Using Local Improvement Charges to Finance Energy Efficiency Improvements: Applicability Across Canada

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About the Pembina Institute

The Pembina Institute creates sustainable energy solutions through research, education and advocacy. It promotes environmental, social and economic sustainability in the public interest by developing practical solutions for communities, individuals, governments and businesses. The Pembina Institute provides policy research leadership and education on climate change, energy issues, green economics, energy efficiency and conservation, renewable energy and environmental governance. More information about the Pembina Institute is available at www.pembina.org or by contacting info@pembina.org.

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Introduction

Local Improvement Charges (LICs) have long been used by municipalities to help cover the costs of infrastructure improvements, such as roads and sidewalks, that are deemed to benefit a specific neighbourhood. Landowners who benefit from the improvements are assessed the LIC that is added to their property taxes each year until their share of the improvements have been paid for.

A study[1] prepared by the Pembina Institute in 2004 for BC Hydro and Climate Change Central found that the mechanism of LICs – a financial instrument already very familiar to local government – can be adapted to finance improvements in residential and/or commercial building energy efficiency. The study included a review of how the concept could be implemented, including a "model" program for municipalities to design and implement an energy efficiency or renewable energy (EE/RE) LIC program.

The use of LICs to finance EE/RE improvements should enable significant municipal action on these improvements at no additional net cost to local government. Using the LIC approach, municipalities are also able to take direct leadership in the way energy is used within their jurisdiction at little or no net cost to the taxpayer. Finally, they are able to take a leading role among their Canadian and international counterparts in bringing about real environmental improvements.

The Office of Energy Efficiency of Natural Resources Canada has funded the Pembina Institute to study the applicability of the EE/RE LIC concept across Canada. The objectives are to review the various legal barriers to the use of LICs for energy efficiency that may exist in each province, obtain more input from provincial energy efficiency staff and identify municipalities that might be interested in piloting the concept.

Municipalities that would be most suitable to pilot the EE/RE LIC concept would be those that have the following:

- An internal program and staff resources already dedicated to energy management.
- Strong council support for greenhouse gas (GHG) reduction and other environmental initiatives, and/or experienced developers certified in energy-efficient building design and retrofits.
- Low debt levels that will allow them to provide or procure the necessary financing.
- Previous experience using LICs to finance municipal works.

[1] *Using Local Improvement Charges to Finance Building Energy Efficiency Improvements: A Concept Report,* located at www.pembina.org/publications_item.asp?id=170

The LIC Concept in Brief

This chapter provides a brief overview of the EE/RE LIC concept. Appendix 1 provides more details on the benefits of an EE/RE LIC program to municipalities and building owners, and a "model" program for municipalities to design and operate the concept. This model program was drawn up based on discussions with municipalities in British Columbia, Alberta and Yukon[2] and updated with information from the current study.

The Advantages of LIC Financing of Energy Efficiency and Renewable Energy Improvements

The main advantage of using LICs over alternative methods of financing energy efficiency improvements is that it associates the repayment of the cost of efficiency improvements with the building property rather than with the current building owner. This potentially removes some of the barriers facing energy efficiency improvements in buildings including:

- Hesitancy to accept long paybacks
- Preference for low first cost improvements
- Lack of access to capital to improve existing buildings
- Lack of access to capital to build efficient new buildings
- Resistance from construction industry and developers

If LIC financing were used, permanent comprehensive improvements with long paybacks (e.g. high-efficiency windows; wall upgrades; heating, ventilation and air-conditioning [HVAC] systems; and control systems) would be more attractive to home and building owners because both their costs and benefits are passed on to new owners if the property is sold before the investments are paid off. In the case of new buildings, LIC financing would allow the additional cost of building to the highest levels of energy efficiency (e.g. LEED Gold certification or net zero energy) to be shared by all owners of the building over time, thereby allowing properties to be sold at competitive prices.

Current property owners benefit because the annual savings are greater than the LIC payment. Future owners benefit because they take ownership of the benefit of lower energy costs but only pay an equitable share of the cost.

In addition, the widespread use of LICs for energy efficiency and renewable energy would make it easier for governments to increase building and equipment codes and standards for two reasons. First, the additional cost would be shared by owners over time and not borne only by the original buyer; and second, increasing use of EE/RE LICs would help increase the market share of efficient technologies to the point where new regulations are possible.

[2] Ibid.

The use of the LIC concept would be most attractive to those municipalities that already have an internal program and staff resources dedicated to energy management, strong council support and success in GHG-reduction and other environmental initiatives, contractors with experience in high-efficiency buildings, and a low debt level that will allow them to provide or procure the necessary financing.

Precedents for Using LICs for Energy Systems on Private Property

A key issue in using LICs as vehicles for financing energy efficiency is whether they can be used to finance improvements on private property. In Yukon, local improvements are defined as "any capital project or service that the municipality deems to benefit one area of the municipality more than the whole municipality."[3] Starting in 1984, the Yukon Government initiated a new LIC-based program to assist residents living in rural areas to receive services by extending the electrical grid and landline telephone service to their properties. These programs are authorized for recovery as LICs under the *Assessment and Taxation Act* of Yukon that defines a local improvement and outlines ways it might be recovered when carried out by the Yukon Government.

There are two innovative aspects to this Yukon program that distinguish it from all other conventional LIC programs:

- These systems are entirely contained on the resident's private property and do not provide direct benefits to other residents.
- Once paid for, these systems are fully owned by the resident – they are not municipal property.

In British Columbia and Alberta, legislation is ambiguous as to whether it allows the use of LICs for private improvements. In British Columbia, the Community Charter[4] defines LICs as being limited only to "those projects that can specially benefit real property in a limited and determinable way." In Alberta, LICs can be used for "any project that the municipal council considers will benefit one area of the municipality more than the whole municipality."[5]

Transaction Costs for an LIC Energy Efficiency Program

Another key issue is how an EE/RE LIC program would be financed by a municipality. Program costs will vary depending on the size of the municipality, the extent of the program, and the municipality's experience with LICs. An LIC program that supports energy efficiency improvements should be run on a cost-recovery basis, so that the following transaction costs can be recovered as part of the LIC payment:

- Interest on capital expenditures – the municipality will need to have funds available to pay for improvements as they are completed and approved.

[3] www.gov.yk.ca/legislation/acts/municipal.pdf
[4] www.qp.gov.bc.ca/statreg/stat/V/vanch_00.htm
[5] www.qp.gov.ab.ca/documents/acts/M26.cfm

- Staff transactions – municipal staff need to devote time to establishing the initial program parameters, dealing with contractors and property owners for LIC requests and approvals, and tracking LIC payments.
- Council transactions – in addition to approving the initial program launch, municipal councils are typically responsible for approving all LICs in the form of a bylaw.
- Advertising – to facilitate adoption of the program by building owners, the municipality will need to promote the program.
- Contractor certification – the municipality will need to have a list of certified contractors for property owners to approach when making improvements.

Legal Framework

Regulations defining the way in which LICs can be used for financing municipal improvements are contained in the legislation governing municipal powers in each province. Although the wording varies among different provincial acts and regulations, three basic approaches are used:

- **Flexible definition of LIC**: The municipal legislation defines a local improvement with considerable flexibility (e.g. "any project that the municipal council considers will benefit one area of the municipality more than the whole municipality"[6]). Municipalities are then free to decide what types of project are within this definition, sometimes subject to approval by the Province. British Columbia, Alberta, Quebec and Newfoundland and Labrador fall in this category. In addition, Yukon has this type of definition.
- **Limited definition of LIC with some flexibility**: The municipal legislation defines what types of improvement can normally be financed using an LIC, but has a means for additional types of improvements to be considered – Saskatchewan, Manitoba, and Prince Edward Island are in this category.
- **Explicit definition of LIC**: The municipal legislation explicitly defines what types of improvement can be financed using an LIC and does not provide a mechanism for changing that definition. Ontario, New Brunswick and Nova Scotia are in this category.

In all provinces, municipal bylaws are required for each LIC plan; and in several provinces, these bylaws must be approved by Provincial Municipal Boards. A summary of LIC legislation is given in Table 1. Our interpretation of how easily current legislation would allow an extension of LICs to include energy efficiency improvements is given in Table 2. Commentaries on respective municipal legislation in each province and Yukon are given in Appendix 2.

[6] From Alberta's *Municipal Goverment Act,* www.qp.gov.ab.ca/documents/acts/M26.cfm.

Table 1: Provincial/Territorial Legislation Governing LICs

Province/ Territory	**Act Governing LICs**	**Definition of Local Improvement or Its Equivalent**	**Limitations**	**Comments**
Yukon	*Municipal Act*	Any capital project or service that a municipality deems to benefit one area more than another	None	
British Columbia	Community and Vancouver Charters	Those projects that specially benefit real property in an limited and determinable way	None	Allows municipality to borrow to cover LICs without approval if full costs are to be recovered
Alberta	*Municipal Government Act*	Any project that a municipal council considers will benefit one area more than the whole	None	
Saskatchewan	*Local Improvements Act*	Any work or service paid for by charging part or all of the cost against lands that benefit [differently from other lands]	Examples: Paving, sidewalks, water/sewer, street lighting, noise barriers, park development, landscaping	Must be approved by Municipal Board
Manitoba	*Municipal Act* and Winnipeg Charter	Benefit to all or part of a municipality	Specifies allowed improvements but also "any other project the cost of which includes a capital component"	Must be approved by Municipal Board Act also defines "special services" that includes maintenance of a local improvement
Ontario	*Municipal Act* Regulation 119/03		Specifies 16 allowed improvements, but these include "gas and heat works"	Must be filed with Municipal Board Allows municipality to undertake local improvements on private property
Quebec	*Municipal Code of Québec*, R.S.Q., chapter C-27.1	Municipal works of any kind including works of maintenance	None	May apply to municipality as a whole, property owners or owners bordering urban planning works
New Brunswick	*Municipalities Act*		Specifies allowed improvements: Streets, sidewalks, tree planting, water/sewer	LICs are rarely used by municipalities in New Brunswick, so most would be unfamiliar with the policy tool

Nova Scotia	*Municipal Government Act*		Specifies allowed improvements: Water/sewer, streets, sidewalks, tree removal, underground wiring	Tree removal may be from private property
Prince Edward Island	*Municipalities Act*	Tax applied to cover differential service level offered to specific area of a municipality	Must be concerned with regional, community, industrial, commercial or housing development	New services fitting within the general categories must be approved by the Province
Newfoundland and Labrador	*Municipalities Act*	Properties that directly benefit from public works	Examples provided: Water, sewer, storm systems, curbs, gutters, sidewalks, streets	Service levies explicitly allow for improvements on private property to enhance value or expand municipal services

Table 2: Applicability of LIC Legislation to Energy Efficiency and Renewable Energy Improvements

Province/Territory	**Applicability to Energy Efficiency and Renewable Energy Improvements**
Yukon	It is already being used for renewable energy improvements. No reason why it could not also be applied to energy efficiency.
British Columbia	No strictly legal impediment to adding EE/RE improvements as the municipality has the authority to define improvements and can also borrow to finance improvements if the full cost is recovered.
Alberta	No strictly legal impediment to adding EE/RE improvements as the municipality has the authority to define improvements. However, it is deemed to be against the spirit of LICs by Provincial Municipal Affairs.
Saskatchewan	No strictly legal impediment to adding EE/RE improvements, but it would have to be approved by Municipal Board.
Manitoba	EE/RE improvements could be included as "capital projects" under current legislation, but it would need to be approved by Municipal Board. Winnipeg Charter allows the designation of Local Improvement Districts that could cover EE/RE improvements.
Ontario	EE/RE improvements would not be permissible under the current list of allowed local improvements, but local improvements can be made on private property, and it appears that new uses can be approved by the Municipal Board.
Quebec	No strictly legal impediment to adding EE/RE improvements as the municipality has the authority to define improvement. However, it is deemed to be against the spirit of LICs by the *Ministère des Affaires municipales et des Régions.*
New Brunswick	EE/RE improvements would not be permissible under the current list of allowed local improvements.
Nova Scotia	EE/RE improvements would not be permissible under the current list of allowed local improvements, but the Province felt that a pilot program could be tested without changing the legislation.
Prince Edward Island	Flexible rules governing services that municipalities can offer; therefore, EE/RE improvements could be allowed as a new service subject to Provincial approval.
Newfoundland and Labrador	EE/RE improvements could potentially be covered by service levies that can be used to finance improvements on private property. This will depend on Provincial interpretation of the definition of a public work.

[7] The *Ministère des Affaires municipales et des Régions* was until recently called the *Ministère des Affaires municipales, Sport et Loisir*.

Although only two provinces, Ontario and Newfoundland and Labrador, explicitly allow a municipality to use an LIC to finance an improvement on private property, no provincial legislation appears to explicitly prevent this. Many improvements, such as sewer upgrades, that are normally financed by an LIC involve some work on private property. There are also examples of where an LIC has been used to finance an improvement that only benefits one property.[8]

The language used in all municipal legislation reflects the original intention of LICs or their equivalent, which was to provide a means to finance new or improved services requested by a group of property owners that would benefit only their properties.[9]

In many provinces, the use of LICs to finance improvements on single private buildings was often seen as not being in the spirit of LIC regulation, rather than not being legal. To test this view, Provincial Departments responsible for the Municipal Act in two provinces, Quebec and Alberta, were contacted for their interpretation.

The *Ministère des Affaires municipales et des Régions* (MAMR) in Quebec agreed that under the Municipal Code of Quebec "municipal works of any kind, including works of maintenance" would qualify for financing under an LIC, and therefore energy efficiency improvements could be eligible if such projects could be interpreted as a form of "municipal work." MAMR's greatest concern, however, was that using LICs to finance energy efficiency projects in buildings would be "viewed" as a subsidy to private owners provided by the municipalities, which is illegal under provincial law.[10] MAMR also felt that the concept would be viewed as increasing the tax burden of property owners. However, although property taxes would increase, this would be a voluntary choice by property owners to finance improvements that would save them money. MAMR views were therefore more issues of perception, but some genuine legal issues regarding the interpretation of energy efficiency improvements as "municipal works" and whether municipalities can "lend" money to finance energy efficiency improvements in private buildings remain to be resolved.

The following issues raised by Alberta Municipal Affairs were also based on a perceived problem with the spirit of the use of LICs, rather than the legality of using them for improvement on private buildings:

- The (Municipal Government) Act "does not contemplate" a municipality in the business of lending money to a ratepayer for any purpose.
- Local improvements are on public land in all cases, and so the Act "does not expect" to be involved in construction on a person's private home.
- A renovation to a home "cannot be defined" as a local improvement.

[8] For example, a Sikh Temple in Surrey, British Columbia.
[9] An LIC should be distinguished from a municipal levy assessed against properties for servicing a new site, maintenance of a drainage ditch, etc. In this case, it is the municipality that takes the initiative.
[10] Bernard Guay, *Ministère des Affaires municipales et des Régions*, personal communication, March 2005.

Contrary to these interpretations, many of the municipalities interviewed in this study (see below) felt that using LICs for energy efficiency improvements was within their current legal authority, and many were interested in doing so.

