



Final Report  
Local Improvement Charges for  
Commercial and Industrial Buildings in Ontario

Sustainable Buildings Canada  
In association with  
Sustainable Alternatives Consulting Inc.

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## 1.0 INTRODUCTION

The project to implement the use of Local Improvement Charges in Commercial and Industrial Buildings (LIC for CI) has ascertained that LICs can be used for all types of buildings<sup>1</sup> and can address Ontario climate change mitigation as well as adaptation. Stakeholders agree that LICs have considerable potential to help public and private sectors collaborate to achieve federal, provincial and local targets for reductions in energy use and GHG emissions, while enabling a significant local economic stimulus.

As of October 2012, the LIC financing mechanism authorized by the province<sup>2</sup> permits municipalities to provide long term, low cost up-front financing for energy and water efficiency retrofits on private property. Program costs for administration, interest and marketing are recoverable from participating owners.

LICs for business have the potential to change the investment perspective for energy and water efficiency retrofits and climate change adaptation and mitigation from a short term to a longer term perspective. Using LIC financing provided by a municipality at advantageous borrowing rates and terms<sup>3</sup>, the business does not feel a need to pay off the loan quickly because it is made against the property and not the business, the debt is not carried on the corporate balance sheet, and in the event of a property sale, the repayment is carried over to the new landowner on the same terms and with the same power to enforce repayment as for any municipal tax. Provided the annual repayments are less than the operating cost savings and those payments will end before the measures need to be replaced, a new owner would readily accept the continuation of the payments while benefitting from the measures.

The rationale for this regulatory change was provided in a report published by the David Suzuki Foundation<sup>4</sup>. While this report outlined the case primarily for single family dwellings, there had been no similar foundation provided for commercial and industrial buildings. The regulation does not specify eligible building types, and considerations for each type needed to be addressed. For example, the eligibility of buildings for LIC financing was unclear under the following circumstances:

- leased as well as owner-occupied buildings;
- industrial buildings on brownfields;
- measures for building energy as well as process energy; and
- whether buildings not subject to property taxes would be eligible – since LICs are repayable on the property tax bill.

Additionally, there was no prior discussion about using LICs to address the private aspects of district energy systems, nor whether LICs were also applicable to financing climate change adaptation such as by installing low impact development measures for stormwater management.

Finally, some additional questions remained as prior legal opinions had:

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<sup>1</sup> Except buildings owned by municipalities and their local boards.

<sup>2</sup> Ontario Ministry of Municipal Affairs and Housing under O.Reg. 322/12 and O.Reg. 323/12

<sup>3</sup> For example, Infrastructure Ontario municipal fixed rates for municipalities are: 2.42% to 2.45% for 15-year terms and 3.10% to 2.68% to 2.74% for 20-year terms

<sup>4</sup> <http://www.davidsuzuki.org/publications/downloads/2011/Property-Assessed-Payments-for-Energy-Retrofits-recommendations-1.pdf>

- declared LICs to be loans whereas the Ontario Ministry of Municipal Affairs and Housing noted LICs are not loans;
- raised concerns about bonusing (preferential treatment for commercial properties), and
- questioned whether legislation was needed to require subsequent owners to continue making payments.

As a result of the above concerns, this new LIC for CI project was developed to address LICs for the Commercial and Industrial Building sectors. Participating municipalities have been the City of Guelph and the City of London. The City of Mississauga and Durham Region have been observing.

Project goals were to:

- 1) Develop a legal opinion to address the above matters.
- 2) Conduct an analysis to: ascertain how LIC financing options available in Ontario as derived from the Legal Opinion relate to US programs that use a similar financing method called Property Assessed Clean Energy (PACE); identify best practices in PACE program design; and translate the PACE experience to Ontario.
- 3) Conduct a broad-based quantitative and qualitative market research to ascertain potential interest in using LICs in Ontario.

This Final Report is a summary of the findings achieved in this Sustainable Buildings Canada initiative, in association with Sustainable Alternatives Consulting Inc.

## 2.0 LEGAL OPINION

Findings from the Legal Opinion prepared by Stanley Makuch<sup>5</sup> produced as part of this Local Improvement Charges for Commercial and Industrial Buildings initiative<sup>6</sup> include that LICs can be used for environmental retrofits for a municipal purpose<sup>7</sup> on all types of buildings except buildings owned by municipalities and their local boards. As well, LICs cannot be used for moveable equipment and would not be used on brownfields. Environmental retrofits can include stormwater management and/or low impact development retrofits, and district energy system connections. LIC payments can be borne by lessees, where both the owner and the tenant have different incentives for implementing energy efficiency retrofits. Since LICs are financed by municipalities, they are not loans to the owner but instead are a fee or a charge, and any debentures issued for LICs would not be counted for the purpose of municipal debt calculations.<sup>8</sup> LICs can also be financed by third parties such as banks where there is also an agreement with the municipality. Legal Opinion findings are summarized in Table 4.1.

