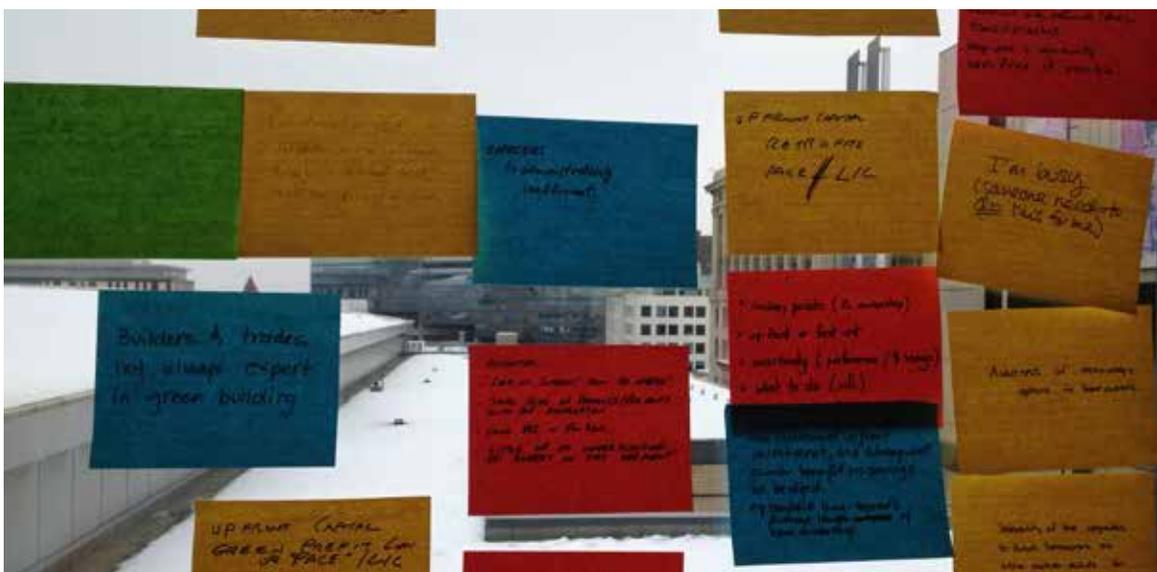




# Finding Innovative Financing for the Green Built Environment

October 29, 2012

DIALOGUE REPORT



# Acknowledgements



Carbon Talks is a project of the Simon Fraser University Centre for Dialogue in association with the Beedie School of Business, the School for Public Policy and the School for International Studies. The goal of Carbon Talks is to advance Canadian global competitiveness by shifting to a low-carbon economy.

Carbon Talks would like to acknowledge the generous support of the North Growth Foundation, Max Bell Foundation, the SFU Centre for Dialogue, and The City of Calgary in hosting this dialogue. Carbon Talks would also like to acknowledge the assistance of Jeff Reading, Carbon Talks advisor and Director, Operations and Enterprise Development at C3.

## Max Bell Foundation



The primary author for this dialogue report is Christopher Gully. Comments and edits on this report were provided by Susan Stinson (The City of Calgary), Shauna Sylvester, Claire Havens, and dialogue participants.

The views in this publication are provided here to stimulate discussion and learning. They do not necessarily reflect the views of Carbon Talks' staff, funders, collaborators, the SFU Centre for Dialogue or The City of Calgary.

Carbon Talks is part of the Creative Commons. We invite you to use the material in this report, but please credit Carbon Talks and the SFU Centre for Dialogue.



# In this Dialogue Report

This report details the invitational dialogue “Finding Innovative Financing for the Green Built Environment” that was held at the Global Business Centre in Calgary on 29 October, 2012. The dialogue session, facilitated by Carbon Talks, was designed to produce actionable plans for the City of Calgary and stakeholders in developing financing mechanisms that will assist in meeting goals outlined in the Calgary Community GHG Reduction Plan. Background information was provided to dialogue participants in the form of a discussion guide that is available on the Carbon Talks website.

The goal of the dialogue was to engage community stakeholders, share knowledge and learning, draw from existing expertise and best-practices, and identify actions that can be taken as individual organizations or in collaboration. The dialogue began by identifying a series of drivers for greening the built environment, including market forces, building codes, energy prices, leadership, and other incentives. Participants were also asked to list a series of barriers to financing the green built environment, focusing on barriers specific to new builds and retrofits in each of the residential, commercial, and industrial sectors.

Participants discussed a number of financing mechanisms that are currently in play or being piloted, including specific programs by Pembina Institute, ENMAX, CCEMC, and C3. A discussion followed on the relative success of these mechanisms

and how they can inform any new proposals. Representatives from Toronto Atmospheric Fund (TAF) presented a summary of their organization and programming, leading to an interactive discussion with participants on details of the TAF model and how it could be applied in the Calgary context. These discussions have continued since the dialogue session.

An interactive mock *Dragon’s Den* panel exercise gave participants the opportunity to develop and pitch potential financing mechanisms for single-family residential, multi-unit residential, and industrial buildings. Questions from participants, and subsequent discussion, keyed in on strengths and weaknesses of each plan.

The dialogue closed with a series of recommendations to the organizations around the table, and the City of Calgary. These focused on the creation of an endowment fund similar to TAF, possibly with funding from CCEMC; changes to local improvement charge legislation to allow the creation of PACE-style programs; the creation of a tax assessment rate specifically for green buildings; and continued education and awareness on energy use and opportunities for retrofits. A number of participants also agreed to take part in a collaborative working group that will build upon this dialogue moving forward.

# Introduction

On 29 October 2012, Carbon Talks and the City of Calgary convened a dialogue at the Global Business Centre in downtown Calgary titled “Finding Innovative Financing for the Green Built Environment.” The dialogue was intended to explore what options are already available, and what options may be developed or explored moving forward for how to adequately finance energy efficient, low-carbon buildings in Calgary. These building categories encompass single family homes, a multi-unit residential buildings, commercial towers or industrial facilities. Key questions that were posed to dialogue participants a week prior to the session included:

- *Does the fact that Alberta is a deregulated energy market expand or limit our options for financing?*
- *Which sectors in Calgary are in the most need of innovative financing solutions?*
- *What tools are lacking, or require changes, to be more effective or efficient?*
- *Where are there still barriers to accessing these tools, and why?*
- *Are there sources of financing that are yet untapped or underused?*
- *What are possible opportunities and constraints with regard to the creation of a holistic emissions reductions funding mechanism?*

Participants from a variety of backgrounds used the day-long session to discuss both these questions, and a series of questions and concerns that were raised as the dialogue proceeded. The following report represents both the over-arching themes that were raised over the course of the day, and the individual, specific recommendations, ideas, concerns, and background information provided by participants.

**The views expressed in this report are solely those of the dialogue participants, and do not necessarily reflect the opinions, future plans, recommendations, or perspectives of the City of Calgary or its administration. Many of the words and phrases used in this report are quotes from the dialogue session, but are not attributed to any individual participant.**

This report will serve as a resource for the City of Calgary moving forward with its work in the coming years on the implementation of the City of Calgary Community GHG Reduction Plan.

