

Request for a Review of Local Improvement Charges and Related Regulations and Legislation

Prepared by: Bill Johnston, Peter Love, David McRobert & Sonja Persram, January 11, 2012

Purposes:

1. Pursuant to Section 61 of the Environmental Bill of Rights, the Applicants request a review of the regulation under the EBR that prescribes acts in relation to the Municipal Act 2001, the City of Toronto Act 2006, and the Assessment Act. The Ministry of Finance (MOF) also needs to be prescribed under O. Reg. 73/94 of the Environmental Bill of Rights because MOF administers the Assessment Act.
2. We are also seeking review of existing policies, or the need for a new policy under MMAH relating to the uses of Local Improvement Charges to enable their use for energy improvements on private properties, in particular, single family dwellings

Description of Relevant Acts, Policies and Related Instruments:

The undersigned contend that a number of instruments relating to the uses of the Local Improvement Charges municipal financing mechanism warrant review for consideration of revisions to existing policies, amendments to existing legislation, regulations and/or supporting technical guidelines to provide for more effective implementation of this financing mechanism.

Although the primary laws, regulations, policies and instruments relevant to this submission are administered by the Ministry of Municipal Affairs and Housing, related laws, regulations, policies and instruments administered by the Ministry of Finance also need to be considered, and this would require prescription of the Ministry of Finance under the Environmental Bill of Rights.

Additionally, parts of the Municipal Act, 2001 will have to be prescribed as being subject to the EBR. Given this inclusion, the Ministry of Municipal Affairs and Housing may also want the City of Toronto Act, 2006 to be similarly prescribed; and the Ministry of Energy and the Ministry of the Environment may be tangentially involved. We recommend that a multi-ministry task group be established to explore the details of the required changes and consult with affected stakeholders and the public.

Accordingly, the laws, regulations, policies and instruments that may be affected under this review would include those related to:

The Municipal Act, 2001
The City of Toronto Act, 2006
The Assessment Act

The request may apply to each statute or regulation individually or collectively to address identified deficiencies in the current implementation.

We believe that the Ministries should undertake this review to amend the uses of Local Improvement Charges because:

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Local Improvement Charges are a key method by which municipalities – and the provincial government – could leverage substantial public benefit by facilitating the financing of energy retrofits. Using a simplified, amended instrument, municipal governments could – at zero net cost – contribute to achieving their targets for reductions in energy use and greenhouse gas emissions while enhancing the local economy. Since they will be required to set targets (if not already in place) and develop plans for achieving them, having this mechanism would be an enabling factor. Given anticipated value differentiation for green and energy efficient homes and buildings over conventional ones, municipalities could also protect their property tax base as well as homeowners' property values and vulnerability to rising and volatile energy prices. This initiative would also benefit current and future generations by protecting the environment and reducing energy use and greenhouse gas emissions on a mass scale.

The province could obtain savings in energy infrastructure, environmental remediation, as well as via reduced unemployment and health care costs (see the Canadian Medical Association's *No Breathing Room: National Illness Costs of Air Pollution*, 2008, and the three reports noted on the following page). The Consolidated Revenue Fund also could benefit from increased income tax revenues arising from the economic stimulus. All of the above would comprise public benefits.

These amendments represent an opportunity to address significant budgetary and strategic challenges given:

- municipalities are now required to set targets and develop plans for achieving reductions in energy use and greenhouse gas emissions
- there is an urgent need for an economic stimulus
- The recent federal government announcement regarding future reductions in health care transfers to provinces is an opportunity to mitigate the impacts on health care costs of non-green energy sources. The result would be less reliance on non-green energy sources because of enhanced energy efficiency.

We believe that there are significant policy, legislative, regulatory and technical support deficiencies that currently limit the ability of municipalities to facilitate local improvements on a cost-neutral (or slightly revenue-positive) basis.

The Municipal Act, 2001 undergoes periodic amendments, however the urgency of the current situation requires that the deficiencies of the Act be addressed immediately.

The undersigned and several supporting organizations believe that (at a minimum), regulations and policies under the Municipal Act, 2001 need to be reviewed and enhanced so that municipalities are assured that they have the authority and the appropriate instrument to facilitate key local improvements for public benefit.

