The Voice of the Smart Energy Communities Marketplace in Canada

#### **Resources for Smart Energy Communities** - Eddie Oldfield, QUEST and FCM

October 4, 2019

### **AGENDA**

- QUEST / Introduction
- Smart Energy Communities
- FCM Resources
- PCP Milestone Tool
- Getting to Implementation
- Scorecard
- Guest panelists



### **ABOUT QUEST**



- QUEST is a national non-government organization that drives the development of **resilient**, affordable, healthy, and prosperous Canadian communities by building awareness of, and support for, efficient, integrated, and localized energy systems.
- QUEST supports local governments to engage, learn from one another, collaborate, get engaged on projects and advance solutions with utilities and energy service providers, developers and the real estate sector, among other key stakeholders.
- Our vision is that every community in Canada is a Smart Energy Community by 2030



## **OUR SERVICES**



#### **WORKING GROUPS**

• A place for our Subscribers to collaborate, learn from one another, and evaluate how to implement on the ground solutions to strengthen the Smart Energy Communities marketplace

#### **EVENTS**

- QUEST*talks* a series of 4 regional networking and accelerator sessions designed to help you stay competitive in the growing Smart Energy Communities marketplace

#### **ADVISORY SERVICES**



• A suite of trusted and independent services to help you succeed in the Smart Energy Communities marketplace

#### **RESEARCH and TOOLS**



• Projects and research that empowers practitioners and decision makers with the tools they need to advance Smart Energy Communities



## **SNAPSHOT OF OUR IMPACT IN 2018**

#### Connect

Connected over 3000 Smart Energy Community leaders with

- 9 Working Groups collaborating and evaluating how to implement on the ground solutions
- 200+ at QUEST*talks* regional networking and accelerator sessions
- 13+ energy mapping workshops across Canada bringing governments, utilities, & the building sector together to achieve a sustainable energy future
- Monthly smart energy news digests and updates

#### Influence

Leveraged our independent third party status to

- 3 presentations to federal standing
   committees and 9 policy submissions to
   governments by working groups
- **Key advisor** on government initiatives including Generation Energy, the ON Community Emissions Reduction Planning, Clean Fuel Standard, & the NS Low Carbon Communities Program
- Generated ongoing dialogue with economic regulators across Canada to enable more innovation within the regulatory construct for utilities

#### Educate

Broadened knowledge and understanding by

- 200+ communities directly engaged in energy literacy through QUEST projects and services
- Building **alignment** among municipal, regional and provincial planning authorities in Ontario
- 2 groundbreaking publications with the
   Atlantic Canada Energy Data Roadmap
   and Toward a Positive Energy Future in
   Northern and Remote Communities
- Helping **9** pilot communities test **60** Indicators for Smart Energy Communities

## **ENABLING YOUR SUCCESS IN 2019**

#### Connect

Build the relationships you need to ensure investments deliver results

#### Influence

Join us as we inspire leadership and advance change

#### **Contacts**

Matchmaking & introductions

#### Networks

- 9 topic specific, outcome oriented, regional working groups
- Chapter events by region

#### **Events**

- 4 QUEST*talks* regional networking & accelerator sessions Government Strategy
- Curated 'invitation only' events

#### **Policy and Regulation**

- National and Provincial Policy Roadmap
- **CAMPUT Regulatory Key Topics**

#### **Industry & Innovation**

- Promoting positive messages through media and local governments
- Supporting effective implementation of emerging provincial/federal policies

- Role at key events like EMMC
- Ongoing advocacy through presentations to all levels of government including federal standing committees

#### Educate

Gain an essential edge with the latest research, tools, and insights

#### **Basic and Applied Research**

- Atlantic Energy Data Roadmap
- **Regional Climate Advisor for PCP**
- Planning Alignment, T2050
- Municipalities and Utilities Partnering for Community Resilience initiative

#### Tools

- **Community Energy Planning** Implementation Framework
- Smart Energy Communities Scorecard