Table 4.1: Summary of Legal Opinions on the Applicability of LICs

- 1) LICs used for a municipal purpose (such as environmental benefit) can be applied to all types of buildings and real property, including conservation authority property and school board

<sup>5</sup> Stanley M. Makuch, B.A., M.A., Juris Doctor, LL.M., *Legal Opinion on Local Improvement Charges for Institutional / Commercial / Industrial Sectors and District Energy Projects*, September 2015, published by Sustainable Buildings Canada and Sustainable Alternatives Consulting Inc.

<sup>6</sup> Not including Multi-Unit Residential Buildings.

<sup>7</sup> Municipalities have identified such purposes in their Community Energy Plans, Sustainability Plans, and Official Plans.

<sup>8</sup> That is, while such debentures are debt, such debt is adjusted from municipal debt totals (subtracted) in calculating municipal borrowing capacity. O. Reg. 403/02, s. 4(2)5

property -- except buildings owned by municipalities and their local boards. Note that Crown properties cannot be subject to a priority lien.

- 2) LICs cannot be used for equipment that is moveable property, i.e. chattels.
- 3) LICs can be used by owners of leased premises and by lessees or sub-lessees under certain conditions.
- 4) LICs are unlikely to be used for brownfield sites because of the risk they pose.
- 5) All permanent aspects of stormwater management systems including low impact development, green roofs, rainwater harvesting and backflow preventers, and other measures such as greywater reuse systems may be financed using LICs. [This segment of the opinion deals with municipalities' capacity to address climate change adaptation.]
- 6) LICs can finance district energy system connections on private property.
- 7) LICs are not a loan to the owner, but if repayments of LICs are overdue, the overdue payments become a tax lien; the entire amount of the LIC does not become due.
- 8) LICs run with the land.
- 9) LICs are financed by municipalities through their own borrowing, borrowing through provincial lending institutions such as Infrastructure Ontario (IO), or through private lending institutions.
- 10) If municipalities or IO issue financing for municipal LICs, this general obligation bond financing can be adjusted from calculations of municipal debt totals, i.e. does not impact calculations of municipal borrowing capacity.
- 11) LIC financing can be securitized.
- 12) Owners can be notified by municipalities of LICs via bills for property taxes, water or garbage.

### 3.0 PACE ANALYSIS

Commercial Property Assessed Clean Energy (PACE) programs in the US use a similar instrument to the Ontario municipal LIC financing mechanism. In the PACE Analysis segment of the LIC for CI project, leading US PACE program funding and program models were assessed for their lessons learned and best practices of optimal funding and program design models for Ontario programs.

Content for the PACE Analysis Report was obtained via a preliminary review of the best approaches to take with generous support from Scott Muldavin, CRE, FRICS, a sustainable finance and investment advisor to governments and owners; and analysis of material they provided in conjunction with online program information. Since interviews were time and budget constrained, examples noted in this report are illustrative and not exhaustive. Interview respondents<sup>9</sup> were executives from the following PACE proponents:

- CleanFund Commercial PACE Capital Inc. (CleanFund)
- Public Finance and Energy Advisors (PFEA)
- Renew Financial (formerly Renewable Funding LLC)
- Sustainable Real Estate Solutions (SRS)

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<sup>9</sup> All the respondents were introduced to the team by PACE Analysis project advisor Scott Muldavin, except for Public Finance and Energy Advisors who was introduced by Peter Love, President, Energy Services Association of Canada.

- Ygrene Energy Fund (Ygrene)

In the first segment of the analysis, LIC funding options that were inferred from the Legal Opinion by Stanley Makuch were noted for comment by the municipalities and the PACE proponents. These options are:

1. General obligation bond issued for total financed amount for all projects.
2. General obligation bond issued for estimated financed total for all projects and subsequently disbursed as needed.
3. A group of banks with pre-arranged approval by the municipality are authorized to discuss financing needs with eligible owners and the municipality (who issues the financing), following which the bank securitizes the funding.
4. Banks issue the LIC financing to the owners directly.

Interview feedback from the PACE proponents was varied regarding these funding options. In general, concern was expressed as to:

1. Challenges in responding quickly to owner funding requests when the mode of funding is a general obligation bond.
2. Whether such a bond could be issued in Ontario for an unknown amount or purpose.
3. The relative interest among Canadian and US banks in providing initial funding to projects over longer terms than five years: Canadian banks may not be interested while some US banks are.

Responses of the municipalities to these concerns guided the next phase of the project.

In the second segment of the research, information on funding models was requested and reviewed.

The **CaliforniaFIRST** Commercial PACE program is open market. In an open market scenario an owner can obtain financing directly from one of several lenders. Municipally-appointed entities called Joint Powers Authorities (JPAs) are issuers of bonds and also apply PACE liens on behalf of the municipality. The JPA the California Statewide Communities Development Authority is co-sponsored by the California State Association of Counties and the League of California Cities, and hired third-party administrator Renew Financial. The financing issued is a standalone or pooled bond. Capital comes from hedge funds, banks, and institutional investors, and one administrator. Note that this program's uptake was not publicly available: no proponent could provide numbers.

