

Jurisdictional Scan of Residential Property Assessed Clean Energy (R-PACE) Programs

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Introduction

A municipal scan including a Feasibility and Design study was completed in 2020 for the design of Saskatoon’s Home Energy Loan Program (HELP). At that time, Halifax and Toronto were the main examples for municipalities that had Residential Property Assessed Clean Energy (R-PACE) financing programs. Since then, many more cities have developed or implemented similar programming.

The research compiled in this appendix for the Canadian programs is sourced from a summary prepared by the Federation of Canadian Municipalities (FCM) from February 2023 and information available on each municipality’s program website. The municipal scan provides information on all existing residential energy retrofit programs in Canada including program type, program administration, uptake rates, interest rates and fees, and funding sources.

Thirteen energy retrofit programs are currently funded through FCM’s Community Efficiency Financing Program.

A scan was also conducted to identify current R-PACE programs throughout the United States (U.S.). A summary and overview of the structure of the programs is available at end of this appendix; however, further research is required to obtain details on the

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success of the programs including program uptake rates, specific interest rates, and fees.

Canadian Programs – Key Findings

Eligible Retrofits

Eligible home upgrades among the retrofit programs are the same as Saskatoon's with some variation depending on the region. Some programs include adaptation measures such as flood proofing in addition to their energy efficiency upgrades and others are more specific to solar upgrades or conversion of oil heating systems to electric.

Performance Thresholds

Some programs require minimum energy reductions or a minimum number of upgrades to be completed as part of their program eligibility criteria. These include:

- Kingston - Minimum 20% energy or greenhouse gas reduction required to be eligible for the program. Program has an average 60% energy savings and GHG reduction per project.
- Edmonton - participants must complete at least three home upgrades to be eligible for their program.

Performance Incentives

Instead of embedding performance thresholds into their eligibility criteria, some programs offer greater incentives for larger energy or GHG reductions. These include:

- Durham - Offering tiered incentives based on % GHG reductions greater than 50% up to \$10,000. Additional incentives for Net Zero and Passive House certifications. Average energy and GHG reductions per project are between 60-90%.
- Nova Scotia - The program offers a GHG emissions retrofit incentive in nine of the 11 municipalities.

Admin Fees and Interest Rates

Table 1 provides a summarized comparison of the admin fees and interest rates across Canada. As shown, administrative fees and interest rates for Canadian programs are ranging from 0% to 5% of the loan amount, or \$0-\$1,500 (see Table 1, Appendix 3). Many of the admin fees or interest rates for these programs are subsidized because of FCM funding.

Table 1 - Comparison of admin fees and interest rates across Canada

Municipality/Program	Admin Fee	Interest Rate
Better Homes Kingston	\$0	0%
Better Homes Ottawa	4% of loan total (\$1,200 on a \$30,000 loan)	0% for low-income households, 4.33% non-low income with 20-year term

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Clean Energy Financing (Multiple Municipalities in Nova Scotia)	\$250	1-4% for 10–15-year term (rates and terms dependent on municipality)
Clean Energy Improvement Program (Multiple Municipalities in Alberta)	1.5-5% of loan total (\$450-1,500 on a \$30,000 loan)	0-10% for 20-year term (rates dependent on municipality)
Durham Greener Homes	Built into interest rate, dependent on term	3 year – Prime + 2% 5 year - Prime + 2.5% 7 year – Prime + 3% 10 year – Prime + 3.5%
Halifax Solar City	\$0	4.75% for 10-year term
Home Energy Loan Program (Toronto)	2% of the total loan (\$600 on a \$30,000 loan)	<ul style="list-style-type: none"> • 5 year – 3.39% • 10 year – 3.74% • 15 year – 4.19% • 20 year – 4.24% • 0% interest program launched with FCM funding
Regional Energy Efficiency Program (Nelson, BC)	\$100	3.15% with a 5- or 10-year term. Max loan is \$16,000.
Retrofit Halton Hills	\$450	0% for 10-year term
Saanich Heat Pump Financing Program	\$0	0% for 10-year term
Solar Colchester/Cozy Colchester	5% of total loan value (\$1,500 for \$30,000 loan) fee is waived for low-income households	10% for 10- or 15-year loan term
Switch Program	5% of total loan value (\$1,500 for \$30,000 loan) fee is waived for low-income households	10% for 10- or 15-year loan term

Funding Sources

All the Canadian programs reviewed have received capital funding through FCM's Community Efficiency Financing Program, including Saskatoon. Common sources of matching funds for programs are internal reserves, partnerships with private lenders, external debt, annual property tax allocations or are unknown.