#### Workshops

Customized offerings like community energy & resiliency mapping

## **ATLANTIC SNAPSHOT**

#### **Working Groups and Projects**

- Municipal Energy Learning Group (NS)
- Municipal Working Group (NB-PEI)
- Building Working Group (NS)
- Regional Climate Advisor for the FCM-ICLEI Partners for Climate Protection (PCP) Program
- Resilience Planning (NRCan and FCM)
- Support for CEP Development and Implementation
- Accelerating Implementation of Renewable Energy

#### Research

- 2015- Homegrown Success: Nova Scotia Smart Energy Solutions Inventory
- 2015 CEP Primer for NB Municipalities
- 2017 Reviewing Market Readiness For Smart Energy Solutions in Nova Scotia
- 2018 Atlantic Canada Energy Data Roadmap



## **QUEST***talks* Implementation Feb 5

2 panels, 10 discussion tables, 80 participants, Awards





## **SMART ENERGY COMMUNITIES**

### THE COMMUNITY ENERGY OPPORTUNITY

• Communities are responsible for over half of all energy use and greenhouse gas emissions

• The cost of energy is high and growing, and much of energy spending is leaving local economies



### COMMUNITY ENERGY PLANNING - KEEPING ENERGY \$\$ local



"Every 1% reduction in energy use by Bridgewater residents and businesses keeps \$1 million in the local economy."

QUEST

### **SMART ENERGY COMMUNITIES**

• QUEST positions **energy as the starting point** for *municipalities* 

- A Smart Energy Community seamlessly integrates local, renewable, and conventional energy sources to efficiently, cleanly, and affordably meet all its energy needs
- It is a coveted, highly livable place to live, work, learn, and play



## **SMART ENERGY COMMUNITIES**

- They are characterized by four major components:
  - 1. take advantage of energy efficiency
  - 2. integrate conventional networks
  - 3. harness local energy opportunities
  - 4. integrate land use
- Smart Energy Communities also help improve resilience



## **CEP PRIMER for NB MUNICIPALITIES**



### COMMUNITY ENERGY PLANNING PRIMER FOR NEW BRUNSWICK MUNICIPALITIES

- Steps to plan for and develop a CEP
- Based on best practices from CEPs across Canada

https://questcanada.org/resources/#publications



Report March 2016

### **ADVISORY SERVICES**









ENERGY MAPPING WORKSHOPS RESILIENCE WORKSHOPS COMMUNITY ENERGY PLANNING SUPPORT CUSTOM SERVICES

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## **ENERGY MAPPING WORKSHOPS**

#### • Objectives

- a. Strengthen alignment amongst stakeholders
- b. Develop energy literacy
- c. Define energy priorities
- These workshops provide an opportunity for integrated, systems-thinking approach to community energy planning
- Interactive & customizable
- Multi-stakeholder engagement & collaboration

## ENERGY MAPPING WORKSHOPS COMMUN ENERGY PLANNING SUPPORT

Become one of the many communities realizing significant economic, environmental, health, & socioeconomic benefits from implementing their Community Energy Plans

## **RESILIENCE PLANNING WORKSHOPS**

#### Objectives

- a. Understand climate risks & vulnerabilities
- b. Identify strengths & weaknesses
- c. Identify adaptation and resilience measures
- Activities:
  - Detailed baseline survey
  - GIS mapping of available data
  - Workshops for municipal, utility, local stakeholders
  - Three table-top exercises
  - Team collects information & analyzes all results



## **RESILIENCE** WORKSHOPS

Understanding climate risks & vulnerabilities is key to planning for safer, healthler, & more resilient communities

THAT OFFER AN

APPROACH

TEDV

### **TABLE TOP EXERCISES**

#### Team building and planning alignment













## **FCM RESOURCES**

## Regional Climate Advisor & FCM-ICLEI PCP Resources





The regional climate advisor initiative is offered through the Municipalities for Climate Innovation Program, which is delivered by the Federation of Canadian Municipalities (FCM) and funded by the Government of Canada. This initiative supports communities that are members of the FCM–ICLEI Partners for Climate Protection (PCP) program to reduce greenhouse gas emissions and take action on climate change. PCP is a partnership between FCM and ICLEI—Local Governments for Sustainability. fcm.ca/pcp.