To overcome the legal ambiguity of using LICs to finance energy efficiency or renewable energy building improvements, provinces will need to recognize that this is a non-conventional use of LICs and provide municipalities (through their Municipal Affairs departments or Municipal Boards) with the authority and guidance to do so. Some provinces may choose to actually amend the appropriate regulation governing use of LICs, while others may provide an interpretation that the new use of LICs for energy efficiency improvements is within the scope of LICs (perhaps using Municipal Boards to maintain some control over this use). Individual municipalities that want to pilot the energy efficiency LIC concept could take the initiative and inform the Province of their intention and recommend that the Province view the pilot as a test of this new use.

Reponses by Provincial Departments/Utilities Responsible for Energy Efficiency

Interviews were held with members of the federal/provincial/territorial Demand Side Management (DSM) Working Group in each of the provinces east of Alberta to discuss the following questions:

1. Do you think the LIC concept would be effective in removing many of the financing barriers to energy efficiency in buildings by associating the additional cost with the property instead of the owner?
2. What types of improvements do you think the EE/RE LIC concept would be most suitable for – new or existing buildings? Residential, commercial and/or institutional buildings? Complexes/subdivisions or single buildings? Specific products (windows/solar water heaters/HVAC/heat pumps) or combined upgrade packages?
3. What do you think of the model EE/RE LIC program proposed in the attached concept paper? Does it cover all the necessary steps? What other considerations need to be added? Have all of the cost considerations/transaction costs been adequately addressed? Are there any steps that you think would be difficult to implement?
4. What do you think would be the best source of financing for EE/RE LICs – municipal loans, municipal revolving funds, Federation of Canadian Municipalities (FCM) Green Municipal Funds or other options?
5. Would your agency be able to provide assistance/financing to municipalities wanting to pilot the EE/RE LIC concept?
6. Which municipalities in your province would be most interested in piloting an EE/RE LIC program?

These topics had been discussed previously with contacts in the Yukon, British Columbia and Alberta in 2004. The responses to the above questions from each provincial contact are provided in Appendix 3 while key responses raised to each topic are summarized in Table 3.

Table 3: Responses from Provincial Contacts

Question	Key Responses
1: Removing Barriers	➢ The concept has great potential if any legal issues can be resolved, and misconceptions about the application of LICs to improvements to private buildings are clarified. It must be made clear that the concept is not a subsidy, is voluntary and benefits the whole community through its environmental and cost-reducing features. ➢ The concept needs to be piloted in several parts of the country to determine its acceptability, its transaction costs and its uptake. ➢ The concept could provide an additional tool for electric and gas utilities to target strategic energy efficiency measures with long paybacks as part of their DSM programming. ➢ The concept would be even more valuable if it were used to address the split landlord/tenant incentive barrier in buildings where the landlord pays both property taxes and energy bills. ➢ The fact that municipalities can usually get better financing rates than individual property owners would also help overcome some financial barriers and offset the transaction costs of the program.
2: Building Types and EE/RE Measures	➢ The key targets for the concept should be long payback measures where conventional financing measures (loans, mortgages, performance contracts) are insufficient to overcome the two- to four-year maximum payback barrier. ➢ In general it was felt that EE/RE LICs would be applicable in both the commercial and residential sectors. For commercial/institutional buildings, there would be fewer but larger projects, thus saving on transaction costs. On the other hand, homeowners are least likely to make decisions on the financial bottom line. ➢ In most cases, the municipality should be the body that decides the target building type and measures to be included in an EE/RE LIC program. Different municipalities will have different building profiles. In some cases, where there is agreement among all municipalities, a provincial program or utility DSM program targeted at specific technologies would be possible. ➢ The most commonly mentioned measures that could be financed with an EE/RE LIC were ground-source heat pumps, solar water heaters, windows and comprehensive commercial/institutional retrofits. Additionally, the concept might also be useful for financing of strategic seasonal load-reducing technologies such as solar photovolatics (PV) and micro-turbines. ➢ There might be a specialized target market for EE/RE LICs in northern areas where municipalities do not have power or gas grid services and cannot afford to bring these services to the area. The LIC concept could be used as it is in Yukon to finance any energy-saving or on-site power-producing measure that reduces the demand for grid

	expansion. New Construction: ➢ The EE/RE LIC concept would be particularly suited to new green/brown field developments or subdivisions, where they could focus on long payback, well-defined upgrades such as net zero energy housing and LEED Gold/Platinum certification. This would require consideration early in the planning process, as it would affect many design decisions by developers. ➢ There are other policy options (including regulation) available to address energy efficiency in new constructions that are not as readily applicable to existing stock. Care should be taken not to compromise recent advances in energy-efficient new construction by introducing a concept that implies there are cost differences. ➢ Individual eligible measures in new construction should include well-defined, high-cost, energy-efficiency technologies that are not normally included in high efficiency construction but might have high strategic value for peak load reduction or net zero energy construction such as solar water heaters. Existing Buildings: ➢ Application of the concept to existing building stock could be carried out quickly and strategically, focusing on particular areas, types of buildings and selected long payback measures. In existing buildings, it would make sense to limit the use of EE/RE LICs to major building shell improvements that include wall, window, roof and, in the case of commercial buildings, complete lighting/energy management upgrades. Individual measures installed on their own, such as heating and windows, would best be covered by other program options. ➢ If older stock were involved, the EE/RE LIC could be continued beyond the payback period by the owner to finance upgrades of non-energy building features out of energy savings.
3: The Model EE/RE LIC Program	➢ Many municipalities are familiar with the LIC process, and therefore the model program would not be a challenge as long as sufficient staff resources were provided, a cost-recovery approach was used, and assured financing was available. ➢ To keep transaction costs down, EE/RE improvements eligible for the LIC concept should be greater than a specified minimum amount (e.g. $3,000). ➢ The payment schedule for an EE/RE LIC must be made longer than the payback period for the measures to create a positive cash flow for the property owner; otherwise there is no incentive to use the concept. ➢ Advertising the concept in a way that reduces misconceptions of the concept as a tax or grant will be a challenge. ➢ Municipalities using the concept might have to accept some level of

	default on LIC payments but no more than with conventional LICs. ➢ Consideration must be given to whether conventional financing might be preferable when selecting measures and building types. Some homeowners might prefer to top up their mortgage than to take on an LIC. ➢ Care must be taken in any EE/RE LIC program that the net benefit to the property owner in the form of lower energy bills minus the LIC payment is not wiped out by increases in the base property because of increased tax assessment. ➢ Certification of contractors eligible for undertaking improvements carried out under an EE/RE LIC program is very important. Where there are insufficient trained installers/contractors that can be certified for a given technology, Natural Resources Canada could play an important role in supporting training and certification. ➢ Using different LIC terms for replacing electricity or gas technologies should be avoided by using average or all encompassing terms to ensure that there are no perceived inequities and that the program is simple to run.
4: Financing EE/RE LICs	➢ A provincial fund could provide an ongoing source of funding for municipalities offering LIC financing for EE/RE measures, using municipal finance bodies where they exist. ➢ FCM could provide national financing for EE/RE LICs by increasing the scope of loans available through the Green Municipal Fund. ➢ Electric and gas utilities that offer a comprehensive set of well-funded DSM programs might be interested in using the EE/RE LIC concept to reach new DSM target customers and using municipalities to deliver the program. ➢ Some municipalities might already have a high debt load and therefore might not be able to provide their own financing for an EE/RE program. ➢ Some municipalities are sufficiently debt-free to provide their own financing for EE/RE LICs from reserves or a debenture offer – at least for a modest program. Even if this were the case, convincing the public that setting aside the funds to operate the program is in their best interests could be challenging. This challenge would be greatly reduced if the operating funds were received specifically for the program. ➢ An EE/RE LIC program could provide an effective method of aggregating efficiency projects as carbon offset projects while at the same time providing “carbon financing” towards the cost of the projects.
5: Provincial Support	➢ Most provinces have energy efficiency budgets that might be able to co-contribute to a pilot EE/RE LIC program thereby covering costs such as training, reporting and workshops.

for Pilots	➢ Political resolution of perception issues and real or perceived legal issues at the provincial level would be needed before departments responsible for energy efficiency would be able to act.
6: Municipal Suggest-ions for Pilots	➢ Many larger Canadian cities are part of FCM's Partners for Climate Protection (PCP) program and were most frequently mentioned as likely candidates for an EE/RE LIC pilot.

Municipal Responses

Municipalities in each province were contacted to determine their interest in piloting the EE/RE LIC concept and to obtain their views on a) the types of measures they might support through an LIC program, b) the model LIC program proposed, and c) financing options. A meeting was also held with the FCM to obtain its views on the concept and determine its interest in providing financing and promotion for a pilot or national EE/RE LIC program.

Municipal Views and Interest

A summary of municipal responses is shown in Table 4. Individual responses are provided in Appendix 4.

Table 4: Municipal Interest in Piloting the EE/RE Concept

Municipality (Province)	Interest in Pilot	Comments
Vancouver (BC)	➢ Interested in the concept, but would not be prepared to launch a pilot until Community Charter is unambiguously modified to allow an EE/RE LIC program	➢ Has recently adopted a GHG-emission-reduction strategy ➢ Member of PCP
Hinton (AB)	➢ Interested in pilot (2004) as soon as Provincial legal issues have been resolved	➢ Member of PCP
Regina (SK)	➢ Interested in a pilot for existing buildings, starting with commercial/industrial sector ➢ Would like to see Provincial support and resolution of any legal interpretations	➢ The City's Green Ribbon Committee is currently addressing GHG-reduction programs under PCP
Winnipeg (MB)	➢ Interested in using the concept to upgrade downtown buildings ➢ Longer term interest in using concept for community energy systems (e.g. heat pumps in Waverley West) ➢ Would like to see Provincial support and more information on concept and Yukon experience provided to City politicians and staff	➢ Winnipeg Charter allows designation of Local Improvement Districts and improvements to real property ➢ Council completing discussion of PCP Climate Change Action Plan ➢ Some precedents for using property tax system to encourage building improvements
Ottawa (ON)	➢ Interest in pilot for existing buildings as soon as it can be arranged ➢ Has low debt load and therefore could finance pilot out of reserves ➢ City considers it has the legal authority to proceed with pilot	➢ Member of PCP ➢ Hydro Ottawa has new mandate to undertake DSM programming

Québec (QC)	➢ Interested in pilot that would cover specified long payback measures for both existing and new buildings ➢ Financing could be through partnership with FCM, Provincial government and utilities, and private banks ➢ Willing to contribute to the cost of a pilot ➢ Would need support/approval from provincial government and City Council	➢ City's new Charter allows it to use *taxe d'amélioration locale* [local improvement tax] to finance non-municipal works ➢ Member of PCP
Chelsea (QC)	➢ Interested in pilot, particularly for heritage buildings ➢ Longer term interest in using concept for new development areas ➢ Would need Provincial approval ➢ Would be willing to contribute to the cost of a pilot ➢ Would welcome financing by FCM and Hydro-Québec	➢ Member of PCP ➢ Taxe d'amélioration locale cannot be used by smaller Quebec municipalities so that only municipal works can be covered using *taxe de secteur* [sector tax] ➢ Loans to municipalities must be approved by the Province
Fredericton (NB)	➢ Interested in a pilot program, especially if financing is available from a fund specifically dedicated for the purpose ➢ There is a sensitivity to anything that could be perceived as an increase in taxes due to the City's challenge of attracting new development from the urban fringe ➢ This will be a difficult program to sell from the staff level without political level support	➢ Member of PCP ➢ Has recently completed a major review of efficiency opportunities in municipal buildings so it has staff that are familiar with the issues ➢ It was concerned that there might not be enough qualified contractors to do the retrofit work if the program were successful
Halifax (NS)	➢ Interested in a pilot program, and believes such a program would fit well with existing sustainability initiatives ➢ Although current legislation does not allow an EE/RE LIC, the City is confident it could work out an agreement with the Province to try a pilot program	➢ Member of PCP ➢ Currently in the process of completing a community energy plan and a renewable electricity and district energy strategy

Municipal Comments

- All municipalities contacted expressed real interest in the EE/RE LIC concept and the idea of a pilot program. Although the proposed targets for the pilot varied among municipalities, there were several common views: The concept would be very valuable in helping to implement their GHG-reduction targets under the FCM PCP program.
- Although City Council approval would be needed and some additional training/staffing would have to be done, the implementation of an EE/RE LIC program would be within the capacity of the municipality.
- Resolution by the Province of the perceived or real legal issues surrounding use of LIC for EE/RE improvements on private property is essential before pilots can proceed.
- Municipalities would be willing to contribute towards the cost of a pilot (either through their own or borrowed funds).
- Having a broad range of financing options available for an EE/RE LIC program (including use of FCM loans and utility DSM financing) would make it much easier for municipalities to implement the concept.

Federation of Canadian Municipalities

FCM would be willing to both promote the EE/RE LIC concept and provide financing through its new infrastructure funding included in Budget 2005.[11] Under the agreement with the federal government, this funding can be used to fulfill new government priorities. A specific request from the federal government designating EE/RE LICs as an important policy would allow FCM to include it in the items for which its loans could be used.

The best way to pilot the use of FCM financing for EE/RE LICs would be to test the funding in provinces where the provincial government is willing to provide an interpretation of LIC regulations that would allow a municipality to finance EE/RE improvements. There would also have to be municipalities in these provinces that were willing to pilot the concept. If the approach worked well, the FCM financing could be extended to other provinces.

FCM believes that many of its members who are part of FCM's Partners for Climate Protection program would be interested in using the concept to help implement their GHG-reduction plans. This confirmed the discussions with Ottawa, Québec, Regina, Winnipeg and others who are members of PCP.

FCM would like to see other funding being used to complement/supplement its loans. These would include Municipal Financing Authorities, debenture issues, municipal reserves, private sector banks and provincial utilities (see "Financing Options" chapter).

[11] Elizabeth Arnold, FCM, personal communication, April 2005.

FCM is just like any other borrower in terms of managing risk, but it might be able to offer lower rates and can build on a previous good loan record with a municipality. Also, FCM would not treat the loan as a true debt if all costs were recovered through the LIC.[12] It might be possible for LIC payments to be assigned to FCM as part of loan agreement with the municipality. One additional criteria for FCM and a FCM Green Municipal Fund loan is that a municipality must show how the measures provide environmental benefits, including reduction in GHG emissions.

FCM would also be willing to promote the EE/RE LIC concept as part of its information for PCP members on policies to reduce GHGs.

[12] The Province of Manitoba treats financing for an LIC in this way. Any loan for an improvement that is fully cost recovered from the beneficiaries is not considered a debt.

Financing Options

During the discussion of the EE/RE LIC concept with provincial governments, municipalities and FCM, several options for financing an LIC program were identified. Municipalities would be able to use the most appropriate option(s). Having a diverse set of options was considered most important.

Municipal Financing

Some municipalities are debt free and have financial reserves that can be used with approval of Council for community purposes. If an EE/RE LIC program were operated on a full-cost-recovery basis, it is likely that some municipalities might consider using reserves for this purpose.

Municipalities in some provinces are also allowed to issue debentures to finance municipal works or projects. Again if an EE/RE LIC program were operated on a full-cost-recovery basis, investors could be paid a sufficient return.

Provincial Borrowing

Most provinces have a lending body that is used to provide loans to municipalities to finance local improvements or other municipal works or projects. Sometimes this is operated on a pool basis whereby some municipalities invest their reserves while others borrow. Provided the provincial government approved the use of these funds for financing EE/RE improvements and a municipality had not reached its debt limit, then this would be a useful source of funds. Some provincial municipal lending bodies will not treat a loan for municipal works as a debt if the costs are recovered from the beneficiaries. Since this would be the case for an EE/RE LIC program, municipalities with significant debt might still be able to finance the concept in this way.