The City of Ottawa received funding from FCM to launch the Better Homes Ottawa Program. After fully allocating FCM funding, they recapitalized their program through a \$15,000,000 loan from VanCity Community Investment Bank. The program continues to be a PACE financing program with most of the program terms maintained under the new partnership.

According to FCM, six of the programs leveraged private capital or external debt in the initial capitalization of their programs. The sources of private capital included partnerships with credit unions, loans from major banks, and utility funding. All the

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programs using private capital are using it for 25% or less with FCM providing the remaining 75%. Several municipalities are unable to share information publicly on their capital structure for these programs, thus information is from aggregated data provided by FCM.

Program Administration

Toronto, Halifax, Kingston, and Halton Hills administer their programs in-house with municipal staff like Saskatoon. The other eight programs use a third party to administer their program and to deliver energy coaching. Using a third-party administrator reduces the amount of City staff needed to run the program. An administrative fee required, charged to the participant, to cover the third-party's fees. This approach has been used by other jurisdictions to scale-up across a province or region quickly with a more sophisticated and full-service system as third-party administrators can provide all services including application intake and processing, loan management, energy coaching, and program monitoring.

Educational Programming and Tools

Energy coaching/technical retrofit advice services and building science or net zero training for contractors/builders are the most common educational tools. These include:

- Kingston and multiple programs in Nova Scotia have built mandatory energy coaching or concierge services into their program application processes.
- Edmonton and St. Albert provide a solar potential map like Saskatoon's.
- Many of the municipalities are working on the implementation of a home energy map like Saskatoon's but have not yet launched one.

Direct Lending

The Regional Municipality of Durham implemented the first direct lending program in Canada in April 2022 for energy efficiency retrofits. Loans are not provided through PACE financing, instead they are directly loaned from the financial institution to the participant. With this program model, is tied to an individual, not the property and the applicant's eligibility for a loan is based on their personal credit score, bankruptcy history, and debt servicing ratios.

To deliver this program, Durham has a partnership with two local credit unions who provide loans directly to homeowners. The municipality provides a loan loss reserve (funded by FCM) of \$1,500,000, or 20%, of the total loan capital for the program to the credit unions to cover potential defaults on the loans. The loan loss reserve reduces risk for the credit unions and allows participants to access preferential interest rates and repayment terms. With this model, the bank sets the interest rates and lending terms, but the municipality designs and delivers the program to residents.

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Canadian Program Summaries

Better Homes Kingston

Location: Kingston, ON

Program Type: Property Assessed Clean Energy (PACE) Financing Program.

Program Administration: City of Kingston administers the program. Third party energy coaching service done by Sustainable Kingston.

Launch date: April 2022.

Uptake: All program spots were filled within six months of launch. Application intake is currently paused.

Interest rate and fees: zero per cent interest and loan term up to 20 years. No administration fees.

Funding sources:

- FCM Community Efficiency Financing Program
- Source of matching funds is unknown

Environmental performance: Minimum 20% energy or greenhouse gas reduction required to be eligible for the program. Program has an average 60% energy savings and GHG reduction per project.

Education and tools: Each participant is required to complete an initial coaching session at no cost with Sustainable Kingston to help prioritize their retrofits and ensure they meet product specifications before installation. Contractor quote templates available online for each type of home upgrade.

Unique features: Rebates are tiered based on energy and GHG performance of retrofit up to \$5,000. Income qualified applicants can receive a rebate up to \$600 for the cost of energy audits.

