Empowering municipal climate action

Lessons learned from CAANZero, an innovative program exploring a financing mechanism for local governments.

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Executive summary

Cities, towns and villages are responsible for more than half of Canada's greenhouse gas emissions. As such, they play a critical role in lowering emissions, especially through the decarbonization of the building sector. But municipalities also face budgetary and capacity challenges, and they are limited in their ability to finance retrofit projects. As more municipalities commit to net-zero emissions by 2050, achieving that goal requires additional expertise and sources of capital.

The Climate Action Accelerator to Net Zero (CAANZero) was an initiative created by MaRS Discovery District to help small and medium-sized municipalities address two key barriers to meeting their net-zero climate targets: financing and capacity. Specifically, the goal of the program was to provide municipalities with access to private capital through a blended finance mechanism as well as expertise and capacity support to facilitate energy retrofits of municipally owned and managed buildings. The program consisted of three phases and ran from February 2020 to July 2024.

Through the first two phases of the program — design and feasibility — the program identified the key challenges and barriers faced by small and medium-sized municipalities in meeting climate goals, explored national and international models for financing energy retrofits of municipal infrastructure, and used the strengths of these examples to design a model relevant to the Canadian context. A climate action accelerator manager (CAAM) role was created to manage the financing mechanism and to identify, prioritize, and implement energy retrofits in partnership with municipalities.

As the program moved into its implementation phase, MaRS focused on engaging municipalities to form municipal cohorts in Ontario and British Columbia (the pilot provinces identified in the program's second phase), procuring a CAAM, and determining a fund structure that would appeal to investors. Through this work, two of our base assumptions — the need for an innovative financing vehicle for energy retrofits in British Columbia, and that we could structure the financing as an energy service agreement that would not be characterized as a debt obligation in Ontario — were challenged. As we focused pilot implementation in Ontario, key legislative and financial barriers also emerged that significantly limited our ability to successfully implement the CAANZero model.

Legislative barriers: Limiting policy and regulatory environment

- Ontario's municipal finance laws limited the structure of the CAANZero financing mechanism to a debt-based option — debentures — that would directly compete with lower-cost, better established capital available. In addition, debt limits, general debt aversion and lower-tier municipal restrictions in Ontario hindered the potential municipal participation in the CAANZero program.

Financial barriers: Competing capital

- While grant funding and blended grant and loan programs are often oversubscribed, existing sources of low-cost municipal debt — such as those available through province-backed issuers — are not being fully leveraged. These sources of capital offer significantly better rates than what was possible with private investors, even when leveraging patient capital. This has the effect of inadvertently crowding out private capital, including innovative financing mechanisms like CAANZero.

Other hurdles that created additional levels of complexity and uncertainty include restrictive procurement processes that limit the ability of municipalities to receive support from third parties. These hurdles solidified MaRS's ultimate decision to not implement the CAANZero pilot.

While MaRS was not able to implement the model, we gained important insights. We focused on capturing the lessons learned and developed a list of recommendations specific to the different levels of government and other actors to overcome key legislative and financial barriers.

Recommendations for the federal government

1. **Provide municipalities with stable funding through enhanced fiscal transfers:** To meet resident needs, address climate change and manage growing responsibilities, municipalities — especially small and medium-sized cities — require robust and predictable funding. In line with the Federation of Canadian Municipalities' Municipal Growth Framework, municipalities need permanent, flexible federal transfers for infrastructure and climate initiatives to reduce reliance on alternative financing and to support staff capacity.
2. **Expand federal grant and loan programs for municipally led infrastructure solutions, with a focus on filling gaps for funding less suited to private-sector investment:** Federal grant and loan programs are crucial for small and medium-sized municipalities to fund infrastructure and climate projects, especially those without clear cash flows. To maximize impact, the government should streamline application processes and target funding for public-interest projects while enabling more space for private capital to support revenue-generating initiatives like municipal energy retrofits.

Recommendations for provincial and territorial governments

3. **Review and amend legislation and regulations governing municipalities to better align responsibilities with decision-making powers:** To match increasing municipal responsibilities with adequate funding, provincial and territorial legislative changes could enable local revenue diversification and private capital engagement. In Ontario, the Ministry of Municipal Affairs and Housing has an opportunity to work with municipalities in a collaborative process to review and consider amendments to the *Municipal Act, 2001*.
4. **Collaborate with the federal government to help fill municipal funding gaps:** Provincial and territorial governments must coordinate and expand targeted grant and loan programs in conjunction with federal initiatives, ensuring they are streamlined, complementary and focused on public interest projects with less defined return on investment. This coordination of funding opportunities to cover municipal finance gaps should include the low-cost capital available through province-backed organizations that go to capital markets.

Recommendation for municipalities

5. **Financial decision-makers in municipal governments identify and implement creative funding solutions for climate action:** Financial decision-makers should maximize existing revenue sources and explore innovative financing approaches for climate action. Strengthening collaboration across municipal departments, sharing best practices and engaging in advocacy can help push for necessary municipal finance reforms at the provincial and territorial levels.

Recommendation for all levels of government

6. **Leverage public funds as catalytic investments that help address market failures and policy gaps:** Governments across all levels should leverage the strategic use of public funds to address market failures and policy gaps in order to attract private investment. Public investments should be structured to offer targeted risk-sharing mechanisms that lower the cost of private financing and provide assurance to investors, better aligning public and private financing incentives.

Recommendation for other ecosystem actors

7. **Agencies or other entities that distribute public funds or provide low-cost borrowing, consider a funding mix that enables the crowding-in of private capital:** While municipalities need access to affordable public capital, MaRS found through the CAANZero program that existing grants and low-cost loans can inadvertently crowd out private investment. In line with Recommendations 2 and 4, MaRS recommends that entities that provide capital prioritize public dollars for large-scale public benefit projects with uncertain cash flows, while private capital may be leveraged for investments with clear returns, such as energy retrofits, ensuring a more efficient allocation of resources.