# Methodology

The dialogue featured a mix of roundtable discussions, presentations by key individuals, a break-out group activity, and a panel discussion. The session was designed to solicit thoughts, opinions, and information from a wide variety of perspectives, guided by the Carbon Talks Rules of Engagement (see Appendix B). The dialogue was designed by Carbon Talks, facilitated by Shauna Sylvester, and documented by Claire Havens, Christopher Gully and City of Calgary representative Susan Stinson. A discussion guide, written by Christopher Gully in cooperation with The City of Calgary, was sent to participants one week prior to the dialogue. This guide provided background information and framed the dialogue.

Throughout this Dialogue Report, a series of charts show the results of a dialogue post-questionnaire that quantitatively measured the views of the invited participants on a variety of issues that were discussed throughout the day. A final dialogue evaluation was also used to gauge to what degree participants felt the dialogue was useful and productive; the results of the dialogue evaluation are presented in Appendix A.

The following table provides an outline of dialogue participants:

Participant Affiliation	Number
Non-government, publicly funded agency	4
Municipal government	4
Foundation	4
Financial Institution	2
Non-profit	3
Industry Association	1
Academic	1
Utility	1
<b>Total</b>	<b>20</b>



# Opening the Dialogue

How familiar are you with the 2011 Calgary Community GHG Reduction Plan?

Pre-Dialogue

3/5



Post-Dialogue

3.6/5



How supportive are you of the 2011 Calgary Community GHG Reduction Plan?

Pre-Dialogue

3.6/5



Post-Dialogue

4.4/5



How knowledgeable are you on funding and financing mechanisms for the green built environment?

Pre-Dialogue

3.7/5



Post-Dialogue

3.8/5



The City of Calgary opened the dialogue, welcomed participants, and framed the discussion in terms of the City's GHG reduction targets and what next steps are required for implementation. The Calgary Community GHG Reduction Plan was adopted by Council in 2011 with only one dissenting vote, indicating that Administration has strong support from Council. One of the commitments made by the City moving forward is to work directly with the community on implementing the Plan and developing actionable next steps.

The Plan is made up of best practices from both Alberta and jurisdictions around the world. It has three objectives: conservation, efficiency, and the promotion of low-carbon energy alternatives. These objectives are underpinned by the triple bottom line benefits of GHG reductions – environmental, social, and economic benefits.

Calgary is a city of entrepreneurs, and for a plan to come together that is essentially a business plan built on partnerships, this type of city is probably one of the only places it could be successful. For an outside perspective, Toronto Atmospheric Fund was invited to participate in order to explain the TAF model and share their lessons learned.

Ultimately, the purpose of this dialogue was threefold:

- To work with stakeholders to develop and implement an action plan, including pursuing funding opportunities
- To support the developing of financing services that can facilitate ongoing low-carbon projects
- To draw from community stakeholders to determine key components of a sustainable funding structure to deliver ongoing actions and projects

# Driving the Green Built Environment

The dialogue opened with a round table discussion on the drivers for greening the built environment, or increasing energy efficiency. While some people are motivated by climate change and environmental degradation, others consider cost as the primary driver. Depending on the individual or the organization, some drivers are much stronger than others. Only talking about financial returns can limit the discussion.

In the real estate industry, occupiers and tenants are beginning to demand more efficiency, indicating a degree of **market demand** – however this is still mostly on the commercial side. While we may like to think concerns over energy efficiency are altruistic, in Calgary it is a business decision. If there was a better understanding of the business cases for specific retrofits, green buildings, or other energy efficiency and emission reduction projects, there would be more movement – most actors are working under the assumption that the business case doesn't exist. Without raising that awareness, there will not be the critical mass necessary to encourage funders and financiers to step in and provide mechanisms and products to meet those needs. Residents are still more willing to spend on curtains than 30 years of better energy performance.

While a greater percentage of the market is following standards such as LEED, there is still a large proportion doing the bare minimum based on **code requirements**. Some players are hoping for changes to the building code, while others are happy with the status quo. Toronto has its own legislation that sets building code for large buildings; these now have to be 25% better in terms of energy efficiency than the national building code. This has turned out

to be a major driver in the commercial sector. This “25% better than code” requirement was piloted by the Toronto Atmospheric Fund group (TAF) through specialized, market-based loans to condominium developers with stringent conditions on monitoring and verification. A controlled case study of two identical buildings has already shown savings on the order of a 50% reduction in gas usage. The Government of Alberta has committed to consult on a new building code that includes energy efficiency, and hopefully this will build on a new national building code that is expected at the end of 2012.

The **split-incentive** issue remains a concern, for example often the person in charge of making decisions on retrofits will not be around by the time the payoffs for those decisions are realized; it's the tenant who pays the actual energy bills. While it is possible to put together a fantastic financing program, if there is no interest in the outcome then nothing will move forward.

**Changes in technology** can also introduce risk as it's difficult to anticipate the future. Regulations move slowly while technology moves quickly, so there has to be an awareness of that timing disconnect. This also relates to asset lifecycles: if there is awareness of when replacements are needed for older systems, such as boilers, then there is a window of opportunity for new technology and energy savings. New technologies can also be difficult to market among builders used to working with certain technologies, systems, or habits. For certain technologies, such as district energy, there needs to be a shift away from business as usual; innovation and the encouragement of new norms can be a major driver of economic benefits.

Some technologies may seem to become obsolete quickly. For example solar panels may eventually be replaced by solar film over windows, solar shingles, or solar paint – technologies still in their infancy. However a solar panel installed today will still function at the same level for 20-30 years; it is fungible energy in this sense. There is unlikely to be a need to replace old solar technology with new; if obsolescence is less pronounced then it may be with something like computing technology. When such technology does become investment grade, it represents an opportunity for an organization like TAF to step in and run a pilot project.

To build a greener building, the up-front construction costs mean a **higher price point**. TAF developed a program by which they provided loans to Tridel, a Toronto-based developer, for the incremental cost of five energy efficiency measures. These loans were repaid by the condominium corporation through energy savings. Unfortunately the Condo Act in Ontario stipulates that any contract entered into by the developer, transferred to the condo corporation, can be null and void within 12 months. Banks won't take on that kind of risk: it's risky to lend to a building that doesn't yet exist. Although a condominium association cash balance must be equal to one year of monthly maintenance costs, there is still the risk that savings from energy efficiency won't materialize, so the ultimate responsibility for repayment of the loan ends up with the owners of individual units. In all cases, the estimates on energy savings have been conservative, and ultimately the energy savings have been significant.

Other considerations need to be taken into account when discussing energy efficiency at a **neighbourhood**

**level**, such as in Calgary's East Village. Any measures, including district energy, must service a certain density before becoming worthwhile. The economics for an individual building do not necessarily work at the neighbourhood level without significant buy-in. Much of the financing discussed does not apply to residential buildings, and Alberta is reportedly one of the worst performing jurisdictions on residential energy efficiency in the country.

While energy audits or efficiency assessments are an important first step, a certain percentage of customers will choose not to follow through with retrofits. If customers are more **aware of what is available locally** to implement such energy efficiency retrofits, they will be more likely to make the necessary investments.

The dialogue then moved to discuss the **cost of energy**, and how that affects the decision-making process on energy efficiency retrofits or green amenities in new buildings. Most businesses will consider the cost of energy as a normal cost of doing business, so small returns on significant investments are unlikely to be enough of a driver. A change in thinking is necessary in this regard; while businesses are beginning to put greater emphasis on their corporate social responsibility (CSR) planning, most don't yet include energy efficiency within that envelope.