Better Homes Ottawa

Location: Ottawa, ON

Program Type: Property Assessed Clean Energy (PACE) Financing Program.

Program Administration: Third party program delivery partner is Envirocentre.

Launch date: Original program supported by FCM launched in November 2021. A new recapitalized program with VanCity Community Investment Bank was launched in June 2022.

Uptake: First round of funding for original program is fully allocated. The recapitalized program has room for up to 500 applicants. To date, 160 applications have been

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received under the interest-bearing loan, while an additional 325 projects are at various stages of completion.

Interest rate and fees: Zero per cent interest for low-income participants, 4.33% interest for non-low income with a 20-year term. The administration fee is 4% of the total loan value.

Funding Sources:

- FCM Community Efficiency Financing Program. When this program was launched a portion of 0% funds secured from CEF were set aside for a low-income program
- VanCity partnership provided private capital funding

Environmental performance: Future Homes Pilot Project for deep retrofits and Rain Ready Ottawa program provided for storm water management.

Education and tools: Program includes a hotline for questions and advice on energy retrofits and low-income participants receive free support from a retrofit manager. Training and education for local contractors is provided for net zero renovations and heat pump sales.

Unique features: Maximum loan up to \$125,000 or 10% of tax-assessed property value; property owners offering affordable units can access low-income stream. Green roofs and accessory dwellings are also eligible project upgrades for homeowners.

Clean Energy Financing

Location: Multiple municipalities (11 total), NS

Program Type: Property Assessed Clean Energy (PACE) Financing Program.

Program Administration: The Clean Foundation is a non-governmental organization that administers the program for multiple municipalities.

Launch date: 2016.

Uptake: Unknown

Interest rate and fees: Between 1-4% interest rate with 10-15-year term options (depends on the local municipality). The administration fee is a flat fixed fee of \$250 per loan.

Funding Sources:

- FCM Community Efficiency Financing Program
- Source of matching funds are unknown

Environmental performance: The program offers a GHG emissions retrofit incentive in 9 of the 11 municipalities.

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Education and tools: Participants receive guidance on what retrofits will be cost effective for their home, and ongoing support from Clean Foundation's team of Energy Advisors and Technical Analysts.

Unique features: Program validates a savings-to-investment ratio for all projects to ensure savings will exceed loan repayments before renovations occur.

Clean Energy Improvement Program (CEIP)

Location: Multiple municipalities (11 total), AB

Program Type: Property Assessed Clean Energy (PACE) Financing Program.

Program Administration: Alberta Municipalities administers the program and is a provincially funded non-profit member association that advocates for and offers services to municipalities in Alberta.

Launch date: November 2021-Ongoing.

Uptake:

- City of Calgary program intake paused after initial launch in January 2023. 240 pre-qualification submissions received in less than 36 hours. Reopening to new pre-qualification submissions in July 2023 and November 2023 and 150 pre-qualification submissions will be accepted each intake round. Intakes in 2024 will depend on financing availability after funds are committed to projects in 2023.
 - The City of Calgary complemented the FCM loan with \$5 million allocated from an internal reserve. As participants repay over the course of their loan term, the funds are repaid to both FCM and the internal reserve.
 - Calgary's interest rate for 2023 is 2.95% with term lengths up to 20 years. For 2023, no administration fee is being charged to participants.
- City of Edmonton residential CEIP pilot program is at capacity and application intake is closed. This Program was at capacity within hours of launching. The commercial CEIP pilot is still open to applications. The City of Edmonton is launching their permanent residential and commercial CEIP programs in Spring 2024.
- City of Lethbridge program is at capacity for year one and has paused to new submissions until 2024 or earlier if space becomes available.
- City of St. Albert program is at capacity for year one and waitlisting all new submissions. The Program was at capacity within a few days of launching but has been able to accept submissions from the waitlist as others have cancelled or been declined.

Interest rate and fees: Interest rates vary by municipality and range from 0% to the Bank of Canada's prime rate, and up to 10% in the Town of Canmore. Loan terms up to 20 years are available. The administration fee varies based on the municipality, and ranges from 1.5 - 5% of the total project cost.

