

National Report on Community Energy Plan Implementation

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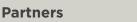
















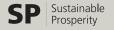


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Visit our website to learn more about the *Getting to Implementation* initiative.



Communities have a key role to play in energy. While many communities in Canada are advancing plans to define priorities around energy, all communities need help getting from plans and ideas to implementation.

Community Energy Planning:

Getting to Implementation in Canada is a collaborative initiative spearheaded by the Community Energy Association,

QUEST - Quality Urban Energy Systems of Tomorrow, and Sustainable Prosperity.

The initiative aims to help communities implement their Community Energy Plans (CEP) in order to improve efficiency, cut emissions, and drive economic development.

Objectives of this Initiative

- Identifying barriers and opportunities for integrated and principle-based community energy planning
- Defining business models for government agencies, utilities, real estate professionals and other community energy stakeholders
- Developing tools and resources for an integrated and principlebased approach to community energy planning such as step-bystep guides and best practice examples
- Increasing understanding and awareness of integrated and principle-based community energy planning across Canada
- Improving capacity among Canadian CEP practitioners to provide support for integrated community energy planning

Key Outcomes

- · A National Report of Community Energy Plan Implementation
- A Canadian Compendium of CEP Legislation, Regulations and Policies
- · A series of national workshops and an Innovation Symposium
- The development of a Community Energy Implementation Framework
- · A pilot application of the Framework to three test communities
- \cdot Training modules to support the delivery of the Framework









Supporters

















Partners







Across Canada, more than 170 communities, representing over 50% of the population, have developed a Community Energy Plan (CEP).

A CEP is a tool that helps define community priorities around energy with a view to improving efficiency, cutting emissions, enhancing community resilience, managing future risks, and driving economic development.

Many communities in Canada are facing challenges implementing their CEPs.

This National Report on Community Energy Plan Implementation is the first installment in a national, multi-year initiative entitled *Community Energy Planning:* Getting to Implementation in Canada.

The purpose of Community Energy Planning: Getting to Implementation in Canada (GTI) is to develop a Community Energy Implementation Framework that will serve as a tool to help communities that currently have a CEP to navigate the challenges and get to the implementation stage. The initiative will also provide resources for communities currently without a CEP to develop an integrated and principle-based Plan that optimizes the benefits and is poised for implementation.

This National Report on Community Energy Plan Implementation undertakes to document and evaluate the current state of implementation of CEPs in Canada. It will:

- Define what a CEP is, what the key drivers are, and what benefits a CEP has for a community
- Provide a snapshot of CEP implementation in Canada and introduce a CEP implementation scoring system
- · Describe success factors and barriers for CEP implementation
- Provide key considerations going forward for the development of the Community Energy Implementation Framework

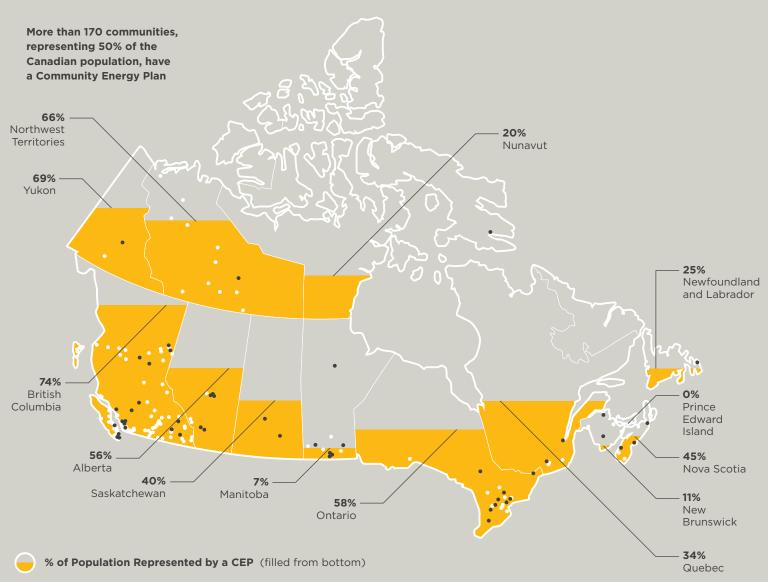
Analysis Approach

The findings in this report are based on the research and analysis of a representative sample of 50 CEPs across Canada in addition to 33 interviews with local government staff that are currently involved with community energy planning.