FCM Green Municipal Fund

If the federal government agrees that the EE/RE LICs is a valid use of the new funds provided to FCM in Budget 2005, then FCM is willing to provide financing to those municipalities that want to use the concept. FCM would only be able to provide financing for EE/RE LICs in provinces where the provincial government provides an interpretation of LIC regulations that would allow a municipality to use them for EE/RE improvements.

FCM is like any other borrower in terms of risk but might be able to offer lower rates. If all costs were recovered through the LIC, the loan would not add to the municipal debt load, particularly if it were possible for LIC payments to be assigned to FCM as part of the loan agreement with the municipality. An additional criterion for FCM and a FCM Green Municipal Fund loan is that a municipality must show how the measures provide environmental benefits, including reduction in GHG emissions.

Private Sector Loans

A municipality with a good investment and/or borrowing relationship with private sector banks could also borrow from this source to finance an EE/RE LIC program. The full-cost-recovery feature of the program would reduce the risk for the lending agency and therefore should be available at reasonable interest rates. If a municipality obtained some of the financing necessary for an EE/RE LIC program from one of the other sources described above, this should leverage private sector financing at lower rates.

Electric, Gas and Efficiency Utilities

Power and gas utilities in several provinces, including British Columbia, Manitoba and Quebec, operate comprehensive DSM programs that aim to reduce electricity and gas use in buildings through efficiency measures. New Brunswick is planning to establish an independent efficiency utility to operate these types of programs financed by a public benefit on all energy sales. In each case, utilities might be interested in financing longer payback measures through EE/RE LIC program operated on their behalf by municipalities. Municipalities would retain sufficient income from LIC payments to administer the program with the remainder being returned to the utility.

Utilities in some provinces also have increasing winter and summer peaks that could be managed by strategic investment in technologies, such as solar thermal and electricity and energy storage. Making these investments through a municipally run EE/RE LIC program would allow aggregation of these installations into a single program while simultaneously overcoming customer resistance to the initial cost barrier.

Carbon Financing

Major energy-efficient and on-site renewable energy retrofits might be eligible to be registered as a domestic GHG reduction offset project under the *Moving Forward on Climate Change: A Plan for Honouring our Kyoto Commitment* (April 2005). An EE/RE LIC program could provide an effective method of aggregating efficiency projects for this purpose while providing “carbon financing” towards the cost of the retrofit projects. A municipality would sell GHG-reduction credits to a purchaser such as the Climate Fund or Canadian industrial large final emitters on an annual basis and reduce the LIC payment by the equivalent amount. In this way the property owner would benefit from the GHG reduction without having to participate individually in the offset market.

Conclusions

Basic Concept

All provinces and municipalities interviewed agreed that the EE/RE LIC concept could play a major role in increasing the penetration of energy efficiency and renewable energy technologies that have current paybacks beyond property owner thresholds, which are up to four years. As such, it has a major role to play in helping municipalities manage both their community's energy costs and GHG emissions.

The concept would also provide a tool for electric and gas utilities to target strategic energy efficiency and renewable energy measures with longer paybacks but that have immediate system benefits to reduce peaks or other high value benefits.

In cases where landlords pay both taxes and energy costs, the concept offers a way to reduce the impact of the split incentive barrier by allowing landlords to make building improvements without increasing rents.

Because it addresses longer payback measures for which there are few existing incentives or programs, the concept is ideally suited to produce domestic GHG-reduction offsets.

The greatest barrier preventing the use of LICs to finance energy efficiency improvements in buildings is the uncertainty related with the legal interpretation of LICs at provincial government levels. In all provinces, the concept could only be used if the real or perceived legal barriers to the use of LICs for this purpose were removed. This would have to be in the form of an official interpretation of LIC regulations to municipalities by provincial governments, which in turn could only be done by the respective provincial departments responsible for Municipal Affairs. In many provinces, departments responsible for energy efficiency and municipalities are nevertheless very interested in developing implementation strategies and designing programs using the EE/RE LIC concept as soon as the legal issues are resolved.

The federal government can play a role in disseminating information about the EE/RE LIC concept and its benefits, and offer financial and other support for training and certification. The final decision to use the concept, however, rests with provincial governments.

Technologies and Measures to Include in an EE/RE LIC Program

The EE/RE LIC concept should focus on technologies and measures that are not targeted by other federal or provincial programs or incentives, unless there is remaining resistance by property owners because of high first cost. The concept should not be used for measures where the incremental costs over conventional technologies or approaches are dropping quickly as it might decelerate the cost-reduction process.

In new construction, the concept appears best suited to comprehensive efficiency and renewable energy packages that are one step beyond building specifications such as R-2000[13], ENERGY STAR®[14] and LEED Silver certification. These practices are currently being incorporated into mainstream building practice. Incremental costs for these buildings are becoming smaller and will soon be in the 0- to 4-year payback range. Targets for the EE/RE LIC concept should therefore focus on net zero energy housing and LEED Gold or Platinum certification where paybacks would be more than four years. The concept would be particularly valuable where municipalities want to develop subdivisions and greenfield developments that feature these types of buildings (or community/district energy systems) and where a sufficient number of developers are willing to build to these standards.

In existing buildings, the most promising applications appear to be major retrofits/renovations in designated districts and neighbourhoods where a large number of property owners might take advantage of the EE/RE LIC program, and where the LIC term could be extended to cover other aspects of building improvements besides energy efficiency measures. The upgrades would be limited to non-portable improvements to the shell of the building (walls, windows, roofs) and, in the case of commercial buildings, major lighting and HVAC improvements. The key objective would be to bring existing buildings up to the equivalent of the best new buildings being constructed today.

Some individual equipment would lend itself to the EE/RE LIC concept, particularly those that have a short- and long-term strategic value because of their electricity demand/peak management capability, such as solar water heaters and solar PV systems. Technologies such as ground-source heat pumps, which have very long paybacks when used to heat/cool individual energy-efficient homes, do not appear to be suitable for financing with an EE/RE LIC program, unless they are used to heat larger buildings or clusters of homes.

In general, an EE/RE LIC program targeted at commercial/institutional homes might be more easily implemented because of the smaller number of participants and the larger projects.

There are some opportunities to apply the EE/RE concept to applications in northern communities in several provinces and territories where it can be used to reduce the need for building new grid extensions or increasing their capacity. This was the original use of the concept in Yukon.

The EE/RE LIC Model Program

In general, the model program given in Appendix 1 was viewed as a good model upon which to build an EE/RE LIC program. Key aspects raised by provinces and municipalities included the following:

[13] R-2000 is an official mark of Natural Resources Canada.
[14] ENERGY STAR is a registered trademark of the United States' Environmental Protection Agency.

- LIC payment schedules must be set so that the annual payment (plus the increase in basic property tax because of increased property value) is less than the average savings achieved from the upgrade, thus providing a positive cash flow for the property owner.
- Contractor certification is very important. Only those contractors who can demonstrate knowledge of and experience in high-efficiency buildings practice should be eligible to undertake work financed under an EE/RE LIC program. Experienced contractors mentioned included the Better Buildings Partnership, the EAGA Partnership Ltd., Efficiency Vermont, Green Communities Association, Homeworks Services Inc. and Canadian energy service companies. Financial support for training and certification may be needed in some provinces.
- To keep transaction costs down, a minimum improvement cost should be set (e.g. $3,000).
- Promotion of the program must stress that it is voluntary, not a new tax, and that the net combination of taxes and energy costs will be lower.
- For equity and cost minimization, the same LIC payment scheme and terms should be used for gas and electricity customers.

Financing

The Federation of Canadian Municipalities is willing to finance municipal EE/RE LIC programs out of the new infrastructure funding to be provided in the 2005 Federal Budget (provided that the federal government request FCM to include this option in the agreement on the new funding, and that the real or perceived legal issues are resolved in each province). Because this legal clarification is not likely to occur in all provinces at the same time, FCM proposes to introduce the financing one province at time. This would also provide the opportunity to pilot the concept.

Although power and gas utilities were not contacted directly, BC Hydro co-funded the 2004 study on the EE/RE LIC concept, and several provincial and municipal contacts mentioned that utilities might be interested in the concept as a way of reaching customers with longer payback measures using their DSM financing. This might be particularly true where these long payback measures could play a strategic role either by increasing export opportunities (e.g. in British Columbia, Manitoba and Quebec) or by managing peak demand (e.g. in Ontario).

Some provinces have provincial financing authorities that provide financing to municipalities for municipal works or other projects and programs. In some cases, if there is full recovery of costs from the beneficiaries, these loans are not treated as a debt. In other cases, municipalities have a sufficiently low debt load to be able to finance an EE/RE LIC program from municipal reserves.

Because an EE/RE LIC program would target longer payback measures that are not regulated or receiving incentives from federal and provincial EE/RE programming, there is a real opportunity to partially finance these measures through carbon financing i.e. selling GHG reduction credits under Canada's proposed new offsets program. By

aggregating projects under an EE/RE LIC program a municipality could reward property owners for their GHG-reduction investments without having to participate personally in the offset market.

Piloting the Concept

All of the municipalities approached were interested in piloting the EE/RE LIC concept provided that the following conditions were met:

- Financing were available if they needed it.
- Legal issues were resolved.
- Some assistance was provided by the provincial and federal governments toward the cost of staff training, contractor certification, etc., during the start-up phase.

All municipalities approached are members of the FCM PCP program, and see the EE/RE LIC concept as a valuable tool in implementing their community GHG reduction plans. It is expected that most municipalities that are members of the PCP program would be interested in piloting or using the concept.

Departments responsible for energy efficiency in each province are willing to coordinate and/or support piloting of the concept – again if the legal issues are resolved and the federal government can also provide some support for the pilot. Specifically, municipalities would like the Office of Energy Efficiency to provide:

- Encouragement of political action on legal issues at the Provincial level.
- Technical and financial support for piloting the concept (e.g. municipal staff training and transaction cost monitoring).
- Instructing FCM that they can use new infrastructure funding to finance EE/RE LIC programs.
- Training and certification support for implementing contractors.

In provinces (or municipalities) where utilities have significant DSM programs, utilities could play a role in financing or supporting a pilot.

A workshop on the EE/RE LIC concept for staff and Council in municipalities interested in piloting the concept, attended by those with experience with the concept in Yukon, was mentioned as a useful next step.

Provincial/Territorial Suitability

Table 5 lists each province and territory and rates the suitability of a pilot based on the legal review and responses to provincial/territorial and municipal interviews.

Table 5: Provincial/Territorial Suitability for LIC Pilot

Province / Territory	**Suitability for Pilot**	**Explanation**
Yukon	N/A	Already in use for renewable energy in Whitehorse, but not approached in this study.
Northwest Territories	N/A	Not approached in this study.
Nunavut	N/A	Not approached in this study.
British Columbia	High	Flexible legislation. Provincial support from ministries responsible for environment and energy, but not yet from ministry responsible for municipal affairs. Municipal interest is contingent on clear provincial support.
Alberta	Medium	Flexible legislation. However, concept's legality questioned by ministry responsible for municipal affairs. Support from Climate Change Central, but not reviewed yet by energy ministry. One municipality is ready to try a pilot.
Saskatchewan	High	Flexible legislation and some indication from municipalities that it would be applicable to EE/RE improvements. Provincial and municipal uptake is contingent on political support and funding sources, however.
Manitoba	High	Flexible legislation. High provincial and municipal interest in a number of key areas. Potential role for Manitoba Hydro.
Ontario	High	Restrictive legislation that may need to be amended to include EE/RE improvements. Provincial interest, and new Conservation Action Team is ideal vehicle to resolve legal issues. Strong municipal interest in pilot. Potential role for utilities.
Quebec	Medium	Flexible legislation although not perceived to be applicable to EE/RE improvements by ministry responsible for municipal affairs. Provincial and municipal interest and potential role for Hydro-Québec.
New Brunswick	Medium	Restrictive legislation. Moderate provincial interest due to current focus directed toward the formation of new energy efficiency agency. Municipal interest in pilot.
Nova Scotia	High	Restrictive legislation, but provincial interest and willingness to allow a pilot to proceed without changing legislation. Municipal interest in a pilot program as long as it is a large-scale project.
Prince Edward	Low	Flexible legislation. Medium provincial interest, but no

Island		contact made with municipalities.
Newfoundland and Labrador	N/A	Not approached in this study.

Recommendations

A flow chart showing how the EE/RE LIC concept might be advanced to the point of municipal pilots is shown in Figure 1. The recommended actions are as follows:

1. This paper should be circulated to all provincial and territorial departments responsible for energy efficiency and municipal affairs, and to major gas and power utilities with significant DSM programming.

2. The Office of Energy Efficiency (OEE) and interested provincial departments responsible for energy efficiency should move quickly to resolve the legal issues surrounding the use of LICs for the financing of energy efficiency and renewable energy improvements. This could be done by first discussing the EE/RE LIC concept at the federal/provincial/territorial DSM Working Group, then encouraging discussions about the use of the concept in each province between departments responsible for municipal affairs and energy efficiency. The objective would be for the department responsible for municipal affairs to provide an interpretation of regulations governing municipal local improvements that would allow municipalities to use LICs for EE/RE improvements in buildings.

3. If necessary, energy ministers should be encouraged to take this issue up with their municipal counterparts. In provinces like Ontario, bodies such as the Conservation Action Team, which includes representation from both Ministries, should be encouraged to consider the concept as soon as possible. Natural Resources Canada (NRCan) could also facilitate additional discussion by placing the EE/RE concept on the agenda for the Council of Energy Ministers (CEM) meeting in September 2005.

4. To further accelerate the resolution of legal issues, municipalities such as the City of Ottawa and others surveyed in this study that are interested in moving quickly on a pilot should be asked to participate in the negotiations.

5. NRCan should include the EE/RE LIC financing option in its agreement with FCM on the spending of new infrastructure funding. As legal issues are resolved in each province, FCM should indicate to municipalities in those provinces that it can offer loans for financing EE/RE improvements using LICs.

6. As the legal issues in each province are resolved and as municipalities receive confirmation that LICs can be used for EE/RE improvements, information on how to use the EE/RE LIC concept should be sent to municipalities in that province that are members of PCP program, inviting them to propose a pilot program that would test the concept in a chosen area and with selected EE/RE measures. The OEE and the provincial departments responsible for energy efficiency should indicate to municipalities what role they would play in each pilot program. Municipalities would select the type of financing they would prefer to use and identify the staff training and

other needs that would benefit from higher levels of government support during the pilot project.

7. DSM program managers in provincial utilities should be approached to determine whether they would like to participate in and co-finance the pilot programs.

8. NRCan's OEE should initiate work on support tools, materials and training workshops that would be needed by any municipality interested in using the EE/RE LIC concept, which may include the following:
    - Familiarization seminars for municipal staff and Council members on the benefits and details of an EE/RE LIC program.
    - Training workshops for municipal staff administering an EE/RE LIC program.
    - Training and certification standards for contractors in energy efficiency and renewable energy building practices.
    - Offset protocols for building energy efficiency and renewable energy that could be used by municipalities to register EE/RE improvement projects financed by LICs and generate offset credits for sale through the new Canadian offsets market.
    - Brochures and other materials that could be used by provinces and municipalities to promote and explain the EE/RE LIC concept.
    - Monitoring services for each pilot program to determine the uptake, financial viability, transaction costs and other information needed to evaluate the concept.

