FINANCING LOW CARBON BUILDINGS AND RETROFITS

A ROUND TABLE DIALOGUE WITH VANCITY

FINAL REPORT

VANCITY HEAD OFFICE
MAY 18, 2011
Low-carbon buildings are buildings that operate at a high level of energy efficiency. While uncommon in British Columbia, buildings that generate renewable energy on site are also low-carbon and sometimes even net zero greenhouse gas producers.

The challenge of financing low-carbon buildings comes from the widespread perception that it costs more to install renewables or construct or renovate buildings to a higher energy performance standard. In many cases this is true. Installing condensing boilers or low-emissivity windows, or adding more insulation to buildings comes at a margin cost increase over less energy-efficient options. Likewise the capital cost of renewable energy systems is prohibitive, especially if measured in terms of simple payback via utility bill savings.

Carbon Talks brought together a multi-stakeholder group to discuss these barriers, and to identify opportunities, particularly for financing low-carbon buildings. The group discussed both new construction and retrofits, focusing on commercial buildings and multi-unit residential buildings.

Key issues emerged including acknowledgement of the need for government intervention to assist low carbon building to make the shift from fringe to mainstream. From builders to buyers, participants recognized the need to better educate the market and to promote low carbon buildings.

Greater market interest would encourage financial institutions to support low carbon building. At Vancity, we believe it is both our opportunity and our obligation to increase our support for developers, builders, contractors, building owners and occupants who are making the shift to low carbon buildings. Thus, we'll continue to explore ways to leverage our financial tools and services to support low carbon and net zero buildings.

We're grateful to SFU's Centre for Dialogue and Carbon Talks for helping us engage our local community on this important issue.
EXECUTIVE SUMMARY

On May 18, Simon Fraser University and Vancity hosted an invitational dialogue at Vancity’s head office in Vancouver to explore innovative models in financing low-carbon buildings and retrofits. Dialogue participants included twenty thought leaders from the financial sector, utilities, government, developers and academia.

The goal of the full-day dialogue was to identify best practices and practical opportunities for financing low-carbon buildings and retrofits, particularly for commercial and multi-urban residential buildings.

This dialogue was the first among a series of dialogues that Carbon Talks will be hosting on financing the low-carbon economy.

One week before the session, participants were sent a discussion guide which framed the issue, provided historical information on building data and trends, outlined some lessons from other jurisdictions and provided options for moving forward.

As part of a context setting exercise participants were asked to identify drivers in advancing the transition to low-carbon buildings and retrofits, particularly in commercial and multi-urban residential buildings. Participants pointed to the following key drivers: regulation, corporate social responsibility, market demand, monetary incentives, fluctuating energy costs, job creation, concerns about air quality and the move to sustainable urban design by passionate local architects. For developers, the drivers were more targeted and included: the development of niche markets to secure a competitive advantage, developer incentives such as accelerated approvals, social investing, risk mitigation, leadership and creativity.

When asked who is driving change in B.C., participants highlighted the role of utility companies, local and international financiers, business organizations, academic institutions and government.

Participants outlined a range of challenges and barriers to financing low carbon buildings and retrofits which are detailed in section 4. Some of the key barriers included: cost, high risk and long pay-back periods, lack of subsidies or incentives for developers, low electricity rates, poor consumer education, split incentives, lack of large corporate tenants and corporate head offices in Vancouver, lack of solid metrics that measure true impact, poor capacity among strata councils to manage green buildings or to take on debt for energy efficiency upgrades, lack of understanding among developers about availability of green products, and small market up-take.
As participants looked forward, they considered some of the tools for financing low-carbon buildings. These included: external funds to underwrite or transfer risk for the developer, split financial tools (e.g. Verdant project), amendments to the strata act to prevent loopholes that undermine energy efficiency, better marketing of the business case for low-carbon buildings and retrofits, metering and sub-metering energy consumption to compel tenants to reduce their energy use, green equipment loans, development of district energy systems to aggregate and scale for efficiency, encouragement of more leasing of energy systems such as hot water boilers, development of incentives particularly for commercial buildings, and the development of a loan guarantee fund.

Following small group work, participants identified a series of recommendations for actions. These recommendations focused on government action at the federal, provincial and municipal level, marketing and capacity building and financing and incentives. The detailed recommendations are outlined in Section 6 of the report. In the closing round, a number of the participants committed to forming a working group to follow-up the day’s discussion and to advance three key recommendations:

1. Work collaboratively with government, utilities, financial institutions, philanthropic organizations and businesses to create a loan loss reserve fund (perhaps based on the Toronto Atmospheric Fun model) to mitigate risk in financing low-carbon construction and retrofits.
2. Develop a workshop with developers on green building financing.
3. Work collaboratively to develop simple “turn-key” marketing and capacity building tools targeted at engaging buildings owners and strata councils in low-carbon upgrades

Carbon Talks and Vancity committed to assist participants in moving the working group concept further.