The **Connecticut Green Bank (CGB)** has been sole source funder of the **Connecticut C-PACE** project that, after 3 years to prove the concept, morphed to an open market model with pre-approved capital providers. The CGB has its own warehouse facility which as of December 2015 was a \$100 million partnership with Hannon Armstrong. The CGB previously sold down (securitized) transactions to capital funders to replenish their available funds, of which CleanFund Commercial PACE Capital Inc. had purchased the greater part. CGB partner Sustainable Real Estate Solutions (SRS) conducts the technical underwriting, third party quality assurance and post-construction performance measurement and verification. SRS also provides project originator (marketing entity) and contractor training services, and co-authored the program handbook with CGB. Uptake has been very significant.

### 3.1. Data platform and the Investor Confidence Project

Having a streamlined process makes it easy for owners and contractors to sign on, and providing stakeholders with accessible data provides a common platform for them to see information they need for their elements of the analyses. A basis for such a platform is the rigor provided by the Investor Confidence Project (ICP). Consideration of ICP would ideally be addressed at the outset of a program.

The ICP was initiated by the US Environmental Defense Fund<sup>10</sup> to standardize protocols in order to optimize building investment decisions, and bring about owners' and investors' assurance in the resulting estimated savings and impacts on value. The intention is to reduce participant transaction costs and encourage uptake due to increased confidence in the program impacts. Benefits also include mitigated risk for stakeholders including owners, existing mortgage holders and municipalities. Information on the ICP method was shared with our LIC for CI project team.

### 3.2. Key Recommendations

PACE programs for the commercial and industrial sectors and district energy system connections<sup>11</sup> offer an excellent opportunity for Ontario municipalities to learn from their experience. This can assist in establishing proof of concept, and in the potential for scaling up at a program level. Analyses of the CaliforniaFIRST and the Connecticut C-PACE programs identified optimal approaches as well as lessons learned. A summary follows, of key recommendations arising from the proponents' feedback.

*3.2.1 Province-wide programs:* Consider how to prepare to set up the equivalent of 'state-wide' programs where municipalities don't have to do the work, and can readily opt into the program.

**Recommendations** – over the longer term – are that:

- a) As many jurisdictions as possible would be involved.
- b) Consider the trade-offs regarding whether a single or multiple LIC administrators are allowed to operate within Ontario. The Connecticut PACE program administrator, the Connecticut Green Bank (CGB), is the sponsoring state agency. The project originator (SRS) who helped develop the program also wrote the handbook and developed a software framework to facilitate using current data for iterative project analysis and to enable multi-stakeholder access. This framework is also part of the Investor Confidence Project.  
By comparison, the CaliforniaFIRST program has several administrators.
- c) The Ontario programs evolve from a central financing entity to a broader funding model once the LIC program 'product' is proven in the financing marketplace. In the mature PACE process, originators can choose the funding model – for example, a qualified capital provider like the CGB (now that the concept and process have been proven, additional funders to the CGB have been made available).
- d) Separate the program administrator role from the capital provider role to avoid potential conflicts of interest. Otherwise, for example, capital providers may seek to fund more participants and therefore may call for less stringent eligibility requirements resulting in less technically robust and unnecessarily high-cost projects being funded.

<sup>10</sup> Not related to the Canadian organization of slightly different name

<sup>11</sup> Municipal, university, school and hospital buildings may not benefit from the Investor Confidence Project: Peter Love, President, Energy Services Association of Canada, personal communication with Sonja Persram, January 11, 2016.

3.2.2 *Apply sufficient resources:* There are differences in how participating municipalities in PACE address time to set up and monitor the program.

- a) The majority see PACE as a benefit to constituents; these municipalities assign enough staff for a relatively minimum amount of time. SRS notes that “PACE is viewed by local municipalities as an economic development program – improving local building stock, reducing energy consumption and GHG emissions, and creating local jobs.”
- b) The minority have limited staff, limited budget, and see the program as more for the benefit of individual owners.

**Recommendation:** Ontario municipalities should adopt the first approach.

3.2.3 *Individual municipalities decide on dividend:* US municipalities expect to get remunerated for (only) the services they provide. There, a government entity cannot profit from services it provides to the public.

**Recommendation:** each Ontario municipality would make their own decision on having a dividend (research in Ontario determined that having a program dividend is feasible – for example, utility programs provide dividends to municipalities).

3.2.4 *A municipality may decide to develop a program whereby it does not have any outlay for project funding, and gets fees for its services:* Several possible methods of remuneration include: fees on an hourly basis, via a cost cap; or a per-project fee<sup>12</sup> which is assumed to cover staff time involved. This includes activities by Joint Power Authorities.