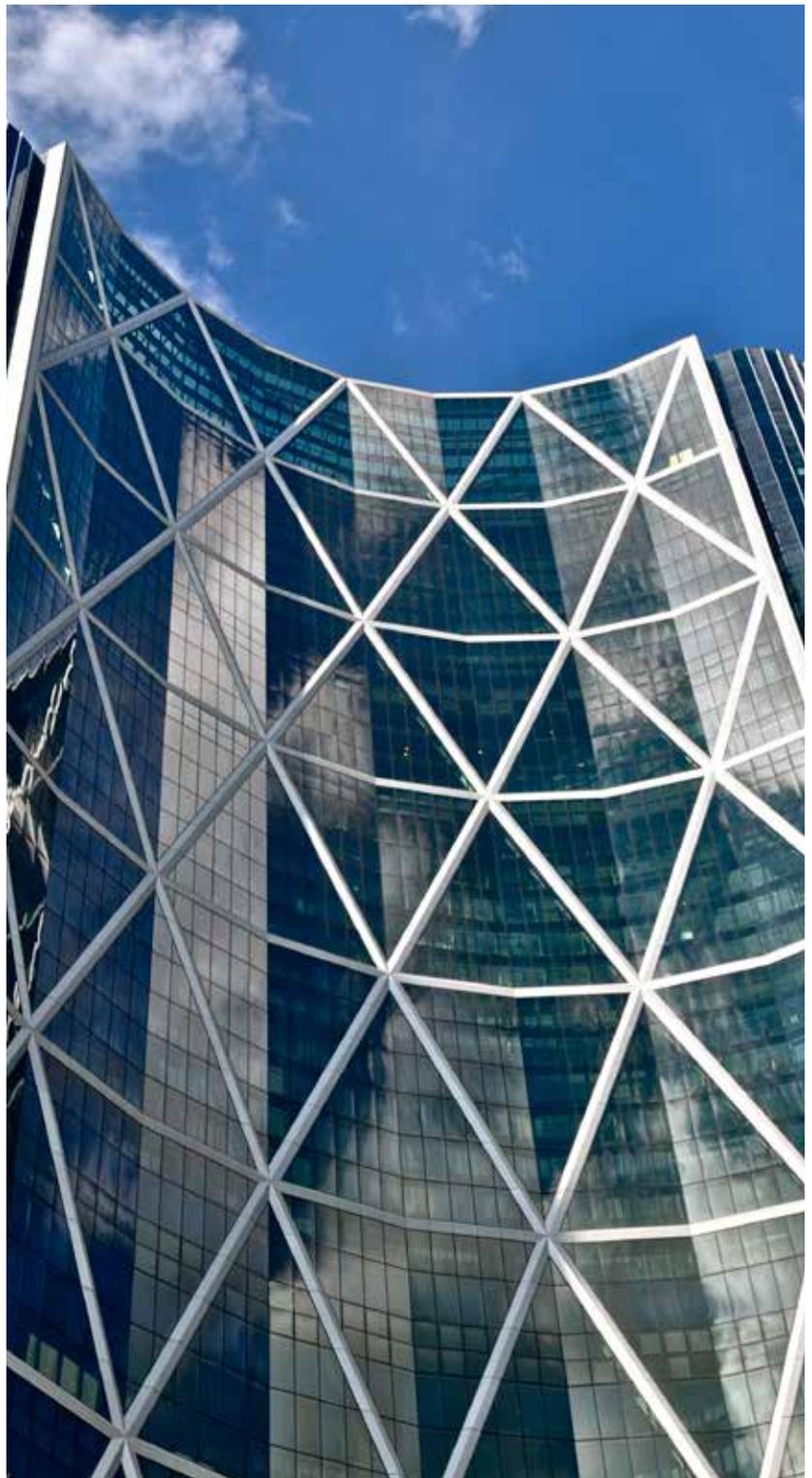
While in Toronto there is a supply side driver – only two major power lines feed the city – this is not the case in Calgary. There are very few “pinch points” or bottlenecks within the province. While dialogue participants confirmed an expectation that **electricity prices are expected to remain low**, there

could be a spike in the near future when a government mandated price freeze expires at the end of 2012. Due to a largely unregulated market, Alberta lacks the kinds of supply drivers that exist in British Columbia or Ontario.

That said, given the current gas price, projects that may otherwise be appropriate for retrofits are no longer as attractive. Many buildings constructed after the mid-1990s are not good candidates from an economic perspective. Reportedly, **electricity is a larger driver for retrofits than gas**. If another coal-fired power plant in Alberta goes offline, then prices will almost certainly increase.

Putting a **cost on carbon** is another option for raising funds. As noted in the Discussion Guide, Alberta currently gives heavy final emitters the option of paying \$15 per tonne of CO<sub>2</sub> emitted into a fund that is then reinvested into emissions reduction projects.

If the infrastructure is in place and cost incentives already exist, then one piece of the equation that may be missing is **leadership**. If people in decision-making positions are made aware of the potential return on investment in some of these energy efficiency measures, and buy in to the importance of emissions reductions, then movement will happen.



# Examples of Innovative Financing

The second roundtable discussion asked participants to share innovative financing models that they had worked on, or become aware of. While a discussion guide had been presented to participants a week prior to the dialogue, the guide could not contain an exhaustive list of financing and funding mechanisms; this roundtable complemented that list and expanded upon or provided context to some well-known financing options.

One project that is being piloted is a partnership between **Pembina Institute** and the **Government of Alberta** through funding from the Alberta Real Estate Foundation. This project involves engaging with commercial and industrial facilities to pay for upfront costs and energy audits. The cost of the audit is repaid through cost savings. The pilot project has reportedly seen mixed results to date.

The **Calgary Downtown District Energy Centre** is also related to financing of the East Village. The product for sale is hot water and heat; there will be no need for individual buildings to buy their own capital equipment, all that's necessary is a pipe and heat exchanger. The struggle has been how to finance pipes and get buy-in from potential customers. As building developers don't like delays, one of the large condominiums going up in the Village will be a standard building without any special or innovative energy efficiency measures, including a hook-up to the district energy facility. This has meant a missed opportunity for savings over the full 30-40 year life of that building.

The **ENMAX GenerateChoice** program, described in the Discussion Guide, remains a premium product. It has been made flexible in terms of transferring solar

equipment to a new house if a family moves. The payback period is currently about 20 years, which is outside of the range of tenure of most homeowners. It is estimated that the market potential for this program is about 2%.

The **incentive rebate program** run by **C3** is largely funded by the Government of Alberta, and this has been successful on many levels. This sort of program is predicated on a behavioural change – it assumes that customers will understand the benefits. Though these particular programs closed in April 2012, there are efforts underway to move forward on a redesigned, revised version in the future. In early 2013, C3 will also be looking at a rotating fund similar to TAF aimed at small and medium sized enterprises (SME) that subsidizes the cost of an energy assessment and follows up by providing a series of locally available options to implement energy efficiency savings.

The **City of Calgary** is also taking aim at developing a sustainable funding model which will be spearheaded through an executive stakeholder advisory group in 2013.