This report seeks to contribute to a larger body of research that explores innovative financing solutions for municipalities in order to implement solutions that meet the complexity and urgency of the environmental, social and economic issues facing their constituents today.

As we close out the CAANZero program, MaRS remains committed to supporting municipal climate action. CAANZero materials, which include key implementation documents that could guide future pilot projects, are available by request. For more information, reach out to the MaRS Climate team at mfm@marsdd.com or visit the CAANZero website.

Introduction

The need for infrastructure investment

Small and medium-sized municipalities face financing constraints and capacity shortfalls, which can make it difficult to implement climate solutions.

The climate crisis affects everyone, but its effects are most vivid, deadly and expensive when climate-related disaster strikes urban areas: wildfires in Los Angeles and Fort McMurray, flooding in Toronto and Toledo, Spain. But just as municipalities bear the brunt of these weather events, they are also the place where climate impacts can best be mitigated and fought. According to the Intergovernmental Panel on Climate Change, urban areas generate between 67 and 72 percent of the global share of carbon emissions. In Canada, the Federation of Canadian Municipalities estimates that 50 percent of the country's greenhouse gas (GHG) emissions are generated within municipal boundaries. Reducing those emissions has immediate environmental, social and economic benefits for those communities — and beyond.

Cities of all sizes play an essential role in the transition to net-zero emissions, including in the decarbonization of the building sector. Municipalities are responsible for 60 percent of Canada's public infrastructure. However, there are limitations in their ability to finance retrofit projects. Municipalities receive eight to 10 cents of every tax dollar collected in Canada. After spending on services, operations and maintenance, however, less than 20 percent of those revenues are available for infrastructure investment. Demands for low-carbon infrastructure compete with a growing list of socio-economic challenges for which municipalities are tasked with finding solutions and administering community-support programs. While financing and capacity challenges hamper bold climate action across Canadian cities, they are particularly pernicious in smaller municipalities which have limited budgets and staff capacity.

To address financing constraints and capacity shortfalls, the Climate Action Accelerator to Net Zero (CAANZero) aimed to support small and medium-sized municipalities across the country in meeting their climate goals by tackling these challenges.

A model for municipalities

CAANZero was led by MaRS Discovery District (MaRS), a Canadian charity and North America's largest urban innovation hub. As a non-partisan organization with a broad network, MaRS is uniquely positioned to bring together stakeholders from the climate economy, including startups, companies, not-for-profit organizations and different levels of government to advance climate solutions. CAANZero was supported by our implementing partner, SVX, a non-profit diversified financial services firm with expertise in the support, design and management of impact investing funds.

CAANZero was designed to support energy retrofits of municipally owned and operated buildings. The focus of the program recognized that Canada's buildings sector accounts for close to 17 percent of the country's total GHG emissions (including electricity usage), and that an estimated 70 percent of existing buildings will still be in use in 2050. Retrofitting existing infrastructure will be key to reaching Canada's goal of net-zero emissions by 2050, but the price tag is high: retrofitting buildings across Canada is expected to cost approximately $400 billion over the next 20 years.

The goal of the CAANZero program was to provide small and medium-sized municipalities with access to private capital investment, which would otherwise be difficult to reach, to support municipal building retrofits. At the same time, it sought to provide expertise and capacity building to identify, evaluate and execute climate-positive projects at the necessary scale and pace.

The CAANZero financing and capacity-building model was developed and iterated over the course of more than four years through meaningful engagement with more than 50 stakeholders, including advisors and municipal partners. (For an outline of the progression of CAANZero over three phases see page 8, and the outline of the proposed model on page 10.)

Phases of the CAANZero program

Phase 1:

Designing a framework for Canadian municipalities

In February 2020, MaRS created the Municipal Impact Investment Fund (MIIF) program to better understand and address the climate infrastructure challenges Canadian municipalities face as they strive to meet their GHG reduction targets. A 13-person expert advisory committee was established, which included representatives from municipalities and financial institutions, private investors and experts in municipal climate action.

Through extensive interviews, secondary research and strategic consultations with the advisory committee, MaRS identified and explored four different national and international solutions for municipal climate finance: the Canada Infrastructure Bank (CIB); energy service companies (ESCOs); green banks; and the U.K.-based Mayor of London Energy Efficiency Fund (MEEF) program. The MEEF program was particularly helpful. Initiated by the Greater London Authority and led by Amber Infrastructure, which has extensive experience in infrastructure fund management, the program provides flexible and competitive financing to advance low-carbon projects in London.

The MIIF program promoted two key features: a focus on the unique needs of small and medium-sized Canadian municipalities, and developing a portfolio of energy retrofit projects across a cohort of municipalities to deliver blended financing that individual municipalities might not be able to access on their own. There are a number of ESCOs in Canada that offer financing and technical expertise for energy retrofits. To date, however, these organizations have not focused on working with municipalities due to barriers such as long timelines, layers of bureaucracy, procedural challenges and an inability to compete with cheaper sources of capital to which municipalities have access. ESCOs have therefore prioritized working with privately owned assets.

The CIB, an arms-length Crown corporation, has a mandate to prioritize infrastructure projects that benefit Canadians — including energy retrofits — with $35 billion to invest, as well as the ability to attract additional investment from private sector investors and institutional investors. However, many small and medium-sized municipalities struggle to develop the project size necessary for CIB investment and often do not have internal capacity to lead project aggregation. The MIIF program sought to address these gaps.

Phase 1 was completed in April 2021 and insights were captured in a Design Study Report. The report recommended that the program move to the feasibility assessment stage, which would include designing a detailed model for two provinces that could enable pilot implementation.

Phase 2:

Feasibility assessment of CAANZero

In February 2022, MaRS launched Phase 2 of the program, which was rebranded as the Climate Action Accelerator to Net Zero (CAANZero) based on consultations with partners. Those consulted determined that CAANZero better reflected the desired outcome of the climate finance and capacity support model.