The Municipal Statute Law Amendment Act, 2006 enables municipalities via their broader powers to utilize the appropriate mechanisms for delivering municipal services to their communities. As a result it may be considered that the list of LIC work in the Municipal Act, 2001 (O. Reg. 586/06 (2)) and the City of Toronto Act, 2006 (O. Reg. 596/06, s. 1 (2)) is not

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limiting – and energy improvements on private properties may be authorized. However, municipalities are concerned about this interpretation and request that these additional uses of LICs be specified. Further, the allocation of LIC costs and the method by which they are set up are too complex and time-consuming to enable LICs' use for this purpose. At present, only approximately 25% of municipalities utilize LICs; several have noted this is because LICs are onerous to set up.

The arguments and underlying rationales for our proposed reforms stem in major part from three 2011 reports conducted for the David Suzuki Foundation in a project funded by the Ontario Trillium Foundation. These reports together provided an analysis of the barriers to energy retrofits, a comparison of LICs and other financing mechanisms regarding their appropriateness in funding energy improvements on private properties, rationales for municipal engagement in this activity, the roles of higher level governments and other stakeholders, regulatory changes that would be required, and strategic implementation recommendations for an optimal program. This use of LICs is called *Property Assessed Payments for Energy Retrofits*, or "PAPER."

Additional prior and subsequent Canadian and US validation for the PAPER concept is also noted in the support material.

Canadian authorization of LICs for this purpose originated in Yukon Territory, and was enabled recently for Halifax Regional Municipality via the province of Nova Scotia's charter change. The City of Windsor recently passed a resolution requesting regulatory change in support of a PAPER program.

In a Property Assessed Payments for Energy Retrofits program, municipalities would be able to utilize LICs to facilitate energy retrofit programs at a net zero program cost. They would assess energy retrofit financing costs plus program administrative expenses against the benefiting private properties whose owners opt-in to the energy retrofits program. Like LICs, repayments would be on the property tax bill, with recourse being that any defaulted payments would be subject to encumbrance via a priority lien. The goal would be to structure the measures financed to be based on optimal energy savings via recommendations from energy evaluations, and so that the savings exceed investments. The priority lien provides a measure of security for investors enabling lower interest rates.

Another useful mechanism in use and in development elsewhere in Canada is utility-based on-bill financing – described in the second, financing report. This mechanism could potentially harmonize with an LIC program, but as of June 2011, major Ontario gas and hydro utilities had not been considering implementing on-bill financing. Furthermore, in Ontario, utility on-bill financing of energy retrofits would be complicated by the multiple LDCs and gas utilities. And, according to BC's Ministry of Energy, Mines and Responsible for Housing, their new Pay As You Save program providing on-bill, utility financing apparently does not preclude developing a dovetailed Local Improvement Charges program.

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We believe that the Ministries should undertake this review to protect municipalities' rights to facilitate energy retrofit financing and enhance residents' quality of life because it addresses the following barriers:

- People often plan to move before they believe they will recoup their investment in energy improvements. This mitigates the business case for homeowner investment in costly energy improvements that would reduce energy use and greenhouse gas emissions.
PAPER would allow any financing balance to be continued to be repaid by a new owner on sale of the property.
- Low interest loans need to be available on an equitable basis, particularly in the current scenario of rising and volatile energy prices. However, the private sector tends to provide lower interest rates to people with higher income levels.
Having security would enable banks to finance municipalities in a PAPER program at lower interest rates, which would be passed on to the owners.
- Owners may have competing uses for their available cash or financing, and may not want to add to their debt load.
LICs (and PAPER) would provide dedicated financing that is not reflected on owners' personal debt totals since it is associated with the property. This was a major benefit in the US Long Island Green Homes initiative.
- Private sector lenders are not focused on optimizing energy savings per dollar spent, but on the ability to repay. Owners have knowledge gaps about the kinds of measures that would result in optimal energy savings, and tend to focus on (for example) window replacements – which have a long payback period. On a mass scale, money spent on such retrofits would not leverage optimal reductions in energy use and GHG emissions to help achieve municipalities' – and provincial – targets.
In a PAPER program, municipalities would have control over the measures financed and therefore over the attainment of targets. The focus would be on financing (non-portable) energy efficiency measures that would result in net savings on homeowners' energy bills from the first year.
- Private sector (or most utility-based) financing allows a maximum five year term – and therefore, predictability of interest rate. This makes it less affordable for homeowners for whom the payments would exceed energy bill savings. Market research conducted in 2010 for the City of Toronto on this mechanism found that 82 per cent of homeowners financed their energy retrofits with cash or savings. Of homeowners who conducted energy improvements in the previous 5 years, about one-half had spent \$5,000 or less. And, of homeowners who did not do all of the energy improvements recommended from an energy assessment, 66 per cent (57 per cent of all homeowners) had found them too expensive. Affordability and available financing also limits the level of energy savings and GHG emission reductions that could be achieved with the energy improvements.
A PAPER program would allow for longer financing periods (e.g. 10-20 years) at a fixed interest rate, as this is a feature of LICs. It also would allow closer matching of the financing term with the useful life of the asset. Mortgage re-financing could fold in energy retrofit financing however the interest rate is not predictable beyond a 5-year duration and this makes payback difficult to calculate. Moreover, LIC-based financing, with the added security afforded by