The communities for the study were selected by firstly identifying all known CEPs across Canada. A representative sample of 50 CEPs, representing 30% of all CEPs identified, were then selected for a more detailed review and were each targeted for an interview. A representative sample of 50 CEPs were selected for the study based on geography, population size, growth rate, economic base, CEP publication year, and Federation of Canadian Municipalities Partners for Climate Protection (PCP) milestone achieved.² Communities were then targeted for an interview to identify the level of implementation of the CEPs as well as success factors and barriers for implementation. Interviews were obtained with 66% of the communities. The communities were then given a score for implementation success and a correlation analysis was conducted to identify relationships between the CEP implementation scores and other factors identified in the research.

¹ To learn more visit www.gettingtoimplementation.ca

² The characteristics of the communities selected for this study are illustrated in Appendix I.



- Researched Community Energy Plans
- Other Community Energy Plans

What is a Community Energy Plan?

A CEP is a tool to help define community priorities around energy with a view to improving efficiency, cutting emissions, and driving local economic development.³

CEPs are typically led by local governments and developed in partnership with community stakeholders. While there is no standard approach for developing a CEP, there are several common elements found in CEPs. Of the sample of CEPs researched:

Tools

- 76% contain energy and greenhouse gas emissions (GHG) models. This includes models based on historical energy consumption data as well as forecasts based on population and energy usage assumptions. Some Plans also include energy maps
- CEPs tend to demonstrate a diversified approach to decision making using tools like inventories and business-as-usual projections

Targets

- · 90% have an emissions reduction target, of which:
 - 24% have a sector reduction target for buildings
 - 33% have a sector reduction target for transportation
 - 22% have a sector reduction target for solid waste

Actions

- CEPs typically contain between 10-50 actions and an average of 35 actions
- The most commonly found actions in CEPs are listed in Figure 1.A

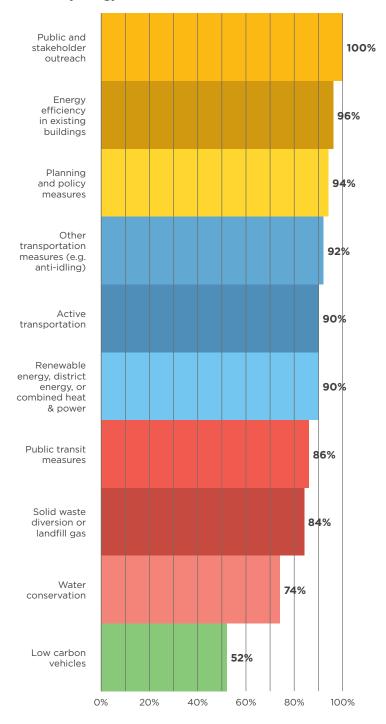
General

- CEPs typically meet the recommended criteria identified by the Federation of Canadian Municipalities Partners for Climate Protection (PCP) Program⁴
- · CEPs typically emphasize the importance of partnerships⁵

Gaps

- Many CEPs are weak in terms of developing emission reduction models, action plans and monitoring strategies, as well as in expressing an intent to integrate activities with existing processes, and demonstrating a principled approach to planning⁶
- Over half of the CEPs make reference to the need for specific Provincial, Territorial and Federal policy amendments to support the implementation of the proposed actions

Figure 1.A - Commonly
Found Action Items in
Community Energy Plans



1.1 - Why Develop a Community Energy Plan?

While some drivers are unique from community to community, there are several commonly cited reasons for developing a CEP. Local economic benefits such as job creation and cost savings were consistently ranked as the most important driver for community energy planning among the communities interviewed. Economic benefits were followed by local environment, community resilience, health, and social benefits (see Figure 1.B).

According to the sample of communities in Canada interviewed for this study, there are real advantages to implementing actions on energy and emissions with a CEP in place, rather than without a CEP in place. The most commonly identified advantages include:

Alignment and Integration: A CEP is a strategic document that can help demonstrate alignment with existing Council priorities, senior management goals, and community planning initiatives. It is a tool that can help a community prioritize and justify actions and make informed choices. It can be used to integrate actions on energy and emissions into other planning and policy initiatives.

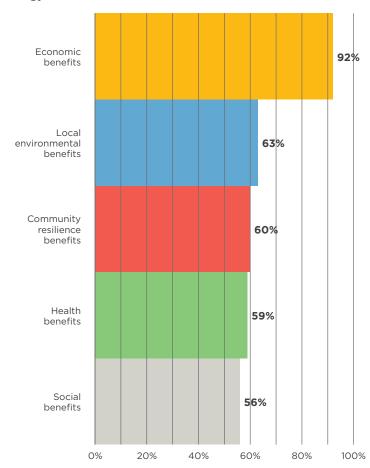
Tracking and Accountability: A CEP enables a community to set targets, identify actions to meet targets, and track and report on the progress of actions. This capability can help a community to measure the impact of its decisions and to ensure that the actions being pursued are resulting in environmental, economic or social benefits for the community. It can also provide a template for accountability by identifying stakeholders to deliver on the actions in the Plan.