In this phase, pilot feasibility assessments were conducted with the participation of four municipalities: Barrie, Peterborough and Halton Hills in Ontario; and Victoria in British Columbia. With input from cross-departmental staff in each city and climate champions in financial institutions and ESCOs, two approaches to the CAANZero model were proposed: a one-stage approach utilizing a special purpose vehicle (SPV) to capitalize projects; and a two-phase approach with a limited partner/general partner (LP/GP) to complement the initial SPV.

Both approaches promoted blended finance by leveraging public seed capital to secure follow-on private investment. The program design centred on a public-private partnership between municipalities, public investors, private investors, public asset owners and private asset owners. Core to both approaches was the role of the climate action accelerator manager (CAAM), a third-party expert or group of experts with the knowledge and experience to undertake technical energy retrofit projects from origination to implementation, and the financial management expertise to set up investment funds and attract investors.

Phase 2 was completed in March 2023 and insights were captured in a Feasibility Study Report. The report recommended that the program move to the pilot implementation phase in Ontario and British Columbia, which would test the CAANZero research and assumptions under real-world conditions.

Phase 3:

Pilot preparation

In July 2023, MaRS initiated Phase 3 of the CAANZero program, which focused on piloting the program with municipal cohorts in Ontario and British Columbia. Phase 3 focused on the following activities:

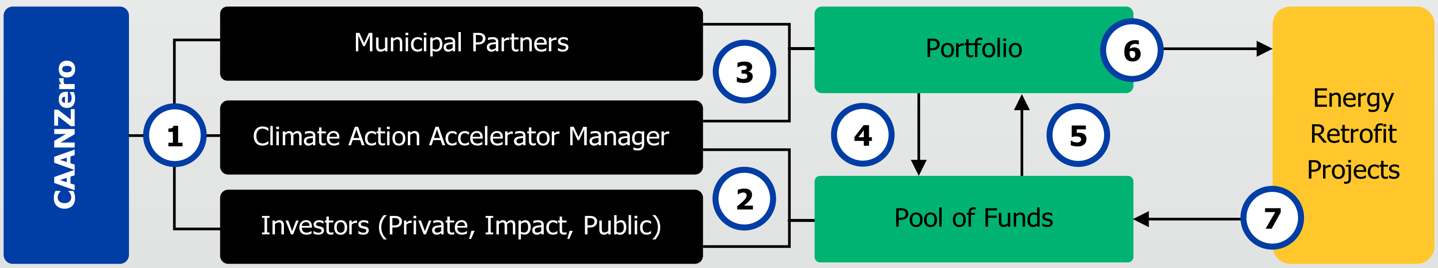
- **Engaging municipalities:** In partnership with CAANZero's lead municipalities, Peterborough and Cornwall, MaRS designed an open call to municipalities to form cohorts in each province.
- **Securing a climate action accelerator manager (CAAM):** MaRS assessed the Canadian marketplace for potential CAAMs, designed a procurement process, and developed a detailed description of required qualifications and responsibilities.
- **Designing the fund(s) structure and engaging investors:** MaRS refined the CAANZero fund model, determined the fund structure in Ontario and prepared to launch the call for investors.

The CAANZero model

Over the course of the CAANZero program, MaRS designed and continually refined the model with the engagement of three key stakeholders:

- **Municipalities:** Provincial cohorts of small and medium-sized municipalities (three to five municipalities per cohort) to provide insights and leadership in retrofit project prioritization and implementation.
- **Investors:** Private and patient capital investors at various investment levels and risk profiles to invest in a pipeline of bankable retrofit projects.
- **The climate action accelerator manager (CAAM):** The entity responsible for the management and deployment of funds into energy retrofits for municipally owned and operated buildings.

The proposed model for how these actors would work together is outlined below.



1. MaRS convenes the necessary stakeholders to launch the CAANZero pilot and provides support through every step of the project.
   - MaRS, with support from SVX and the lead municipalities, will procure a CAAM.
2. The CAAM will secure investment commitments, focusing on private investments. The CAAM will also assess risk profiles and investment needs for retrofit projects, walk investors through the CAANZero process and secure commitments to consider investing alongside public capital in project portfolios originated, analyzed and aggregated through the CAANZero program.
   - These commitments do not entail a release of funds; rather, they provide directional support for the CAAM to understand the needs of each investor. Capital from investors will only be released once they approve specific project portfolios.
   - MaRS will provide support in the engagement of public and impact investors, to complement the finance offering available, and balance risks through patient capital.
3. Leveraging their expertise, the CAAM will provide comprehensive support to municipalities as asset owners in order to identify, evaluate and develop a financial plan for viable retrofit projects.
   - Municipalities in each of the province-based cohorts will be selected through an open call process that MaRS will lead.
4. Viable projects identified by the CAAM and municipalities will be added to an investment-ready project portfolio for the CAANZero in order to streamline the investment process and attract the necessary scale of capital. Due diligence will be undertaken, by the CAAM, on all projects to ensure that the environmental and investment objectives of the CAANZero program are met. Once all criteria have been met, the CAAM will present project portfolios to private, public and impact investors based on their respective investment profiles.
5. Investors will have the opportunity to review the terms of the portfolio and make a decision on whether to invest. The CAAM blends catalytic public and impact capital with private capital to finance the execution of project portfolios. The CAAM also oversees and/or guides project execution, evaluation and outcomes verification.
   - A portfolio’s risk and return expectations, including terms, must be agreed upon in advance by the participating municipalities.
6. Funding is released, triggering the start of the retrofit project(s) with support of the CAAM.
7. Savings in energy and operational costs that have resulted from a retrofit are used to repay investors. The CAAM reports on project outcomes and impacts.

Challenges and barriers

As we worked through the pilot preparation activities as part of Phase 3, it became clear that CAANZero's ability to deliver a competitive and scalable municipal financing option was limited.