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the priority lien in case of default, allows investors to finance municipalities at much lower interest rates, which would be passed on to homeowners. 42 per cent of homeowners in the City of Toronto's market research said they would be interested in purchasing an energy efficient home with an outstanding energy efficiency loan, lower monthly bills and higher resale value.

- Non-turnkey programs require homeowners to hire and oversee workers and work, for which they may not feel sufficiently experienced or knowledgeable.

A municipally-facilitated PAPER program could allow turnkey, neighbourhood-scale retrofits, and provide a level of quality assurance which could result in as much as 30 per cent cost savings arising from economies of scale compared to other programs. These savings would be shared between the municipality and the homeowner.

As well, when municipalities obtain financing for LICs via general obligation bonds these funds are adjusted from municipal debt totals due to the income stream.

Since most of the research has been related to single family dwellings, and the institutional, commercial and industrial as well as multi-unit residential building sectors have different characteristics, requirements and challenges, we are requesting a three-phase approach in order to:

1. Implement regulatory change for Local Improvement Charges to enable LICs to be used for energy retrofits on single-family residential properties immediately by municipalities (all tiers)
2. Regulate to allow LICs (or another financing mechanism with a priority lien) to be used for energy retrofits in other sectors. This would require time to conduct research to:
 - a. Assess the applicability of this mechanism for and confirm optimal changes needed regarding energy retrofits to the small business, multi-unit residential building and commercial/industrial sectors.
 - b. Ascertain the applicability of this mechanism for financing municipal infrastructure energy improvements in municipally-owned homes and buildings that are rented, and determine what changes would be needed for these purposes. Since municipal owner-occupied properties would not be subject to rent or payments in lieu of taxes, it may be appropriate to determine the suitability of the mechanism in this separate case as well.
 - c. Ascertain the applicability of this mechanism for financing institutional infrastructure energy improvements. [Some properties make payments in lieu of taxes which are current-value assessment based. Others like universities and hospitals make "heads and beds" payments (based on enrollments and the number of available beds respectively).]
 - d. Ascertain the applicability of this mechanism for district energy systems.
3. Create the opportunity for developing a province-wide PAPER program for one or more sectors.

Items 1, 2 a) and 3 would mirror the introduction of regulatory / legislative changes in other jurisdictions, such as the State of California. (In some California programs, both homes and commercial properties could participate. In the case of Berkeley, the program was offered to

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both but taken up only by homeowners. The Long Island Green Homes initiative served only homes.)

Actions needed

Part one of this regulatory change request is described in detail below.

Upon enabling regulatory change, Property Assessed Payments for Energy Retrofits could be established for homes as follows:

- 1) Clear authority would be given to municipalities to utilize Local Improvement Charges to finance energy retrofits on private, single family residential properties. This could be clarified within the Municipal Act, 2001, *O.Reg 586/06, 1. (2) Definitions of work and in 2. Scope of local improvement*, and similarly for the City of Toronto Act, 2006, *O. Reg. 596/06*.
- 2) The cost allocation method would not be based on frontage, but include labour and materials retrofit costs, plus related expenses such as permits, evaluations and appraisal fees, as well as pro-rated municipal administration costs to participating homeowners only. Non-participating homeowners would not be required to cover program costs.
- 3) Make the set-up process simple, and opt-in. Currently, the LIC process is complex and onerous, and can take up to one or two years. Primarily, this current complexity exists in large part since LICs can be mandatory on two-thirds vote. Process simplification could include multiple properties being encompassed within a single by-law, and amended within *O.Reg 586/06, 5. Local improvement charges by-law, 6. Notice of local improvement charges by-law; and sections 7-10 which pertain to petitions and an application to the Ontario Municipal Board; also, sections 19-21 and 22-30 under the Procedure for Imposing Special Charges*. Similarly for *O. Reg. 596/06*.
- 4) Recognize the public benefit of the private property energy improvements as described above. *PAPER-like* programs in the US were criticized on the grounds that the municipal programs' activities on private property were not deemed a public benefit – despite the resulting energy savings and greenhouse gas emission reductions. This could be included within the definition of work, *O.Reg 586/06, s.1. (2)* and *O. Reg. 596/06, s. 1 (2)*
- 5) On sale of the property, like LICs, allow any *PAPER* financing balance to remain with the property to continue being repaid – and benefitted from – by the new owner
- 6) Like an LIC in Ontario, at the initiation of financing there would be no encumbrance of the financed amount on the property. In case of default, only outstanding payments would be subject to a priority lien. *PAPER* financing would not be subject to a title lien. *O.Reg. 586/06, s. 33. (1)* and *O. Reg. 596/06, s. 33 (1)*. Having clear legislative and regulatory authority regarding this provision is vital, as in the State of California, two differing opinions exist between credible entities (Lawrence Berkeley National Labs for the US Department of Energy, and the Clinton Climate Initiative) regarding interpretation of the state legislation. LBNL/DOE's interpretation is as above. CCI's interpretation is that all of the financing must be subject to a priority lien up front, and not only defaulted payments. (The prevailing opinion is in favour of the outstanding payments only being subject to the priority lien).
- 7) Continuing *O. Reg 403/02* for *PAPER* in order to allow a municipality's general obligation bonds that are issued to finance LICs, to be adjusted from the municipality's debt totals.
- 8) An upper-tier municipality may facilitate a single *PAPER* program for multiple lower-tier municipalities within its jurisdiction.

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The following is not currently an authorized activity for municipalities in regards to LICs, however municipalities would find it useful if they were enabled via:

- 10) Authority to sell LIC financing to banks. This would enable a revolving fund to be developed. *This would be a new provision.*
- 11) Loan loss reserves based on expected program default rates. A proxy for default rates could either be the mortgage default rate or the property tax default rate. *This would be a new provision.*

The Municipal Act, 2001 may also have to be amended because section 394 stipulates as follows:

Restriction, fees and charges

394. (1) No fee or charge by-law shall impose a fee or charge that is based on, is in respect of or is computed by reference to,

(a) the income of a person, however it is earned or received, except that a municipality or local board may exempt, in whole or in part, any class of persons from all or part of a fee or charge on the basis of inability to pay; and,

(e) the generation, exploitation, extraction, harvesting, processing, renewal or transportation of natural resources. 2001, c. 25, s. 394 (1); 2006, c. 32, Sched. A, s. 166.

For example, use of passive/active solar or passive ventilation measures may be precluded by subsection 1 (e) above. Note also that eligibility for typical LIC financing (and, PAPER) does not include taking a credit check, as this would involve assessment based on income – a violation of subsection 1 (a). This is a social justice feature of Property Assessed Clean Energy legislation (similar to PAPER) in the US. Risks of not taking credit checks would be mitigated by stringent eligibility criteria to select for fiscally responsible homeowners. The corresponding sections of the City of Toronto Act, 2006 are: c. 11, Sched. A, s. 261 (1); 2006, c. 32, Sched. B, s. 54.

Value

There is an anticipated value differential between energy efficient and green homes and buildings with conventional energy systems due to new appraisal guidelines introduced by the US Appraisal Institute and we expect an eventual impact on Canadian appraisals in the future. Consequently, as value impacts property taxes, homeowners looking ahead may find challenges to today's business case for home energy retrofits. This concern could be addressed by also amending aspects of the Assessment Act.