The following report captures the richness and detail of the dialogue. Since participants were not asked to come to consensus, the report does not reflect a collective voice, but the diversity of views that were expressed by individual participants.
ACKNOWLEDGEMENTS

Convening Organizations

**Vancity** is Canada’s largest credit union. Formed in 1946, Vancity now has $14.1 billion in assets, more than 390,000 members and 59 branches throughout Greater Vancouver, the Fraser Valley and Victoria. Vancity and its subsidiary companies are guided by a commitment to corporate social responsibility, and to improve the quality of life in the communities in which they live and work.

**Carbon Talks** is a partnership 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 Vancity, the North Growth Foundation, and the SFU Centre for Dialogue in hosting this dialogue.

Carbon Talks gratefully acknowledges the work of Andrew Broderick and Maureen Cureton of Vancity for their support in the design, delivery and evaluation of the dialogue process. Additional thanks to Heather Tremain, Principal, Urban Fabric, who wrote the discussion guide for this session.

Carbon Talks would also like to thank Maria Lee for her support with the note taking and Elodie Jacquet who assisted in analyzing the data and preparing charts for the final report. Final editing of the discussion guide and report was conducted by Shauna Sylvester, Maureen Cureton and Elodie Jacquet.

The views in this publication reflect the ideas generated in the course of the full-day dialogue session. They do not reflect the views of Carbon Talks’ staff, funders, collaborators, SFU or Vancity. For further information on Carbon Talks, please contact:

Carbon Talks
SFU Centre for Dialogue
3325 – 515 West Hastings Street,
Vancouver, B.C. V6B 5K3.
Tel. 778-782-7895
info@carbontalks.ca
www.carbontalks.ca

October, 2010. Carbon Talks is part of the Creative Commons. We invite you to use the material, but please credit Carbon Talks and the SFU Centre for Dialogue.
# Table of Contents

EXECUTIVE SUMMARY ........................................................................................................... 3

ACKNOWLEDGEMENTS ........................................................................................................... 5

INTRODUCTION .......................................................................................................................... 7

2.0 METHODOLOGY .................................................................................................................. 8

3.1 PARTICIPANTS’ VIEWS ....................................................................................................... 10

3.2 WHAT ARE THE KEY DRIVERS IN ADVANCING THE TRANSITION TO LOW-CARBON BUILDINGS? ............................................................................................................. 10
  
  3.2.1. What is specifically driving developers? ..................................................................... 11

  3.2.2. Are the drivers different in B.C.? .............................................................................. 12

  3.2.3. Who are the people driving change in B.C.? .......................................................... 12

4.0 BARRIERS TO ADVANCING LOW-CARBON BUILDING AND RETROFITS ...................... 14

4.1 FINANCING CHALLENGES ............................................................................................... 15

5.0 FINANCING TOOLS AND BEST PRACTICES ................................................................ 18

6.0 RECOMMENDATIONS ........................................................................................................ 20

  6.1 GOVERNMENT ACTION ................................................................................................. 20

  6.2 MARKETING AND CAPACITY BUILDING .................................................................. 21

  6.3 FINANCING AND INCENTIVES ..................................................................................... 22

APPENDIX A ............................................................................................................................. 24

APPENDIX B – FINANCIAL TOOLS ....................................................................................... 25

APPENDIX C - EVALUATION RESULTS .................................................................................. 29
INTRODUCTION

On May 18, Simon Fraser University and Vancity hosted an invitational dialogue at Vancity’s head office in Vancouver to explore innovative models in financing low-carbon buildings and retrofits. Dialogue participants included twenty thought leaders from the financial sector, along with utilities, government, real estate developers and academia.

Energy management and energy-efficiency are a $1.2 billion dollar industry sector in British Columbia. Green buildings are estimated to contribute an additional $1.5 billion to BC’s economy. Growth of these sectors will, in part, be driven by municipalities, such as the City of Vancouver, with adoption of targets and requirements for low-carbon and carbon neutral buildings. Achieving low-carbon and net zero buildings will require new development strategies and innovative financing.

The goal of the full-day dialogue was to identify best practices and practical opportunities for financing low-carbon buildings and retrofits.

This report, which is organized into seven sections, reflects the key recommendations that emerged from the one-day dialogue. Section 1 provides an introduction to the project. Section 2 outlines the dialogue methodology, agenda and participant profiles. Section 3 provides the context, an overview of the participants’ views and some reflections on drivers that advance the transition to low carbon buildings. Section 4 outlines the obstacles to financing low carbon buildings. Section 5 lists financial tools and best practices to overcome these barriers. Section 6 outlines recommendations, and finally, Section 7 provides concluding thoughts and evaluative comments by participants.