First, some of our base assumptions were challenged; specifically, the need for an innovative financing mechanism in British Columbia and the ability to structure the financing as an energy service agreement that would not be characterized as a debt obligation in Ontario. At the same time, key policy, regulatory and financial barriers were identified, as well as a set of additional challenges that further complicated the work to meet the goals of Phase 3. It was ultimately decided that MaRS would not move forward with pilot implementation.

For the remainder of Phase 3, therefore, we conducted additional research into the barriers preventing private capital from reaching municipalities in Ontario for energy retrofits, and developed a set of recommendations that could help actors overcome legislative and financial impediments. For this work, we used the following methodology:

- Synthesizing insights from Phases 1 and 2, as well as our preparations for pilot implementation as part of Phase 3.
- Conducting in-depth secondary research into policy, regulatory, financial and other barriers to implementing the CAANZero model and municipal energy retrofits.
- Engaging subject-matter experts to substantiate insights and recommendations.

The Lessons Learned section below outlines the key takeaways gleaned from the additional research. The Recommendations section presents insights and suggestions from public sector decision-makers and other actors to guide solutions that can address the identified barriers.

Lessons learned

Here are the key takeaways and insights derived from our efforts to implement the CAANZero model and with input from stakeholders and experts in the area of financing for building retrofit projects.

Rethinking assumptions

British Columbia: Reassessing the need for an innovative debt financing mechanism for energy retrofits

During the early phases of CAANZero, MaRS built relationships with a number of municipalities in British Columbia, identifying a few key champions in the province who would be willing to explore the opportunity presented through the CAANZero program. However, as we shifted to pilot implementation, it became clear that the need for a model like CAANZero was limited.

First, British Columbia has a relatively clean grid, which means a lower cost of energy that in turn reduces the potential energy cost savings for municipal energy retrofits and GHGs would be less significant. This would make the repayment structure for a model such as CAANZero, which hinges on energy savings, less viable. We also wanted to focus the pilot in a location where there was a balance between the effort to implement the model and the impact in terms of GHG reduction.

The need for the CAANZero financing model was also obviated by the availability of capital for municipal energy retrofits. Municipalities of all sizes in British Columbia have access to low-cost and flexible financing through the Municipal Finance Authority (MFA), which can be used for energy retrofit projects. The MFA uses a collective structure to pool the borrowing and investment needs of communities and offers lending rates that are below those offered by banks. All borrowing and lending by municipalities in British Columbia, with the exception of the City of Vancouver, occurs through the MFA. With the MFA able to access private debt markets and distribute capital to municipalities at low cost, CAANZero seemed of limited additional value.

Finally, compared to other provinces, British Columbia has had stronger municipal support programs and resources for retrofits of publicly owned and operated infrastructure such as the CleanBC Communities Fund and the Local Government Climate Action Program. Many of the municipal energy retrofits that would have provided higher energy savings could be completed with other sources of capital, making CAANZero a less attractive opportunity.

Recognizing that the CAANZero model would provide greater value in other jurisdictions, we made the decision to assess another province for the pilot, while focusing on our implementation efforts in Ontario.

Ontario: Structuring CAANZero financing as a service payment

The second assumption MaRS tested was whether CAANZero financing could be structured as a service payment. As noted above, CAANZero's financing structure was based on the energy service company (ESCO) model. CAANZero's goal was to make the ESCO structure more accessible to small and medium-sized municipalities through aggregation, and with the intention of engaging one of the major ESCOs for the CAAM role. In the typical ESCO model, ESCOs could be considered service providers because their model relies on energy performance as a way to generate cash flow and repay the cost of the retrofits, the details of which are outlined in energy performance contracts. As part of these contracts, ESCOs can guarantee the energy savings or performance improvements of the energy projects they implement. Given that payments to the ESCO are tied to the energy savings or performance, this, in non-municipal spaces, can be considered a service rather than a loan or debt obligation.

CAANZero sought to test if this structure would apply to municipalities. This would mean that financing for energy retrofits would not appear as a debt obligation on a municipality's balance sheet, making it a more appealing option to finance energy retrofits. As discussed further in the next section, municipalities in Ontario have an annual limit for principal and interest repayments when taking on new long-term debt. This limit applies to financial commitments, liabilities and contractual obligations, for which payment would be required beyond the term for which the council was elected — which is typically four years in Ontario. Because payments as part of an energy performance contract would extend beyond four-year council terms, the municipal treasurer could characterize these payments as a long-term debt liability. Treasurers have some discretion in how they characterize the annual amount payable, which could keep the energy services off the balance sheet; however, due to a lack of consistency in how municipal treasurers apply this interpretation across municipalities, it would be challenging to position the CAANZero model as a non-debt obligation that could be scaled across jurisdictions.

With this new insight, MaRS realized that we would need to explore explicitly debt-based options for structuring the CAANZero financing mechanism.

Legislative and financial barriers to CAANZero implementation in Ontario

Based on what we learned, we made the decision to focus on debt-financing in Ontario for the pilot, while continuing to explore other provinces as options. But as we dove deeper into the debt-based structure for the CAANZero financing mechanism in Ontario and engaged more municipalities, other barriers emerged that limited our ability to implement the model.

Limiting policy and regulatory environment

Every province has its own rules and legislation regarding municipal borrowing and debt. In Ontario, the *Municipal Act, 2001* is the central piece of legislation governing the province's municipalities. The policies and regulations under this act can impede municipalities' participation in innovative financing models such as CAANZero. The act also limited the options available for the structure of the CAANZero fund model.

Municipal engagement with CAANZero

We identified several factors that affected municipal engagement with innovative financing programs such as CAANZero. One key limitation under the *Municipal Act* is the annual repayment limit (ARL), commonly referred to as a "debt ceiling," which is the maximum amount that a municipality can pay in principal and interest payments annually for new long-term debt. The *Municipal Act* in Ontario sets the ARL at 25 percent. A number of municipalities have established internal debt policies and procedures that set limits lower than 25 percent to ensure financial stability and transparency.