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Funding Sources:

- FCM Community Efficiency Financing Program.
- Source of matching funds vary between a Line of Credit from a local financial institution and internal reserve funds. In all cases matching funds are used as capital for financing.
- Internal reserve funds

Environmental performance: City of Edmonton requires participants to complete at least three home upgrades to be eligible for their program.

Education and tools: Edmonton and St. Albert have residential solar potential maps. The City of Edmonton also provides a city-wide energy map and has provided training for real estate agents for building science and energy efficiency. City of Calgary offered an Air Source Heat Pump virtual training session for contractors.

Unique features: Many municipalities are offering incentives for completed CEIP projects that reduce their total financed amount. City of Leduc offers a separate EV incentive for CEIP participants. City of Lethbridge is reserving a portion of funds each year for privately owned residential affordable housing complexes that meet the program eligibility criteria.

Durham Greener Homes

Location: Regional Municipality of Durham, ON

Program Type: Direct Lending Program.

Program Administration: The Windfall Ecology Centre administers the program.

Launch date: April 2022.

Uptake: 347 applications received.

Interest rate and fees: Variable interest rates depending on the loan term:

- 3 year – Prime¹ + 2%
- 5 year - Prime + 2.5%
- 7 year – Prime + 3%
- 10 year – Prime + 3.5%

Funding Sources:

- FCM Community Efficiency Financing Program provided upfront capital for a loan loss reserve for the municipality, and this was leveraged to obtain partnerships with credit unions

¹ Prime interest rate was 6.95% on June 23, 2023.

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- Partnerships with two local credit unions who provide loans directly to participants

Environmental performance: Offering tiered incentives based on % GHG reductions greater than 50% up to \$10,000. Additional incentives for Net Zero and Passive House certifications. Average energy and GHG reductions per project are between 60-90%.

Education and tools: Participants can access up to 4 sessions with an energy coach from Windfall Ecology Centre.

Unique features: This program is the first direct lending program in Canada. It is not a PACE program, and the eligibility is based on the participant's credit score, bankruptcy history, and debt servicing ratios. The loan is tied to an individual, not the property.

Halifax Solar City

Location: Halifax, NS

Program Type: Property Assessed Clean Energy (PACE) Financing Program.

Program Administration: Program administered in house by municipal staff.

Launch date: Originally launched in 2012. Program was expanded in 2016.

Uptake: 791 applications approved; 750 projects completed to date. Total approved financing since 2016 is \$20,500,000.

Interest rate and fees: Interest rate is 4.75% for a 10-year term.

Funding Sources:

- FCM Community Efficiency Financing Program
- Annual allocation from municipal operating budget since 2016

Environmental performance: Average annual energy from solar projects is 11,000 kWh and average annual GHG savings per project are 7.8 tCO_{2e}. Total 6.9 MW of solar electricity approved since 2016.

Education and tools: Program staff perform a full review of each proposal to ensure it aligns with best practices before installation.

Unique features: Program is specifically for solar electric, solar hot air and solar hot water home upgrades.

Home Energy Loan Program

Location: Toronto, ON

Program Type: Property Assessed Clean Energy (PACE) Financing Program.

Program Administration: Program administered in house by municipal staff.

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Launch date: Original program launched in 2014 with interest rates set to the city's cost of borrowing. A new program with FCM funding launched in July 2022.

Uptake: 2,590 applications received, and 786 approved.

Interest rate and fees: Multiple interest rates offered and depend on the loan term. The administration fee is 2% of the loan amount.

- 5 year – 3.39%
- 10 year – 3.74%
- 15 year – 4.19%
- 20 year – 4.24%
- 0% interest program launched with FCM funding

Funding Sources:

- FCM Community Efficiency Financing Program for zero-interest loan program
- Internal reserves

Environmental performance: Unknown

Education and tools: Senior energy coach on staff to provide in house energy coaching and technical assistance to property owners. Also hosts Net Zero Renovation training for building and contractors to build capacity for net zero renovations. Information, resources, and webinars/videos on BetterTO website to educate on energy retrofits and decarbonization at home. Educational and awareness programming key actions within the City of Toronto NetZero Existing Buildings Strategy.