False Creek, photo by Talha Tariq
2.0 Methodology

The dialogue was designed and facilitated by Carbon Talks, a project of the Simon Fraser University Centre for Dialogue in association with the Beedie School of Business, the SFU School for International Studies and the SFU School for Public Policy.

Participants were selected based on their knowledge and expertise in finance, development, energy and public policy.

The following table provides an outline of the participants’ profile:

<table>
<thead>
<tr>
<th>Profile of Invitees</th>
<th># of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financiers</td>
<td>3</td>
</tr>
<tr>
<td>Government (municipal, provincial and federal)</td>
<td>5</td>
</tr>
<tr>
<td>Utilities</td>
<td>4</td>
</tr>
<tr>
<td>Developers</td>
<td>3</td>
</tr>
<tr>
<td>Energy Services Company</td>
<td>1</td>
</tr>
<tr>
<td>Development Consultant</td>
<td>1</td>
</tr>
<tr>
<td>Academic</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

Note: There were 20 people in attendance – 6 female and 14 male (including Carbon Talks’ Executive Director and two rapporteurs).

To ensure an open and candid discussion, the dialogue was governed by Carbon Talks’ Terms of Engagement and Chatham House Rules [See Appendix A].

One week before the session, participants were sent a discussion guide which framed the issues, provided definitions of key concepts, outlined the barriers and challenges in financing low-carbon buildings and retrofits, described some of the tools that developers and financiers have designed to address these challenges, profiled lessons from other jurisdictions and outlined opportunities to scale financing in British Columbia.
The agenda was designed to enable maximum participant engagement. The session was opened by Andrew Broderick, Vice President, Community Investments for Vancity. The session was facilitated by Shauna Sylvester, Executive Director of Carbon Talks and Fellow at the SFU Centre for Dialogue and co-designed by Shauna and Maureen Cureton, Vancity’s Green Business Manager.

A variety of methods were used to solicit participant feedback including opening and closing rounds, generative discussions on principles and options, question and answer sessions, small group discussions, plenary discussions and an evaluation survey. A final round was used to solicit feedback on the process and format of the dialogue and the content of the final report.

### Roundtable Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30</td>
<td>Registration and coffee</td>
</tr>
<tr>
<td>8:45</td>
<td>Opening – Andrew Broderick, Vice-President, Community Investment</td>
</tr>
<tr>
<td></td>
<td>Overview of the Day and Roundtable Introductions - Shauna Sylvester, Facilitator</td>
</tr>
<tr>
<td></td>
<td><strong>Dialogue Session #1: Context Setting</strong></td>
</tr>
<tr>
<td></td>
<td>What are the key drivers in advancing the transition to low-carbon buildings?</td>
</tr>
<tr>
<td></td>
<td><strong>Dialogue Session #2: Challenges and Barriers</strong></td>
</tr>
<tr>
<td></td>
<td>What are the key barriers to financing low-carbon buildings and retrofits?</td>
</tr>
<tr>
<td></td>
<td><strong>Dialogue Session #3: Financing Tools and Practices</strong></td>
</tr>
<tr>
<td></td>
<td>What tools and best practices have emerged to address these challenges?</td>
</tr>
<tr>
<td>12:00</td>
<td>Lunch</td>
</tr>
<tr>
<td></td>
<td><strong>Dialogue Session #4: Opportunities Going Forward</strong></td>
</tr>
<tr>
<td></td>
<td>What financing tools and solutions can be developed in BC for both large and small-scale low-carbon buildings and retrofits?</td>
</tr>
<tr>
<td></td>
<td><strong>Dialogue Session #5: Recommendations</strong></td>
</tr>
<tr>
<td></td>
<td>What concrete steps can the financial industry, the development community, government, civil society and others take to remove barriers and encourage both demand for low-carbon buildings and the financing of them? What are the synergies among players?</td>
</tr>
<tr>
<td></td>
<td>Next Steps – Andrew Broderick, Vancity</td>
</tr>
<tr>
<td></td>
<td>Closing Round and Evaluation</td>
</tr>
</tbody>
</table>
3.0 CONTEXT SETTING

3.1 PARTICIPANTS’ VIEWS

As part of an introductory exercise, participants were asked to introduce themselves and express what they hoped to gain from the dialogue in order to advance the financing of low-carbon commercial and strata buildings and retrofits.