In our research, Ontario-based stakeholders in municipal finance noted that the majority of municipalities are well within their debt limits. Should a municipality require approval to exceed the limit, an external regulatory approval process through the Ontario Land Tribunal is available to them. Nevertheless, the ARL can sway a municipality to take a conservative approach to borrowing capital. In addition, municipalities face competing priorities when it comes to infrastructure investments. Municipalities must continue to invest in the maintenance of existing infrastructure assets, while also investing in new infrastructure or retrofits that meet broader goals such as accessibility and climate adaptation. When a municipality is limited in the amount of debt it can take on, this can make it difficult to prioritize large capital projects related to climate action.

Another hurdle is municipal government structure. In Ontario, there are three types of municipalities: single-tier, upper-tier and lower-tier. The relationship between the upper-tier municipality and the lower-tier municipalities within their purview, including the authority for lower-tiers to issue debt, is further characterized by the type of upper-tier municipality. Lower-tier municipalities within counties generally have more autonomy than municipalities within regions. Importantly, lower-tier municipalities within regional municipalities cannot issue their own debt such as debentures or take on external debt financing without going through the upper-tier governments. This would limit the ability of certain small and medium-sized communities to participate in CAANZero. This is a particular challenge for lower-tier municipalities that have grown considerably since the *Municipal Act* was established and are keen to employ innovative financing mechanisms to invest in urgent climate related projects.

Options for CAANZero's fund structure

MaRS engaged external legal support to determine a viable structure for a debt vehicle that would work within the regulatory landscape of municipal borrowing. It was proposed that the best and most versatile option for CAANZero would be to use debentures. In this structure, a special purpose vehicle (SPV) would be established where investors receive undivided co-ownership interest in a pool or tranche of debentures issued by participating municipalities.

There is precedent in the province where multiple entities issued debentures to an SPV to raise capital. However, important questions about investor needs remained, namely, whether investors would require a ratings instrument for the SPV, or if the loans, by virtue of being protected by a tax base and having been subjected to some level of credit scrutiny, would be sufficient to establish credit worthiness. These questions could only be addressed by the CAAM who would flesh out the details of the fund model and socialize it with potential investors. This option complicated the original implementation process proposed for

CAANZero, as it required the CAAM to be secured by MaRS rather than by the cohort of municipalities.

It is important to note that Infrastructure Ontario (IO), a Crown agency of Ontario that invests in and executes on projects across the province, provides infrastructure loans to municipalities through debentures. If CAANZero were to create a similar financing structure, it would be in direct competition with IO's loan program, which offers competitive rates for energy retrofits and makes financing available to small and medium-sized municipalities that otherwise cannot access capital markets. In discussions with Ontario municipal finance stakeholders, MaRS discovered that, while IO has a concentration limit for financing per municipality, the vast majority of municipalities have not reached these limits. A number of stakeholders noted that IO is the primary lender to provincial municipalities. Given the competitive rates it can offer, it would be difficult to position CAANZero as an optimal or even complementary offering — particularly since MaRS is not well-established among municipal financing entities, in addition to municipalities' general wariness to approach private capital.

MaRS also looked into the possibility of structuring the financing as a conditional loan agreement, akin to the municipal financing offered by CIB. The CIB successfully advocated for an amendment to the *Municipal Act* and the *City of Toronto Act*, as well as bylaw changes in every participating municipality. While the CIB's national mandate, as well as its internal capacity and expertise, gives it leverage to change or adapt structural barriers to municipal financing, this level of legislative influence would be beyond the scope of the CAANZero pilot project.

Not only was the proposed CAANZero financing arrangement difficult to align with Ontario's regulatory regime, but it would also require a re-design for every province where it would be implemented as each has a unique policy and regulatory framework governing provincial municipalities. This would add a level of complexity to pilot implementation; the need for multiple fund models across Canadian provinces and territories would create barriers to scaling CAANZero. This is not to say that it could not be done; rather, that it would be difficult for one organization to lead this work across Canada in a timely and cost-effective way, which was the goal for Phase 4 of the CAANZero program.

Given the impediments listed above, the value of the model and the likelihood of pilot success is limited at best. Important changes would be required to make CAANZero viable in Ontario, some of which are discussed below in the Recommendations section.

Competing capital

Canadian municipalities meet their growing expenditure needs through various means: own-source revenue[1], intergovernmental transfers, grants and, in some cases, debt, which is guided by province-specific rules and regulations. However, intergovernmental transfers have not caught up with the expanding responsibilities of municipalities, which receive eight to 10 cents of every tax dollar collected, yet must manage and

[1] Own-source revenue options across all provinces and territories are: taxes on property, user fees, fines, license and permit fees, sales revenue and investment income. Other sources (e.g., land transfer taxes, development charges, etc. vary based on the province or territory).

maintain more than 60 percent of public infrastructure. Barring municipal finance reform, municipalities have limited options for taking on large capital expenditures for municipally owned and managed buildings. Options include raising property taxes and user fees to increase own-source revenue, issuance of debt, external sources of capital (for example, government grants and loans, where permitted) and exploring alternative sources of capital.

The CAANZero model was designed to be an alternative and complementary pool of funds that crowded in private capital in order to move forward timely energy retrofits. We discovered instead that external sources of capital that are available to municipalities were: a) at times not fully leveraged; and b) offering significantly better rates than what CAANZero could offer, and therefore inadvertently crowding out private capital.

Debt through various sources of capital

Research has continually shown that municipalities can face a financing gap in taking on climate mitigation projects. In our conversations with municipal and provincial government stakeholders, however, it became clear that debt finance from entities that can access capital markets, such as Infrastructure Ontario (IO), even at highly competitive rates, is not being exhausted at an option. This suggests that the funding gap was not entirely due to a lack of available capital, which CAANZero was designed to address, but rather that there were important barriers in accessing existing funding options and insufficient capacity to undertake more projects even when capital might be available. In addition, as noted above, it is common for municipalities to operate under provincially imposed constraints when taking on debt, and, at times, adopt a conservative approach to undertaking debt financing.