Unique features: Program requires written consent from mortgage lender before a participant is approved for a loan.

Regional Energy Efficiency Program (REEP)

Location: Nelson and surrounding Regional District of Central Kootenays, BC

Program Type: On-Bill Financing Program.

Program Administration: deliver the program in partnership with Nelson Hydro (electrical utility provider).

Launch date: Originally launched in 2012; program expanded to regional district in 2019.

Uptake: 800 participants registered prior to 2019, and 750+ participants registered since regional expansion.

Interest rate and fees: Interest rate is 3.5% with a 5- or 10-year loan term and maximum loan amount is \$16,000. Administration fee is \$100 per loan.

Funding Sources:

- FCM Community Efficiency Financing Program

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- Source of matching funds are unknown

Environmental performance: Average energy savings per project 35%.

Education and tools: Free training provided to contractors through builder training program.

Unique features: Program contracts one service provider to do all energy evaluations, income-qualifying applicants can receive a free energy audit and installation of energy efficient products. In addition to home upgrades, loans of up to \$8,000 are available for an electric bike.

Retrofit Halton Hills

Location: Halton Hills, ON

Program Type: Property Assessed Clean Energy (PACE) Financing Program.

Program Administration: Program managed in-house by town staff.

Launch date: April 2022.

Uptake: Program funding fully allocated and not accepting new applications. 11 applications received, 9 approved for funding.

Interest rate and fees: Interest rate is 0% over a 10-year term. Administration fee is \$450 per loan.

Funding Sources:

- FCM Community Efficiency Financing Program
- Source of matching funds are unknown

Environmental performance: Participating homes have a baseline energy use/GHG profile that is 1.7-1.8 times the average in Halton Hills. Total estimated energy reduction of 807 gigajoules per year which is equivalent energy use of 6.75 Halton Hills homes. Total estimated GHG reduction of 44 tCO_{2e} per year which is equivalent GHG emissions of 9 Halton Hills homes.

Education and tools: Free training provided to contractors through builder training program.

Unique features: Home must be at least five years old to be eligible for the program.

Saanich Heat Pump Financing Program

Location: Saanich, BC

Program Type: Property Assessed Clean Energy (PACE) Financing Program.

Program Administration: City Green Solutions administrates the program and provides energy coaching support.

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Launch date: Pilot program launched in April 2022. Saanich is planning for a re-launch of the program in August 2023 and will accept a minimum of 50 homes per year for three years. Eligibility criteria will be expanded from replacing only oil-based heating systems, to replacing all fossil fuel-based heating systems including natural gas and propane furnaces.

Uptake: Initial pilot phase was fully subscribed and closed in September 2022. Current uptake from pilot phase is as follows:

- 51 participants, including 22 income-qualified households
- 29 completed projects

Interest rate and fees: Interest rate 0% over 10-year term. No administrative fee to participate.

Funding Sources:

- FCM Green Municipal Fund
- Real Estate Foundation of BC
- The district is moving to implement a revolving green fund, which would allocate \$600,000 per year for three years. The concept is endorsed in principle and \$600,000 for the first year approved from surplus for the 2023 budget.

Environmental performance: Average GHG savings per project: 5.5 tCO_{2e} per year.

Education and tools: Energy coaching support is provided by City Green Solutions.

Unique features: Program can only be used for replacing fossil fuel-based furnaces or boilers with electric heat pumps and related work such as an electrical service upgrade or ducting modifications.

Solar Colchester/Cozy Colchester

Location: Colchester County, NS

Program Type: Property Assessed Clean Energy (PACE) Financing Program.

Program Administration: PACE Atlantic administers the program and provides energy coaching support.

Launch date: October 2021.

Uptake: Received 560 applications and 185 projects are completed. The program is currently full and not taking new applications. Program was expected to re-launch in Spring 2023, but there is no new information on their website to date.