Overall, participants expressed hope to identify the problems in financing low-carbon buildings, and to learn from them. They acknowledged that financing is a barrier to accelerating the pace of development of low-carbon buildings, and hoped to demystify some of the financial tools so that the public – tenants, consumers, and businesses – can be properly informed of their options. Participants also wished to see development of partnerships, and better co-ordination between the private and public sectors so that low-carbon building projects can be implemented on a larger scale.

3.2 WHAT ARE THE KEY DRIVERS IN ADVANCING THE TRANSITION TO LOW-CARBON BUILDINGS?

As part of a context-setting exercise, participants were asked to identify the key drivers in advancing the transition to low-carbon buildings and retrofits, particularly in commercial and multi-urban residential buildings. The following drivers were identified:

**Regulation** is a key driver in the advancement of financing low-carbon buildings. The City of Vancouver and the Government of BC have bold targets to decrease BC’s greenhouse gas emissions by 2020. The provincial targets, as outlined in Bill 44, state that BC GHG levels will be 33% less than the 2007 GHG levels. At the municipal level, buildings in the City of Vancouver aim to be carbon-neutral by 2020. To meet these targets, the City of Vancouver has been increasing its energy-efficiency standards, and is advancing new building codes. For example, new civic buildings greater than 500 square meters are now mandated to be LEED-BC certified. In 2012, the City of Vancouver also plans to develop the HVAC (Heating, Ventilation and Air Condition) by-law.

**Corporate social responsibility** is also a key driver for businesses that build or lease commercial office space. For example, most of the major pension funds are now financing the development of LEED platinum buildings. Many public sector operations are also seeking lease arrangements in green buildings as well as LEAD building certification for new buildings. As new government regulations for carbon neutrality emerge, this demand will increase.
The transition to low-carbon buildings is also **market-driven**, as tenants, households, and consumers demand more energy-efficient buildings. Demand pushes the companies to act, which then gives incentives for governments to respond by setting and implementing regulations. Currently, there is no broad-based demand and the market-driven approach is still at the early adopter stage, with educated consumers at the commercial and household levels dominating the niche market.

**Monetary incentives** were identified as another key driver for governments, businesses, and individuals. With fluctuating **energy costs**, some businesses opt for low carbon buildings to avoid higher expenditures on utilities expenses in the long run. By retrofitting residential homes, homeowners may realize higher market resale value.

The current state of our economy could also become a driver as governments and businesses look to new forms of **job creation**. The retrofit industry alone has a huge potential for creating wealth and jobs.

Indoor **air quality** is a public issue. Efforts to improve indoor and outdoor air quality are a factor for some developers in developing green buildings.

There are some very passionate **architects** who are committed to cutting-edge design. Increasingly this is expressed in the creation of low-carbon buildings and in some cases buildings that move beyond the ‘do no harm’ principle to being models of environmental preservation. These leaders create a higher threshold in B.C. for **sustainable urban design**.

### 3.2.1. What is specifically driving developers?

- **Niche markets and a competitive advantage**
- **Developer incentives such as accelerated approvals**
- **Investors**: pension funds and owners shifting some of their portfolio to social investing
- **Risk mitigation**: pension funds want something that has a long-term positive return
- **Leadership**: developers want to be perceived as innovators among their peers and in society.
- **Creativity**: there are a number of individuals that are bored with what they are doing – i.e building boxes – building low carbon buildings can represent an avenue for them to be creative and demonstrate their individualism.
- **Pride**: everyone wants to be proud of what they create.
3.2.2. Are the drivers different in B.C.?

Vancouver is perceived as a green city. The City of Vancouver’s “Greenest City” efforts are driving regulation and creating an environment for innovation. Provincial policies are also unique and accelerating green building (e.g. carbon pricing, targets for carbon neutrality for public sector operations).

People on the West Coast are passionate about the outdoors and outdoor activities. They make a strong connection between making ecological choices and preserving the spaces they enjoy for recreation. There is definitely a potential for tapping into this passion and making it a strong driver for change.

3.2.3. Who are the people driving change in B.C.?

Participants identified several B.C leaders driving change:

Utility companies, such as FortisBC and BC Hydro are already providing incentives and services for users who wish to shift to low-carbon solutions.

Local Financiers, such as Vancity and pension funds are already financing low-carbon buildings. The issue with the financiers is their use of old financial tools. Defining innovative tools and developing partnerships will be essential to scale-up the financing of this sector.

External financing is already made available by some industrial-size players, such as Honeywell or Johnson Controls. These companies help finance retrofits for certain types of industrial buildings such as hospitals if clients agree to implement their specific technologies.

Business organizations, such as the Vancouver Regional Construction Association (VRCA) and British Columbia Building Envelope Council (BCBEC) are using green attributes as part of their branding.