## FCM FUNDING OPPORTUNITIES

#### • Green Municipal Fund (ongoing), for

- o Plans
- o Feasibility studies
- o Pilot projects
- o Capital projects

#### Projects fall into these categories:

- Sustainable neighbourhood and brownfields action plan
- Energy efficiency and recovery
- Transportation and fuel efficiency
- Water quality and conservation
- Waste management and diversion
- o Brownfields

#### • Municipalities for Climate Innovation Program

(fully allocated, may recapitalize 2020)





## **FEDERAL BUDGET HIGHLIGHTS**

**Budget 2019 commits \$1 billion to delivering results for Canadians directly through FCM**, primarily the <u>Green Municipal Fund</u> (GMF). This program expansion includes support for:

- energy retrofits of existing and new affordable and social housing projects operated by both municipal and community-based housing providers
- **community financing** to enable municipalities to support homeowners as they make their homes more affordable and **energy efficient**
- activities that reduce greenhouse gas emissions from large community buildings or other infrastructure
- renewal of FCM's popular **Municipal Asset Management Program**

In the coming months, we will share more information about related funding opportunities.

## WHAT IS PCP? (Partners for Climate Protection)



- <u>Network</u> of over **390** Canadian municipal governments
- **<u>Commitment</u>** to reduce GHGs and act on climate change
- <u>Partnership</u> between the Federation of Canadian Municipalities (FCM) and ICLEI-Local Governments for Sustainability
- Founded in 1994 24 Years and Running







ON FÉDÉRATION DIAN CANADIENNE DES LITIES MUNICIPALITÉS



### WHAT IS PCP? A NATIONAL NETWORK



## **PCP MILESTONE FRAMEWORK**



## Corporate & Community Scale

- Five milestone framework
  - GHG Measurement
  - Setting a Target
  - Developing a Plan
  - Implementing a Plan
  - Monitoring & Reporting

 Technical support and guidance, free training and resources

### **HOW TO JOIN**

- 1. Contact us for our **orientation package**
- 2. Download the sample resolution to join PCP
- **3.** Appoint staff and elected official liaisons to be the main contacts
- 4. Submit adopted **Council resolution**, along with contact info
- **5.** Receive information package, resources, and PCP Milestone Framework to begin implementation.

## **TOOLS AND RESOURCES**

- Regional Climate Advisors
- One-on-one technical support line pcp@iclei.org
- **Peer-review** for milestone applications
- Case studies and guidance documents
- Access to PCP Hub and PCP Milestone Tool
- Webinars, workshops, peer to peer learning
- Quarterly newsletter



#### **PCP HUB**

#### http://www.pcphub.fcm.ca/



**Partners for Climate Protection** 

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Français

## Advancing municipal solutions to climate change in Canada

Welcome to the Partners for Climate Protection Hub.

Our peer-to-peer online network helps municipal staff and elected officials connect with the best resources and expertise on local climate action. The PCP Hub is a great way to learn about the latest resources on climate and energy and to get news about funding opportunities.

Are you a PCP member or associate member?

🖂 Sign up

Sign in		
Email		
Password		
	Sign in	

🖉 Start discussion

🛓 Upload document

🛗 Schedule event

🔗 Ask a question

FCM

## **PCP** Milestone Tool

- New version released February 2019
- Supports PCP members measuring and managing emissions
- Corporate & community emissions
- Free for PCP members



## **GHG Emission Inventories**

An account of the amount of GHG emissions released into the atmosphere It reveals how the community and corporation consumes energy and generates waste Provides baseline data to measure future progress against

Track emissions, energy consumption, and dollars spent



## **Types of GHG Inventories**

A **<u>community</u>** inventory captures the GHG emissions produced from key sectors and activities within the community as a whole

A <u>corporate</u> inventory captures the GHG emissions associated with a local government's operations and services



# Step 1: Define the Boundary

#### Community:

Administrative boundary of local government

#### Corporate:

 Operational control of municipal government



# Step 2: Set the Inventory Year

- Depends on data availability
- Align with province?
- Align with similar municipalities?