Leveraging Partnerships and Funding: A CEP demonstrates commitment and credibility to community stakeholders, funders and investors. This can help local governments to build partnerships that are critical for implementing community actions on energy and emissions.

Communications, Education and Engagement: A CEP can be used as a communications tool to engage with staff and stakeholders. It can help to educate staff, stakeholders and the public about energy use in a community.

Dedicating Resources and Budget: A CEP can encourage municipal staff to dedicate budget and resources to carry out actions on energy and emissions.

Figure 1.B - Reasons for Developing a Community Energy Plan



³ There is currently no standard approach for developing and implementing a CEP. This definition has been developed by the *Community Energy Planning: Getting to Implementation in Canada* team. For a list of other CEP definitions visit http://gettingtoimplementation.ca/category/faqs/

⁴ The PCP program encourages municipalities to take action against climate change through a five-milestone process that guides members in creating GHG inventories, setting realistic and achievable GHG reduction targets, developing local action plans, and implementing plans using specific, measurable actions to reduce emissions.

 $^{^{\}rm 5}$ See Appendix II for the complete list of elements found in CEPs that were analyzed in this study.

⁶ See Appendix III for the list of policy and technical principles for developing a principle-based CEP.

A Snapshot of CEP Implementation in Canada

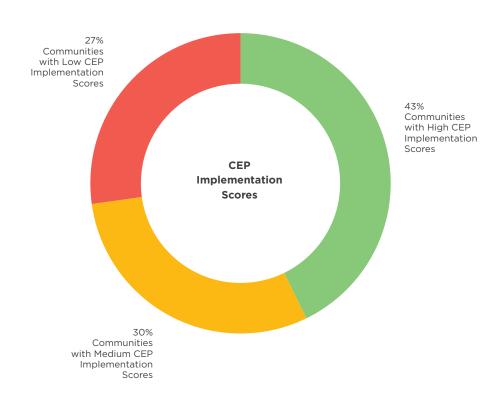
While over 170 communities across Canada have developed a CEP to define priorities around energy, all communities face challenges when it comes to implementation.

In order to determine the state of CEP implementation in Canada, this study developed a CEP implementation scoring system. The criteria for this CEP Implementation Score are described in the sidebar.

The communities reviewed for this study were determined to have the following CEP Implementation Scores (see Figure 2.A)⁷:

- · 43% of CEPs with High CEP Implementation Scores
- · 30% of CEPs with Medium CEP Implementation Scores
- · 27% of CEPs with Low CEP Implementation Scores

Figure 2.A - Community Energy Plan Implementation Scores



⁷ Community energy planning is a relatively new discipline in Canada. There are currently no consistent inventories that are comparable across time and communities, yet. Since measurable outcomes, such as energy and emissions reductions, are not readily available, implementation scores are using actions implemented as a proxy for implementation success.

CEP Implementation Scores

CEPs with High
Implementation Scores

are defined by having more than 75% of actions implemented when more than two years old

or

more than 25% of actions implemented when less than two years old. Any communities that achieved level 5 of the FCM PCP program were ranked as having High Scoring CEPs.

Implementation Scores
are defined by having

are defined by having 25%-75% of actions implemented when more than two years old

10

showing an intent to show progress when less than two years old (determined during interview stage of research).

CEPs with Low Implementation Scores

are defined by having fewer than 25% of actions implemented when more than two years old

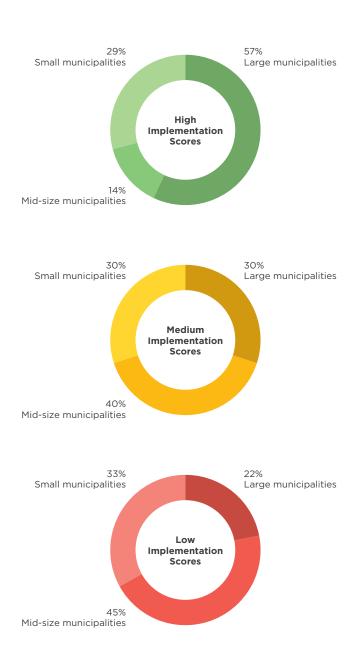
or

showing little intent to show progress when less than two years old (determined during interview stage of research).