International players are emerging in social capital, financing and manufacturing. However, it is early days and some international financial players may tire and stop investing if they do not see substantial growth opportunities in the low-carbon building market in B.C.

Academic institutions, such as UBC or BCIT are already developing programs for the architecture and design of low-carbon buildings.
The federal, provincial and municipal governments are driving some change through their green procurement and operational policies, their carbon pricing, and their investment and incentive programs.

South East False Creek Development
4.0 Barriers to Advancing Low-Carbon Building and Retrofits

Participants were asked to identify the challenges and barriers to advancing low carbon buildings and retrofits.

Participants identified the following key barriers:

**Cost:** there needs to be a “tipping point” when all the developers and financiers will want to “jump on the band-wagon”. When this happens, the cost of building low-carbon buildings will go down. Until then, the cost will remain high.

There is a lack of incentives and subsidies for low-carbon technologies such as solar energy. This may explain why the Ontario market is developing faster as they have access to feed-in tariffs. (Toronto developers can also access financing through the Toronto Atmospheric Fund).

Most residential buildings are equipped with electric baseboards, one of the cheapest heating options on the market today. **Low electricity rates** make it difficult to convince building owners to switch to low-carbon heating options.

Consumers currently don’t see the value of low-carbon buildings. Professionals should offer an incremental approach to retrofits. People should be able to measure the success of their upgrades. There is a huge need for **consumer education** and hand-holding at this stage.

BC developers are driven by the condominium market, not commercial real estate. 75% of the construction in Vancouver is residential. Unlike other major cities, **Vancouver lacks large corporate tenants and corporate head offices.** Larger corporate tenants and building owners may be more willing to pay the bill for low-carbon upgrades.

There is a complex relationship between property management, tenants, and developers. This leads to **split-incentives.** The person who ultimately pays the electricity bill is not necessarily the owner of the building. Strata Council do not necessarily value or know how to maintain the features of a low-carbon building.

It can be complicated to measure how long it takes to finance a solution and to measure its true impact. There is a real need for **metrics** that resonate with users. The cost to build LEED certified buildings is equalizing for commercial buildings but not for condos. Again, this is where **education and leadership** on the part of municipalities or the provincial government is key.

---

1 [http://www.toronto.ca/taf/index.htm](http://www.toronto.ca/taf/index.htm)
We cannot underestimate the impact of the ‘leaky condo’ issue in Vancouver. It has made many developers, investors and those who service the industry shy of trying new approaches.

There is a perception that the green products are not available for low-carbon construction. Products are readily available but developers and builders need better education on sourcing and procurement.

## 4.1 Financing Challenges

Participants identified the challenges in financing low-carbon commercial and strata construction and retrofits on large post-it notes and to post these on the wall. The chart below captures the various issues participants raised within each category. The key themes are identified in section 4.0, but the detail is provided here to reflect the nuances of the challenges for each building type.

### Challenges for New Buildings – Commercial and Strata

<table>
<thead>
<tr>
<th>New Buildings</th>
<th>Commercial</th>
<th>Strata</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Market is not demanding more financing</td>
<td>Split-incentive</td>
</tr>
<tr>
<td></td>
<td>Small sector – government entities (schools, hospitals, colleges) unable to take on debt</td>
<td>Motivation: why exceed regulation – no driving need for financing</td>
</tr>
<tr>
<td></td>
<td>Energy costs are too low – there is no sticker shock for B.C. utility bills</td>
<td>Consumer demand: currently driven at the “high end” of the market</td>
</tr>
<tr>
<td></td>
<td>Uncertainty - where will energy prices be 5, 10, 20 years from now? What impact will those prices have on viability of green projects?</td>
<td>Achieving sustained performance for investments that are made</td>
</tr>
<tr>
<td></td>
<td>New technology will be OLD soon – develop flexible financing for upgrades</td>
<td>Justify increased capital expenditure for developer</td>
</tr>
<tr>
<td></td>
<td>Performance of “green” buildings does not match results predicted by energy modeling and design</td>
<td>Leaders are uncertain how to serve their loans for energy efficiency during building construction</td>
</tr>
<tr>
<td></td>
<td>Pay-back assumptions via utility bill savings</td>
<td>Knowledge of lenders</td>
</tr>
<tr>
<td></td>
<td>Loan to value – higher cost to build may mean more equity is required</td>
<td>Resistance of developer to encumber new owners/strata</td>
</tr>
<tr>
<td></td>
<td>Lack of awareness of benefits of energy</td>
<td>Willingness by purchasers to participate in pay back</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Uncertainty of savings exceeding payments</td>
</tr>
<tr>
<td></td>
<td></td>
<td>New strata corporation = uncertain cash flow unless x% of units are SOLD</td>
</tr>
</tbody>
</table>
efficiency upgrades
- Cost to maintain green buildings is unknown
- Lack of tracking and research in financial performance
- Split incentive – The developer pays the cost of the energy technologies but it is the owners/tenants who get the benefits
- Justify upfront capital for both lender and owner
- Is financing going to be enough – need commercial incentives
- What if green technologies do not work. Who is at fault – the developer, design team, user, strata?
- Distribution statement: will there be an impact on court cases between developer and purchaser
- Current design and construction contractual framework