At the same time, there is significant demand and uptake when the offering is a combination of grants and low-cost loans. For example, the Community Buildings Retrofit Initiative through the Federation of Canadian Municipalities' (FCM) Green Municipal Fund is often oversubscribed. This suggests that municipalities will, from the outset, seek the cheapest capital available to finance their projects.

It is important to emphasize there is a difference in the sources of capital described above, even if both incur debt for the municipality. Because a province-backed entity such as IO can access capital markets, its pool of funds is not inherently limited. There are, however, constraints, such as credit ratings, market conditions and the cost of accessing capital markets. The Green Municipal Fund does not raise funds in capital markets. Rather, it is a revolving fund with limits on its allocation of grants and loans. These can be considered relatively constrained resources, and receiving funding entails a competitive process.

Lower-cost capital

The CAANZero model was designed to offer an innovative source of capital within a broader stack of funding options. But municipalities continually emphasized that the main factor in their decision whether or not to access CAANZero financing was a competitive low-interest rate. MaRS found that in trying to provide competitive, a low-interest rate, CAANZero risked becoming over-reliant on a limited pool of patient capital (for instance, philanthropic capital), which was not a sustainable approach. Province-backed debt issuers, or entities like FCM, are able to offer interest rates that are not easily matched by the private sector.

It is important to note that we encourage increased funding of programs that support municipalities in their efforts to maintain services and infrastructure (discussed further in the Recommendations section). We suggest that those programs focus on the most effective and efficient use of resources, particularly when capital is constrained, in ways that can crowd in private capital when there is a compelling business case. Ultimately, the direct comparison to other low-cost capital limited CAANZero as a viable source of financing, even if there is a recognized need for additional capital in the municipal ecosystem.

For context, during Phase 3 of the CAANZero project, the macroeconomic conditions — primarily, high interest rates — made it a difficult time to raise capital. There are also a number of existing and upcoming opportunities that can provide competitive financing for municipalities, which further limits the market need or gap that CAANZero would fill. (See page 18 for examples of capital sources for municipalities.)

The availability of low-cost capital and the challenges with ensuring a low interest rate as part of the CAANZero fund model from the outset limited the potential for success of the pilot project. Deliberate changes to current funding offerings would need to be made for a model like CAANZero to work in Ontario, or for the development of other sources of funding that would fill the gap CAANZero was trying to address.

Sources of capital for Ontario municipalities

During Phase 3, we explored a number of sources of low-cost capital for municipal energy retrofits in Ontario. Listed here is a non-exhaustive list of funding sources that are available to small and medium-sized municipalities.

National sources of capital

Federation of Canadian Municipalities (FCM): The Green Municipal Fund (GMF)

The GMF manages approximately $2.4 billion in federally funded programs that support financing and capacity building for municipalities across the country. A range of activities are eligible, including climate planning and process building, as well as implementing climate mitigation and adaptation projects, with an emphasis on supporting small and medium-sized municipalities. Funding opportunities relevant to CAANZero have included the following programs: Community Buildings Retrofit; Pilot: Net-Zero Transformation; and Sustainable Municipal Buildings. A number of these programs received financing that covered much of the cost of energy retrofit projects; a grant portion of the GMF offering also covers the interest on the loan.

FCM is beginning to look at ways of crowding in private finance to bolster municipal infrastructure projects. This could be an important opportunity to explore a funding mix that prioritizes the allocation of public capital to de-risk projects associated with more difficult business cases, making them more appealing to private investors.

Housing, Infrastructure and Communities Canada: Green and Inclusive Community Buildings Program (GICB)

The GICB program was established through a commitment of $1.5 billion in federal funding over five years to support retrofits, repairs or upgrades of existing publicly accessible community buildings, with an emphasis on underserved and high-needs communities across Canada. The goal of the program was to reduce GHG emissions, advance best practices, and foster awareness and alignment to green building standards.

Ontario-specific sources of capital

Infrastructure Ontario (IO)

IO is a Crown agency of Ontario whose goal is to modernize and maximize the value of public infrastructure and real estate in cooperation with the private sector. Its business lines include major projects, real estate services, infrastructure lending, commercial projects and development. The agency manages a portfolio of thousands of provincial assets, develops commercial solutions for the government and — most relevant to CAANZero — invests in and executes on projects in communities province-wide, including those with a focus on energy efficiency retrofits.

Other barriers to CAANZero implementation

While legislative and financial factors represented the greatest barriers to implementing CAANZero and ultimately informed our decision to discontinue piloting of the model, other barriers emerged that also presented a challenge to successful CAANZero implementation. These barriers warrant further exploration.

Third-party support for municipal energy retrofits

The role of the CAAM would be central to the success of the CAANZero program. The CAAM would be tasked with managing the fund and supporting municipalities with technical expertise through every stage of an energy retrofit project. The latter was central to CAANZero's turnkey solution for small and medium-sized municipalities, providing essential capacity support in a context where staffing access to specialized skillsets are a consistent challenge.

The work of the CAAM was based on the ESCO business model, with the role of the CAAM ideally filled by an established ESCO or aggregator, which is an organization that bundles multiple energy-related services or assets together from a variety of sources to create a larger portfolio. Through CAANZero, MaRS intended to better facilitate work between ESCOs and small and medium-sized municipalities.

As part of the Phase 3 pilot activities, MaRS and SVX undertook a landscape assessment of potential CAAM organizations in Canada, to determine if there was market interest in this type of structure. In that assessment, we identified 18 organizations that could either provide technical expertise on energy retrofits or in fund management or both. A questionnaire was shared with these companies to assess the reaction of the market to the CAAM opportunities, as well as to inform and adjust the design of the CAANZero pilot program. While the questionnaire was straightforward, there was no incentive for submitting a response, and only one company participated.

Given the small sample size, we cannot draw broad conclusions. However, the low level of engagement might be indicative that the market is not prepared for a program like CAANZero. Important questions remain as to whether CAANZero, or another capacity support program, could facilitate more collaboration between ESCOs and small and medium-sized municipalities.