2.1 - Is Size of Community an Important Factor?

In looking to determine what the variables are that influence if a CEP will have a higher or lower implementation score, it is important to note that the size of the community is an important, but not an overriding factor. In fact this study shows that all sizes of communities - large urban centres through to smaller communities - are having success with the implementation of CEPs. All sizes of communities are also equally likely to be facing challenges in implementing their CEPs.8

Figure 2.B - Community Energy Plan Implementation Scores by Community Size



⁸ Large municipalities are defined as those with a population exceeding 100,000, mid-size communities with a population ranging from 20,000-100,000 and small municipalities, with a population of less than 20,000

2.2 - What's Getting Implemented?

Having earlier identified the commonly found action items in CEPs, Figure 2.C illustrates which of those action items are successfully getting to the implementation stage.

What's working?

The majority of communities with a CEP are successfully implementing planning and policy measures (e.g. land use policies such as an infill strategy, complete streets policies, design standards) as well as solid waste diversion and landfill gas projects.

What's not working?

The majority of communities with a CEP are less likely to have success in the implementation of local financial incentives, renewable energy, district energy, and combined heat and power projects.

What's the difference?

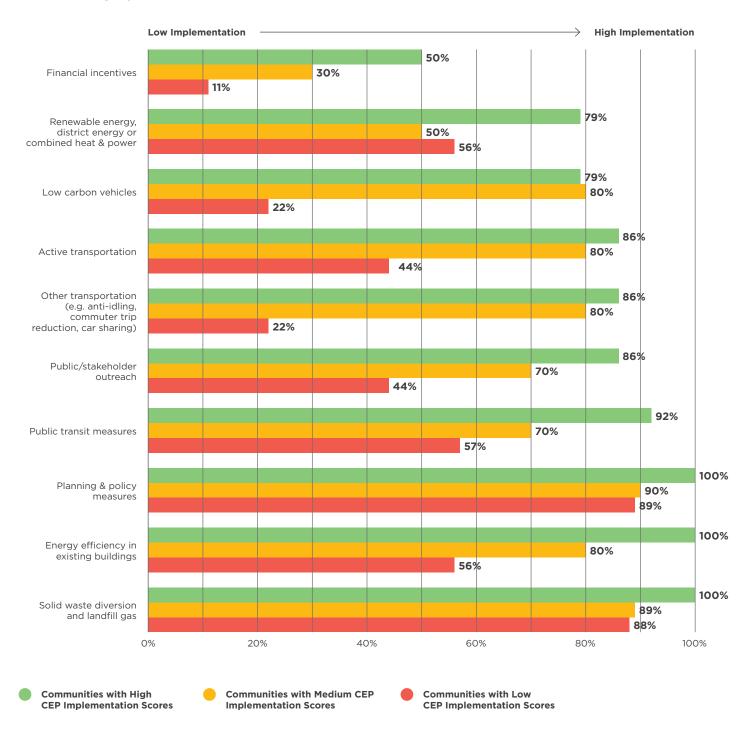
Higher scoring communities tend to far exceed the performance of low scoring communities on actions related to energy efficiency in existing buildings, low carbon vehicles, other transportation actions and financial incentives.







Figure 2.C - The CEP Action Items that are Getting Implemented



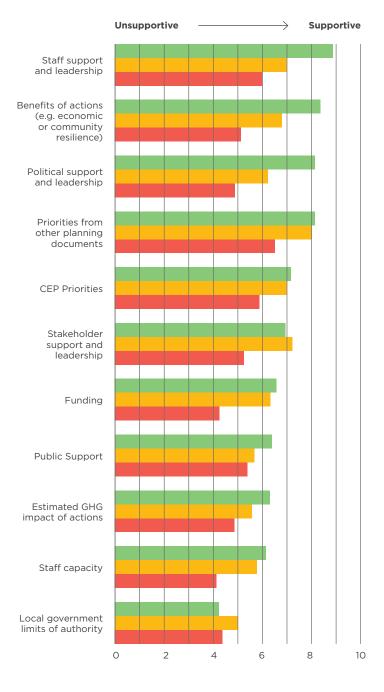
Key Success Factors for the Implementation of Community Energy Plans

To develop a Community Energy Implementation Framework, which will help communities get from plan to implementation, it is important to identify those factors that are shared by CEPs with high Implementation Scores. These factors may be the keys to success for implementation.