3.2.5 *Optimize funding by streamlining to standardize processes and obtain market buy-in, then open the marketplace:* If the funder marketplace requires education, set up a preliminary process to prove the concept based on sole source providers, and then open the marketplace once there is comfort with the process. To pre-empt and mitigate market challenges the Connecticut Green Bank established itself as program administrator, with Sustainable Real Estate Solutions as technical administrator, and the SRS software platform allowing transparent stakeholder participation in underwriting. Proven success attracted interest from private capital providers, allowing the CGB to open up the funding marketplace. SRS and the CGB both originate customers.

Staged approaches that avoid limitations may be optimal. Costs are minimized – and optics are better – if a program is developed to be delivered with optimal tools to ease communications, processing and funding, and which can mitigate stakeholders’ risks and be scalable.

3.2.6 *Utilize US funders as needed:* Since energy efficiency is an enigma to the larger lenders, and there are 12 specialty lenders in the US who would fund projects in Canada, municipalities may wish to commence with US funders until the Canadian marketplace sees the proven concept –unless a ‘made-in-Canada’ approach is preferred, in which case the recent announcement in the Ontario Climate Change Action Plan<sup>13</sup> about a Green Bank funded by cap-and-trade credits may be the solution needed.

<sup>12</sup> About \$100-250/project is a sample Administrator fee in the CaliforniaFIRST project.

<sup>13</sup> Ontario Ministry of the Environment and Climate Change, *Ontario’s Five-Year Climate Change Action Plan 2016-2020*, 2016



*3.2.7 Mortgage lender approval – and other stakeholders’ risk mitigation – is assisted with an SIR>1:* Mortgage lender approval is a critical PACE success factor. SRS finds that the project SIR>1 helps to satisfy existing mortgage holders’ concerns regarding the project’s impact to borrowers’ repayment ability and collateral value, and typically enables the mortgage holder to permit the project to go ahead. They use a standard request form in addition to the information shared on the software platform, the sum of which are best practices.

Public Finance and Energy Advisors note that the No. 1 challenge is obtaining mortgage lender approval for the PACE financing. They find that PACE can be rationally explained 80% of time to first lien holders to get consent. Currently it is rare when lenders are reluctant to give consent.

Clean Fund also observed that mortgage lender approval is facilitated by noting:

- a) Improvements made with the land-secured financing are generating value for the property that is the bank’s collateral. As well, cash flows may be enhanced.
- b) Property tax payments (including PACE) are 2-3% of the value of the property, based on their underwriting criteria, so in a worse-case scenario if 2 years of property tax payments are not made, this accumulates to 5% of the value of property with a senior lien if default is called by any party. This does not represent a substantial amount for lenders.

*3.2.8 Underwriting based on SIR also addresses other value-enhancing metrics:* As noted by SRS, their “underwriting methodology speaks to both SIR & Collateral Value Improvement... experience has shown mortgage lenders (and most owners) will give NO credit in underwriting to “intangible” metrics, as owners and mortgage-holders make these project investments virtually 100% focused on cash flow.”<sup>14</sup> This is in contrast to Clean Fund’s cautions about underwriting based on SIR because of tangible and intangible non-energy property owner metrics that create value, such as productivity and health benefits from better HVAC systems that they believe cannot be accounted for in SIR.

*3.2.9 Origination may be optimally assisted via training contractors:* A critical success factor to origination for the Connecticut program that may be applicable to the Ontario scenario is to not rely on industry associations like BOMA and the USGBC for leads because these owners and building managers are knowledgeable and also may be more likely to have sufficient funds to conduct the upgrades. Rather, SRS notes that the most successful marketing channel has been the contractors that serve Class B and C building owners.

Clean Fund noted the No. 1 challenge is lack of awareness of PACE financing.

PACE program scalable success, according to SRS, requires the identification, training and ongoing support of contractors to become the primary sales force to reach the mid-market building owner sector. SRS noted that the project origination process can take 6 months to 1 year depending on the project size and complexity.

*3.2.10 ESCO participation may be different in Canada than the US, facilitating contractor training:* This long sales cycle, the Commercial PACE training required and associated costs may be reduced if ESCOs become involved in origination.

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<sup>14</sup> McCarter, Brian J., personal communication with Sonja Persram, May 13, 2016.

3.2.11 *It is important to have a software platform to enable multiple stakeholders' input during origination:* The LIC for CI project team has access to a printout of the software and database owned by SRS that is the basis for origination and project eligibility analysis. This will contribute to the team's development of a localized software platform for the pilot.

3.2.12 *Commercial PACE scale-up requires investment:* The start-up and operating costs for a Commercial PACE program to be scalable has been significant, and would be for an LIC-CI program. Third-party administration firms may be willing to incur those start-up costs in the context of a properly structured agreement.

## 4.0 MARKET RESEARCH

The market research segment of the LIC for CI project provided an understanding of Ontario market size, segments, and industry capacity to address owners' needs in LIC projects. Stakeholder interest was analysed with respect to findings from both the Legal Opinion and the PACE Analysis.