# Step 3: Collect the Data

- Real consumption data
- Survey data, modelled data
- Regional or national data scaled down using population or other indicators
- Trade off between accuracy & ease of collection



# Step 4: Quantify GHG emissions

- Convert activity data to GHG emissions
- GHG emissions = activity data x emissions factor
- Can use PCP Tool



## **Milestone 1 Requirements**

- 1. Summary of inventory
- 2. Summary of data sources
- 3. Description of assumptions, omissions, other relevant data
- 4. Business as Usual Forecast



## Why Set A Target?

- Public statement of your commitment to climate change action
- Sets a goal of where you want to go and when you want to get there
- Demonstrates leadership to citizens and businesses
- A target to measure progress against



## Why Set A Target?

Realistic, achievable, meaningful and reflect the need for significant action on climate change Must have: **20%** below Base year 2016 by 2030 Target year % reduction Other types: energy targets, intensity targets, per capita targets



## What are others doing?

**IPCC Target:** 45% below 2010 by 2030

Federal and Provincial Target: 30% below 2005 by 2030

Municipality	Corporate	Community
Halifax	30% below 2008 by 2020	20% below 2008 by 2020
Grand Manan	20% below 2015 by 2030	20% below 2015 by 2030
Charlottetown	40% below 2015 by 2030	50% below 2015 by 2030
Grand Bay-Westfield	9% below 2015 by 2025	7% below 2015 by 2025

## **Two Approaches to Target**

## Satting

#### **Top Down Approach**

#### **Bottom Up Approach**

- Chosen before action planning and analysis
- Usually aligned with provincial, federal, or other jurisdiction's' target

Advantages:

- Faster or "easier" selection
- Alignment with other jurisdictions

Disadvantages

- Risk of not meeting target
- Uncertainty

 Chosen by identifying possible actions and assessing potential to reach reduction by target year

Advantages:

 Certainty of actions and ability to meet target

Disadvantages

- Less aspirational
- More challenging process

## **Target Setting 101**

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Simple in theory, difficult in practise



## **Milestone 2 Requirements**

- 1. Description of Target
- 2. Council Endorsement



## Why Develop a Climate Plan?

- Will help municipal government and community:
  - Reduce energy & save money
  - · Keep energy dollars in the community



- Prepare for a carbon constrained future
  - Defines actions and goals for reducing emissions and energy
  - Assigns responsibility for completing actions
  - Regulations from higher levels of government

## Why Develop a Climate Plan?

- Can benefit economy, society, and community
  - Encourage economic growth and green jobs through lowcarbon investment
  - Resiliency
  - Energy security
  - Improved health and well being



## **Selecting Actions**

#### PCP Milestone Tool: GHG Reduction Potential

Partners for Climate Protection **MILESTONE TOOL** MILESTONE 3 SCENARIO BUILDER HOME / INTRODUCTION / COMMUNITY ACTION PLANS / SCENARIO BUILDER / SCENARIO BUILDER Introduction Scenario outcome - emissions reduction model Corporate dashboard Expand All Instructions Community dashboard Scenario builder Emission reduction wedge chart Overview Emission reduction Set-up 1,200,000 Renewable fuels Action selection Stationary energy - AFOLU 1.000.000 - IPPU Transportation - Solid waste Waste On-road transportation 800,000 - Residential AFOLU and IPPU ---- Remaining emissions Grid model Target 600.000 Cost projections Outcome 400,000

## **Milestone 3 Requirements**

- 1. Description of activities to achieve target
- 2. Description of cost and/or funding sources
- 3. Description of where overarching responsibilities are contained
- 4. Explanation of how stakeholders participated in plan formation



## **PCP MILESTONE TOOL**

https://pcptool.ca/

**Energy Consumption** 

18,652,383 GJ/yr

### Partners for Climate Protection MILESTONE TOOL

### 1 2 3 4 5

#### MILESTONE 1 2013 COMMUNITY INVENTORY - OVERVIEW

Expenditure

\$5,400/yr

HOME /	MILESTONE 1	2013 COMMUNITY INVENTORY - OVERVIEW

General

+ Completeness check



- Overview
- Stationary Energy
- Transportation
- Waste
- AFOLU and IPPU
- Shortcuts

Community dashboard Corporate dashboard Add community inventory





+ Export to PDF

**GHG Emissions** 

846,178 tCO2e/yr

Notes

+ Export to Excel

Documents





Log in to https://pcptool.ca/

## **GETTING TO IMPLEMENTATION**



The resources developed from the GTI Project are available here to help communities that currently have a Community Energy Plan navigate the challenges and get to implementation. They are also designed to help communities currently without a plan to design an integrated and principle-based Community Energy Plan that optimizes the benefits and is poised for implementation.