**Mortgage incentives** are available on the residential side for energy efficient buildings. For corporate customers there are interesting initiatives in sectors such as forestry and agriculture, however commercial building developers continue to use conventional financing mechanisms.

The \$15/tonne compliance option mentioned previously grants funds that are managed by the **Climate Change Emissions Management Corporation (CCEMC)**. Investments by CCEMC are strictly non-

risk. This is viewed as a “virtuous cycle approach” aimed directly at emissions reductions. CCEMC bases its granting decisions on what projects have the best potential long-term outcomes. Funding is channeled toward research, incubation, and projects close to commercialization in energy efficiency (50% of projects), carbon capture and storage (30%), and green energy (20%). Most funds are channeled back toward large final emitters.

Another example of a fund set up through taxation or fees is the Texas Loan Star: fines for infractions in the oil industry go into a fund then used to invest in public sector buildings. Administration costs make up only a small percentage of all loans granted, covered by a 3% interest rate.

The Energy Service Company (ESCO) system is another private sector tool available. TAF has developed an new financial product - TAF’s Energy Savings Performance Agreement (ESPA) - which offers non-debt financing for multi-measure energy efficiency retrofits. Repayment comes from the savings, which is determined through rigorous monitoring and verification. A specialized insurance policy de-risks the transaction; it is purchased by the pre-qualified project engineer based on a third-party validated estimate of savings. If projected savings don’t materialize, a claim is made. The ESPA has been designed for multi-unit buildings (MURBs) and addresses key barriers facing building owners: lack of confidence in savings and access to capital. The same model could be applied to single family residential if there was aggregation to create a portfolio of projects.

The **Net Zero Community** concept is also being explored, whereby developers with enough

contiguous land are able to plan for energy savings throughout the entire community, whether that be homes, commercial spaces, or institutions. An example program at the neighbourhood level is **Green Energy Works Oregon**. They have engaged with residents at a neighbourhood level, offering a one-stop-shop for residents to get an energy audit and do upgrades; there are no incentives or guarantees offered. This neighbourhood approach has been very successful – for an individual house to do an assessment and produce a recommendation, the administrative costs may not make it worthwhile.



# Toronto Atmospheric Fund

Dialogue participants invited a representative from Toronto Atmospheric Fund (TAF) to explain the success of their model, leading to a discussion as to how the TAF model or parts thereof could work within a Calgary context.

TAF was founded in 1991 after a several City Councilors attended the 1988 World Conference on the Changing Atmosphere in Toronto and determined that action was needed at a municipal level to deal with a global problem. They successfully allocated part of the proceeds from the sale of a surplus property (the Langstaff Jail Farm) to a special-purpose endowment established through the provincial Toronto Atmospheric Fund Act. TAF is a non-share capital corporation that operates as an arms-length agency of the City of Toronto, with an 11-member Board and two statutory committees (Investment and Grants & Programs).

TAF has been delegated management of the \$23 million endowment, which has been maintained and provides the core operating revenue, with no draw on the City's budget. TAF invests the asset in a diversified portfolio, including bonds, equities and direct investments (loans and financing), projects that generate a market rate of return, reduce GHG emissions, and that can help encourage a market transformation. TAF is not an equity or venture investor and cannot risk capital although convertible debt instruments, warrants and options can be utilized. They work to structure transactions in a way that protects the endowment but also advances worthy projects that need innovation and demonstration to gain traction; it's a small "strike zone" exhibiting a market rate of return and at least a 10% emissions reduction and opportunities for scale

up. Opportunities are denied for reasons including an insufficient emissions reduction opportunity or poor balance sheets.

Returns on the asset are used to provide grants to local, non-profit projects that advance low-carbon opportunities in an urban context. Some of TAF's successes have included a feasibility study on deep lake cooling, AutoShare, Smart Commute, and Solar Neighbourhoods. TAF is currently exploring a new grant approach called "Enterprise Grants" which recognizes that certain projects could generate a return but at their current stage really need a grant, or there may be public/private collaboration which could be stimulated. For example, TAF funded nine non-profits to convert their 9 hybrids to plug-in hybrids and took out warrants in the battery provider, which generated a 112% return on the initial grant within several months when the company was purchased.

TAF also undertakes strategic projects, almost always with partners, to incubate new technologies, policies and business opportunities with potential for urban emission reductions. Successful projects have included Light Savers, Tower Wise, Last Mile, and Geocities.

Another role for TAF is policy reform, which can generate game-changing results. For instance, TAF's LightSavers program showed that advanced outdoor/utility lighting - LEDs, dimming, motion sensing - can generate major energy savings but restrictive bylaws were hampering adoption. TAF helped to rewrite and disseminate new bylaws. This is a key part of the process of innovation, demonstration and de-risking of low-carbon solutions.

While Toronto is TAF's base, it has implemented programs more widely with provincial, federal and foundation support. Over the years TAF has invested over \$55 million in projects, has saved the City \$60 million in energy costs, and has helped achieve Toronto's ambitious emission reduction targets that essentially mirror the Kyoto Protocol.

An organization like TAF can be established if there's a commitment to independence and innovation. TAF works outside of the mainstream municipal bureaucracy, somewhat like a "skunk works" division of a company. With a small team of only 8 people TAF must work with partners to innovate and push the envelope.

**In your opinion, what is the most appropriate role for the City of Calgary to play in financing of the green built environment?**

*"Facilitate and seed fund outreach, engagement, and delivery. Create and mobilize pools of capital."*

*"Sponsor a multi-year implementation fund; terms of reference to be open to negotiation and conversation, with feedback from key champions."*

*"Create a dedicated fund to support a number of key initiatives."*

*"Convenor, collaborator, leader, policy changer, advocate for behavioural change."*

*"Provide the right level of knowledge and incentives to change behaviours. Public funds should not be needed from an investment perspective."*

*"Reduce barriers and risks to private sector funding; create a fund; guarantee loans."*

*"Facilitate processes to allow private funding to step in; remove barriers, demonstrate business cases."*

*"Create the environment for success and leverage city investments to build a greater pool of resources to carry out the GHG Reduction Plan."*

# Barriers to Financing

Dialogue participants were asked to write down those barriers that they have identified with regard to financing residential new builds and retrofits, multi-unit residential new builds and retrofits, industrial new builds and retrofits, and commercial new builds and retrofits. Participants also had the option of identifying barriers that cover all of these categories. The following is a summary of all barriers identified by participants:

## New residential builds

- Construction costs in Alberta are already high, meaning that added costs reduces the room for financing
- Builders and trades are not often experts in green buildings
- Energy efficiency and GHG reducing systems are not valued as much as other home amenities such as curtains or granite countertops
- There is a general lack of interest in the market, meaning most projects aren't large enough to enjoy economies of scale
- There is little to no understanding of energy in general among homeowners

## New multi-unit residential builds

Many of the barriers are similar to those for new builds, with added difficulties:

- There is a lack of communication between land owners and developers
- There is an increased probability of the split-incentive issue
- There is a lack of security for financiers against strata or common property
- There is a perceived risk in changing from business as usual

