Community Energy Planning: Getting to Implementation in New Brunswick
Agenda

- Overview of the GTI initiative

- **Part I:** Building the Case for Community Energy Planning
  - Presentations and interactive discussion

- **Part II:** Implementing Community Energy Plans
  - Panel and interactive discussion

- **Part III:** Table-top exercise
Community Energy Planning:
Getting to Implementation in New Brunswick
Project Partners and Supporters

The J.W. McConnell Family Foundation

LA Fondation de la famille J.W. McConnell

Suncor Energy Foundation

Alberta Real Estate Foundation

Real Estate Foundation British Columbia

Conseil de la Coopération de la Saskatchewan

CDEM

CDEA Colombie-Britannique

SDE Colombie-Britannique

Fondation ECHO Foundation

Community Energy Association

QUEST Quality Urban Energy Systems of Tomorrow

Sustainable Prosperity
Agenda

- Overview of the GTI initiative

- Research overview:
  - What is a Community Energy Plan?
  - Who is involved in a CEP?
  - What are the success factors for implementation?
  - How can you build the case for community energy planning in your community?
Overview of the Getting to Implementation Initiative

Stages

Research

National Engagement & Framework

Pilot & Promotion

- National Report on CEP Implementation
- National Report on Policies Supporting CEP Implementation
- Building the Business Case for Community Energy Planning

Deliverables

- National workshop series
- Community Energy Implementation Framework

- Apply Framework to three test communities
- Practical case studies developed for test communities
- Training modules developed to aid with delivering the Framework
- Framework made publicly available with training support
Energy Use in Canadian Communities

Energy Use in Canadian Communities by Sector (2012)

- Outside Canadian Communities: 41%
- In Canadian Communities: 59%
- Transportation: 18%
- Residential: 17%
- Construction and Manufacturing: 12%
- Commercial: 12%

Source: (Natural Resources Canada, 2012)
### Energy Spending in Canadian Communities

<table>
<thead>
<tr>
<th>Community Size</th>
<th>Average Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Communities (less than 20,000 people)</td>
<td>Up to $80 million</td>
</tr>
<tr>
<td>Mid-sized Communities (20,000 – 100,000 people)</td>
<td>$60 million to $400 million</td>
</tr>
<tr>
<td>Large Communities (100,000 people to 2.5 million people)</td>
<td>$300 million to $10 billion</td>
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</tbody>
</table>
1. Integrate Conventional Energy Networks
   – So that the electricity, natural gas, thermal / district energy, and transportation fuel networks in a community are better coordinated to match energy needs with the most efficient available energy source.

2. Make Smart Land Use Decisions
   – Recognizing that poor land use can result in energy waste.

3. Harness Local Energy Opportunities
   – Renewable electricity (solar, wind), renewable natural gas, heat capture, geothermal, and other energy opportunities tailored to the specific community.
Community Energy Planning in Canada

% of Population (filled from bottom)
- Researched Community Energy Plans
- Other Community Energy Plans

- 66% Northwest Territories
- 69% Yukon
- 74% British Columbia
- 56% Alberta
- 40% Saskatchewan
- 7% Manitoba
- 58% Ontario
- 20% Nunavut
- 25% Newfoundland and Labrador
- 0% Prince Edward Island
- 45% Nova Scotia
- 11% New Brunswick
- 34% Quebec
What is a Community Energy Plan?

A CEP is a tool that helps define community priorities around energy with a view to:

- Driving economic development
- Managing future risks and enhancing resilience
- Improving energy efficiency
- Cutting GHG emissions
What is a Community Energy Plan?

A CEP often contains:

- A baseline inventory of energy and GHG emissions
- Energy and GHG reduction targets
- Actions to achieve targets
What is a Community Energy Plan?

Energy and Emissions Inventory

Energy inventory includes:

- Electricity, natural gas consumption
- Other fuels (e.g. propane)
- Transportation fuels
- Waste
- Water and waste water
- Generation
What is a Community Energy Plan?
Energy and Emissions Inventory

Source: London, Ontario
What is a Community Energy Plan?

Energy and Emissions Inventory

- **Natural Gas**: $234 million, 27% stays in London
- **Gasoline**: $530 million, 4% stays in London
- **Propane**: $35 million, 43% stays in London
- **Diesel**: $131 million, 5% stays in London
- **Electricity**: $492 million, 14% stays in London
- **Fuel Oil**: $38 million, 18% stays in London

Total: $1.5 billion
What is a Community Energy Plan?
Energy and Emissions Inventory

- United States, 3%
- Canada - Government, 7%
- Western Canada, 25%
- Ontario - Government, 15%
- Ontario - Business, 37%
- London Region, 13%
What is a Community Energy Plan?

Energy and Emissions Inventory

Source: Fort Providence, Northwest Territories (Arctic Energy Alliance, 2008)
What is a Community Energy Plan?
Energy and Emissions Targets

- 90% of plans have targets
- Targets can be pragmatic or visionary
- All plans without targets are doing poorly on implementation
- Targets can be integrated into other plans (e.g. official plans)
What is a Community Energy Plan?