- We don’t yet have a regulatory framework that requires occupancy permits to be issued every 5 years that require minimum efficiency requirements
- Timing of financing-pre-strata corporation formed means funder is relying on developer’s credit (higher risk)
- Long payback - 10 years versus short tenure (25 years)
- Market competitiveness between developers and price sensitive buyers
- Achieving sustained performance for investments that are made
- Strata developers want lowest cost, highest curb appeal (energy solutions are not visible)
- Educating and awareness strata management and councils regarding low carbon “solutions”
- Robust residential market

<table>
<thead>
<tr>
<th>Challenges for Retrofits - Commercial and Strata</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Retrofits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Commercial</strong></td>
</tr>
<tr>
<td>Economics: cost of energy</td>
</tr>
<tr>
<td>Ownership of retrofit</td>
</tr>
<tr>
<td>Complex relationship between owner, property management, and tenant: who covers the cost?</td>
</tr>
<tr>
<td>Showing owner that there is a value proposition for retrofit</td>
</tr>
<tr>
<td>Cash flow in “B” + “C” class property</td>
</tr>
<tr>
<td>Commercial – limited desire to take on additional debt- particularly if there isn’t a revenue stream associated with it</td>
</tr>
<tr>
<td>Can owner depreciate equipment and write off loan payments?</td>
</tr>
</tbody>
</table>

16 | Carbon Talks – Financing Low Carbon Buildings and Retrofits
- Who should be financing the retrofit? Owner manager tenant or shared?
- Meeting the Return on Investment hurdle
- Scarcity of capital caused by global economic conditions
- Competing with investment in other projects and renovations
- Payback term versus loan term – if retrofit has a long payback loan term is either too short to cover or the long term loan is too high a risk
- Length of amortization period
- Long payback periods due to low energy costs
- Lenders are generally not willing to accept the energy efficiency related equipment as sufficient security on a financing loan. They want strata owners to sign loan documents.
- Recouping investment with triple net lease
- Demonstrating to the owner that there is a value proposition for the retrofit
- Where is the security? This requires coordinating many owners
- Lenders are not confident that the projected energy savings will be achieved. If the actual energy savings are much lower than the financing payback from savings may no longer work.
5.0 FINANCING TOOLS AND BEST PRACTICES

Participants were asked to identify some of the tools and best practices that have emerged to address the challenges and barriers. The following is a list of the tools and innovations that were highlighted:

- **Split financial tools** to overcome split incentives, such as the Verdant project\(^2\) with Vancity Capital
- **External funds** such as the Toronto Atmospheric Fund: they underwrite and transfer the risk for the developer
- **Capacity building** to manage the buildings and the new technology – it is not uncommon to see new low-carbon buildings not performing to their standards because of poor maintenance. It may be worth exploring the model where the developer offers a maintenance contract for the building or the position of a green concierge is developed.
- **Amendments to the strata act to prevent loopholes** – For example, many lower mainland strata units have electric baseboard heaters and inefficient gas fireplaces. Owners pay their own electricity bill but the gas bill is charged to a “common area” cost. To save money, many strata unit owners turn down (or off) their electric baseboard heaters and rely on the inefficient gas fireplaces.
- **Education in the sales process.** There needs to be a better marketing of the business case for low-carbon buildings and retrofits – i.e. framing how and why this is important to consumers and why developers should consider this as a competitive advantage.
- **Metering and sub-metering energy consumption** would allow tenants to become more aware of their consumption and more aware of the need to reduce their energy usage.
- **Green equipment loans**, based on an ESCO\(^3\) model. Honeywell, Johnson Controls and Ledcor are providing such loans for industrial building such as hospitals. *(Note: The ESCO model is good for large buildings, however we must keep in mind that a majority of commercial buildings in Vancouver are small).*
- **Aggregate and scale for efficiency.** District Energy systems are an example of how we can scale up efficiency. Need to consider how we can district energy systems in Vancouver.

---

\(^2\) Verdant @Univercity

\(^3\) ESCO: wikipedia definition
• Shift paradigm around owning versus “renting” energy options such as leasing hot water boilers as is the case in Eastern Canada.