## Residential retrofits

- The payback time for retrofits often exceeds the length of home ownership, meaning there is a gap between the upfront investment and the savings enjoyed by subsequent owners
- Many homeowners are uncertain about potential performance and savings, or are simply too busy to consider the option
- There is a lack of information available on what retrofits are readily available
- For rental properties, the building owner has little incentive to invest in energy efficiency
- Many residents already spend a large percentage of their income on housing and are therefore considered at financial risk; this leaves little discretionary income for retrofits
- As with new builds, most projects aren't large enough to benefit from economies of scale

## Multi-unit residential retrofits

- For small and medium-sized buildings, retrofits require a large investment with low returns
- There is a lack of awareness and access to information and programs for builders, strata corporations, owners, and so on

### **New commercial builds**

Compared to the other categories, there is the perception that new commercial builds are more receptive to GHG reduction initiatives. That said, barriers include:

- A lack of standards for energy efficiency that could push the market
- Anything not part of “core business” is often ignored

### **Commercial retrofits**

- There is an insufficient amount of “patient money”, that is, investors who are willing to wait for the return on investment
- Most businesses do not understand the potential of energy savings
- It is difficult to pass retrofit costs along to tenants
- Retrofits are often not perceived to increase property values

### **New industrial builds**

- Technology evolves very quickly, and the first to market will always pay a premium, meaning that industry is likely to be risk-averse to investments that are outside of their core business
- There is a lack of sufficient cost depreciation incentives for green capital investments
- For many industries, process fuel is the focus as opposed to heating or cooling fuel, so most efforts are focused on optimizing process fuel use
- The return on investment is considered too low

### **Industrial retrofits**

- Payout time is more important for business, but energy efficiency retrofits usually involve a long payout time. For many industries, a 20-50% return on investment is required
- There is a lack of dedicated energy managers in industry

### **All categories**

Many of the barriers listed above are shared between all categories, including high up-front capital costs, an insufficient return on investment, split-incentives, core business decisions not including energy, and a lack of knowledge among tenants and owners. Additional barriers listed by participants included:

- Energy is often seen as the cost of doing business, rather than a manageable cost
- People are skeptical of potential performance and savings, there is a lack of trust that cost savings will materialize
- There is a lack of coordination between various levels of government
- The permitting process for green builds is arduous
- Those funding and incentive opportunities that exist are not sustainable over the long term
- Depending on the type or extent of a particular efficiency upgrade, energy prices may currently be too low to provide adequate incentives for action
- It can take considerable investment just to discover how extensive energy efficiency barriers are; without the right motivation, most building owners will not take this initial step
- Non-profit partners are seen as a cost or a risk, as opposed to a strategic asset or benefit

# Scenario Planning

A group exercise was used to break dialogue participants into smaller groups, encourage creative thinking, and foster connections between different sectors. The plenary was divided into four groups, each tasked with developing a plan to implement innovative financing in their own respective sector – single family residential, multi-unit residential buildings, and industrial. These groups then returned to plenary to present their plans to a mock *Dragon's Den* style panel of experts.

## Single Family Residential

The first group presented a Property Assessed Clean Energy (PACE) system for Calgary focused on the retrofit market. This would allow homeowners to use local improvement charges (LIC) to make energy efficiency upgrades that are paid off through property taxes. The funding could come from municipal bonds, or backstopped by the CCEMC. The difference between this and a home equity line of credit (LOC) is that the LOC goes with the homeowners even after they move – a LOC will only work if the homeowner sees a premium.

At the moment, the City does not have legal jurisdiction to use this kind of mechanism, so changes would be necessary. This has been done in a number of jurisdictions in the US, Ontario, and BC. The system would have to find appropriate aggregators, whether that's a non-profit or a contractor. American PACE programs partner with pools of contractors that are each educated by an administrator before going on to do marketing and outreach.

Uptake of such a program could be encouraged if homeowners are made more aware of their energy usage. If a database was established whereby homeowners can determine, by square footage, whether their house is performing well or not in comparison to neighbouring properties, then they may be more likely to make efficiency improvements.

## Multi-Unit Residential Buildings (MURB)

The second group presented a plan to support energy efficiency improvements in multi-unit residential buildings. Funding could come from an endowment, or an organization such as Federation of Canadian Municipalities (FCM). Energy savings would translate into cost savings used to pay down the loan, backed by insurance. This would focus on particularly inefficient buildings with a fairly fast payback scenario reaching a maximum of 8-10 years.

The City could assist in a number of ways, such as:

- enabling this program through easing of the permitting and regulation process,
- raising education of what is a normal level of energy usage,
- playing a role in funding the endowment, justified by a mandated goal of reducing GHG emissions, and
- as an insurance underwriter; those buildings that perform retrofits would have their savings guaranteed.

## Industrial

The third group began by explaining how different the industrial sector is compared to residential: it is much more heterogeneous, it is larger, there are inputs and outputs, and building efficiencies are generally lower. Industry also faces larger business and technical risks. If there is a business case for increased efficiencies in industry, then commercial financing will generally be sufficient. The challenge is understanding when and why that doesn't happen.

A dedicated organization could be put together that "clears the underbrush" and opens a path for the commercial sector to come in and do that financing. This organization could plan industrial areas, put in park managers focused on how to run these parks efficiently, and include incentives to encourage industry to be more flexible and efficiency-focused. This is essentially an issue of planning, rather than financing.

Industry will generally be looking for payback periods of 18 months or less, especially given that technology changes quickly. Anything beyond that 18 month period will require incentives. Incentives can be financial or regulatory, starting at the municipal development plan level, then cascading down to subdivision and implementation.

Business parks in Singapore and Germany are already working on this sort of model. Edmonton is moving in that direction, with discussions on sharing heat, fuel, and fire facilities in a heavy-duty industrial situation. The model would have to be changed for Calgary. Other jurisdictions, such as BC, Ontario, New Brunswick, and Nova Scotia already look at energy efficiency on a facility by facility basis, and fund energy managers who build the business case and push for energy efficiency retrofits.

# Recommendations

Following a day of dialogue, participants had the opportunity to present a series of recommendations. The recommendations below represent the synthesis of the conversation, and some recommendations include ideas, thoughts, and opinions from a number of dialogue participants.

## Practice

What can be done to change practices among players involved in financing the green built environment? Recommendations included:

- Be more creative in terms of product development from a lending perspective.
- Change the way that pricing is done on new developments. A more energy efficient house may increase the capital cost, but it decreases operational costs, and this could be better reflected in mortgage applications and so on. Canada Mortgage and Housing Corporation (CMHC) does currently offer mortgage loan insurance options that take energy efficiency into account.
- Make energy efficiency part of executive performance appraisals.

## Education and Knowledge Transfer

A major portion of the recommendations discussion revolved around how to increase awareness and ensure that everyone has the knowledge required to move forward on energy efficiency projects and programs. Recommendations included:

- Developing a database that is accessible to both private and non-private sectors and covers single family residential, MURBs, and so on, encouraging owners to examine their own efficiencies. People are generally unaware of their energy efficiency, and too many ratings systems are complex and proprietary. In the private sector, brokers already know this information, but it should be made public. Benchmarks could be printed directly on utility bills, or energy labeling for houses could be instituted. If the energy bill stayed the same, but a cheque was sent along to represent the savings, this could also make the concept of energy efficiency “come alive” and increase overall energy literacy.
- A system of recognition could promote efforts at efficiency upgrades. If a building passes a certain efficiency target then they could, for example, get a discount on property taxes.
- The education of building managers will also have to be improved, perhaps through the promotion of a “green concierge” training program. The International Facility Management Association (IFMA) Certified Facility Manager program is an example of a best practice in this regard.
- There should be a staged process for the building approval process. Some kind of resource person who is willing to have a conversation on what is required and find out if a proposal is feasible, would assist in helping clients quickly decide whether to move forward with a project or not. Ontario has something similar: a one-stop telephone number with a resource person who is aware of incentive programs, how they work, how to apply and follow-up.