### 4.1. Key elements contributing to program uptake

From the PACE Analysis these include factors that are both part of, and built around, the financing mechanism's features. The purpose of the market research was to ascertain market interest towards development of LIC pilots and to potentially contribute to development of LIC programs. Factors contributing to uptake, as ascertained in the PACE Analysis include:

- Using the longer terms that LIC financing allows plus available incentives brings a retrofit package of measures into a positive cash flow for the owner.
- Net positive cash flow benefits the anticipated post-retrofit property value.
- These factors in turn contribute to existing mortgage holders' interest in signing-off on such agreements.<sup>15</sup> The security provided by the LIC priority lien on overdue payments has caused programs incorporating this kind of financing to address existing mortgage holder concerns by obtaining their permission. However, feedback after completion of the Legal Opinion included one 'big-five' banker reviewer's observation: why is mortgage holder permission needed for LICs if it is not required to raise taxes (or other fees and charges whose overdue payments are subject to being added to the tax roll as a priority lien).
- Confidence in energy savings arising from the installations.<sup>16</sup>
- The long sales cycle of such retrofit packages means that municipalities are not ideal sales entities.
- Instead, partners are needed with capacity to understand the financing mechanism, attract and provide the information to potential customers – and to close deals.
- Transaction costs associated with the application and contract processes need to be kept low.

### 4.2. LIC suitability for Ontario building types, sectors, sizes, and ownership

The LIC Market Research project was intended to ascertain for which Ontario building types, sectors, sizes – and their owners – LICs may be suitable.

<sup>15</sup> PACENow, *Lender Support Update Senior Mortgage Lender Considerations of Commercial PACE Transactions in 2013, 2014* <http://pacenation.us/wp-content/uploads/2014/03/Lender-Support-Update-20143.pdf>

<sup>16</sup> Ibid.

LICs have the potential to transform Ontario through partnerships enabling municipalities and higher level governments to address climate change mitigation and adaptation. Buildings represent about 24 percent of Ontario's GHG emissions including electricity used to run building equipment and appliances.<sup>17</sup> Governments at all levels have targets for reductions in energy and water use<sup>18</sup> and greenhouse gas (GHG) emissions in all buildings within their jurisdictions, and are challenged with dealing with an increasing frequency, intensity and duration of storm events. Yet the capacity to mitigate and adapt to these challenges, and reap economic benefits arising from higher value, energy and water savings, and government budget benefits from infrastructure savings, green jobs, and an economic stimulus, depends on investments in retrofit measures to address the challenges, delivered at sufficient scale.

#### **4.3. Awareness about LICs and the existence of LIC programs**

The level of organization needed to be able to provide such scale depends on several factors.

In the course of informing market research respondents, this research built awareness and interest. Qualitative outreach interviews were conducted with individual municipalities, the Association of Municipalities of Ontario; gas utilities; owners of Class A buildings; business associations; four Energy Service Companies; and Infrastructure Ontario.<sup>19</sup> Feedback from all, except for large owners of Class A building portfolios and one municipality whose evaluation is pending, indicated their interest in LICs and in LIC Commercial and Industrial Building programs for their communities, customers and members. Large building portfolio owners noted they have financing available to address all necessary building retrofits. Gas utilities noted that owners of buildings that are 'Class B' and smaller commercial building owners may be more interested in LICs, and that differences may be due to fewer available financing options. Paybacks were estimated to be 2 to 7 years. With respect to simple paybacks, customers are typically seeking measures with a payback of 2 to 3 years, and where this is longer, the owner requires it to be at least cash flow neutral.

#### **4.4. Buildings that can benefit from LICs**

Stakeholders noted that LICs could benefit the following buildings:

- All building types except for universities with endowments (ESCO 3)
- Industrial buildings (ESCO 1, Canadian Manufacturers & Exporters)
- Commercial buildings owned independently (ESCO 3)
- Commercial buildings between 30,000 and 200,000 sf (ESCO 3)
- Commercial buildings 100,000 sf needing \$500,000 in retrofits minimum (ESCO 2)
- Commercial buildings 50,000 sf needing \$1 million in retrofits minimum (ESCO 4)
- Owners with less options for financing energy retrofits (Utilities and industry associations)

#### **4.5. Other key elements required for LIC success.**

Stakeholders recognized that LICs by themselves are not sufficient and would be combined with other key elements in LIC programs that mitigate barriers. Through the course of our larger study as well as in

<sup>17</sup> See: *Ontario's Climate Change Strategy*, <https://www.ontario.ca/page/climate-change-strategy> downloaded March 20, 2016

<sup>18</sup> For example: the City of Guelph, the City of London, Peel Region, the City of Mississauga, York Region, the City of Toronto and the Regional Municipality of Waterloo.