Actions in a CEP

- Public and stakeholder outreach
- Energy efficiency in existing buildings
- Planning and policy measures
- Other transportation measures (e.g. anti-idling)
- Active transportation
- Renewable energy, district energy, or combined heat and power
- Public transit measures
- Solid waste diversion or landfill gas
- Low carbon vehicles
What is a Community Energy Plan?

Actions in a CEP

New & Existing Residential & Commercial / Institutional Buildings
1. Reduce Demand
2. Re-use Waste Heat
3. Renewable Heat
4. Renew Electricity

Waste
1. Organics Diversion
2. Construction - demolition waste diversion
3. Landfill Gas Capture
4. WWTP* Gas Capture

Passenger & Commercial Transportation
1. Trip Distance Reduction
2. Mode Shift
3. Vehicle Efficiency
4. Fuel
Success Factors for CEP Implementation

- Political, staff and stakeholder buy-in
- Staff and financial capacity
- Integrate energy into plans and policies
Success Factors
Political, Staff and Stakeholder Buy-in

Political Support
– Critical for implementation
– Focus on economic benefits, risk management

Staff Support
– Support is needed in a range of departments
  (finance, facilities, economic development, etc.)

Stakeholder Support
– Stakeholders are needed at all stages of the CEP development and implementation process
– Early, sustained engagement is key!
Success Factors
Political, Staff and Stakeholder Buy-in

Economic Drivers
– Keep dollars in the local economy
– Local jobs
– Manage risks
– Retain and attract local business
– Urban renewal
– Affordability
– Resilience
– Employee productivity
## Success Factors
Political, Staff and Stakeholder Buy-in

<table>
<thead>
<tr>
<th>GHG Reductions</th>
<th>Financial Payback</th>
</tr>
</thead>
</table>
| • Ground-Sourced Heat Pumps  
• Retrofitting Newer Homes (post-1980)  
• Solar Hot Water Heating | • Retrofitting Institutional Buildings  
• Solar Air Heating |
| • New “LEED” Commercial Retail Buildings  
• Retrofitting Apartment/Condo Buildings  
• New High Efficiency Homes  
• Solar PV “behind-the-meter” | • Bioenergy  
• Retrofitting Commercial Office Buildings  
• New High Efficiency Industrial Facilities  
• New “LEED” Institutional Buildings  
• Solar PV with FIT Contract |
| • New “LEED” Apartment/Condo Buildings  
• Small Scale Wind Turbines | • Wind Turbines |
| | • New “LEED” Commercial Office Buildings |

Energy cost avoidance of around $250 Million per year by 2018
## Success Factors
### Institutionalizing the CEP

<table>
<thead>
<tr>
<th>Embedding</th>
<th>Embed CEP into plans, policies and staff job descriptions</th>
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<tbody>
<tr>
<td>Budgeting</td>
<td>CEP goals and actions are regularly considered during the annual and five-year budgeting processes</td>
</tr>
</tbody>
</table>
| Convening       | Coordinate ongoing meetings to discuss implementation, Mayor's Task Force  
- Committees of Council  
- Staff committees  
- Community committees |
| Monitoring      | Monitor CEP implementation:  
- KPIs, like number of home energy retrofits  
- Indicators for specific departments  
- Follow up inventories |
| Reporting       | Report on the progress of the CEP regularly and integrate the CEP reporting for other plans:  
- Regular reports to council |
## CEP Implementation
### The Role of the Province

<table>
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<tr>
<th>Provisions</th>
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<tr>
<td><strong>Provincial Legislation</strong></td>
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<tr>
<td>- Community Planning Act</td>
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<tr>
<td>- Clean Environment Act</td>
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<tr>
<td>- Electricity Act (renewable portfolio standard)</td>
</tr>
<tr>
<td>- Municipalities Act</td>
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<tr>
<td>- Energy Efficiency Building Code Standard</td>
</tr>
<tr>
<td><strong>Electricity Regulation</strong></td>
</tr>
<tr>
<td>- NB Energy and Utilities Board (Open Access Transmission)</td>
</tr>
<tr>
<td>- Electricity from Renewable Resources Regulation - Electricity Act</td>
</tr>
<tr>
<td>- Locally Owned Renewable Energy Small Scale (LORESS) - draft</td>
</tr>
<tr>
<td><strong>Financial Incentives</strong></td>
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<tr>
<td>- Electricity Efficiency Plan</td>
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<tr>
<td>- NB Environmental Trust Fund</td>
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<tr>
<td>- Gas Tax Fund</td>
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<tr>
<td><strong>Other Tools</strong></td>
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<tr>
<td>- Large Industrial Renewable Energy Purchase Program</td>
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<tr>
<td>- NB Smart Grid - Reduce and Shift Demand</td>
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<tr>
<td>- NB Power Net Metering &amp; Embedded Generation</td>
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<tr>
<td>- Toolkit for Building Sustainable Communities</td>
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<tr>
<td>- EV Advisory Group and Pilots</td>
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<tr>
<td><strong>Plans and Strategies</strong></td>
</tr>
<tr>
<td>- NB Climate Change Action Plan</td>
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<tr>
<td>- NB Energy Blueprint</td>
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<tr>
<td>- Value-added Wood Sector Strategy</td>
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