• Incentives: BC Hydro offers prescriptive incentives for small and medium projects and offers customizable incentives for large projects. FortisBC offers non-prescriptive incentives. There are some federal incentives for residential owners and there are also some provincial government incentives in the works. How can we develop incentives tailored for commercial buildings? What further incentives can be created for MURBs and retrofits (Could Vancouver’s HELP program move beyond financing retrofits for individual residences?).

• Loan guarantees, such as the one provided by the TAF provides a third party guarantee on the margin. TAF used a part of their endowment to create a loan guarantee fund. What kind of loan guarantee fund can we create in B.C.? Who will fund?

Participants were then divided into three working groups to focus on financial tools for the following:

- New Residential Buildings
- Retrofits for Multi-Urban Residential Buildings
- New Construction and Retrofits for Commercial Buildings

Each group provided an overview of their recommendations for enhancing the financing for each type of construction and retrofit. An outline of each working group presentations is provided in Appendix B.
6.0 **Recommendations**

Participants were asked which concrete steps the financial industry, the development community, government, civil society and others could take to remove barriers and encourage both demand for low-carbon buildings and their financing.

6.1 **Government Action**

- Balance increase in regulatory measures with mechanisms to adopt new regulations
- Do a cost-benefit analysis before you regulate in order to protect affordability
- Require buildings to be labelled for energy performance
- Implement tax incentives applicable to low-carbon developments and create tax incentives for suppliers and contractors
- Federal government:
  - Reinstate the Commercial Building Incentive Program (CBIP) or a similar program
  - Advocate for Weights and Measures Canada to have more options for meters that can be used for billing (because not enough suites are individually metered)
- Provincial government:
  - Change the strata property act so that if a strata building owner group has voted to charge suite owners directly for their energy use (space heat gas, water, fireplace gas) then suite owners have a legal obligation to pay those bills (currently they do not).
  - Increase carbon tax overtime so people understand that they will face rising energy prices
  - Bill 7 - establish regulations to address split incentive through energy-efficiency upgrades funded by the utility and paid back via utility bills (for owner-occupants or renters)
  - Update Strata Act to ensure that strata councils properly maintain green features
- Municipal government:
  - Develop retrofit regulations for commercial buildings
  - Create minimum standards for strata buildings to require old buildings to meet new buildings’ higher standards over times
- Increase awareness of changing building codes for regulations – don’t allow regulation change dates to slip
- Create density bonus to reduce need for financial incentive and speed up development process

## 6.2 Marketing and Capacity Building

- Create partnerships with consistent messaging
- Create a simple “sexy” program designed for potential “consumers”
- Create and promote labelling for buildings
- Improve education for: end users, marketing staff, contractors, developers
- Ensure there is a joint effort program between utilities, government (multi level), associations, financial institutions targeted by sector and size
- Increase transparency for costs and risks (impacts) of new technologies
- Host a workshop on green building financing with Urban Development Institute
- Build awareness of low-carbon construction and retrofits for strata owners, commercial building owners
- Convince builder/developers of the value of higher efficient building through an independent third party service provider
- Utilities host a workshop with Toronto Atmospheric Fund model to understand their model for supporting facilitators
- Compile energy benchmark data for various types of buildings as well as reliance performance data on the energy saving that can be achieved from various energy technologies
- Market zero bill buildings (buildings that are net-zero energy that never pay utility bills)
- Build clarity around certification bodies and green buildings
- For retrofits, offer a facilitated program through multiple partners – delivering all that is needed: pre and post energy audits, engineer, incentives, financing and installation.
- Beware of paperwork and red tape. If it is too much developers, owners will not take up financing/incentive options provided by utilities or government
- Small brainstorm group on how to sell Bill 7

---

4 [http://udi.bc.ca](http://udi.bc.ca)
6.3 **FINANCING AND INCENTIVES**

- **Banks:** create an unsecured loan if sector has good through track record of payments or loan loss reserve fund to offset the risk
- **Loan guarantee to enable flexible/referred price and terms**
- **Provide a packaged offering for Verdant-type projects**
- **Develop “The Latte Loan”** — i.e. an energy management company installs energy management equipment in a building but retains ownership of the equipment and charges tenants the price of a latte each month. The energy management company arranges for financing the equipment and their loan interest is included in the latte fee.
- **Vancity:** facilitate a focus group with developers on Verdant loan to understand how to create demand.
- **Consider rate buy-downs of loans issued by financial institutions** — i.e. today utilities offer incentive for purchase of high efficiency equipment. Instead, or additionally, utilities could use their funds to buy down the interest rate on financing the low carbon building (new or upgrade).
CONCLUSION

Financing Low Carbon Buildings and Retrofits was the first session of its kind hosted by Carbon Talks and Vancity. The session was designed to identify the obstacles and the remedies for scaling up financing of low carbon buildings and retrofits, particularly for commercial and multiple urban residential units.