<sup>19</sup> Municipalities interviewed were: the City of Kingston, City of Mississauga/Peel Region, City of Toronto, Frontenac County/Town of Frontenac, and the Town of Oakville; also the Association of Municipalities of Ontario. Municipalities briefly surveyed in a small industry event included: City of Burlington, City of Hamilton, Peel Region, Town of Markham, City of Vaughan, and the Town of Whitby.

the market research, municipalities and utilities, (for example) wanted assurance that ‘owners need financing’. However it may be more apt to say that owners – and their bankers -- need financing and other program elements that enable a reliable net positive cash flow – this can include the quantification of value beyond energy cost savings<sup>20</sup>. The PACE Analysis findings also included program proponents in the CaliforniaFIRST initiative who preferred not to have LIC programs with a net positive cash flow because some owners may be interested due to other potential benefits such as insurance retention. Municipalities will need to consider the trade-offs.

#### **4.6. New partnerships to obtain the necessary level of detail**

A variety of stakeholders were interviewed about their interest in partnering to enable such groupings, and the feedback was positive.

#### **Municipalities, associations, utilities, and energy service companies (ESCOs)**

Interest was expressed in developing new partnerships to help enable more detailed market solutions. Municipal documents such as Municipal Energy Plans (MEPs) have created policy contexts for LICs. Some municipalities already include LICs in their plans, while others interviewed planned to include LICs in their MEPs. Some significant stakeholder partnerships already exist. However, associations (for example) have an understanding about the business types of their member companies that could greatly assist cross-referencing with building information from other stakeholders.

#### **Building on pilots toward central program facilitation across the province; federal and provincial support to reduce transaction costs**

The PACE Analysis finding that central provincial facilitation of programs is a goal was also a recommendation of interview respondents. Municipal representatives as well as the Association of Municipalities of Ontario supported central facilitation to make it easy for small-to-large jurisdictions to participate. ESCOs enquired as to where LIC programs exist as they are interested in sales and implementation, and associations and utilities are interested in LICs contributing to member and customer uptake of retrofits. A loan-loss reserve and handbook were deemed important. An ESCO noted that US tax credits such as on PACE interest add to the business case. The PACE Analysis found that Commercial PACE scale-up, start-up, and operating costs are significant. Central financing can reduce transaction costs. AMO considers it important to develop this with care so that pilots with key attributes build toward a central program.

#### **4.7. Potential Impacts of LICs**

Given that the average estimated energy conservation across all building types during the period from 2010 to 2020 is 8.0%, and that the largest sector by floorspace, large office, has an estimated savings of 8.3%, LICs could provide longer term, lower cost financing to implement the retrofits necessary to enable the province and municipalities to achieve important targets while providing a significant economic stimulus. A 2014 study done for NRCan found that increasing energy efficiency substantively over 15 years could generate \$690 million in additional Ontario provincial tax revenue for retrofits in

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<sup>20</sup> Scott.R. Muldavin, *Value Beyond Cost Savings: How to Underwrite Sustainable Properties*, Green Building Finance Consortium, 2010.

institutional, commercial and industrial sectors. This would represent an increase in Ontario GDP of up to \$174 billion; 87,290 jobs, and could cut CO<sub>2</sub> emissions in the province by 29 MT/year.<sup>21</sup>

The PACE Analysis noted that the highly successful CT-C- PACE program generates a net project positive cash flow, with positive NOI and ROI impacts on value. Moreover, as noted by Scott Muldavin,<sup>22</sup> value extends beyond energy savings, such as health and productivity benefits. Using the Investor Confidence Project's method of quantifying value impacts shared with our LIC for CI project team, such benefits translate to mitigated risk for owners, existing mortgage holders, municipalities and other stakeholders.

## 5.0 CONCLUSIONS

This LIC Commercial and Industrial Buildings and District Energy Systems project has provided stakeholders with a package of findings on the legal authority of municipalities' to use LICs in these applications to assist in addressing climate change mitigation and adaptation. The Legal Opinion details this authority in simple language for both municipal legal counsel and finance/administration staff, and for their elected officials. The PACE Analysis highlights key US programs, outlines models of funding and program design, and outlines best practices as well as their applicability to Ontario LIC pilots and programs. The LIC Market Research provides assessments of: Ontario impacts of actions to mitigate climate change; and municipal, association, utility, and energy services company stakeholder assessments about target markets for environmental LIC programs.

As may be expected, the market research not only ascertained interest by potential stakeholders, it also informed them. Achieving the required level of carbon reduction will not be easy, but stakeholders are gearing up for this task, and it is encouraging to see how quickly interest in the LIC concept arose for those new to it, and in the newly understood uses based on the Legal Opinion for those familiar with the LIC concept. The LIC mechanism and LIC programs are welcomed by stakeholders to help them address the deep retrofit needs and challenges of commercial and industrial buildings. Since financing is not the only barrier to deep energy retrofits, stakeholders need to understand the other challenges that the LIC itself, and an effective program designed around it, can overcome. Effective use of this mechanism also involves partnerships among entities that together have the infrastructure, knowledge, and resources to deliver needed, trusted, and verified solutions for buildings, owners, and tenants.