9. Municipalities should fine tune the model EE/RE LIC program shown in Appendix 1 to meet their specific needs, ensuring that certain key features are retained:

    - Target the EE/RE LIC program at building improvements where the incremental cost is significant, there are identified co-benefit opportunities, no regulations are contemplated and there are no other major incentives available.
    - Set LIC payment schedules so that the annual payment (plus the increase in basic property tax) is less than the average savings achieved from the upgrade.
    - Certify only those contractors that can demonstrate knowledge of and experience in high-efficiency buildings practice to undertake work financed under an EE/RE LIC program.
    - Set a minimum improvement cost (e.g. $3,000) to keep transaction costs down.
    - In promotion of the program, stress that it is voluntary, is not a new tax, and that the net combination of taxes and energy costs will be lower.
    - For equity and cost minimization, use the same LIC payment scheme and terms for gas and electricity customers.

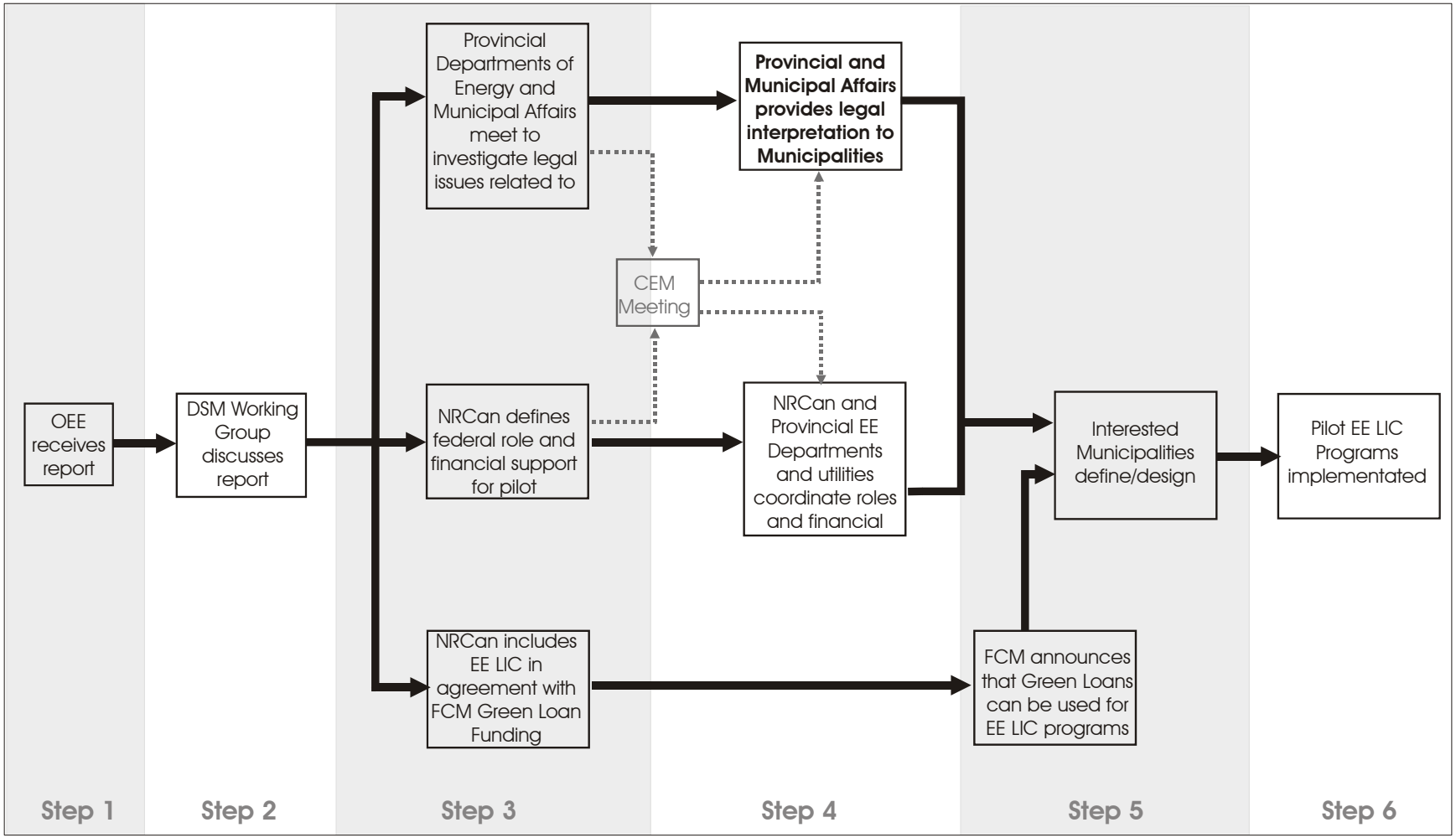

Figure 1. Next Steps in Implementing the EE/RE LIC Concept

Appendix 1: Model Program for Using LICs to Finance Energy Efficiency Improvements

Benefits of an Energy Efficiency LIC Program

The LIC mechanism is distinctive from other financial instruments in several respects:

- Like a loan, an LIC provides a mechanism for gradually paying off a large one-time improvement to a property.
- Unlike a loan, LICs are not assigned to individuals, but to properties.
- Like a tax, LICs are levied as a separate line item on property tax bills.
- Unlike a tax, LICs are generally voluntary in nature – they are requested by (a majority of) property owners.
- LICs can be easily structured to recover all funds invested by a municipality for improvements.
- LICs are already levied by most municipalities in Canada.

As previously mentioned, the main advantage of financing energy efficiency improvements using an LIC program over alternative methods is that it associates the repayment of the cost of the improvements with the property rather than with the current property owner.

In the case of existing homes or commercial buildings, where energy efficiency improvements provide long-term cost benefits, the rate of LIC repayment would be set at less than the annual energy savings realized through the improvement. The owner of the property will then receive an economic benefit from the very first year of installation. Moreover, owners can sell their property at any time after installation of the improvement, without losing any of their investment in these improvements. No matter when they sell, they will have paid less for the improvements than they have saved in reduced energy costs. Similarly, purchasers of properties with energy efficiency improvements and outstanding LIC charges will simply pay off the remaining amount of the LIC on an annual basis, receiving a net cost benefit from the improvement each year.

In the case of new homes or buildings, allowing the additional cost of energy efficiency improvements would be included in the LIC. This removes the capital cost of these efficiency measures from the sale price of a new home – which has long been the basis of opposition by the home construction industry to improved energy efficiency standards for new homes. Instead, the LIC approach would allow a new homeowner to pay off the outstanding investment in annual installments. Because these payments would be less than that of the actual energy savings achieved by the improvements, the new owner would receive immediate benefits from the energy efficiency improvement. Indeed, by removing the existing disincentive for new home buyers to invest in homes built to higher energy efficiency standards, a successful energy efficiency LIC program should allow local governments to more aggressively pursue stricter energy efficiency codes for new construction.

Similarly, the proposed use of LICs for energy efficiency improvements provides landlords with an incentive to invest in the energy efficiency of their buildings. Since they would enjoy a net reduction in total costs during the first year of installation, the cost savings generated by the targeted energy efficiency improvements would allow landlords to either lower their rents to attract tenants or simply leave rents unchanged and earn a greater profit on their property.

The use of LICs explicitly addresses several barriers that prevent investments in energy efficiency:

1. *Hesitancy to Accept Long Paybacks*. Many improvements that have the potential to significantly reduce energy use in buildings do not pay for themselves for several years. Current owners have little incentive to make these investments if they will own the building only for a few years. By tying payments to the physical property through an LIC, rather than to the owner, these investments become attractive to a much wider range of property owners. If a property is sold before the savings have paid for the initial investment, the departing owner will have paid for only a portion of the investment but will still have been able to realize part of the resultant savings.

2. *Preference for Low First Cost Improvements.* The high up-front capital costs of many major energy efficiency improvements mean that many owners opt for low-cost improvements instead. This approach effectively makes the implementation of the major improvements more difficult because the benefit gained is often too low to justify further action. For example, if homeowners spend money to weatherstrip and seal their windows, they are less likely to replace them with more efficient windows because of the time and money already invested. In these cases, the opportunity to make major efficiency gains can be lost for many years. With an energy efficiency LIC program targeted at larger investments, property owners will have the financial flexibility to opt for higher-cost, higher-efficiency investments instead of low-cost options.

3. *Lack of Access to Capital to Improve Existing Buildings*. Lack of access to capital and high debt loads often mean that building owners and homeowners cannot borrow the additional capital needed for major energy efficiency improvements. Financing an improvement through an LIC does not add to the owner's personal debt because the LIC is tied to the property, and the improvement costs are paid for out of the resulting energy savings.

4. *Lack of Access to Capital to Build Efficient New Buildings*. New buildings built to the highest efficiency standards might cost more to build than conventional buildings, but these costs are recovered many times over during the life of the building. However, the additional up-front cost of these buildings can dissuade many buyers who are either unable or unwilling to take out a larger mortgage. By including the additional construction cost of the energy efficiency improvements in an LIC, all owners of the home or building benefit from the improvements – and the energy savings can pay for this investment over a period of years.

5. *Construction Industry Resistance.* Builders and equipment suppliers are commonly opposed to stricter energy efficiency codes and standards because they perceive that the changes will decrease sales (as per point 4, above). Allowing the additional cost of energy efficiency to be included in an LIC reduces the first cost of choosing energy efficiency, which will encourage sales, thereby alleviating contractor concerns and allowing governments to increase efficiency codes more rapidly.

The next two sections describe how an LIC program to finance building energy efficiency improvements could be designed and implemented, including the key decisions that will need to be made at each stage of program development. Because this use of LICs has not been tested in practice, there are several options that can increase program flexibility and stand a good chance of being successful.

Designing an Energy Efficiency LIC Program

The following issues should be considered when designing an energy efficiency LIC program:

Financial and Staff Resource Capacity. The municipality must assess its ability to carry out a successful energy efficiency LIC program. The capital financing for the improvements will need to be secured. These funds could potentially come from the existing municipal budget, higher levels of government, municipal organizations such as FCM or by issuing bonds. Provincial agencies such as the Municipal Finance Authority of British Columbia exist to provide this type of financing, and many municipalities are familiar with the annual process of using this source. Indebtedness of individual municipalities will vary; but in most provinces, local governments should be able to borrow the additional capital required to offer an energy efficiency LIC program and recover all costs of borrowing through selection of the interest rate applied (see "Financing Structure" point). In British Columbia, a municipality is allowed to spend up to 25 percent of total revenues on principal and interest (not including one-time grants). However, it is not recommended that municipalities have a debt payment that is more than 15 percent of total revenues.

The staff needed to administer the program will need to be assigned from other tasks and/or hired depending on the anticipated size of the program and related workload. If municipalities already have staff resources engaged in energy management improvements in municipal facilities, they could be used to provide technical assistance to LIC staff. This may reduce set-up and LIC processing costs. The types of transaction costs associated with the implementation of an LIC program are reviewed in the next section of this paper. Sufficient staff resources must be allocated for administration of the LICs.

Administrative Unit. An energy efficiency LIC program would best be managed by the unit currently administering conventional LICs with the addition of extra staff trained in building energy efficiency and renewable energy. The same familiar LIC mechanism is

used, but the application would be significantly different and require specialized staff. In some cities, where LICs are processed by multiple departments according to the specific nature of the improvement (drainage LICs, road LICs, etc.), energy efficiency LICs would not be a good fit into any existing program, and a separate unit would need to established for the purpose.

Council Support. Every LIC put in place by a municipality must first be specifically authorized by a municipal bylaw approved by Council (see "Operation of an Energy Efficiency LIC Program" section). However, it is advisable to have the general concept of using LICs to finance energy efficiency improvements approved in principle by the municipal council as a first step in designing and implementing a municipal program.

A particularly strong rationale for council approval of a municipal energy efficiency LIC program would be the council's existing commitment to reducing energy costs or GHG emissions from the community as a whole. Municipalities that are members of the FCM PCP program have already committed to achieving community-wide reductions of GHGs. An energy efficiency LIC program can be reasonably justified as an effective means by which the city can assist the community as a whole in achieving reductions. A similar rationale is available to those municipalities that have committed themselves to a community energy planning process.

Some municipalities might be averse to taking on extra debt to finance an energy efficiency LIC program, even though full-cost recovery is anticipated and the risk of default on LICs is very low. This might be particularly true for cities that already have large loans to finance conventional LICs.

Public Support. Because the application of the LIC tool for household energy efficiency improvements constitutes a significant and novel extension of traditional civic functions, it is also strongly recommended that the municipality clearly present its rationale for the use of this tool to the public. In particular, municipalities should ensure that the program is not perceived as a new tax on energy-efficient properties. To overcome this issue, municipalities can stress the voluntary nature of the program and the financial savings resulting from these improvements.

Public promotion should also highlight that energy-efficient LICs are designed to finance longer payback improvements not traditionally financed by conventional loans from financial institutions. The improvements being targeted by LICs are those not normally targeted by banks that focus on conventional loans for shorter-term investments.

Eligible Energy-Efficient Technologies. The municipality needs to decide which energy efficiency improvements and technologies are eligible under the LIC program. In principle, LICs could be applied to energy efficiency improvements for any new or existing property. Depending on the types of properties/owners the municipality wants to target, council could limit the program to a particular type or vintage of building, or restrict the types of property eligible (e.g. those properties zoned for commercial or residential buildings).

Beyond these limitations on eligibility, it is recommended that energy efficiency LICs should be limited to only those improvements in building energy efficiency that a) cannot be easily removed from the house or building, and b) are easily recognized as energy efficiency measures. Examples of these energy efficiency measures include:

- Building shell upgrades (insulation, air sealing and new windows) including re-siding and other outside renovations that would allow significant energy efficiency improvements to be made at the same time.
- New high efficiency HVAC systems and water heaters, including permanently installed solar water heaters.
- Permanently installed solar PV systems and associated inverters, grid connections and meters.
- Built-in water efficiency measures such as water-efficient toilets.
- Many of the components relevant to attainment of LEED Gold and or net zero energy housing certification (in commercial and residential buildings respectively).

Note that the improvements listed above have longer payback periods because of the higher levels of capital investment involved and as such are subject to the types of barriers that the LIC program addresses.

It is further recommended that the city restrict eligibility for the energy efficiency LIC program to a specific set of measures known to produce significant benefits for the buildings in question. Technologies that are ineffective for the climate zone of a particular municipality or measures that are not optimized for the size, function and load of the proposed building should not be made eligible.

Coordination with Financial Incentive Programs. Some energy efficiency improvements will be eligible for federal or provincial incentive grants. The LIC program could be structured so that these grants can be taken advantage of when the improvements are made. Alternatively, the municipal LIC program could be limited to those energy efficiency improvements not covered by these programs. In all cases, the objective would be to coordinate the LIC program with these grants, minimize duplication of effort and prevent any confusion in building owners' minds as to how these programs operate.

Some building owners will also be eligible for tax credits for non-energy-related investments. These would need to be preserved in the application of an energy efficiency LIC.