Interest rate: Interest rate is 0% and loan terms of 10 or 15 years are available. The administration fee is 5% of the total loan value and waived for income-qualified participants. The estimated interest rate for the program re-launch is 3.75%.

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Funding Sources:

- FCM Community Efficiency Financing Program
- User-pay model: Solar and Cozy Colchester operate on a user-pay model, meaning the programs are not subsidized by non-participating taxpayers.

Environmental performance: Average GHG savings per project: 8 tCO_{2e}.

Education and tools: Energy concierge from PACE Atlantic is assigned to each project and oversees the project or guides residents from application to repayment of loans.

Unique features: Home Energy assessments are provided for free to all program participants.

Switch Program

Locations:

- Stratford and Charlottetown, PEI
- Wolfville, NS

Program Type: Property Assessed Clean Energy (PACE) Financing Program.

Program Administration: PACE Atlantic administers the program and provides energy coaching support.

Launch date: July-August 2021.

Uptake: Wolfville and Stratford programs are full and not accepting new applications. The Charlottetown program is expected to continue running until Fall 2023. Uptake numbers are as follows:

- 846 projects are ongoing with 620 completed and an average loan of \$14,000.

Interest rate: Interest rate is 0% and loan terms of 10 or 15 years are available. The administration fee is 5% of the total loan value and waived for income-qualified participants.

Funding Sources:

- FCM Community Efficiency Financing Program
- Municipalities and provincial efficiency organizations
- User-pay model: Solar and Cozy Colchester operate on a user-pay model, meaning the programs are not subsidized by non-participating taxpayers.

Environmental performance: Average GHG savings per project: 2.79 tCO_{2e}. Annual GHG reductions are 2,500 tCO_{2e} from completed projects.

Education and tools: Energy concierge from PACE Atlantic is assigned to each project and oversees the project or guides residents from application to repayment of loans.

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Unique features: Each participant's project is run through an energy modelling software to ensure a savings-to-investment ratio is met; meaning monthly savings from projects exceed monthly loan repayments. Energy audits are provided to all program participants for free.

United States Programs

A scan of R-PACE programs throughout the U.S was completed, and it was identified that R-PACE enabling legislation is active in three states including:

- California (10 active programs),
- Florida (4 active programs), and
- Missouri (3 active programs)².

PACE Nation PACE Programs provides a map and a link to each of the PACE programs being offered throughout the U.S.

Current R-PACE programs enable single-family, one-to-four-unit residences, homeowners no upfront cost financing for renewable energy, energy and water efficiency, and resiliency retrofits on their homes³. PACE programs are typically enabled through state legislation and authorized at the local government. Municipalities may directly administer R-PACE programs, or they may be delivered through public-private partnerships with one or more PACE providers⁴. Financing is based on the assessed value of the property and owners may be eligible for up to 100% of the cost of eligible projects through fixed rates and financing terms of up to 30 years. Interest rates vary through programs; however, they are generally between 7-10%⁵.

Eligible projects typically include:

- Resiliency Measures - Earthquake, Flood, and Grid Resiliency (Resiliency retrofit eligibility varies with the state),
- Energy - Efficiency Measures,
- Water - Efficiency Measures, and
- Renewable Energy Measures.

R-PACE programs cannot currently be used for financing new construction unless the ownership is transferred from the developer to the property owner⁶. However, a study conducted by the Rocky Mountain Institute identified that R-PACE for new construction could scale net-zero energy (NZE) or NZE-ready home construction⁷.

² <https://www.energy.gov/scep/slsc/property-assessed-clean-energy-programs#residential>

³ <https://rmi.org/our-work/buildings/residential-energy-performance/faq-pace-for-homes/>

⁴ <https://www.energy.gov/scep/slsc/property-assessed-clean-energy-programs>

⁵ <https://rmi.org/our-work/buildings/residential-energy-performance/faq-pace-for-homes/>

⁶ <https://rmi.org/our-work/buildings/residential-energy-performance/faq-pace-for-homes/>

⁷ https://rmi.org/wp-content/uploads/2017/10/RMI_R-Pace_for_NZE_Insight_Brief_2017.pdf