## Government

The bulk of recommendations were aimed at government, with most focusing on municipal government. Recommendations included:

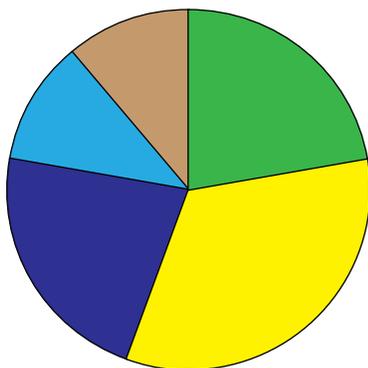
- Reduce transaction costs, including expediting the permitting and regulation process. While an expedited process is in place for green buildings in Calgary, it is still a long line and the system is reportedly not as efficient as it could be. Training is also necessary for inspectors so they have awareness and understanding of new technologies, enabling them to issue permits quickly and without delay.
- Establish an energy resource within the municipal land department that can advise prospective purchasers of energy efficiency opportunities. This could include targeting specific neighbourhoods for marketing, awareness raising, audits, and so on. Currently, 70% of those who did audits didn't follow through with any investments, so there is an education gap. Part of this work can include demographic analysis to account for correlations such as the relationship between lower-efficiency houses and seniors and those on a fixed income.
- Establish a different assessment mill rate for those behaviours that are desirable and dis-incent those that aren't.
- The Alberta government is set to review the municipal government act, including charters, so there is room for changes, such as on the local improvement charge (LIC). The LIC was not developed with the intention of making improvements within households, so changes would be required.
- Work with the Assessment Authority to establish a new property tax rate for green buildings, buildings with a certain level of energy efficiency, or buildings with a designated number of green amenities.
- Create a database of knowledge that could assist homeowners in deciding whether they need to pursue energy efficiency retrofits. University of Calgary has done infrared imaging of homes for example – this sort of project can assist homeowners in determining the relative rate of heat loss for their property.
- Municipalities must also “walk the walk” by doing demonstration projects and taking a leadership role on increasing energy efficiency in their own buildings. This may require some sort of Green Revolving Fund for municipal operations as a way of test-driving innovation. The City must recognize that it has a responsibility to be involved in assisting building owners to increase their energy efficiency, if it is to meet its own legislated GHG emission reduction targets. It is recognized that the City of Calgary is already making significant steps in this regard.
- Campaign finance reform could also lead to changes that prevents any single voice from gaining too much prominence, whether that be developers, building owners, or otherwise.
- Financial incentives should be recognized as a means of innovating and kick-starting an opportunity. Framing an opportunity in terms of innovation will bring different players to the table. Such incentives would need to be long-term to ensure persistent action over time.
- The price of carbon is also key to the economics of energy efficiency upgrades.

## Final Round

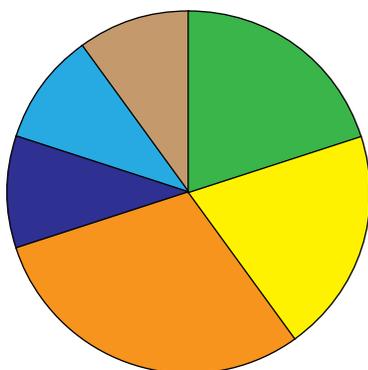
Which of the following is the most useful financing mechanism?



Pre-Dialogue



Post-Dialogue



The final round of the dialogue asked participants to reflect on what they liked about the session, what they did not like, and what recommendations they feel must absolutely be reflected in the final report. As the majority of recommendations are dealt with in detail in the previous section, this last section will present a more concise overview.

Many dialogue participants expressed an **appreciation** of the multi-sector approach and the fact that there were both finance and energy efficiency experts in the room; it was a varied group of people with different perspectives, including TAF. It was also indicated that the discussion paper in advance was valuable.

Participants were **less satisfied** with the lack of regulatory context: Alberta has its own context on what can and cannot be done, and that discussion could have been more robust. There was also a call to have more time to discuss such a complex issue, and a desire to have more representation from private enterprise in the room.

**Recommendations** to the City included a desire to see the City execute something tangible and take the lead, rather than simply study and analyze. This could include taking some of the examples that have been raised here, and make them specific to Calgary and Alberta. This should include making use of public and private partnerships, and taking advantage of the nimble and innovative nature of the non-profit sector.

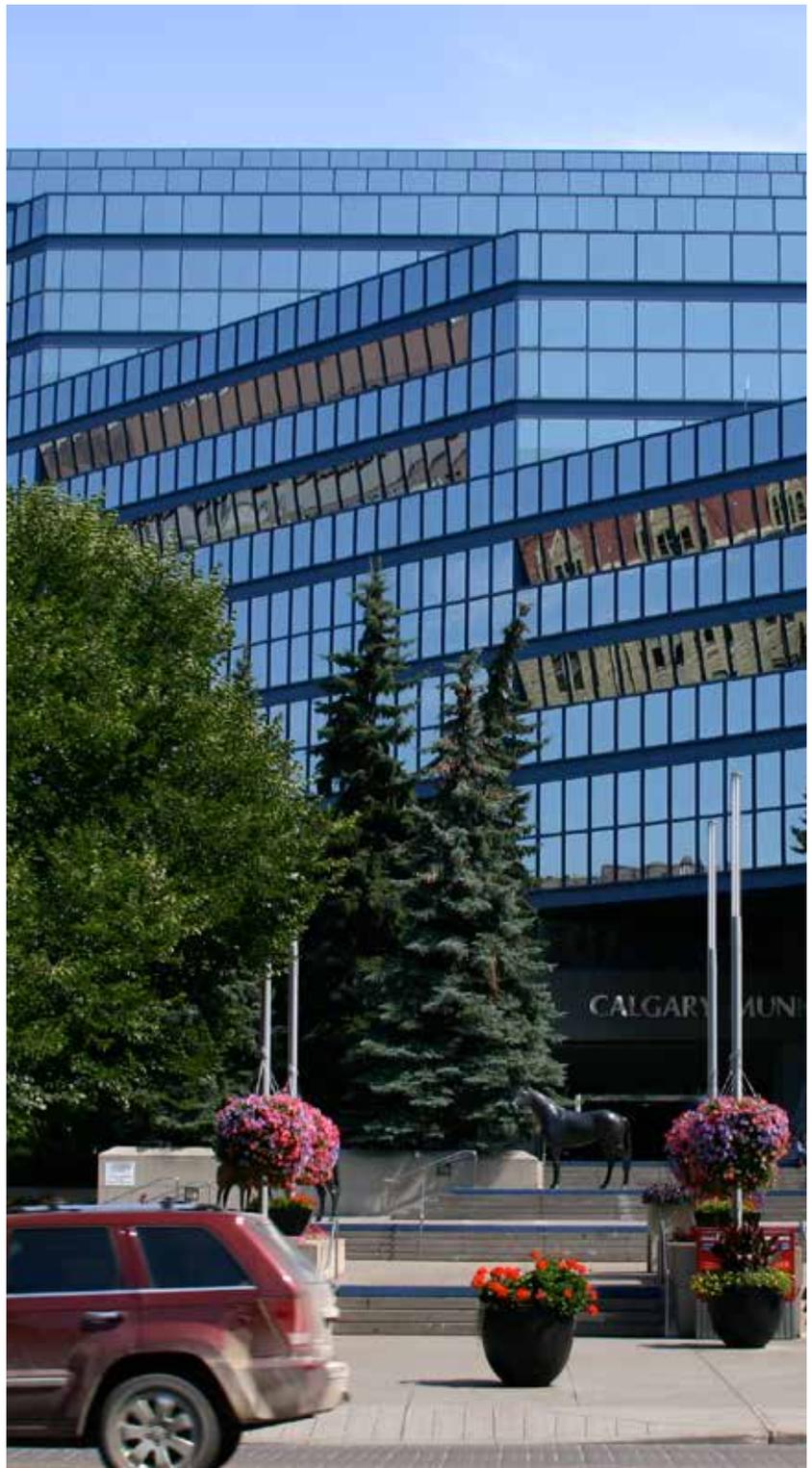
Most of all, participants indicated that there is an opportunity to develop momentum on building an endowment fund, whether that be through an existing organization or another body, while recognizing that one size doesn't fit all, and solutions and financing mechanisms are sector specific. First steps should include the creation of a collaborative group that can establish a vision and find a practical objective that can be used to demonstrate its goals. Such a group should focus more on the development of financing products, rather than on sourcing the funding itself.