Currently there is wording within the act which allows the Minister of Finance to prescribe regulations – (which has not yet taken place) – that give a property owner a tax exemption for machinery and equipment used for energy efficiency and conservation.

3. (1) All real property in Ontario is liable to assessment and taxation, subject to the following exemptions from taxation:

Machinery

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*17. All machinery and equipment used for **manufacturing or farming purposes** or for the purposes of a concentrator or smelter of ore or metals, including the foundations on which they rest, but not including machinery and equipment to the extent that it is used, intended or required for lighting, heating or other building purposes or machinery owned, operated or used by a transportation system or by a person having the right, authority or permission to construct, maintain or operate within Ontario in, under, above, on or through any highway, lane or other public communication, public place or public water, any structure or other thing, for the purposes of a bridge or transportation system, **or for the purpose of conducting steam, heat, water, gas, oil, electricity or any property, substance or product capable of transportation, transmission or conveyance for the supply of water, light, heat, power or other service.***

Machinery for producing electric power

18. All machinery and equipment including the foundations on which they rest to the extent and in the proportion used for producing electric power but not including any buildings, structures, structural facilities or fixtures used in connection therewith.

Machinery for energy conservation

18.1 Machinery and equipment used for the purposes of energy conservation or efficiency and prescribed by the Minister for the purposes of this paragraph.

Continued exemption re renewable energy sources

(8) If machinery or equipment used to produce electricity from a renewable energy source prescribed by the Minister is installed on land that would otherwise be exempt from taxation under this or any other Act, the land remains exempt from taxation in circumstances prescribed by the Minister. 2011, c. 9, Sched. 3, s. 1 (2).

There are several possibilities here. At this point, only energy efficiency measures will be addressed, but the arguments should also be considered for renewable energy:

1. property tax abatement could be applied on incremental value from energy efficiency measures
 - a) Machinery and equipment for energy conservation could be prescribed by the Minister.
 - b) If this occurs, it would be recommended that insulation and passive solar/ventilation measures would be also exempt, given their significant conservation potential.

However, municipalities with tight budgets may be concerned about opportunity cost, particularly without an end date. A solution could be having an end date equal to the financing end date, or (for example) 10 years.

Alternatively:

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2. Equivalent income tax credits could be provided for homes with an enhanced energy rating*

*This tax credit could be similar to the successful federal Home Renovation Tax Credit and the provincial Tax credit for NovoClimat-certified new homes in Québec.

Conclusion

The above information supports the Applicants' request for review of existing policies, legislation, regulation and/or technical guidance relating to the uses of Local Improvement Charges pursuant to Section 61 of the Environmental Bill of Rights, to enable their use for energy improvements on private properties, in particular, single family dwellings.

Support Material

Charter change:

Province of Nova Scotia, *Bill No. 112 as passed*, regarding the Halifax Regional Municipality: http://nslegislature.ca/legc/bills/61st_2nd/3rd_read/b112.htm

Resolution:

The City of Windsor, *Council Minutes, October 17, 2011*, <http://www.citywindsor.ca/displaydoc.asp?i=1200>

US legislation:

DSIRE (Database for State Incentives for Renewable Energy – contains incentives at all government levels, for both energy efficiency and renewables): www.dsireusa.org

Reports and other resources:

Persram, Sonja, *Property-Assessed Payments for Energy Retrofits: Recommendations for Regulatory Change and Optimal Program Features*, David Suzuki Foundation, 2011. http://www.sustainable-alternatives.ca/PAPER_Persram_for_DSF.pdf

Persram, Sonja, *Property-Assessed Payments for Energy Retrofits and Other Financing Options*, David Suzuki Foundation, 2011. http://www.sustainable-alternatives.ca/PAPER_plus_other_financing_options_-_Persram_for_DSF.pdf

Persram, Sonja, *Strategic Recommendations for an Optimal PAPER Program*, David Suzuki Foundation, 2011. http://www.sustainable-alternatives.ca/Strategic_recommendations_for_an_optimal_PAPER_program.pdf

Duffy, Robert and Fussell, Heather, *This Green House: Building Fast Action for Climate Change and Green Jobs*, Columbia Institute, May 2011. http://www.civicgovernance.ca/sites/default/files/publications/This%20Green%20House_Report.pdf