Eligible Installers. The municipality should design its energy efficiency LIC program to ensure, as far as possible, that installation is done in a professional and cost-effective manner. To achieve this, it is recommended that the municipality set out criteria determining the eligibility of contractors to carry out the improvements and provide an estimate of the savings that would be realized from the improvements. Because these types of investments are unfamiliar to many property owners and contractors, it will be essential that contractors are familiar with their installation and performance, can

undertake an energy audit of the building, and can accurately estimate the costs and savings from the upgrade recommended.

In many cases, professional organizations and accreditation programs that certify members' proficiency in installing various types of energy efficiency improvements already exist (e.g. R-2000, EnerGuide for Houses and LEED accreditation programs). Technology-oriented professional associations (e.g. Canadian Earth Energy Association and Canadian Solar Industries Association) also have codes of conduct for members, which could be adopted with a minimum of effort for use by municipalities.

Financing Structure. The municipality also needs to decide on the financing structure for the LICs. It is recommended that the LIC program operate on a cost-recovery basis, because the improvement is beneficial to both the property owner (financial benefits) and the community as a whole (environmental benefits).

To overcome the aversion to long-payback investments and to provide modest reductions in energy costs from year one, it is strongly recommended that the LIC payments be structured so that, in an average year, the LIC repayment is less than the energy cost savings achieved. As such, the optimal LIC repayment term should be somewhat longer than the time estimated to achieve a simple payback through energy savings. This said, it is also prudent to offer property owners the flexibility of a shorter payback term, as well as the option of full early payback without financial penalty, as with traditional LICs. The longest available term for repayment would likely vary across municipalities because of different energy needs, technologies and prices, but it could be in the range of 15 to 20 years. This is comparable to the longest available terms in traditional LIC programs.

In cases where the basic property tax assessment is raised because of the improvement, the LIC payment schedule must be set so that energy savings are greater than the LIC payment plus the increase in basic tax.

It is recommended that the interest rate for the LIC be set to cover all the additional transaction and processing costs incurred by the municipality to run an LIC energy efficiency program. The exact amount will depend on the staffing and borrowing costs of each municipality and the nature of the program it chooses to pursue.

In terms of cash flow, local variations in LIC rules that allow deferral of property taxes need to be taken into account. For example, in Vancouver, residents over 65 years of age can defer taxes until the property is sold.

Minimum and maximum cost limits for improvements need to be set by the municipality. It is recommended that the minimum limit be relatively substantial (e.g. $3,000–$5,000) to avoid the high relative transaction costs that would apply to management of smaller sums and to avoid interference with existing programs that already adequately finance lower-cost and shorter-term energy efficiency improvements. As noted above, the energy efficiency LIC mechanism is particularly well suited to more expensive improvements that have longer-term paybacks.

Maximum funding limits are prudent to ensure that available funds can be applied to a large number of applicants and to prevent possible abuse of these funds. Maximum funding limits could be capped at a modest percentage (e.g. 25 percent[15]) of the total assessed value of the property. Within this overall cap, more stringent maximum funding limits could be set for each technology, based on discussions with qualified contractors experienced with these technologies. There is no need to check an applicant's personal financial background because of the property-based nature of an LIC, thus saving what can be a significant part of total transaction costs in a conventional loan program.

Program Advertisement. The municipality must announce and advertise the program. Depending on the number and proximity of participating municipalities, and the extent of the municipality's cooperation with professional organizations in structuring the program, this step could be accomplished by the local government alone, or through a collaborative campaign with local contractors or other participating municipalities. Regardless of the model selected, making people aware of the program will be critical.

Operation of an Energy Efficiency LIC Program

The following describes steps in the application for and implementation of a typical energy efficiency LIC:

1. A property owner decides they would like to investigate having energy efficiency improvements installed in their building. This could occur as a result of an energy audit of an existing building or an interest in constructing a high-efficiency building.

2. The property owner contacts City Hall, which has a list of eligible contractors and technologies that can be financed with an LIC. Alternatively, the property owner contacts these contractors directly.

3. One or more contractors undertake an energy assessment of the building and discuss possible energy efficiency options with the property owner, keeping in mind the eligible technologies listed by the municipality. It may be possible to streamline the audit process by having standard energy reductions for each eligible measure or technology (at least for a particular municipality). It would be prudent for the property owner or one of the contractors to initially confirm the eligibility of the intended improvement with City Hall at this time.

4. The contractor develops a quote for materials and labour that is agreed to by the property owner, along with an estimate of the savings that would be achieved. In cases where the eligible work is just a component of the overall renovation, the LIC would be applied only to the eligible improvements within the larger project. A proper determination of the costs for these components would be less onerous if the eligible measures or equipment were clearly defined, and applications were assessed

[15] The limit of 25 percent was used in the Yukon LIC program.

in cooperation with relevant professional organizations experienced in installing these technologies.

5. The property owner submits the quote to the municipality for approval.

6. Assuming the request for an LIC and the quote are eligible, the municipality then advises the property owner on what their annual LIC payment and term will be, along with an estimate of the annual energy savings. Ideally, the annual payments would be set so that they are less than or equal to the estimated average annual energy savings so that cost savings could be realized immediately. This process requires setting the payback term uniquely for each proposal; but as programs evolve, municipalities might find it more effective to provide fixed terms for different types of improvements. This is how traditional LICs operate.

7. If the property owner agrees to the terms of repayment through the LIC, the municipality then initiates a bylaw for the LIC and gains approval from Council.[16] In practice, it would be prudent to combine several LICs into a single bylaw and take these bylaws before the municipal council on a regular basis. In many municipalities, LIC applications are grouped together and approved only two or three times a year. For groups of new homes, a single bylaw could be used to cover all homes in a subdivision, with the developer being the proponent (as owner of the property). Improvements to large facilities such as shopping centres (or a new building) could be covered by their own LIC bylaws.

8. The contractor is authorized to initiate work. Because property owners would likely want to proceed quickly with renovations, a streamlined cost estimate and approval process is recommended to minimize the time between application and authorization to proceed. Conventional LICs often involve several property owners and the contracting process can take several months. The processing and approval of an energy efficiency LIC should take less time than for a conventional LIC.

9. Upon completion of the upgrades, the contractor submits an invoice to the municipality.

10. The municipality or designated authority inspects the work to ensure it has been done satisfactorily and within the cost estimate, and that the work will produce the savings estimated. If the work does not meet the requirements agreed upon with the contractor, the property owner will still be liable for full repayment of the funds advanced by the municipality. In anticipation of this outcome, all contracts will need to clearly communicate the expectations of the property owner and responsibilities of the contractor so that the city can ensure that improvements are acceptable. Having a list of qualified and properly trained contractors will also help mitigate this risk. The need for contractors to be qualified in installation will be strongest with newer technologies, such as solar water heaters, that property owners and contractors are less familiar with.

[16] Provincial legislation normally requires that each new LIC be approved by the municipal council.

11. The municipality then issues payment for the improvement to the contractor and applies the LIC to the property tax records. The LIC payment is made annually along with regular property taxes.

    If, because of actions on the part of the property owner, the improvements made do not continue to provide the expected savings for at least the length of the payback period (or are removed through an additional investment for example), the owner would still be responsible for full repayment of the funds advanced by the municipality. Careful selection of reliable technologies, and cooperation with professional contractors and building technology associations, should minimize this problem. Building owners should also be advised to carry sufficient insurance to cover the cost of replacing the efficiency improvements in the case of fire or other loss.

    If LIC payments are defaulted, the municipality has the same extensive rights as it does in the case of failure to pay property taxes. With conventional LIC programs, this problem usually only arises with property owners who voted against a local improvement that was favoured by a majority of their neighbours. In the case of the energy efficiency LIC program described above, LICs would only apply to individual properties and only at the request of property owners, thus substantially avoiding this issue.[17]

12. When a property is sold, the LIC is passed on to the new owner who must be apprised of its existence (and benefits) during the sale. Other features of the LIC and improvements, such as carrying sufficient insurance, should also be passed on to the new owner at this time. Legal appeals of energy efficiency LICs would be expected to be extremely rare because the charge would have been voluntarily agreed to by the property owners.

Carbon Financing

With the advent of a national GHG offset market under Canada's Kyoto plan, it will be possible for projects that reduce GHG emissions to sell carbon credits as the reductions are achieved. Municipalities offering an EE/RE LIC program could reduce the annual LIC payments made by property owners by selling the GHG reductions on their behalf. More details of how such as process would work should be available later in 2005.

[17] Opposition to an LIC placed on a single property might still occur in the case of a condominium property, where a minority of the strata council opposed the LIC.

Appendix 2: Provincial/Territorial Regulations Governing LICs

Yukon

Sources:
Municipal Act: www.gov.yk.ca/legislation/acts/municipal.pdf

The Yukon *Municipal Act* provides municipalities with flexible guidelines for LICs. The guidelines should not prohibit a municipality from using an LIC to finance energy efficiency improvements. The approach would be similar to that used already in the territory for using LICs to finance individual renewable energy systems.[18] Under the Act, local improvements are defined as "any capital project or service that the municipality deems to benefit one area of the municipality more than the whole municipality."

British Columbia

Sources:
The Vancouver Charter: www.qp.gov.bc.ca/statreg/stat/V/vanch_00.htm
The British Columbia Community Charter:
www.legis.gov.bc.ca/37th4th/3rd_read/gov14-3-pt07.htm#section210

Under the Vancouver Charter, the City of Vancouver has powers separate and distinct from other municipalities in British Columbia. The Vancouver Charter regulates LICs in a less restrictive manner than British Columbia's *Local Government Act* (LGA), which limits the definition of LICs to only "those projects that can specially benefit real property in a limited and determinable way." There is no specific requirement for Vancouver to pay maintenance costs for LIC improvements as in the LGA. Based on the Charter, Vancouver appears to have sufficient powers to expand its use of LICs to include energy efficiency improvements.

The Government of British Columbia has now enacted the Community Charter, replacing the old *Local Government Act*. In general, the Community Charter allows a much greater scope for action by local governments within British Columbia than the previous Act did. The Charter explicitly allows municipalities to borrow money to cover LICs and specifies that a municipality does not need additional approval to borrow money if the full costs of the LIC are going to be recovered. This would provide all the legal means for a municipality to undertake a major energy efficiency LIC program. As such, the Community Charter appears to provide municipalities in British Columbia with the ability to use LICs for energy efficiency purposes.

[18] The City of Whitehorse already has a draft bylaw.

Alberta

Sources:
Municipal Government Act: www.qp.gov.ab.ca/documents/acts/M26.cfm

The Alberta *Municipal Government Act* defines local improvements with significant flexibility. Specifically, the Act defines a local improvement as "any project that the municipal council considers will benefit one area of the municipality more than the whole municipality." This would allow the application of LICs to be expanded to energy efficiency improvements without necessitating changes to existing legislation.

Saskatchewan
Sources:
Local Improvements Manual & Appendixes:
www.municipal.gov.sk.ca/mrd/munlocalimprove.shtml#1#1

The Northern Municipalities Act, The Rural Municipality Act, 1989 and *The Urban Municipality Act, 1984* allow municipalities to carry out a wide range of works and services. *The Local Improvements Act, 1993* provides a means of financing certain projects by charging the cost (or a portion of the cost) against the land that benefits from the project. Taxpayers may pay a special assessment in full when a local improvement project is authorized or pay a part of the total annually with their property taxes until the amount is paid in full. Incentives might exist for paying the total amount sooner.

Generally, a "local improvement" (LI) is any work or service paid for by charging all or a part of the total cost against the lands that benefit from the work or service. The benefit received by these lands must be different from or greater than the benefit generally received by other lands in the municipality.

The LI bylaw must be approved by the Saskatchewan Municipal Board.

Section 3 of the Act lists many works and services that could be undertaken as local improvements. For example, street paving, sidewalk construction and water/sewer main installation are commonly done as local improvements. Street lighting (including the cost of electricity), construction of noise-reduction barriers, and park development or landscaping may also be done as local improvements.

Energy efficiency or renewable energy improvements would qualify under the above definition of an LI, provided the Municipal Board approved the bylaw. There appears to be no legal reason why the Board would not do so. There is no explicit wording that says an LI cannot be located on private property.

Manitoba

Sources:
Municipal Act: www.canlii.org/mb/laws/sta/m-225/20050211/part3.html

Under the Division 4 of the Municipal Act "Local Improvements and Special Services" defines an LI as a benefit to all or part of the municipality. It defines several types of improvements but also allows for "any other project the cost of which includes a capital component" to be classified as a local improvement. Special Services are services supplied to all or part of a municipality, including "maintenance or operation of a local improvement."

The Act requires a local improvement or special services plan to be prepared outlining costs and contributions by property owners. Three readings of a bylaw authorizing the LI are required, and the LI plan has to be approved by the Manitoba Municipal Board. There is no specific mention of not allowing an LI on private property.

An energy efficiency or renewable energy LIC would qualify as a project that includes a capital component, so that as long as the Municipal Board approved the LI bylaw, it would appear to be legal under the *Municipal Act*.

Ontario

Sources:
Municipal Act, 2001, O.R.119/03 Local Improvement Charges – Priority Lien Status: www.e-laws.gov.on.ca/DBLaws/Regs/English/030119_e.htm

Regulation 119/03 specifies 16 types of improvements that can be financed by LICs. The only type that might cover energy efficiency or renewable energy improvements is:

> *7. Extending a system of gas or heat works, including all such works that may be necessary for supplying gas or heat to the owners of lots for whose benefit the extension is provided.*

This would certainly cover any district heating or shared heating system such as a community ground-source heat pump loop or solar thermal loop. However, it would be a stretch to include other energy efficiency or renewable energy building improvements.

An LI bylaw has to be filed with the Ontario Municipal Board and approved by the board if there is any objection to the LI. This would provide a means for a municipality to argue the case for an EE LIC at the Board level.

Ontario and Newfoundland and Labrador (see below) are the only provinces to explicitly allow a municipal local improvement to be made on private property. Under section 23 of the *Ontario Municipal Act* "a municipality may enter into an agreement with any person to construct, maintain and operate a private road or a private water or sewage works, including fire hydrants." Regulation 113/09 then allows the municipality to "undertake the private work as a local improvement . . . as if the municipality were undertaking its own work." Therefore, while it appears to be more difficult in Ontario to include energy efficiency and renewable energy improvements as LIs, there are no barriers to their use on private property.

The view of the Ministry of Municipal Affairs and Housing is that currently the LIC regulation does not allow LICs to be used for energy efficiency projects. Pilot projects may be possible through an exemption but ultimately the regulation would have to be amended.

Quebec

Sources:
Municipal Code of Québec, R.S.Q. c. C-27.1
www.canlii.org/qc/laws/sta/c-27.1/20050211/whole.html
Loi sur la fiscalité municipale –
www.canlii.org/qc/legis/loi/f-2.1/20050111/tout.html
Loi sur l'interdiction de subventions municipales –
www.canlii.org/qc/legis/loi/i-15/20050211/tout.html

The Quebec legislation on municipalities appears to have been last updated in December 2004.

According to Article 979 of the Municipal Code of Québec, all local municipal council can apply a "special tax" (not referred to directly as a local improvement tax) for the payment of municipal works. The legislation, under Article 979, is very generally worded and only limits what could be undertaken as a local improvement to "municipal works of any kind, including works of maintenance." EE/RE LICs could possibly therefore qualify using the existing legislation, if energy efficiency projects can be interpreted as a form of "municipal work."