# Next Steps from the City

At the end of the session, the City of Calgary took the recommendations that were put forth by participants, and indicated it will inform specific action going forward in 2013. The Community GHG Reduction Plan supports the City taking action, The Plan was approved by Council in November 2011 and was developed out of collaborative process with community and municipal stakeholders.

Key actions from this dialogue will inform the City's work plan for 2013. The City has taken on the roles of implementer and plan manager, part of that involves building funding mechanisms. This session was the first initiative in moving forward in that role, and the word that resonated from this dialogue is momentum. What was discussed here today will be central to developing a work plan for City staff, including putting together a collaborative group that will advance the Plan into action on building funding mechanisms for sustained action toward long-term targets.

Following the dialogue, fourteen participants indicated that they are interested in being part of a collaborative working group. Moving forward, this group will build upon the momentum of the dialogue session, and look for practical next steps on how to find innovative financing for the green built environment in Calgary.



# Conclusions

The dialogue “Finding Innovative Financing for the Green Built Environment” had a threefold purpose:

- To work with stakeholders to develop and implement an action plan, including pursuing funding opportunities
- To support the developing of financing services that can facilitate ongoing low-carbon projects
- To draw from community stakeholders to determine key components of a sustainable funding structure to deliver ongoing actions and projects

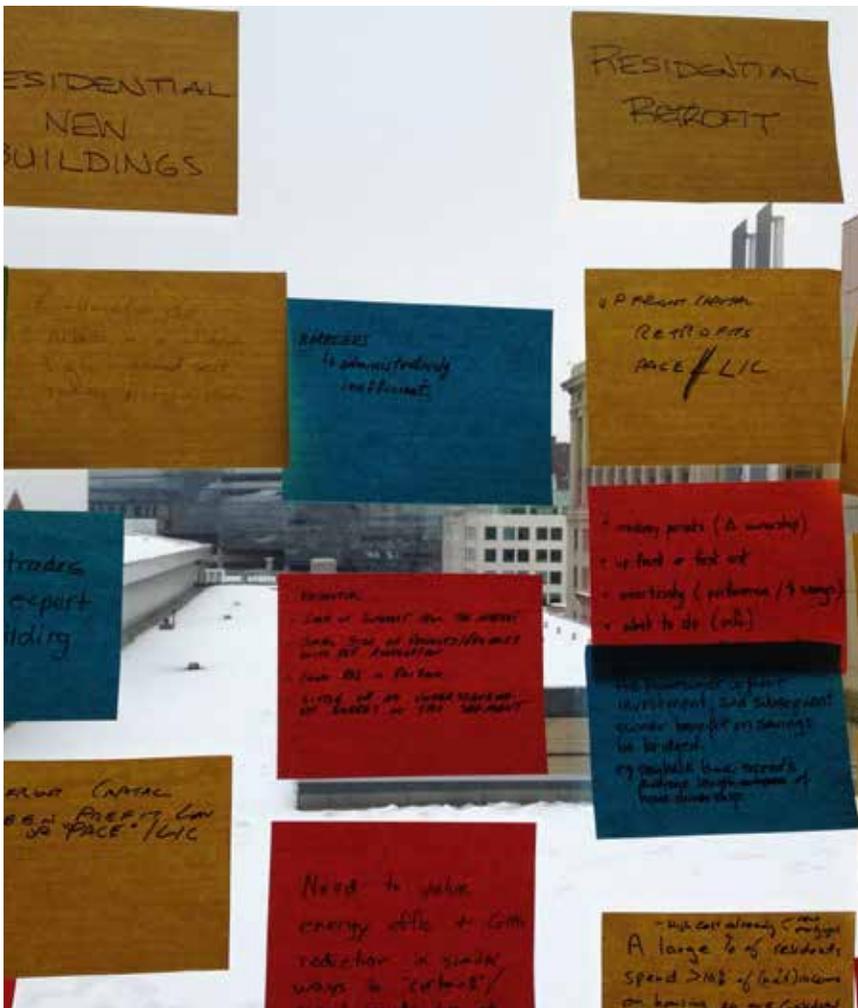
The dialogue was considered successful on all fronts; stakeholders left the session each with a clarified plan of action for developing innovative funding opportunities, and a **collaborative working group** formed from dialogue participants and additional community stakeholders will build upon the momentum generated in the session.

A number of participants suggested that the provincial government be engaged on a proposal to channel a portion of funding being managed by Climate Change Emissions and Management Corporation (CCEMC) into an **endowment fund**, based on the Toronto Atmospheric Fund (TAF) model. Pre- and post-questionnaire results show clearly that dialogue participants saw the potential in such a model. Other sources of funding could also be tapped to create such a fund, including through efforts by Climate Change Central (C3). To that end, the **City of Calgary and TAF have continued to engage** following the close of the dialogue session, and an exchange of best practices and possible opportunities for collaboration have emerged.

Other efforts that will continue or be strengthened include **awareness and education** campaigns for building owners and homeowners on their currently energy usage, and what potential savings exist. As such information becomes more readily available, consumers will be more likely to make educated and rational choices on energy efficiency upgrades and building operations.

Participants also agreed that legislative changes could enable a wider range of funding and financing options. Stakeholders could build on the momentum of this dialogue to push for changes to **local improvement charge (LIC)** regulations to allow the creation of a property assessed clean energy (PACE) program. The creation of a new **property tax assessment rate** was also raised as a means of encouraging homeowners to invest in energy efficiency.