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<sup>21</sup> ENE, *Energy Efficiency: Engine of Economic Growth in Canada: A Macroeconomic Modeling and Tax Revenue Impact Assessment*, 2014 [http://acadiacenter.org/wp-content/uploads/2014/11/ENEAcadiaCenter\\_EnergyEfficiencyEngineofEconomicGrowthinCanada\\_EN\\_FINAL\\_2014\\_1114.pdf](http://acadiacenter.org/wp-content/uploads/2014/11/ENEAcadiaCenter_EnergyEfficiencyEngineofEconomicGrowthinCanada_EN_FINAL_2014_1114.pdf)

<sup>22</sup> Op. cit.

## 6.0 ACKNOWLEDGEMENTS

Sustainable Buildings Canada and Sustainable Alternatives Consulting Inc. extend deepest thanks to our project funders for their support throughout our initiative.

Our team has greatly appreciated the generous commitment and contributions to our project from senior managers in our participating and observing municipalities, in addition to their conservation authorities and local distribution companies. These are: the City of Guelph and the City of London (participating), and the City of Mississauga and Durham Region (observing).

We are most grateful to our US Advisor on the PACE Analysis, Scott Muldavin, CRE, FRICS, who founded the Green Building Finance Consortium and is now a Senior Advisor to Delos. He has led the movement to include value beyond energy cost savings in sustainable property investment decisions.

Our team warmly thanks staff and elected representatives from: the City of Kingston, City of Mississauga/Peel Region, City of Toronto, Frontenac County/Town of Frontenac, and the Town of Oakville; also senior representatives from the Association of Municipalities of Ontario for their contributions of time and information. We are similarly grateful to representatives from the following organizations: two gas utilities, Infrastructure Ontario, the Energy Services Association of Canada and its membership, Canadian Manufacturers and Exporters, NAIOP Greater Toronto, the Toronto 2030 District, Canadian Chamber of Commerce, Canadian Federation of Independent Business, the Canada Green Building Council Greater Toronto Chapter, CleanFund Commercial PACE Capital Inc., Public Finance and Energy Advisors, Renew Financial, Sustainable Real Estate Solutions, Ygrene Energy Fund, and the Connecticut Green Bank; as well as others who contributed anonymously to this initiative.

## 7.0 PROJECT TEAM PROFILES

**Sonja Persram, B.Sc. (Hons.), M.B.A., LEED® AP** is President of Sustainable Alternatives Consulting Inc., partner in this project; **project manager** of the Local Improvement Charges Commercial/Industrial Buildings (LIC CI) project, and **author** of: the Final Report, the PACE Analysis and the Qualitative Analysis of the Ontario LIC Market Research.

Ms. Persram has been researching LICs for approximately a decade. Ms Persram developed the Ontario LIC regulatory change rationale and built the multi-sectoral collaboration supporting the change. She has consulted to the City of Toronto, the Nova Scotia Department of Energy, Halifax Regional Municipality on their LIC solar thermal program and she is advising the Town of Bridgewater, Nova Scotia and three other N.S. municipalities on their residential LIC pilot. Her LIC rationales include: “Assessment of North American Property-Attached and Other Financing Programs for Low-Rise Residential Energy Retrofits” for the City of Toronto, 2010; “Property Assessed Payments for Energy Retrofits: Recommendations for Regulatory Change and Optimal Program Features”; “Property Assessed Payments for Energy Retrofits and Other Financing Options”; and “Strategic Recommendations for an Optimal PAPER Program” - reports for the David Suzuki Foundation, 2011; “Property Assessed Payments for Energy Retrofits Using a Modified Local Improvement Charges Mechanism”, Municipal Finance Officers Association of Ontario, Spring 2011; and she wrote “LIC Primer: Using Local Improvement Charges to Finance Residential Energy Upgrades” and “LIC FAQ” for the Collaboration on Home Energy Efficiency Retrofits in Ontario, 2013.

Additional publications include: “Green Buildings: A Strategic Analysis of the North American Markets”, Frost & Sullivan, 2006; “Regulatory Barriers to Three EQUilibrium Projects”, a Report and Research Highlight, Canada Mortgage and Housing Corporation, 2012); “Chapter 3: Integrative Design Process” in Integrative Design Performance, John Wiley & Sons Inc., (2012); “Code, Regulatory and Systemic Barriers Affecting Living Building Projects”, Cascadia Region Green Building Council, 2011; “Marketing Green Buildings to Owners of Leased Properties” and “Marketing Green Buildings to Tenants of Leased Properties”, Canada Green Building Council, 2007.

**Michael Singleton, B.Ec.**, is Sustainable Buildings Canada (SBC) Executive Director. Mr. Singleton has over 25 years’ experience primarily in the energy sector(s) in program development, including Enbridge Gas Distribution’s Savings by Design program.