Fuller, Merrian, *Enabling Investments in Energy Efficiency: A study of energy efficiency programs that reduce first-cost barriers in the residential sector*, Energy & Resources Group,

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UC Berkeley, prepared for California Institute for Energy and Environment, May 21, 2009
<http://wpui.wisc.edu/files/webcontent/reports/Residential%20Financing%20White%20Paper.pdf>

Home Performance Resource Center, *Best Practices for Residential Energy Retrofit Program Design: Financing Incentives and Recommendations*, March 2010
http://www.hprcenter.org/sites/default/files/ec_pro/hprcenter/best_practices_financing_and_incentives.pdf

LaScelles, Eric, (TD Securities' Chief Canada Macro Strategist at time of writing), *Canadian Mortgage Market Primer*, June 17, 2010
<http://www.td.com/document/PDF/economics/special/td-economics-special-el0610-cdn-mort-market-di.pdf>

Morrison Park Advisors, *Tower Renewal Financing Options Report*, May 2010,
http://www.toronto.ca/city_manager/pdf/tr_financing_options_report.pdf

Natural Resources Defense Council, PACE Now, Renewable Funding, LLC and The Vote Solar Initiative, *Property Assessed Clean Energy (PACE) Programs White Paper: helping achieve environmental sustainability and energy independence, improving homeowner cash flow and credit profile, protecting mortgage lenders, and creating jobs*, May 2010,
<http://www.renewfund.com/resources/resources>

Peters, Roger; Horne, Matt; and Heap, Nicholas, *Using Local Improvement Charges to Finance Building Energy Efficiency Improvements: A Concept Report*, Pembina Institute, May 1, 2004,
<http://www.pembina.org/pub/170>

Peters, Roger; Whitmore, Johanne; and Horne, Matt: *Using Local Improvement Charges to Finance Energy Efficiency Improvements: Applicability Across Canada*, Pembina Institute, June 1, 2005
<http://www.pembina.org/pub/197>

Toronto Real Estate Board, *Letter of Support Re: Property Attached Payments for Energy Retrofits (PAPER) Financing Program*, March 25, 2011

U.S. Department of Energy, *Guidelines for PACE Financing Programs*, May 7, 2010:
http://www1.eere.energy.gov/wip/pdfs/arra_guidelines_for_pilot_pace_programs.pdf

Long Island Green Homes www.ligreenhomes.com

PACENOW www.pacenow.org

Appraisal Institute (US), *Residential Green and Energy Efficient Addendum*, guidelines for appraising green and energy efficient homes, 2011
http://www.appraisalinstitute.org/education/downloads/AI_82003_ReslGreenEnergyEffAddendum.pdf

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Allen, G.; Persram, S.; Kani, M.; and Lester, S., Assessment of North American Property-Attached and Other Financing Programs For Low-Rise Residential Energy Retrofits, Final Report Prepared for the City of Toronto, Toronto Environment Office, December 2010

Baser, Bob, Le Pan, Nick and Peters, Roger, *Pay As You Save Loans (PAYSL): A call for leadership and good policy*, 27 September 2010, Ecology Ottawa
http://www.ecologyottawa.ca/publications/index.php?WEBYEP_DI=1

Market and health-based research

Canadian Medical Association, *No Breathing Room: National Illness Costs of Air Pollution*, 2008, http://www.cma.ca/index.php/ci_id/86830/la_id/1.htm

City of Toronto Home Energy Financing Survey, Ipsos Reid, 2010 (full disclosure: with assistance from Sustainable Alternatives Consulting Inc. for survey development and results analysis)

Ipsos Reid Public Affairs, Green Home Improvement Program Qualitative Research Final Report, February 2009 for Climate Change Central

Sandhu, Parminder and Willis, Paul (Willis Environmental Services Ltd.) and Wang, Kitty, Mims, Natalie, and Bell, Mathius (Rocky Mountain Institute), Opportunity Assessment of Strategies to Increase Private Sector Investment in Energy Efficiency, August 2009, prepared for BC Hydro <http://www.mendeley.com/research/opportunity-assessment-strategies-increase-private-sector-investment-energy-efficiency-prepared-bc-hydro/>

SES Research (Ottawa), Municipal Enviro-Loans for Energy Efficiency and Alternative Energy Study, for the City of Ottawa, June 2007