This study asked participating local government staff to rank various factors based on how supportive or unsupportive they were of the implementation of their respective CEPs (See Figure 3.A). The study found that:

- Most importantly, CEPs need a champion and support from staff and leadership in order to get to the implementation stage
- CEPs must be closely aligned with other community planning documents
- CEPs with high Implementation Scores often highlight co-benefits of actions, for example economic benefits or community resilience benefits
- CEPs with low Implementation Scores have generally not supported with staff capacity and funding
- The majority of communities described priorities from other community planning documents as a supportive factor for implementation
- The majority of communities often stated the limits of local government authority as a challenge for implementation

Figure 3.A - Factors that Support or Do Not Support Implementation of Community Energy Plans



- Communities with High CEP Implementation Scores
- Communities with Medium CEP Implementation Scores
- Communities with Low CEP Implementation Scores

3.1 - What is the Role of Stakeholders?

CEPs have implications for a variety of stakeholders. Some CEP stakeholders wield more influence for implementing CEPs (see Figure 3.B). Interview participants were asked to identify how important various stakeholders were for CEP implementation as well as how supportive those stakeholders have been so far. Results show that:

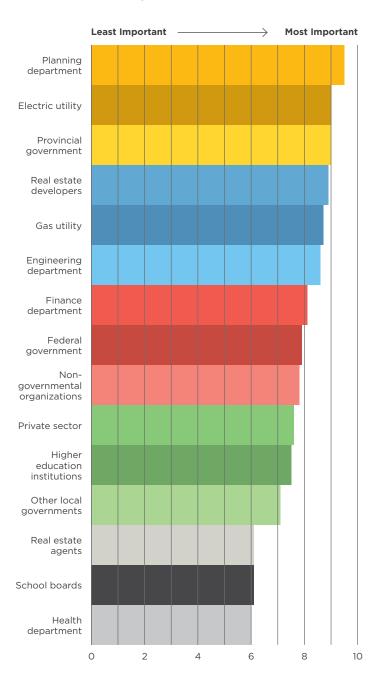
Overall observations:

- Local government planning departments and energy utilities are among the most important CEP stakeholders to work with and have been the most supportive when it comes to implementation of CEPs
- Other stakeholders that are sometimes seen to be influential when it comes to CEP implementation include the Federation of Canadian Municipalities, professional associations, large industrial energy users and provincial emergency management offices

CEPs with high Implementation Scores:

- Had significantly more support from other municipal departments, including engineering and finance departments compared to low scoring CEPs
- Had significantly more support from external CEP stakeholders including real estate developers, higher education institutions, local non-profits and non-governmental organizations, and other local governments

Figure 3.B - Importance of Various Stakeholders for CEP Implementation



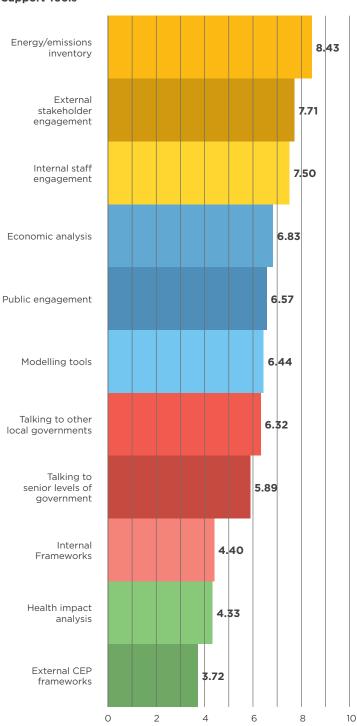
3.2 - What is the Role of Decision Support Tools?

While external factors such as political support or stakeholder collaboration are critical for CEP implementation, there are decision support tools as well as tracking and monitoring methods available within local governments that can help get CEPs to the implementation stage.

Figure 3.C highlights the tools that interview participants considered most useful for the implementation of CEP actions on a scale of 1-10, where 10 is considered an essential tool for implementation. According to interview participants:

- The most useful tools for getting to the CEP implementation stage include energy and emissions inventories, external stakeholder engagement, and internal staff engagement
- The least useful tools include internal and third party CEP frameworks and health impact analyses
- CEPs with high Implementation Scores tended to have inventories and economic analyses ranked as the most important tools for decision making
- Other tools highlighted as being important but that were not listed in Figure 3.C include feasibility analyses, GHG tracking tools, secondary indicators (e.g. number of home retrofits, tonnes of organic solid waste composted, or vehicle miles travelled reduced), and partnerships