**Bob Bach, P.Eng.**, Director and Treasurer of Sustainable Buildings Canada is SBC **project manager** for the individual and final reports in this SBC project **and author** of the market research quantitative analysis. Mr. Bach designs, implements, and evaluates energy efficiency programs for governments and utilities, and is a founding director of SBC, vice-Chair, Energy of the Ontario Building Code Conservation Advisory Council, and a member of the IESO Strategic Advisory Council on Conservation.

**Stanley M. Makuch, LL.M., J.D.**, has over 40 years’ experience as both a highly regarded practicing municipal lawyer, and a widely consulted academic. Since 2010 he has contributed his considerable expertise on Local Improvement Charges (LICs) and on municipal law for projects undertaken by Sustainable Alternatives Consulting, including: reports on LIC for residential buildings prepared for the David Suzuki Foundation; in support of City of Toronto Councillor Mike Layton’s development of a request for a City of Toronto LIC program; and other research, collaborations and projects in this field; as well as advising on the LIC regulatory changes themselves.

Mr. Makuch has dealt with issues of the broader powers of municipalities, bonusing, municipal financing, the Municipal Act, the Planning Act, the Environmental Protection Act, and the Environmental Assessment Act. Early in his career, he carried out Legal and Policy research on which were based significant recommendations in the Report of the Royal Commission on Metropolitan Toronto. Those recommendations were implemented through legislative amendments and judicial decisions, and have resulted in a fundamental change in the manner in which the powers of municipalities are interpreted and granted. The Supreme Court of Canada cited his book *Canadian Municipal and Planning Law* in granting broad authority to municipalities.

Mr. Makuch has acted for many municipalities in a number of Canadian Provinces across Canada. Among his many achievements are the following: writing the legal opinion on bonusing for the City of Toronto regarding the Air Canada Complex; obtained planning approvals for many of the University of Toronto buildings from approximately 1998 to 2009; assisted in writing the City of Winnipeg Act; carried out a “Discrimination in Zoning” study for CMHC on discrimination in zoning in Canada, the U.S. and the U.K. He is the founding editor of the *Municipal and Planning Law Reports* and he was a co-author of *Municipal Licensing* published by University of Toronto Press and of *The Spills Bill: Duties, Rights and Obligations* published by Butterworths. Recent publications include two papers which are in press: “There is No Planning Law in Ontario” (UBC Law Review), and “Have we Legalized Corruption? The Impact of Expanding Municipal Authority Without Safeguards in Toronto and Ontario” (Osgoode Hall Law Journal). Mr. Makuch has served on many boards and commissions, including the City of Toronto Planning Board, and the City of Toronto Committee of Adjustment.

He obtained his Juris Doctor at Osgoode Hall, York University, and his Masters in Law from Harvard University Law School specializing in local government, environmental and urban studies. In addition, Mr. Makuch has studied Economics.

**Peter Love, M.B.A.**, President, Love Energy Consultants Inc., President of the Energy Services Association of Canada, and Ontario’s first Chief Energy Conservation Officer, led the Ontario LIC market research and guided the team on industry gaps and resources. A long-term LIC advisor to Sustainable Alternatives Consulting, he has been named to Canada’s 2014 Clean50, and is a leading advocate for energy conservation across the Province. Mr. Love is also an Adjunct Professor at York University’s Faculty of Environmental Studies, Chair of the Toronto District 2030 Advisory Committee, Vice-President of the Royal Canadian Institute for the Advancement of Science and has been active with Civic Action’s Greening Greater Toronto and the Commercial Building Energy Leadership Council’s Race to Reduce. Recent publications include “The Past, Present and Future of Energy Conservation in Ontario”, “Great Saves: Seven projects prove retrofits are far less daunting when the energy efficiency contract is tied to successful performance”, Green Buildings in China”, and “Building Code and Voluntary Programs Make Ontario New Home Builders Leaders in Energy Efficiency”.

**Bill Johnston, M.A., LL.B.**, is past President of the Toronto Real Estate Board, a past Director of both the Canadian and Ontario Real Estate Associations, and current Manager and Legal Counsel for a Bosley Real Estate Brokerage. Mr. Johnston has been providing his expertise to the project on a pro bono basis, and since 2010 he has provided advice to Sustainable Alternatives Consulting on LIC projects.



## 8.0 GLOSSARY

CGB	Connecticut Green Bank
C-PACE	Commercial PACE Programs (originally used for the Connecticut project; now also applied in other regions)
CT C-PACE	Connecticut Commercial PACE Program
CSCDA	California Statewide Communities Development Authority
ESCO	Energy Service Company
ICP	Investor Confidence Project
JPA	Joint Powers Authority
LIC	Local Improvement Charge
PACE	Property Assessed Clean Energy
Pooled bonds	Bonds secured by contractual assessments of a number of properties
Program Administrator	The organizing jurisdiction, or a third-party hired in this role for the jurisdiction
QA	Quality Assurance
QC	Quality Control
Stand-alone bonds	Bonds that are secured by the contractual assessment of a single property
SRS	Sustainable Real Estate Solutions