The special taxes are based on municipal evaluation, total area, or the number of frontage metres of the property and can apply to:

- The municipality as a whole
- Property owners within a sector of the municipality
- Bordering property owners who benefit from the work done when the works are carried out in a sector of the municipality which is designated as its "central sector," in accordance with a specific urban planning program
- A combination of these categories

In Quebec, the special tax discussed above is also referred to as "taxe de secteur" or "taxe d'amélioration locale."

New Brunswick

Source: *Municipalities Act*: www.gnb.ca/0062/acts/acts/m-22.htm

This legislation appears to have been last updated in 1966. It is probably the most comprehensive piece of LIC legislation reviewed, right down to the details of the Council and clerk's responsibilities.

Local improvements are covered in sections 117 through 148, with the relevant sections reprinted below. Under section 119, the legislation limits what may be undertaken as a local improvement, and as a result, EE LICs probably would not qualify using the existing legislation.

Nova Scotia

Sources: *Municipal Government Act* (1998)
www.gov.ns.ca/legi/legc/statutes/muncpgov.htm
Municipal Law Amendment Act (2004)
www.gov.ns.ca/legi/legc/bills/59th_1st/3rd_read/b070.htm
Municipal Government Act Introductory Guide (1999)
www.gov.ns.ca/snsmr/muns/manuals/pdf/mga/ntrogide.pdf

According to section 81 of the *Municipal Government Act*, municipalities in Nova Scotia can apply charges to a property tax (not actually referred to as local improvement charges) for the following:

- wastewater facilities or storm water systems
- water systems
- laying out, opening, constructing, repairing, improving and maintaining streets, curbs, sidewalks, gutters, bridges, culverts and retaining walls
- the cost of a major tree removal program or the cost of removing trees from a private property
- the cost of placing the wiring and other parts of an electrical distribution system underground

There are no clauses in the section indicating other uses that could qualify; therefore, the way the legislation is now worded, LICs for private land improvements would probably not be allowed according to the letter of the law.

Prince Edward Island

Source:
Municipalities Act – www.gov.pe.ca/law/statutes/pdf/m-13.pdf

Section 30 outlines the municipality's powers and included in that list are the following items that could relate to EE LICs:

- Community or regional development
- Industrial or commercial development and promotion
- Housing development and promotion
- Community development projects

According to section 33, if a municipality wants to add any service from those outlined in section 30 that it isn't currently offering, it needs to apply to the Provincial Minister. In the application, it needs to indicate the service it wants to start offering, the need for those services, the financial implications and the community support for the new service.

Although it isn't clear if such an activity will be permitted, this does give a clear path for the approval of EE LICs.

Section 37, clause 2 provides municipalities with the right to apply different tax rates to different areas of the municipality if different service levels are clearly present. This clause essentially allows the municipality to use an LIC-like mechanism to recover the cost of services and improvements.

A potential problem is in section 64 where the services about which a municipality can pass bylaws are outlined. It isn't clear if a bylaw would be needed beyond the taxation (which is allowed), but nothing in this list fits well with what is proposed for an EE LIC.

Newfoundland and Labrador

Source:
Municipalities Act (1999) – www.gov.nl.ca/hoa/statutes/m24.htm

The legislation has received a number of amendments since 1999, but none of these are relevant to the sections reviewed in the following discussion.

The legislation does not explicitly name local improvement charges, but Part VI: Assessments and Levies (sections 149 to 155) deals with local improvement assessments and service levies, which appear to be the same concept and could potentially be applied to energy efficiency improvements.

Clause 1 of Section 149 states that a local improvement assessment can be applied to property that directly benefits from a public work. The clause cites what this includes (water, sewer and storm systems, curbs, gutters, sidewalks and streets), but it doesn't explicitly exclude other options. This certainly isn't clearly defined, but the wording does appear to open the possibility to energy efficiency improvements.

Clause 2 of section 149, which defines service levies seems to offer even more potential; the public work is explicitly allowed to be on or off private property. The municipality could argue that the energy efficiency improvement will enhance the value of the property (clause e), and that it is designed to expand the capacity of municipal services (clause b). If they were successful in doing so, the energy efficiency improvement could be paid for with a service levy, which seems to be identical to an LIC.

The potential catch for both of these options is that a definition of the term "public work" could not be found in the legislation. Therefore, if it is defined elsewhere, there is a possibility that it excludes energy efficiency improvements.

Appendix 3: Responses by Provincial Departments/Utilities Responsible for Energy Efficiency

Members of the federal/provincial/territorial DSM Working Group in all provinces east of Alberta, except Newfoundland and Labrador, were approached for their comments on the EE/RE LIC concept. The following are the responses from these contacts or those we were referred to, with notes from the 2004 study in Alberta and British Columbia added.

Contacts

Derek Enriques – BC Hydro
Andrew Pape-Salmon – BC Ministry of Energy and Mines
Ted Sheldon – BC Ministry of Water, Land, and Air Protection
Simon Knight – Climate Change Central
Floyd Wist – Saskatchewan Department of Industry and Resources
Grant McVicar – Saskatchewan Office of Energy Conservation
Ken Klassen – Manitoba Department of Energy, Science and Technology
Martin Whicher – Ontario Ministry of Energy
Alain Deneau – Agence de l'efficacité énergétique du Québec
Dean Mundee - New Brunswick Department of Energy
Dan Rae – Municipal Governance Office of New Brunswick
Mike Proud – P.E.I. Department of Energy, Environment and Forestry
Hal Doobelsteyn – Nova Scotia Department of Energy

Q1: Value of LIC concept in removing energy efficiency barriers

British Columbia

BC Hydro co-financed the 2004 study on LICs, and subsequent discussions with buildings energy efficiency staff at BC Energy and Mines indicated widespread support for piloting and use of the concept. The Ministry of Water, Land, and Air Protection expressed similar support, but the Ministry of Community, Aboriginal, and Women's Services has not yet provided their support, and are still considering the concept's legality.

Alberta

Climate Change Central co-financed the 2004 study on LICs and continues to support its implementation and piloting, provided the real or perceived legal issues can be resolved.

Saskatchewan

The concept has the potential to address barriers but needs to be piloted in several provinces to get a good feel of how it might work. The unique conditions in Saskatchewan would have to be taken into account with separate governance and

associations for urban (Saskatchewan Urban Municipalities Association [SUMA]) and rural (Saskatchewan Association of Rural Municipalities [SARM]) municipalities.

An EE/RE LIC program would complement several existing programs offered to municipalities including advice on energy-efficient procurement, energy cost management and solar heating for municipal pools.

Manitoba

The LIC concept might have limited application in Manitoba for new construction because many high efficiency buildings are being built at no additional capital cost. R-2000 and C-2000 Program for Advanced Commercial Buildings (Mountain Equipment Co-op, Prince Street Group) see a positive cash flow from the first year. Manitoba Hydro also has many good DSM programs (currently includes electricity, but will soon be adding gas) that target existing and new buildings; therefore, the LIC concept would have a niche for long payback upgrades not covered by the programs. Manitoba Hydro might in fact see the LIC concept as a way of addressing upgrades beyond the scope of its programs (see "Q4: Sources of financing").

Ontario

Transaction costs would be higher when used for individual homes or buildings.

An EE LIC would be especially useful if it could overcome the split incentives barrier in rental properties, where not all tenants are interested. Using LIC for energy efficiency improvements would not change energy costs and property taxes. The main objective would be to make the actual annual outlays of landlord and tenant unchanged.

Municipalities would have to be ready to accept some risk of default and recovery payments like other property taxes. They could use a lien but they would still have the problem of having to use collection agencies. For this reason, using the concept for commercial buildings would be better than residential.

It must be made clear to all that the community as a whole benefits from the EE LIC program with regards to climate change, energy costs and other co-benefits such as air quality.

It will also be important to explain how the EE/RE LIC concept differs from the Energy Management Service Company (EMSC) performance contract model. An EE/RE LIC program would overcome the long payback barrier by associating the cost with the property, while performance contracts are with the owner. EMSCs also charge quite high fees to cover the guaranteed performance risk.

Quebec

The EE/RE LIC concept could be an effective tool in removing financial barriers for energy efficiency improvements in buildings. However, it is important to bear in mind that municipalities in Quebec are generally all indebted and that the initial cost incurred by the municipalities for energy efficiency projects covered by the LICs must not represent a financial burden to the municipality. Also, many municipalities do not have experience using LICs.

New Brunswick

The EE/RE concept could be effective in some applications; but in many cases, there might be better financial instruments available to improve energy efficiency in buildings. This could especially be the case for individual homeowners where increased mortgages and bank loans might be preferable. For larger scale business and residential developments, the EE/RE LIC concept might be more applicable. This type of program might not be the best use of a municipality's resources (in terms of taking on risk and making staff available) because it would be unlikely to benefit the entire community. The more isolated an improvement is, the harder it is to tell the public that an action/program is the best use of available resources.

Nova Scotia

The EE/RE LIC concept is definitely worth investigating.

The major challenge would be to make the LIC investment more attractive to the homeowner than simply getting a loan or paying for an improvement with cash. If the improvement adds to the value of the home, it does not matter as much if the owners have to sell before the investment is paid off.

On the other hand, the financial flows are probably the same under either model, but similar financial flows are not always viewed the same by individual homeowners. For example, homeowners might not be confident that they will be able to recoup an investment in the resale price even though it might increase the home's value.

Another potential difference between LICs and standard loans is that the municipality might be able to get much better financing than an individual because the government guarantees these reliable investments. As a result, even after administration costs are accounted for, the municipality might be able to offer real savings to an investor.

Prince Edward Island

The EE/RE LIC concept would be effective in removing or reducing financial barriers. The greatest opportunity is for existing residential homes because there are so many opportunities for improvement but not enough policy options to encourage people to pursue them.

Q2: Types of improvements that could be covered by an EE LIC

British Columbia

BC Hydro suggested that the concept might be used for ground-source heat pumps. Provincial staff feel that it could be used for most building types and measures.

Alberta

The innovative multi-home solar heating/storage project being built in Okotoks, Alberta, has been mentioned as a good example of the type of project that would be ideal for the LIC concept. Climate Change Central has no specific recommendations and believes the concept could be applied to most building types and measures.

Saskatchewan

It would be best if municipalities choose which technologies were specified in any potential LI program's guidelines. It would be useful to include technology suppliers' input in the program design, as well as defining a technology screening process as part of any potential program. Ground-source heat pumps are not very popular in Saskatchewan because of the widespread use of gas and also the high cost of heat pumps sized to provide 100 percent of space-heating needs.

R-2000 might be good candidate for new residential buildings as there are currently no financial incentive programs available. However, the incremental cost of R-2000 and similar efficient new housing is dropping as builders fine-tune their designs and construction techniques for incorporating energy efficiency, and the number of these homes is increasing as a percentage of new house construction. In addition, energy efficiency requirements are currently being examined for consideration within the context of commercial building requirements of codes and standards. In considering the potential implementation of the EE LIC concept, care should be taken not to compromise these advances by implying that considerable incremental costs are involved, or that the costs outweigh the benefits to the building owner.

It would therefore be better to limit eligible measures in new construction to well-defined high- cost energy efficiency technologies that are not normally included in high efficiency construction but might have high strategic value for peak load reduction or net zero energy construction such as solar water heaters. In new subdivisions and green/brown field developments, the EE/RE LIC concept could be negotiated as part of a development plan under which all buildings were constructed to a high level of efficiency. The resulting lowering of service infrastructure costs (i.e. lower capacity infrastructure for natural gas, electricity, or water for example) would reduce the development fees and property taxes to developers.

In existing construction, it would make sense to limit the use of EE/RE LICs to major building shell improvements including walls, windows and roofs and, in the case of commercial buildings, complete lighting/energy management upgrades. Individual technology installation measures such as stand-alone heating system upgrades and windows in residential homes would best be covered by other program options.

There may be a specialized target market for EE/RE LICs in northern Saskatchewan where municipalities do not have power or gas grid services and cannot afford to bring these services to the area. Implementing energy efficiency, energy conservation and DSM technologies and techniques might be a cheaper alternative than upgrading the existing grid services where they are, or soon will be, inadequate to serve the load. The LIC concept could also be used as it is in Yukon to finance any energy-saving or on-site power-producing measure that reduces the demand for grid expansion or grid upgrades to increase grid capacity.

Manitoba

The most valuable use of LICs in Manitoba might be in rental properties where the landlord pays the energy bills and where the property needs to be saleable at any time. With rent control, there is no incentive for building owners to upgrade their building, as the cost cannot be passed on in rent. If an LIC is used to finance the upgrade, the sum of energy costs plus property tax remains the same; therefore, rents do not increase.

As noted above, Manitoba Hydro might also be interested in using the concept to top up some of its DSM programs. It has export motivation for saving power and the financial capability to provide the required revolving fund to municipalities. (See also “Q4: Sources of financing.”) Manitoba Hydro is now taking responsibility for all of the province’s DSM programs i.e. power and gas.

Other options are to use LICs for solar water heaters and ground-source heat pumps that have fairly long paybacks in Manitoba because of low utility rates. There is a unique opportunity in the City of Winnipeg to use LICs for a new subdivision of Waverley West that will have shared ground-source heat pump community loops serving several households. This in fact would be in line with the current spirit of LICs as a community service.

Manitoba building stock is the oldest in western Canada, so there is a great opportunity to use the LIC concept to upgrade this stock as part of a revitalization program (especially in Winnipeg). The savings in energy could be ploughed back into building improvements generally over a 15-year period. Deferred maintenance would be another source of savings. This is similar to how an EMSC can offer more than just energy efficiency upgrades by extending the performance contract beyond the payback period.

Ontario

The EE/RE LIC concept would probably be more suitable for existing buildings than new construction. It would be better to concentrate on using building codes to improve energy efficiency in new construction since codes would mandate changes. The concept may be more attractive/suitable for the commercial sector than residential, especially if it could help overcome the split incentive barrier.

In new residential homes, some buyers might prefer to face a higher capital cost and include it in the mortgage than to top up the extra cost into a higher annual outlay. Although in this case they do not recover all the benefits when they sell, it is a selling point for the LIC concept for those who expect to sell.

Blocks of new housing that have high cost energy efficiency or renewable energy features such as net zero energy housing or low grid impact homes would be ideal candidates for LICs (similar to the Yukon application). Another example would be distributed energy systems that reduce demand for purchased electricity and take consumers off grid and reduce summer peak load. LICs could be used as one of a suite of options for this purpose, others including energy smart meters and fiscal and rate incentives. If homes use PV, then they would have a very positive effect on the provincial power peak. Any project using PV, micro-turbines, solar water heaters or fuel cells would have similar value. For the EE LIC system to work for these very high cost items, building owners would need to be rewarded for their low-grid impact (feed-in tariff or time-of-day rates). LIC programs could also be combined with provincial sales tax incentives offered for renewable energy installed in residences and with net metering.

The priority in using LICs should be large upgrades or retrofits (relatively high capital costs) such as upgrades to R-2000 or LEED certification standards, as opposed to relatively small weatherization activities.

For the institutional sector, school boards and schools may be a suitable application for LICs since schools are currently not eligible for infrastructure loans like colleges, universities, hospitals and municipalities are. Schools are not treated at arm's-length like other institutions; therefore, the LIC concept might work well for school upgrades (alternative to EMSC), but schools are unlikely to sell their buildings making the LIC concept less valuable.