#### THE COMMUNITY ENERGY IMPLEMENTATION FRAMEWORK

RESOURCES



### **GTI FRAMEWORK AND READINESS SURVEY**

Step 1: Take the Readiness Survey

**Step 2: View the Framework** 

- An interactive, web-based guide to help communities move community energy plans from a vision to implementation
- 10 strategies that provide guidance on implementation including:
  - Implementation advice
  - Case studies
  - Resources

#### Gettingtoimplementation.ca / miseenoeuvre.ca questcanada.org/survey/





### **GUIDANCE AND RESOURCES**



#### DETERMINE WHICH DEPARTMENT AND STAFF PERSON(S) WILL OVERSEE CEP IMPLEMENTATION.

The department in which a CEP sits can significantly impact implementation. For example, a CEP can be led by the planning, community development or the economic development department. CEPs may also be led by local NGOs or by the provincial/territorial government.

#### Consider the following questions:

- · What department (or organization) should oversee the CEP?
- What staff person should act as the lead for CEP development and implementation?

#### What Department (Or Organization) Should Oversee The CEP?

- Recognizing that collaboration and coordination among political, staff and community stakeholders is central for community energy planning, the department in which a CEP is
  housed should be well-positioned to communicate and liaise with political, staff and community stakeholders
- The department should be well-positioned to communicate the widespread economic, environmental, health, social and resilience benefits of CEP implementation.
- · CEPs are often housed within the planning department due to the strong links that community energy holds with planning and development.
- Some communities house their CEP in the economic development department, recognizing the strong link between economic growth and community energy transition



### **GUIDANCE AND RESOURCES**



Case Study 6: Establishing a Committee of Council in Yellowknife, Northwest Territories

Case Study 7: Establishing a Governance Framework for Edmonton's Community Energy Transition Strategy, Edmonton, Alberta

Case Study 16: Monitoring and Reporting on Implementation Progress in the City of Guelph, Ontario

Case Study 18: Efficiency One, Nova Scotia

## SMART ENERGY COMMUNITIES SCORECARD

### **SMART ENERGY COMMUNITIES SCORECARD**

The Smart Energy Communities Scorecard is the first platform to:

- Define the benchmark for a Smart Energy Community
- Provide communities a roadmap to transition to a Smart Energy Community
- Evaluate progress over time





#### **INDICATORS FOR COMMUNITY CAPACITY & RESOURCES**

- **1. Relationships** Governance and Engagement Models are Established and Meaningful Partnerships Exist
- 2. **People** Staff Capacity is in Place to Support Implementation
- **3. Data** Information and Data is Available to Support Decision-Making
- 4. Financing Supportive Financial Mechanisms are in Place
- 5. **Strategy** Community has a Clear Vision and Plan

\* Note: each *Indicator* has multiple associated *Measures* (i.e. indicators will be measured in multiple ways)





#### **INDICATORS FOR COMMUNITY ENERGY SYSTEMS & PROCESSES**

- **1.** Land Use Land Use Planning Considers Energy and Climate
- 2. Energy Networks Energy Delivery Systems are Optimized to Ensure Reliability and Local Energy Integration
- 3. Waste & Water Waste and Water Systems are Efficient and Integrated
- 4. **Transportation** Mobility Networks are Efficient and Diverse
- 5. Buildings Buildings are Efficient and Incorporate Local Energy Options

\* Note: each *Indicator* has multiple associated *Measures* (i.e. indicators will be measured in multiple ways)



# QUEST

To learn more about QUEST's Advisory Services visit questcanada.org/advisoryservices To learn more about QUEST's **Subscriber Services** visit questcanada.org/subscribers

## **Guest Panelists / Discussion**