Figure 3.C - Decision Support Tools

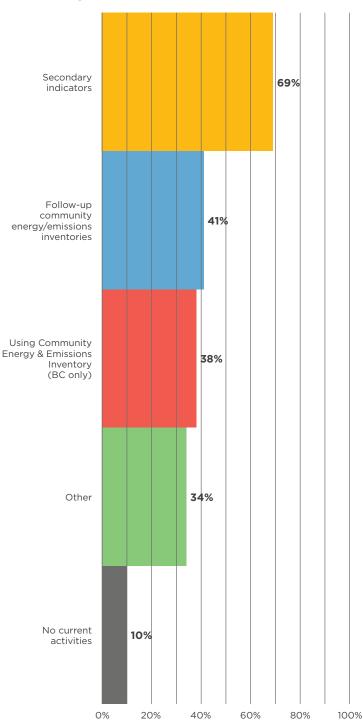


3.3 - What is the Role of Tracking and Monitoring Methods?

In addition to using decision support tools, CEPs with high Implementation Scores tend to have progress tracked and monitored. Communities with high CEP Implementation Scores were found to be three times more likely to track and monitor the progress of actions than communities with low Implementation Scores. Figure 3.D illustrates the most common methods used by communities to track and monitor actions, by showing the percentage of interview participants that use each method.

Using secondary indicators was the most commonly cited approach for tracking and monitoring actions. Communities with both high and medium CEP Implementation Scores were likely to use secondary indicators, while only communities with high CEP Implementation Scores were likely to use follow-up inventories.

Figure 3.D - Tracking and Monitoring Methods



Towards a Community Energy Implementation Framework

Communities have a key role to play in energy. Across Canada, many communities are advancing plans to define priorities around energy and to secure the benefits of implementing a CEP, which include: improving efficiency, cutting emissions, enhancing community resilience, managing future risks, and driving economic development.

Different communities can come across different challenges with CEP implementation. Full implementation of a CEP will be difficult for any community, and requires a carefully thought out and integrated approach.

The following key considerations, identified through this initial research installment in the *Community Energy Planning: Getting to Implementation in Canada* initiative, are for reference for CEP stakeholders across Canada. They are, however, preliminary.

These key considerations will be reviewed against ongoing research and adapted for inclusion in the final Community Energy Implementation Framework.

4.1 - Key Considerations for Communities with Low CEP Implementation Scores

Many of the communities with lower CEP Implementation Scores are struggling to advance their CEP because:

- Next steps are often not clear once the Plan is completed
- Financial and staff resources are usually limited and there is often a lack of political support
- Collaboration is often weak with internal stakeholders such as engineering, finance and other municipal departments, as well as external stakeholders such as real estate developers, higher education institutions, and local non-profits and non-government organizations

To overcome these challenges, these communities can:

Improve the clarity of the plan by:

- Identifying who is accountable for specific action items in the CEP
- Making the plan SMART (Specific, Measurable, Attainable, Relevant, and Time-bound) to help clarify how the actions in the Plan will be implemented
- Becoming a member of the Federation of Canadian Municipalities
 Partners for Climate Protection Program and following the criteria established by the program

Build political and staff support and allocate resources for the plan by:

- · Identifying the economic benefits and/or risk management benefits of actions
- Demonstrating achievement with actions that are easy to implement (e.g. planning and policy measures)
- Focusing on actions that have support from local utility programs and/or Provincial and Federal programs and incentives
- Tracking progress of actions using secondary indicators (e.g. number of home retrofits, tonnes of organic solid waste composted, or vehicle kilometres travelled reduced) or by conducting follow- up energy and emissions inventories

Enhance internal and external partnerships by:

- Focusing on opportunities to integrate CEP priorities into other local government or community priorities
- Building partnerships with important community stakeholders listed in Figure 3.B and finding points of commonality between the CEP and stakeholder priorities

4.2 - Key Considerations for Communities with High CEP Implementation Scores

The communities with higher CEP Implementation Scores identified political support, staff support and the benefits of actions and priorities from other planning documents as the biggest success factors for implementing their CEPs. They also tend to have stronger and more numerous partnerships with important stakeholders.

Communities with high CEP Implementation Scores tend to struggle with:

- Implementing all of the actions in their plan given their limits on local government authority
- Collaborating with important stakeholders including real estate developers, the Federal government and the Provincial government.
- Implementing renewable energy, district energy and combined heat and power projects, transportation actions, including active transportation, low carbon vehicles and other transportation measures (e.g. anti-idling, commuter trip reduction, car sharing), and local financial incentive programs

To overcome these challenges, high scoring communities can consider:

Focusing on actions within the control of the local government by:

- Focusing on organizational solutions for implementing actions. Some methods to achieve this include integrating energy and emissions into existing local government decision making processes, strengthening ties to the office of the Chief Administrative Officer, and/or developing a steering committee
- Identifying and voicing specific recommendations for changes in provincial policy that would help support the implementation of actions on energy and emissions at the local level