Quebec

The LIC concept would be most suitable for existing buildings as the province of Quebec will be adopting a new building code in 2007, which will require all new residential buildings to meet Quebec's *Novoclimat* standards. The type of buildings (residential, commercial or institutional) most suitable for the application of LICs to energy efficiency retrofits would depend on the municipality's needs and circumstance. A municipality with a high level of industrial operations might opt for an energy efficiency program for industrial facilities. Conversely, a municipality with fewer industrial facilities could

select energy efficiency retrofits in residential and commercial buildings. Also, because energy efficiency improvements required in one building can differ greatly from another, it might be preferable to use LICs in single buildings, before applying the concept to complexes and subdivided buildings.

In the context of existing buildings, the LIC concept would be most suitable for specific technologies, as the energy efficiency improvement needs of one building may differ from the needs of another building. Factors include the age of a building and the specific products installed (e.g. windows and heaters). The level of investment required for energy efficiency projects in buildings will also vary according to the municipality's circumstance (e.g. industrial versus residential). Therefore, municipalities could identify a set of measures that reflects their economical and social circumstances. The municipal council could also identify eligible energy efficiency technologies and elaborate criteria (e.g. energy efficiency threshold for existing technologies) that would restrict the replacement of inefficient technologies to those that produced significant benefits for the building in question. As mentioned in the report published by the Pembina Institute, minimum and maximum cost limits for improvements should also be set by municipalities.

Pilot projects could allow municipalities to identify optimal energy efficiency measures in buildings that could be applied across most municipalities. This would allow benchmarking of the investments that are most cost-effective in improving energy efficiency in buildings, and which could be taken into consideration when implementing future energy efficiency LIC programs.

New Brunswick

The concept would potentially work for all sectors (i.e. new/existing, residential/commercial), and none of them should be ruled out. Different agencies within a municipality would each have reasons for wanting to apply this type of program to advance their areas of interest, so there would likely be demand to keep it open to all sectors. For example, a downtown development agency would likely be more focused on the upgrade of existing commercial buildings.

Nova Scotia

The best opportunities would be residential owner-occupied because they have the least access to funding and are the least likely to consider it from an economic perspective. From a rental or commercial perspective, building owners are more financially motivated, so they would not need as much encouragement.

The concept would be most suitable for existing buildings. This is not because it would be harder for new buildings but because there are better ways to deal with new buildings that do not apply to existing buildings (e.g. through regulation).

In terms of specific equipment that is most applicable, this would depend on fuel source and building characteristics.

Prince Edward Island

The concept would be more effective in existing residential because there are significant needs for improvement without matching policy support. The concept was deemed to be less important for new buildings because even in the absence of an energy building code, new buildings are already much more energy efficient, and the smaller incremental increases are not as easily justified. Administratively, it makes more sense to work on larger projects (e.g. an entire subdivision), but the program would be fairer on an individual basis. However, there are not many larger subdivisions going in at the moment.

Q3: The model EE LIC program (see Appendix 1)

British Columbia and Alberta

The model program described in Appendix 1 was developed with input from Climate Change Central and BC Hydro.

Saskatchewan

Some experience with LICs for other purposes would be useful as the program is quite complex for someone not familiar with it. Having the process demonstrated in a municipality would be useful. Enthusiasm from the municipality will be key.

Financing building efficiency through an LIC means that a municipality is effectively taking on new roles as an energy efficiency program provider and a financing agency. These are currently provided by other levels of government, utilities and private financial agencies. For the property owner, there is a shift from paying for energy efficiency improvements in the form of principal and interest to property taxes.

Care must be taken in any EE/RE LIC program that the net benefit to the property owner in the form of lower energy bills minus the LIC payment is not wiped out by increases in the base property because of increased tax assessment. Because the municipality is providing the financing, the expenditures on energy efficiency improvements are guaranteed to be added to the value of the property. This is another reason why only major upgrades should be covered by the LIC concept since a tax increase is expected anyway.

Certification of contractors eligible for undertaking improvements carried out under an EE/RE LIC program is very important. Where municipal financing is concerned, quality assurance should take precedence over least cost. Where there are insufficient trained installers and contractors who can be certified for a given technology, this technology

should either be removed from consideration or a training and certification program put in place. Natural Resources Canada could play an important role in supporting this training and certification.

In some cases, the cost-effectiveness of an improvement within a municipality might vary depending on whether a property uses electricity or gas, leading to different LIC terms being set. This should be avoided by using average or all encompassing terms to ensure that there are no perceived inequities and that the program is simple to run.

Manitoba

LICs are used widely in Manitoba for water, sewer and lighting services, as well as to finance improvements in infrastructure in business zones. It would be best to add staff to the existing LIC unit to manage and run an EE LIC program. This would be in line with union and management practices and would complement the existing infrastructure scope of LICs. Most municipalities would need to hire more staff to implement an EE LIC program, however. Few municipalities have an environmental coordinator to manage such a program so an additional manager would be needed.

The EE LIC program design would need to ensure that there was full-cost recovery as most Manitoba cities including Winnipeg have some existing debt load.

Ontario

Normalizing annual payments on an LIC for weather would not be practical, so in some years the energy savings might not be high enough to cover the LIC payment. The annual payment could be set equal to the expected minimum 10-year savings to always provide a positive cash flow.

Coordination with provincial and federal programs would be important – but only programs that encourage permanent improvements such as Energy Innovators Initiative and provincial incentives for renewable energy.

To keep transaction costs down, there should be a minimum amount covered by an EE LIC: e.g. $3,000. Final estimates of transaction costs would not be known until pilots are undertaken. While it is quite different, LIC program administration costs should be benchmarked against other costs of other programs, especially regulated DSM programs.

Quebec

The model LIC program proposed in the report is well elaborated and covers all the necessary steps for the implementation of an LIC program to finance energy efficiency improvements. It will be important, however, to ensure that the program and its results (e.g. total investments versus energy saving and the real cost represented by the installation of the energy efficiency technologies after energy savings) are well advertised.

New Brunswick

Program design would be best left to the municipalities.

Nova Scotia

Program design would depend how each municipality works. Insights on program design would be one of the benefits of a pilot.

Prince Edward Island

Programs should have a minimal amount of administration because human resources are already overtaxed in many municipalities.

Q4: Sources of financing

British Columbia and Alberta

No specific preferences for sources of funding for EE/RE LICs were provided in 2004.

Saskatchewan

The unique conditions in Saskatchewan would have to be taken into account given the separate urban and rural municipal associations and governance. If provided by the Province, funding must come through Municipal Affairs or through some other provincial organization approved by cabinet for such an undertaking. A Provincial fund to finance EE/RE improvements might be a good option, perhaps managed by SARM and SUMA. Some municipalities might be able to use their own funds but most will not, or they must be willing to issue a debenture for this purpose.

Major energy-efficient and on-site renewable energy retrofits might be eligible to be registered as a domestic GHG reduction offset project under the new Kyoto Climate Change Plan (April 2005). An EE/RE LIC program could provide an effective method of aggregating efficiency projects for this purpose while providing “carbon financing” towards the cost of the projects. The questions of how financing from offset project could be coordinated with an EE/RE LIC program and how the credit ownership would be assigned to the municipality would need to be worked out.

A situation might develop in some cases where one municipality offers an EE/RE LIC program while an adjacent municipality cannot afford to because of high debt loads. In this case, local residents could perceive inequities. This could be resolved by using some form of Provincial loan guarantee where recovered LIC payments are signed over to the lender.

Manitoba

The best source of financing would either be through Manitoba Hydro or through a revolving fund operated, for example, by FCM. These would have the least impact on the debt load of municipalities. Manitoba Hydro could make the EE LIC program one of its DSM initiatives delivered by municipalities.

Ontario

The Ontario Strategic Infrastructure Financing Authority (OSIFA) might be a good source of financing for municipalities wanting to use the EE LIC concept. OSIFA works on a pooled concept, so it would effectively provide low borrowing rates near prime and lower transaction costs that are especially attractive to smaller municipalities. As mentioned before, schools are not eligible for OSIFA financing.

Quebec

There are three possible sources of finance that could be used for energy efficiency LICs:

1. *Provincial electrical utilities*: Electrical utilities could provide initial financing energy efficiency LIC through existing energy management programs. However, financing would most likely only be provided for buildings using the energy source provided by the utility:
    - Hydro-Québec: Buildings consuming electricity
    - Gaz Métro: Buildings consuming natural gas and oil

2. *Green Municipal Fund*: These funds are administered by FCM, and the *Ministère des affaires municipals, sport et loisirs* (MAMSL) acts as the intermediate body. Municipalities interested in implementing a pilot project for energy efficiency LICs could submit a proposal to the MAMSL.

3. *The creation of a collective municipal fund designed to finance energy efficiency projects in buildings*: Contribution to the fund could be on a voluntary or mandatory basis. The fund should "auto-finance" itself on a cost-recovery basis. For example, a mandatory contribution represented as a 1 percent surtax could be accumulated, up to a maximum limit, in the name of the property owner, which the municipality could immediately use to start financing energy efficiency projects. Existing property owners could start reimbursing their loan, while new owners execute energy efficiency retrofits. Interest accumulated through the fund would be recovered by the property owners, while administrative fees would be paid by those retrofitting their buildings. The 1 percent surtax, mandatory or not, would be tied to the property and made transparent during the sale of a building. This collective fund has the advantage to encourage investments in energy efficiency. However, there could be a lot of resistance to setting up such a fund.

New Brunswick

Any loans that a municipality wants to take out have to be applied for through the Capital Borrowing Board (CBB) that then sets up the loan for the municipality via the New Brunswick Municipal Finance Corporation. No particular sources are best suited for this purpose, but the CBB cannot provide loans for services a municipality is not allowed to provide. An additional issue is that New Brunswick municipalities cannot yet get loans from FCM (they can get grants) because the CBB does not have an arrangement worked out with FCM yet.

Nova Scotia

In general, the cheapest financing would be the best. The source does not matter, but financing should be available at low cost because the improvements are durable and guaranteed by government.

Prince Edward Island

Larger municipalities would not have any problems accessing capital, but it might be more problematic for the smaller municipalities. No specific sources seem better than the others, because each municipality handles its own borrowing.

Q5: Support for a pilot

British Columbia and Alberta

Climate Change Central is still interested in providing support for a pilot in Alberta.

Saskatchewan

The province could co-manage a pilot through the Office of Energy Conservation, but it would need additional provincial and federal funding to do so. It would be very important that the pilot is successful and provides a good model. There would also need to be some assurance that if a full program were implemented, there would be sufficient long-term financing for the upgrades to make it a permanent service. The Office of Energy Conservation has forwarded information on the EE/RE concept to the Green Ribbon Committee in Regina and the Road Map 2020 Group in Saskatoon, as well as representatives of Municipal Affairs. This will appraise them of the concept and encourage cities to consider how such a concept could be implemented within their jurisdictions. It will also help them identify what assistance might be required from provincial and federal agencies to resolve legal concerns, as well as finance pilot and long-term programs.

Manitoba

The province's Energy Development Initiative (EDI) might be able to provide some assistance, but since Manitoba Hydro is now responsible for all the province's energy efficiency programming, it would be the better agency to provide funds for a pilot. It could weave the LIC concept into its Power Smart program. EDI would be able to champion the concept provincially, as it is in the same provincial ministry as Manitoba Hydro and could work with Municipal Affairs to resolve any legal problems with the LIC regulations.

Ontario

The Ontario Ministry might be able to cover some of the costs of a pilot, e.g. training, reporting and workshops. It could not cover the normal LIC transaction costs or actual financing of upgrades, but these should be recovered from the property.

Quebec

L'agence de l'efficacité énergétique (AEE) does not have funds to support municipalities wanting to pilot the energy efficiency LIC concept, but it can provide assistance to determine what type of energy efficiency projects would best suit a municipality and provide technical training of municipal personnel. Also the AEE can help identify and train professionals in the building sector, help raise awareness, advertise the pilot project, and provide assistance to identify financing opportunities and to create links between the municipalities and the potential financier of the project.

New Brunswick

Municipalities should use the FCM Green Municipal Fund as a starting point. Additionally, from the provincial perspective, New Brunswick could also draw upon the Environmental Trust Fund, which is a discretionary fund that can be directed at priorities identified by municipalities.

Nova Scotia

There is interest in exploring the possibility of a pilot. Even though EE/RE LICs do not fit within the existing municipalities regulation, a pilot could be tested without changes in the legislation. If this were the case, the pilot would also be used to explore the challenges of changing the legislation. There are existing programs, discretionary funds and staff time that could be used to support a pilot program.

Prince Edward Island

The department is currently too limited from a financial or personnel perspective to properly support a pilot if it falls outside of what it is currently doing.

Q6: Recommended municipalities for a pilot

British Columbia

The Greater Vancouver Regional District expressed interest in 2004. Kelowna and Quesnel are implementing pilot community energy plans.

Alberta

Edmonton, Medicine Hat and Hinton expressed interest in 2004.

Saskatchewan

Regina and Saskatoon are members of FCM's PCP. Regina has a Green Ribbon Committee working on a GHG-reduction plan and a sustainable cities coordinator. Saskatoon is undertaking a Road Map 2020 project that will address changes needed in the city to reduce GHG emissions. Moose Jaw has an interest in energy efficiency for its facilities and might also be a good candidate because of its smaller size.

Manitoba

Winnipeg has the oldest building stock in western Canada and is also a member of PCP. Brandon, Morden/Winkler and several First Nations communities in northern Manitoba are part of Climate Change Community Challenge (C4) program.

Ontario

Toronto has had a long interest in community energy efficiency and renewable energy including the Better Building Partnership and the Toronto Atmospheric Fund. London/Ottawa/Hamilton and several other municipalities are part of the FCM PCP. The Peel region has an energy efficiency group responsible for upgrading its own buildings

Québec

The following municipalities have an interest in energy efficiency: Québec (part of FCM PCP), Lévy, Baie-Comeau, Laval, Montréal and Gaspé.

Several groupings municipalities have also an interest in energy efficiency; for example the MRC de Charlevoix and MRC de Témiscamingue.

New Brunswick

In particular, the City of Fredericton has made a large effort to investigate energy efficiency issues, and the results of that investigation would be a good starting point for focusing efforts on specific sectors and technologies.

Riverview was recommended because it is one of the few municipalities in New Brunswick to have significant experience with LICs. Also mentioned as possibilities were Bathurst, Moncton, Edmundston and St. John.

Nova Scotia

Halifax Regional Municipality and Cape Breton Regional Municipality.

Prince Edward Island

The following municipalities were suggested: Charlottetown (member of PCP), Summerside (it also runs an electric utility), Stratford (it has been active on CC), Cornwall, St. Elenores and Montague.

Appendix 4: Municipal Views and Interest in a Pilot

The following are the results of some of the interviews with a small number of municipalities in a number of provinces. The municipalities were selected based on recommendations from provincial agencies.

Winnipeg

The City of Winnipeg is governed by the *City of Winnipeg Charter Act*, which allows local improvements on "real property" as well local improvement districts, both of which could be financed through local improvement charges.

According the City's Environmental Coordinator, a potential use of LICs to finance energy efficiency and renewable energy improvements in Winnipeg could be for the upgrading of existing downtown building stock and the financing of the proposed community heat pump loops for the new Waverley West subdivision. The planning process for the latter project is just starting, and the use of LICs for the community loops could be included as part of the project development. The upgrading of downtown stock (the oldest in western Canada), however, could be started immediately on a pilot basis.