Traditional procurement processes

The municipal stakeholders we spoke with questioned the ability of the CAAM to lead the procurement of vendors and service providers as part of undertaking energy retrofits on municipally owned and operated buildings. This service is often offered by ESCOs to their clients. In addition to supporting municipal capacity, it was also suggested that this could allow the CAAM to take advantage of economies of scale, although doing so would be contingent on the geographical proximity of participating municipalities and alignment across the types of retrofit projects selected.

Speaking with procurement staff from the pilot's lead municipalities, Peterborough and Cornwall, we were unable to conclude with any certainty whether municipalities could allow another organization to procure vendors and service providers for energy retrofit projects on their behalf, as part of a group or a portfolio, even with the proper oversight mechanisms and active involvement of municipalities. To determine if the full set of services could be performed by the CAAM at scale requires further exploration with a more representative sample size of small and medium-sized municipalities.

Stakeholders frequently noted that municipal procurement processes hinder urgent climate action, a point that was also raised during the research phase. The reasons are multifold: the multiple and involved stages of procurement result in long timelines; processes favour the lowest-cost bids rather than social or environmental benefits; processes are often prescriptive, reducing opportunities for innovation; municipalities lack capacity to assess and adapt procurement policies to address current challenges. The province provides direction on municipal policies, including procurement. If a more streamlined procurement process is not a provincial focus, then a municipality can be limited in more in-depth, systemic changes. Further, municipalities often require explicit provincial authorization to engage in energy performance agreements.

While outside the scope of our recommendations, improving and modernizing policies and processes for traditional municipal procurement will be integral for municipalities to meet climate goals.

Innovative mindset across the ecosystem

Municipalities can be hesitant to be the first to try something new. It is much easier to convince decision-makers and constituents of the merits of innovative approaches after impact has been demonstrated by others. This conservative approach makes sense as municipalities deal with a range of demands, constituents and competing priorities to steward taxpayers' dollars. Oftentimes, constraints on innovation are the result of the policy, regulatory and financial limits that are placed on municipalities.

Even so, several municipalities expressed interest in exploring innovative paths forward for climate action. Absent a pilot project, however, it is difficult to determine the breadth of municipal interest in an innovative program like CAANZero.

On the program funding side, given the technical complexity and inherent riskiness of the CAANZero program, it was difficult to fundraise for such an innovative pilot project. A number of organizations we engaged acknowledged the value of the final product but were not able to fit the development and testing of the vehicle into their funding offerings. A particular challenge was our inability to estimate the GHG and energy reduction information at the program outset, given the energy retrofit projects would be selected almost halfway into implementation.

MaRS is grateful to the municipal staff and funders who worked with us to try something new. While specific recommendations for overcoming risk aversion are outside the scope of this report, it is important that stakeholders continue to find ways to support municipalities that are trying to solve complex problems and deliver innovative programs.

Recommendations

The following recommendations address the challenges preventing municipalities from implementing energy retrofit projects, and the barriers we encountered in implementing the CAANZero model. The recommendations focus on the ways in which the three levels of government and other interested parties can support innovative financing and capacity building to scale up retrofitting municipally owned or operated buildings. Our recommendations also address the need to make systemic changes such that municipalities no longer require alternative approaches such as the CAANZero program in the first place.

Recommendations for the federal government

1. **Provide municipalities with stable funding through enhanced fiscal transfers:** In line with the recommendations of the FCM's Municipal Growth Framework, MaRS recognizes that communities need reliable and predictable financing to adequately meet an increasingly broad range of responsibilities and to contend with the impacts of climate change. The misalignment between fiscal authority and responsibility is challenging for all municipalities, but it represents a particular challenge for small and medium-sized cities. The federal government should provide permanent, predictable and flexible funding through transfers to municipalities that support infrastructure investments and climate goals. Robust funding from higher levels of government could reduce the overall need for alternative financing mechanisms, while also helping bolster staff capacity.

2. **Expand federal grant and loan programs for municipally led infrastructure solutions, with a focus on filling gaps for funding less suited to private-sector investment:** Grant and loan programs are essential for small and medium-sized municipalities to initiate timely infrastructure projects. To ensure that these municipalities have access to low-cost financing options, the federal government should consider expanding its funding program offerings so that municipalities can adequately meet their infrastructure needs. At the same time, it is important to ensure the application process for funding programs is streamlined and designed to respond to the urgency of environmental, economic and social challenges.

   In particular, these grants and loans should be targeted at projects in the public interest that do not generate clear cash flows or projects whose primary beneficiaries are equity-deserving groups. For example, this could include low-cost funding for adaptation and resilience projects where benefits are difficult to quantify, or accessibility improvements in public spaces. A targeted and intentional design of funding programs with private capital attraction and retention in mind could help to fill important financial gaps for small and medium-sized municipalities.

Recommendations for provincial and territorial governments

3. **Review and amend legislation and regulations governing municipalities to better align responsibilities with decision-making powers:** Municipal responsibilities, which continue to expand, must be aligned with adequate levels of provincial funding. However, opportunities to explore diversified sources of revenue, including novel sources of private capital, will require legislative changes at the provincial and territorial level. Changes to legislation could grant municipalities greater autonomy and bolster their problem-solving abilities. While we want to acknowledge the importance of creating enabling environments for municipalities across Canada, given that the majority of our CAANZero Phase 3 work focused on Ontario, our recommendation is specific to the province.

   MaRS recommends that the Ministry of Municipal Affairs and Housing, which is responsible for overseeing the *Municipal Act*, collaborate with Ontario municipalities — particularly those that are small and medium-sized — to meaningfully explore amendments to policies and regulations to better reflect their needs. By providing municipalities with greater authority and decision-making power over financing options, provincial policy-makers could advance local solutions, and enable cities to better meet province-wide goals.

   MaRS is currently conducting research in this area that will become available later in the year.