Enhance partnerships by:

 Building on and expanding relationships with any key outstanding stakeholders that they are not yet working effectively with by focusing on points of commonality between the CEP and stakeholder priorities

Innovative approaches to implementation by:

- Using their power as a municipality to develop new governance models to implement projects that have not traditionally been taken on by the local government (e.g. a new holding company, or innovative partnerships)
- ⁹ A study published by the Federation of Canadian Municipalities identifies three approaches to oversight for implementing plans similar to CEPs: Clark, Amelia (2011). Passing Go: Moving Beyond the Plan. Federation of Canadian Municipalities. http://www.fcm.ca/Documents/tools/GMF/SS_PassingGo_EN.pdf

4.3 - Considerations for Developing a CEP with Implementation in Mind

An analysis of the quality of CEPs shows that there is a trend between incorporating the following components of a plan and successful implementation:

- Broad scope: Plans with actions in all of the action categories listed in Figure 1.A were more likely to be successfully implemented and the most successful CEPs had approximately between 15 and 50 actions
- Action plan: CEPs that were SMART (Specific, Measurable, Attainable, Relevant, and Time- bound), as well as assigned accountability, estimated resources and financial considerations such as cost or benefits were more likely to be implemented
- Integrating the CEP with other plans: CEPs that demonstrated integration with other local government plans had higher implementation scores
- **Emission and energy reduction targets:** All CEPs without a specific target had low implementation scores

Communities that are beginning to think about how to develop a CEP should also consider:

Building support for the Plan by:

- Focusing on building political and staff commitment before you begin developing a CEP. One way to do this is by focusing on and communicating the benefits, particularly the economic benefits, of a CEP. Some examples to focus on include: revenue for the community based on local energy generation opportunities, jobs created through CEP actions, savings from efficiency projects and dollars kept inside the community. Some communities have more interest in other benefits, such as risk management or community resilience
- Developing the CEP using the technical and policy principles listed in Appendix III

Developing partnerships early in the planning process by:

 Building partnerships with important community stakeholders listed in Figure 3.B and find points of commonality between the CEP and stakeholder priorities

Oversight of the Plan and how to integrate the Plan into existing processes:

Opportunities for changes to the organizational structure of the local government to help implement the plan. Some methods include integrating the CEP into local government processes, establishing an oversight body (e.g. a steering committee led by senior staff and linked directly to local government staff members), and/or new governance models (e.g. a new holding company) to help implement specific actions in the plan⁹

Next Steps

While some CEPs are advancing, this early research identifies that all communities would benefit from guidance at various stages of the CEP implementation process. It also identified the unique challenges faced by communities with high, medium and low Implementation Scores. The Community Energy Implementation

Framework, being developed as part of this initiative, will give communities the resources they need to navigate these challenges and get to implementation. The Framework will be developed using findings from this research, as well as through the following research and workshops.

Research

Later this year, GTI will be releasing a research report summarizing the role of provincial and territorial policymakers in CEP implementation.

Canadian Compendium of CEP Legislation, Regulations and Policies

- · A comprehensive overview of legislation, policies and programs being pursued by provincial and territorial governments
- A high level assessment of the impact of these policies/programs may have had in facilitating successful implementation of CEPs
- An analysis of CEP activities in the United States and Europe that provide models for high level policy support for CEP implementation

Workshops

Get involved in the initiative during one of our workshops being hosted in the following locations:

2015 Date	Location
March	Whitehorse, Yukon
May	Wolfville, Nova Scotia
May	Edmonton, Alberta
June	Drummondville, Québec
Summer	Toronto, Ontario
Summer	Saskatchewan
Summer	British Columbia
Fall	National Symposium

Community
Energy
Implementation
Framework
and Pilot
Communities

The Community Energy Implementation Framework will be an interactive tool to identify the role of the key stakeholders to advance various community energy technologies and policies.

The Framework will be developed collaboratively and released in the fall of 2015. The Framework will be piloted in three communities across Canada in 2016.

Visit <u>www.gettingtoimplementation.ca</u> to learn more and to sign up for the newsletter.