Ultimately this dialogue has not only informed the City of Calgary in the development of its work plan for the upcoming year, but also encouraged the implementation of concrete action plans and collaborative dialogue between participants. As the newly created working group moves forward, and individual organizations pursue funding opportunities based on lessons-learned and connections built during the dialogue session, Carbon Talks looks forward to all that will be accomplished in the coming year.



# Appendix A - Dialogue Evaluation



The phone calls and emails during recruitment and after agreeing to participate gave helpful information.



The registration process was efficient and friendly.



The dialogue handbook provided for the discussions was clear and contained relevant and useful information.



The facilitator provided clear explanations, guidance and support throughout the day.



The meals and refreshments were satisfactory.



There was adequate opportunity for me to learn and to participate in group discussions.



Overall, the dialogue was worthwhile to me.



Based on this experience, I am more likely to become involved with similar consultations.



# Appendix B - Rules of Engagement

1. Chatham House Rule: “participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed.”
2. The focus is on dialogue not debate.
3. Hats off: Each participant is here as an individual and is not speaking on behalf of their business or organization.
4. Step up or step back.
5. Cell phones off (or muted).
6. Open Source: The information will be recorded and presented in a report that participants will review. Following the review the report will be available publicly and registered under the Creative Commons.

# Appendix C - Dialogue Agenda

8:30 AM	Refreshments and Pre-Questionnaire
9:00 AM	Welcome Jeff Reading, Advisory Committee, Carbon Talks
9:10AM	Overview of Agenda and Introductory Round Shauna Sylvester, Facilitator, Executive Director, Carbon Talks, Simon Fraser University
9:40 AM	Context Setting Linda Harvey, Lead, Air Quality, Climate Change & Energy, City of Calgary
9:50 AM	Roundtable #1 <i>What are the key drivers in greening the built environment in Calgary? What GHG reductions systems/technologies in the green built environment cannot be supported through conventional financing?</i>
10:20 AM	Roundtable #2 <i>What are some of the innovative financing options that have been created in Calgary?</i>
10:45 AM	Toronto Atmospheric Fund – Understanding the Model Julia Langer, CEO, Toronto Atmospheric Fund
11:10 AM	Roundtable #3 <i>What can we learn from other jurisdictions?</i>
12:00 PM	Lunch
12:45 PM	Individual Exercise <i>What are the barriers and unique financing needs for Calgary in greening: - Residential new buildings - Retrofits for the Multi-urban Residential Buildings - New Construction and Retrofits for Commercial Buildings</i>
1:15 PM	Case Studies
2:45 PM	Recommendations for Moving Forward
3:20 PM	Next Steps Linda Harvey, Lead, Air Quality, Climate Change & Energy, City of Calgary
3:30 PM	Final Round, Post-Questionnaire and Closing
4:00 PM	Adjourn

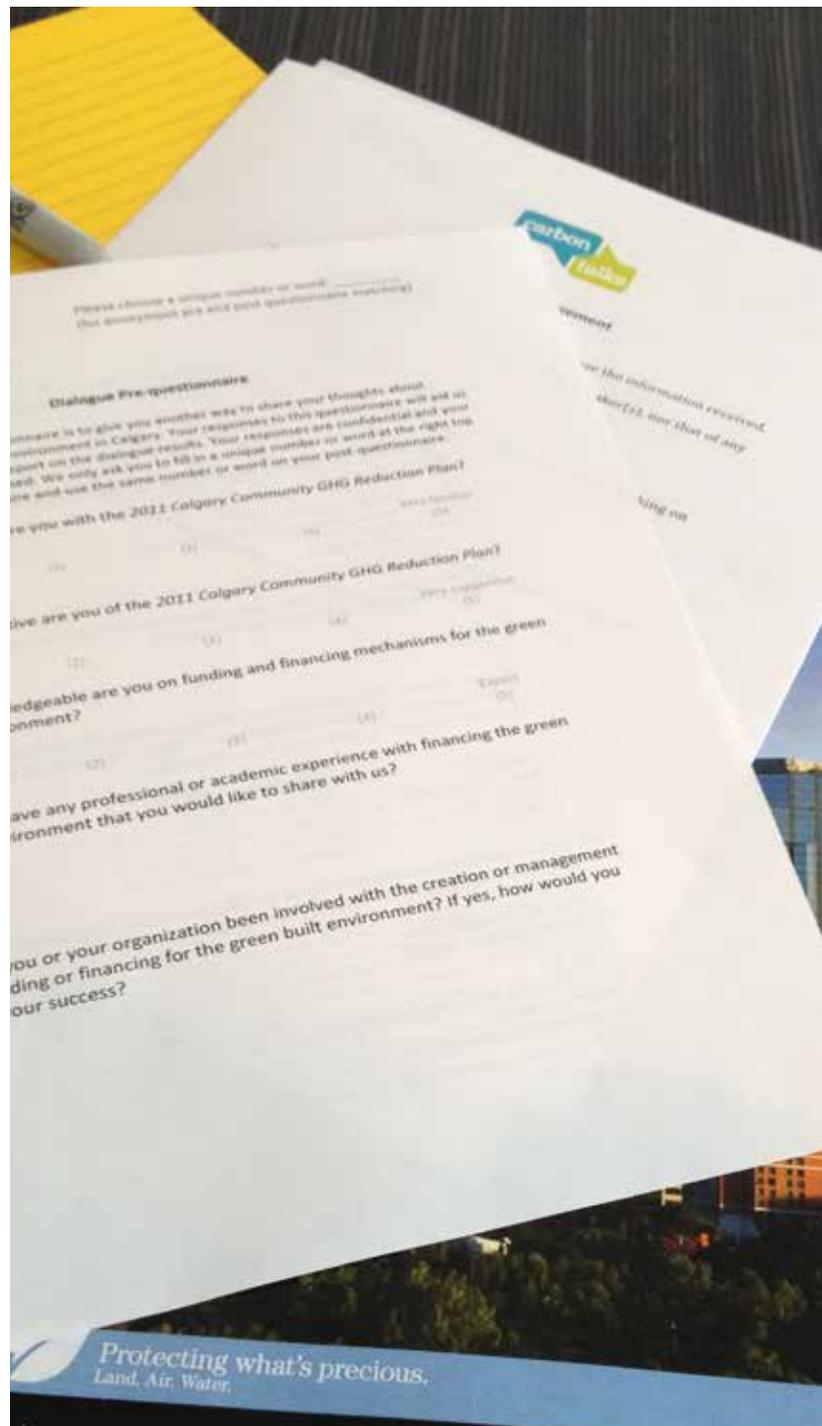
## Photo Credits:

All photos used in this discussion guide have been made available under a Creative Commons license or released in the public domain.

Photos have been attributed by name if available, and by Flickr username otherwise.

Page 5: Katie McKeown, Page 18: Flickr user 'biberfan'

All other photos by Carbon Talks.



# carbontalks

SFU Centre for Dialogue  
3325 – 515 West Hastings Street  
Vancouver, B.C. CANADA V6K 5B3  
[info@carbontalks.ca](mailto:info@carbontalks.ca)  
Tel. 778-782-7895  
Fax. 778-782-7892



THE CITY OF  
**CALGARY**



Max Bell Foundation