4. **Collaborate with the federal government to help fill municipal funding gaps:** The provision of funding from higher levels of government is essential for municipalities to be able to meet their residents' needs. To maximize limited resources, federal, provincial and territorial governments must work in lockstep to address municipal funding gaps. Similar to Recommendation 2, we recommend a targeted and reliable set of provincial and territorial grant and loan programs be expanded. For existing programs, we recommend streamlining them to provide low-cost capital for priority projects that do not generate clear or consistent cash flows. The design of these programs should be stackable and complementary to federal funding programs and other financing options.

   This coordination and stackability of funding opportunities should also include the low-cost capital available through province-backed organizations that go to capital markets, such as Infrastructure Ontario, or the arms-length co-operative Municipal Finance Authority of British Columbia (recognizing their respective differences). These institutions provide a key source of infrastructure funding to municipalities and should continue to build awareness of their financing opportunities and simplify the process of working with them, with particular consideration of the capacity of small and medium-sized municipalities.

Recommendations for municipal governments

5. **Financial decision-makers in municipal governments identify and implement creative funding solutions for climate action:** Small and medium-sized municipalities have a long list of responsibilities with limited financial resources to fulfill them. In lieu of municipal financial reforms at provincial and federal levels, financial decision-makers, including finance team staff, councillors and finance committee members, should review and maximize all available revenue sources to move forward time-sensitive infrastructure projects. In addition, decision-makers can capitalize on opportunities to identify and embrace innovative practices, as well as consider solutions within the outer limits of their authority to advance municipal goals.

   Finance departments are also fostering horizontal alignment with sustainability and climate change teams, as well as with other planning and decision-making departments, divisions and agencies, using tools such as asset management, carbon budgeting or levies (see Halifax's Climate Action Tax as an example). Breaking down siloes helps clarify and sync priorities, promote buy-in for climate-positive projects, and create more opportunities for initiating projects that can meet multiple environmental, social and economic goals. Many innovative solutions exist and are being implemented across Canada; whenever possible, financial decision-makers should collaborate to share best practices.

   Financial decision-makers in municipalities can also play an important advocacy role by engaging provincial and territorial governments to push for municipal finance reforms. Organizations and associations such as the Association of Municipalities of Ontario (AMO) and the Municipal Finance Officers' Association (MFOA) can also advocate on behalf of municipalities.

Recommendations for all levels of government

6. **Leverage public funds as catalytic investments that help address market failures and policy gaps:** Assuming other barriers are addressed, public funding can play a critical role in catalyzing private capital for energy retrofits by mitigating risk and improving the financial viability of projects. Governments at all levels should leverage the strategic use of public funds — through concessional financing, loan guarantees and first-loss capital — to address market failures and policy gaps preventing further private investment. A blended finance approach, where public capital includes credit enhancements or covers early-stage project development costs, can make municipal energy retrofit projects more attractive to private investors.

   To maximize impact, federal and provincial programs should be structured to offer targeted risk-sharing mechanisms that lower the cost of private financing and provide assurance to investors. By incentivizing private financing, governments can accelerate the pace and scale of municipal energy retrofits, driving deeper emission reductions and long-term energy savings.

Recommendation for other stakeholders

7. **Agencies or other entities that distribute public funds or provide low-cost borrowing, consider a funding mix that enables the crowding-in of private capital:** MaRS found that the existing grants and low-cost capital available to municipalities had the effect of inadvertently crowding out private capital for CAANZero. This is consistent with some of the challenges we heard from ESCOs in trying to engage municipalities.

   We recommend that municipalities have expanded access to affordable capital (such as preferential rates and low-cost borrowing). We also recognize, however, that government funding alone is insufficient to meet urban-centred climate needs, and that private capital is critical to closing climate financing gaps.

   As noted in Recommendations 2 and 4, it is easier to attract and retain private capital when there is a clear return on investment, including energy retrofits. Particularly in instances where public funding is extremely limited, we recommend that low-cost capital is allocated to projects with high-public benefits yet less predictable cash flows. An updated funding mix that prioritizes allocation of funds based on other available capital could result in a more efficient allocation of public and private resources, if done in coordination with other key actors. In turn, this would maximize the number of infrastructure projects implemented to help us meet our climate goals.

Conclusion

Partners in essential action

Municipalities across Canada are tasked with finding innovative, timely and effective solutions to the climate crisis, while also addressing other pressing social and economic concerns. Through the three phases of the CAANZero program, MaRS and its partners explored and developed a model to crowd-in private capital and provide much needed capacity support to small and medium-sized municipalities. While there were barriers that prevented the implementation and testing of the model, the lessons learned allowed us to identify recommendations and potential paths forward for municipalities, other levels of government and other relevant actors.

During the course of the CAANZero program, additional insights emerged that were outside the scope of our research, including issues surrounding procurement processes, in-house expertise relevant to building retrofits, capacity building to take on climate action at the municipal level, and the like. Fortunately, a number of organizations across Canada work closely with small and medium-sized municipalities to help them address key challenges and find solutions to advance their goals. MaRS remains committed to collaborating with municipalities, and the organizations that support them, in this essential work.

MaRS is also committed to sharing our experience as part of the CAANZero program and the resources developed to facilitate pilot implementation. The climate team at MaRS is happy to respond to questions about the model and the lessons learned over the course of the program.

In addition, we have developed a CAANZero package, which includes key documents (governance structure, evaluation framework, implementation plans, etc.) that can guide future implementation by municipal actors in more favourable jurisdictions, or those working in other contexts where the model could be applicable. Those interested in the CAANZero package are encouraged to connect with the MaRS Climate team at mfm@marsdd.com or visit the CAANZero website.

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In this third phase of the program, we also spoke with numerous municipal staff, other knowledge partners in the non-profit sector, investors, energy service companies, and provincial and federal public sector staff. We want to thank everyone engaged in the CAANZero pilot preparation for their time and their contributions to creating new tools and developing new insights that municipalities can use in achieving their climate goals.

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