The City is just beginning to develop a Climate Change Action Plan, and there may be an opportunity to include innovative approaches such as an EE/RE LIC program under new initiatives in the plan. This would provide an entry point into the political structure for discussion of an LIC pilot. Introducing the concept through the Civic Environmental Committee would also be useful. However, top-down encouragement and support from the Province would be needed to embark on such an innovative process. Another way of raising support and awareness for an EE/RE LIC program would be to hold a short workshop for councilors and staff, including if possible someone who has used the concept e.g. from the City of Whitehorse.

The best selling points for the EE/RE LIC concept would be its ability to provide a long-term method of upgrading downtown commercial and residential building stock. If the LIC were set for a long enough period (10–15 years), the energy savings would effectively pay for both the efficiency upgrade and other structural improvements irrespective of the ownership of the buildings. There is a precedent in Winnipeg for using the property tax system to encourage building improvements. The City currently offers a renovation property tax credit for low-value housing (less than $95,000 assessed value), if the owner invests in improving the property.

It might be convenient to designate an area in which a pilot EE/RE LIC program could be piloted as a local improvement district. This might make design and implementation of the pilot more acceptable to local stakeholders.

The transaction costs of an EE/RE LIC program are, of course, an important element to an municipality. Winnipeg would monitor the operational and staff costs carefully during any pilot.

Ottawa

Discussions held with staff from the Planning and Growth Management, Development Services, and Corporate Services Departments showed that the City of Ottawa is interested in piloting the EE/RE LIC concept as soon as possible. Legal staff believes that if needed the City would appeal the *Municipal Act* to allow the use of LICs for this purpose because it would be a valuable addition to the City's environmental programming.

There has been extensive discussion among the City staff about which type of building would be best suited to the EE/RE LIC concept. For new buildings, it would be best to incorporate the concept into the planning process for new green/brown field developments or subdivisions. The concept would allow developers and contractors to build to higher standards (R-2000, ENERGY STAR®, LEED Gold/Platinum certification) and finance the additional cost through an LIC. It was recognized that long-term owners and developers such as Home Depot of Canada Ltd. would be less interested in this as they could finance most of these improvements themselves.

Existing buildings would be the best targets for piloting an EE/RE LIC program. The program would be available for upgrades that are usually beyond the financial reach of current owners, including ground-source heat pumps, solar water heaters, windows, larger commercial lighting and heating projects. Measures such as furnace upgrades, insulation and weatherstripping, etc., would be better financed through utility DSM programs or Energy For Home grants.

Hydro Ottawa will be developing new DSM programs under the recent agreement between the Ontario Energy Board and utilities to link rate increases to DSM performance. Hydro Ottawa might be interested in using the LIC concept to finance and deliver DSM programs aimed at long payback measures.

The City of Ottawa currently has a low debt load, and therefore could probably provide the financing for a modest EE/RE LIC program. In the long run, it hopes that a provincial or national revolving fund might be available, such as an expanded FCM Green Municipal Fund program.

Regina

The EE/RE LIC concept has been circulated to the City of Regina Legal and Finance Departments for comment and feedback by the City's Sustainable Communities Coordinator who thinks that the concept could have extensive application in Regina for both new and existing buildings and a wide variety of measures.

The City's Green Ribbon Committee made up of city, business and other stakeholders is responsible for recommending measures to reduce GHG emissions and meet the City's GHG-reduction goals under the FCM PCP program. This committee has residential and industrial/commercial/institutional (ICI) subcommittees and would be the obvious vehicle to introduce the LIC concept. The ICI subcommittee is currently addressing new options such as credit union loans for small businesses and performance contracting for larger facilities. The LIC concept targets the same measures as performance contracting but is preferable for owners who might sell in less than five years because of the association of the cost with the property.

The best target for an LIC pilot might therefore be existing ICI buildings. On the residential side, single measures such as solar water heaters and ground-source heat pumps might be candidates because a system where each home had a different set of upgrades might be expensive to administer.

The City of Regina's Legal Department understands that the *Local Improvements Act* and *The Cities Act* in Saskatchewan both appear to allow for the possibility of accessing a tax to aid in the financing of environmental retrofits to buildings. However, neither Act is clear on the issue as neither was drafted with the financing of private buildings in mind. There is also hesitancy from the City's Finance Department to consider implementing an EE/RE LIC program as there will be a number of administrative challenges associated with such a program.

Moving forward on a pilot in Regina would therefore need some top-down assurance from the Province that any legal or other barrier to the use of LICs would be resolved, and some of the training or other costs associated with mounting a pilot might be met by the provincial or federal governments.

Hinton

During the 2004 study on the EE/RE concept in western Canada, the City of Hinton, Alberta, expressed a real interest in piloting the LIC concept. There is a need for some top-down encouragement to test the concept and the legality of doing so from Climate Change Central and the provincial government.

Québec City

a) Taxes de secteur:

According to Article 487 in the *Cities and Towns Act*, "the council may impose the special tax for the payment of municipal works of any kind, including works of maintenance, according to either the municipal evaluation or the area or the frontage of the taxable property subject to such tax." Special taxes, commonly referred to as "*taxes de secteur*," are generally imposed on property owners who benefit from improvements made to municipal infrastructure (e.g. sewers and roads) in their area. The *Service des affaires juridiques* has, however, indicated that the installation of new equipment to

improve the energy efficiency in buildings does not fall under the municipal government's mandate and therefore cannot be considered as "municipal work."

b) Taxes d'amélioration locale:

Taxes d'amélioration locale or LICs, differ from the *taxes de secteur* in that they could be used to finance work that is not deemed "municipal work." Under this circumstance, energy efficiency improvement projects could qualify under an LIC. However, LICs are not commonly used in the province of Quebec and have not been established under provincial law.

Before the recent amalgamation of Québec City, the City's charter contained a clause that enabled it to use LICs. This clause, however, no longer exists under the newly reconstituted charter of Québec City. However, the new charter could be amended upon request.

The LIC concept could be an effective tool in removing financing barriers for energy efficiency improvements in buildings and used towards meeting Québec City's objective under the FCM PCP program. However, this concept must be approved by the provincial government and the Council of Québec City.

The LIC concept would be more suitable for new buildings, as the cost associated with the installation of new energy-efficient technologies in new buildings is less than the cost of installing new energy-efficient technologies in existing buildings. Specific technologies, however, could be installed in existing commercial and industrial buildings, such as temperature and operation (lighting and ventilation) "self-regulating" control systems. These systems have been previously tested in existing municipal buildings of the City of Québec and have successfully reduced energy consumption.

The City Council would need to define criteria for the eligibility of different energy efficiency technologies with respect to different building categories (industrial, commercial or residential; existing versus new).

The report adequately covers the necessary steps needed to implement the LIC concept for energy efficiency improvements in new buildings but needs to further define the necessary steps required to apply the concept to existing building retrofits.

The best source of financing for energy efficiency LICs would be to create a partnership fund with the federal, provincial and municipal governments, Gaz Métro, Hydro-Québec, the FCM and other private companies. Although the FCM Green Municipal Fund could be used to finance such projects, the approval procedure and grants provided through FCM programs generally have a long delay period.

The City of Québec already provides subsidies to developers who build social housing. Part of these subsidies could be used to finance energy efficiency improvements, which would enable the building owner to save energy and money.

The City of Québec would be willing to share the cost of piloting the energy efficiency LIC concept within its community through a partnership fund, described above. However, the use of LIC to finance energy efficiency improvement in buildings would first need to be approved by the provincial government and the Executive Committee of Québec City.

Chelsea

Although the municipality of Chelsea has previously used LICs to finance work on its sewage system, it is not clear whether the use of LICs to finance energy efficiency improvement in buildings is legal under the Municipal Code of Québec. It will, therefore, first be important to identify whether energy efficiency improvements in buildings could be undertaken as a local improvement under the Code [article 979] and determine if such project are eligible to receive municipal loans provided by the province of Quebec under the "*règlement d'emprunt*" (loan regulation).[19]

The Director of Technical Services, Alain Bourgeois, and the Director of Financial Services, René Gauvreau, at the Municipality of Chelsea are very interested in the LIC concept and agree that it could be an effective tool in removing financing barriers for energy efficiency improvements in buildings and towards meeting the municipality's objective under the Federation of Canadian Municipalities' Climate Protection Program. By reducing the high up-front capital cost of major energy efficiency improvements and tying the payments of these improvements to the physical property rather than the building owner, the LIC concept provides an incentive for homeowners to invest in higher energy efficiency performing technologies that would otherwise have long paybacks. However, prior to applying the LIC concept to energy efficiency improvements in buildings, municipal governments would first need the provincial government's approval that LICs may be used to finance such projects under current legislation.

The LIC concept would be suitable for all types of buildings. However, in Chelsea, there are many heritage buildings, some over 100 years old. These are mostly residential and small commercial buildings and are predominantly single units. The energy efficiency levels of these older buildings are generally low and therefore could be improved through the use of LICs.

There are no longer extensive areas of undeveloped land in Chelsea for subdivision and construction. However, for the remaining undeveloped areas, the municipality requires building developers to submit a General Development Plan (GDP) to ensure that all new building development is environmentally sustainable. GDPs submitted to Chelsea's Technical Services for approval must meet a set of criteria, including an environmental impact study and a description of impact on other users and on the environment. In the future, energy efficiency improvements could be included in the process.

[19] www.mamr.gouv.qc.ca/finances/fina_fina_appr_regl.htm

For existing buildings, the LICs concept would be more suitable to finance specific technologies in order to customize energy efficiency improvements for each individual building. The Municipal Council would need to identify eligible energy efficiency products and set minimum and maximum cost limits for improvements. In the case of new buildings, combined upgrade packages would be more practical and more easily implemented by building contractors. The package could include larger energy improvements, such as geothermal heating systems. Solar heaters would, however, not be appropriate as the Municipality of Chelsea has a bylaw prohibiting builders from cutting more than 10 percent of trees on the property.

The report seems to adequately cover the necessary steps need to implement the LIC approach to energy efficiency improvement in buildings. The main challenge that small municipalities like Chelsea could face in the event of implementing such a program is the additional administrative work involved. Human resources and technical skills in the field of energy efficiency improvements in buildings are also limited, and any increase in administrative and managerial work would require additional help and financing.

The FCM Green Municipal Fund is the most obvious source of financing for energy efficiency LICs, particularly in the event of a pilot project. A second option would be for the municipality to request a loan from the provincial government. As previously mentioned, however, it will be necessary to first determine whether the "*règlement d'emprunt*" allows municipalities to use their loan to finance energy efficiency improvements in buildings. The municipality would welcome financing opportunities from Hydro-Québec.

The municipality of Chelsea would be willing to share with the Province the cost of piloting the energy efficiency LIC concept within its community. However, the municipal council would first need to discuss and study this option, obtain approval by the provincial government, consult the population and vote on the issue. The municipality's next budget is expected to be tabled in November 2005.

Fredericton

The city has a comparable program that covers the cost of storm water systems for new developments whereby the developers/owners pay them back after the properties are developed. This program is in place because the costs of water and sewer are sometimes too high for developers, but the city wants the areas developed. The contracts vary depending on the specific arrangements, and Fredericton is debt free, so it has not needed to approach the Province at all for additional financing. The fact that the energy efficiency model would involve improvements on private property does not raise any specific concerns

The EE/RE LIC would be an effective mechanism, but there would be political concern with anything that could be perceived to raise the costs of homes. There is a significant problem with sprawl, with 7 out of 10 new homes being built just outside city

boundaries. The fact the program would be voluntary would help with this issue, but it would not eliminate the problems of perception entirely.

The City ran a building retrofit program for its own buildings about five years ago, and based on the results, there is likely a lot of additional potential for existing buildings (both commercial and residential). There would not be as much potential for new buildings, because many new residential developments are already going in as R-2000/E80 because of increasing energy prices. As far as technology goes, all the ones highlighted in the concept study would be applicable in Fredericton.

A major concern with the existing buildings would be ensuring that qualified personnel are available to do the work. The City certainly has the people with the skills for new buildings, but not necessarily for existing ones; for example, there is no one in Fredericton certified to do EnerGuide audits and there are significant waiting lists to get someone in from Moncton to do them.

There is also interest in using the EE/RE LIC concept in a new subdivision. There are some fairly progressive developers who are looking for ways to market new housing (e.g. smart housing with built-in wireless connectivity), and they might be amenable to this idea.

In general, the steps outlined in the sample program make sense and the overall program could be integrated well with the city's climate change program. It would be very important to get the developers and contractors on board because they could potentially be some of the programs best advertisers, especially if they stood to benefit by having some of the up-front capital costs of development covered before the developments had been sold.

Although Fredericton is in a sound position financially and could raise or borrow the money if it wanted to run the program, the availability of funds (or even the flexibility to borrow) would be quite limited for many communities in New Brunswick. The City had some success with FCM green funds and although somewhat limited, Environmental Trust funds from the province are also available.

There should be strong federal support to make the EE/RE LIC concept work. Municipalities are the best delivery agents, but in most cases they would need to be backed by start-up funds to get the program off the ground. Clear federal support will also make this a much easier sell to the public, because currently climate change is not high on the priority list (at least in terms of allocating dollars) even though the municipalities are members of PCP. Selling the program becomes much easier if the funding comes from a dedicated loan rather than having to sacrifice other priorities.

Halifax

The municipality is interested in potentially helping with a pilot project and has a number of sustainability initiatives underway that this could fit well with. Examples include preparing a green purchasing policy, exploring renewable electricity opportunities, a land-fill gas project, being a member of PCP, and developing a community energy plan. Because the majority of the City's electricity is supplied by coal-fired generation, improving building efficiency represents its biggest opportunity to address climate change concerns.

Although the concept is not allowed by existing legislation, the City has a good relationship with the Province and is typically allowed to take on new initiatives when it asks. This viewpoint corresponds with Provincial responses.

In general, City staff thinks that the EE/RE concept would be effective at removing financial barriers, but the program would need to be designed carefully to target the right types of improvements and cover the administrative costs. Targeted improvements would have to be for assets that are fixed to properties and long-term investments. The overall cost of the improvements would also have to be large to justify the administrative costs. For the City, an initial estimate of minimum project size to justify it would be $1 million. This is not to say that it would not work for smaller projects, but the City is interested in targeting the big wins first. The size requirement could also be defined in terms of the number of people affected, or the anticipated GHG reductions.

In terms of commercial versus residential applications, either of these would be applicable so long as the project is large enough. The City has a couple of large sub-division projects starting along with a large "big-box" commercial development that could all be potential pilots. In terms of new versus existing applications, the concept would be more applicable to new buildings because it would be easier to find large/bundled projects and there was also a concern that targeting existing buildings would be overlapping with an already established EMSC market. An exception for existing buildings would be for a project that involves multiple buildings such as district energy systems, where the capital costs would be significant and unlikely to be taken on as a private project. Halifax is currently looking at district heating for the peninsula, and it has an application into round two of Opportunities Envelope for this work.

Municipal loans and revolving funds would be good financing options, and climate change focused funds/loans such as the Opportunities Envelope or forthcoming partnership fund would also be applicable. FCM was considered less useful because there is so much competition for funding, the application process is too onerous, and the bulk will likely go to sewer and water projects.