Appendix I

Overview of Research Sample

British Columbia

Québec

Alberta

Eastern Canada

Figure Al.A - Provincial and Territorial Figure Al.B - Provincial and Territorial **Distribution of CEPs across Canada Distribution of CEPs Reviewed for this Study** 9% 8% 7% 12% 38% 4% 11% **Reviewed for this Study Across Canada** 5% 18% 61% 4% 10% 10%

Saskatchewan

and Manitoba

Northern Canada

Ontario

Figure Al.C - Population Size of CEPs across Canada

Figure Al.D - Population Size of CEPs Reviewed for this Study

32%

Across Canada

Reviewed for this Study

32%

Large Communities (>100,000)

Mid-size Communities (20,000-100,000)

Small Communities (<20,000)

Across Canada Reviewed for this Study

Figure Al.F - Publication Year of CEPs

Figure Al.E - Publication Year of CEPs

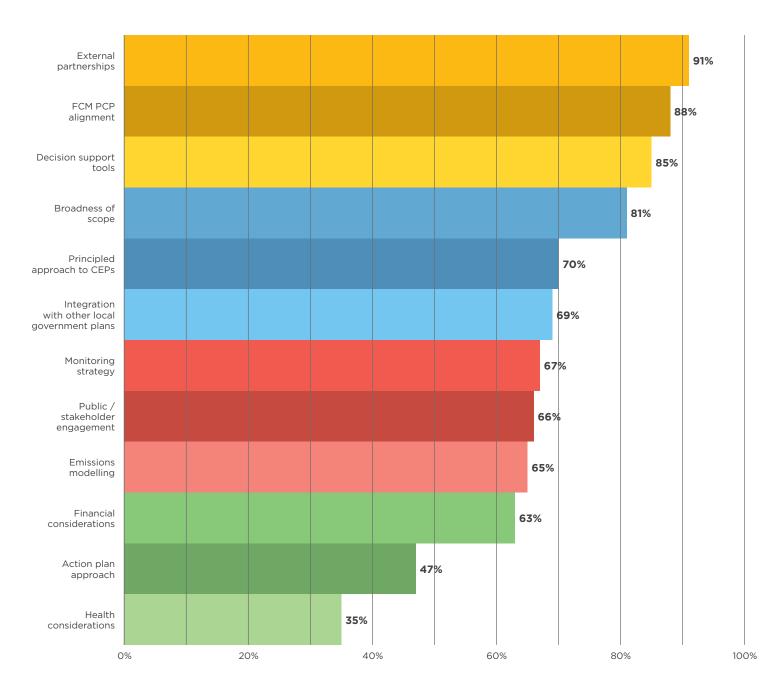
Figure AI.H - Economic Base of Communities Figure Al.G - Economic Base of Communities with CEPs Across Canada with CEPs Reviewed for this Study 11% 8% 10% 14% 38% **Across Canada Reviewed for this Study** 46% 14% 15% 20% 22% Metropolitan Rural Tourist Resource Remote

Figure Al.I - Partners for Climate Protection Milestone Figure Al.J - Partners for Climate Protection Milestone Achieved for Communities with CEPs across Canada Achieved for Communities with CEPs Reviewed for this Study 7% 18% 24% 4% 40% **Across Canada Reviewed for this Study** 14% 34% 40% 7% 1% 4% Not a PCP Member 0

Appendix II

CEP Elements Reviewed for the Study

Figure All.A - Strong and Weak Elements in the 50 CEPs Reviewed



Appendix III

Technical and Policy Principles for Developing Principle-Based CEPs

Technical Principles

Improve efficiency - first, reduce the energy input required for a given level of service

Optimize exergy – avoid using high-quality energy in low-quality applications

Manage heat - capture all feasible thermal energy and use it, rather than exhaust it

Reduce waste – use all available resources, such as landfill gas and municipal, agricultural, industrial, and forestry wastes

Use renewable energy resources – tap into local opportunities for geoexchange systems, small scale hydro, biomass, biogas, solar, wind energy, and opportunities for inter-seasonal storage

Use energy delivery systems strategically – optimize use of energy delivery systems and use them as a resource to ensure reliability and for energy storage to meet varying demands

Policy Principles

Match land use needs and mobility options – understand the energy implication of land use, infrastructure for water and wastewater, waste management, personal mobility, goods movement, and building design decisions

Match energy options to local context – local climate, building on land use choices, industrial structure, availability of local sources of waste and renewables

Send clear and accurate price signals – consumers should see and pay full real costs, including external costs

Manage risks and be flexible – maintain technological and fuel diversity; pursue cost-effective opportunities first and incorporate learning; assume the need to adapt quickly to market and technological surprises

Emphasize performance and outcomes in policy and regulations – avoid prescribing fuels and technologies

Pursue policy and program stability – maintain a consistent and predictable decision making environment to sustain investor confidence



Visit our website to learn more about the *Getting to Implementation* initiative.