Although the green building movement in Vancouver has evolved substantially over the years with more developments seeking LEED certification, it was clear from the discussion that the financing of low carbon buildings and retrofits is still an early-adopter stage.

The market for green building finances is still relatively small. Although Vancity and others have experimented with innovative financial tools (e.g. Verdant, Dockside Green), these tools are not widely known among the developer community. Best practices developed in other jurisdictions (e.g. the Toronto Atmospheric Fund or European Union financing) also provide models that can be adapted in the B.C. market.

Implementation of government carbon policies will provide a stimulus to the low-carbon buildings and retrofits and as these requirements become mandatory, mainstream financing will kick in. But through this transition period, a number of other tools can be employed to accelerate the financing of low-carbon buildings and retrofits. These tools range from working with governments to create incentives and sharpen regulations to designing marketing and capacity building materials for builders and strata owners to creating a loan loss reserve fund to mitigate risk for lenders.

It was clear from this first gathering that there is energy and interest in collaborating further to scale up the financing tools and accelerate the market demand for low-carbon buildings and retrofits.

Evaluative Comments of Roundtable Participants

It’s nice to see so many people from so many different sectors wanting to go in the same direction. It’s a very complex issue so we just have to start somewhere. There’s an opportunity for collaboration within this group. It’s ok to think big. Let’s encourage that.

This is complex problem that will require sophisticated solutions, the only thing that would improved the process would have been to have more people who are part of the market.

I enjoyed this immensely. Moving from the abstract to the concrete. Quick wins. I’m sick of talking about barriers, let’s bring in someone from the Toronto Atmospheric Fund and talk about what’s working.

Timely but I recognize we are in the early adopters stage, need to build on successes.

Let’s get a group together to work on next steps especially on marketing.

I really liked the process, best we could have expected for a first time!
APPENDIX A

Terms of Engagement

1. Chatham House Rules: “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. Hat’s off: Each participant is here as an individual and is not speaking on behalf of their business or organization.

4. Cell phones off (or muted).

5. 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 B – FINANCIAL TOOLS

Participants were divided into three working groups to focus on financial tools for the following:

- New residential buildings
- Retrofits for residential buildings
- New construction and retrofits for commercial buildings

Each group provided an overview of their recommendations for enhancing the financing for each type of construction or retrofit. Each group was asked to consider the following questions for each model:

- How would you describe this model?
- Is it appropriate for large or small scale developments?
- Who is best equipped to implement this model?
- What time frame is necessary?

Below are the reports generated from each working group:

RESIDENTIAL BUILDINGS: NEW CONSTRUCTION

1. Bill 7\(^5\), recently passed by the BC Legislature will allow utilities companies to provide financing for the acquisition and installation of energy efficiency improvements.

   This tool can be applied both to small and large residential building projects.

   It will necessitate partnerships between the utilities companies, the developers and the government.

   A two-year timeline would be conceivable to implement this tool with success.

2. Developers to develop tools to self-finance some of their projects using a model developed by Tridel Corporation with TAF.

   The following is a description from the Tridel website:

   Tridel partners with the Toronto Atmospheric Fund on an innovative financing approach that leverages operating cost savings to pay for incremental capital costs of energy efficient upgrades, like better heating and cooling equipment, ventilation systems, and building envelope (eg windows and walls). How does a

\(^{5}\) SECTION 33: [Clean Energy Act, section 17.1] requires prescribed public utilities to establish and maintain a program to provide financing for the acquisition and installation of prescribed energy efficiency improvements.
**Green Loan Work?**

**Step 1:** The builder specifies and installs energy efficient upgrades on HVAC equipment, windows, appliances, motors and other features in the community. **Step 2:** The lender finances the developer's eligible extra capital costs of acquiring these materials – costs associated with installations which are over and above Building Code requirements. **Step 3:** The Condominium Corporation pays the money back to the lender with a portion of the funds that would otherwise be spent on heating, cooling and electricity.

This tool can be applied to both small and large residential building projects.

The model depends on partnerships between small and large developers and a TAF like organization or a financial institution.

3. **Developer Utility** – developers would take the time to figure out a district energy system and seek third party financing for it (for example, Fraser Lands).

This tool can be applied to both small and large residential building projects.

Some issues regarding zoning would need to be addressed.

The speed of uptake would depend on the utility.

This model is being done and more work needs to be focused on how to support district energy more fully.

4. **Incentives**

This tool can be applied to any size projects. It has proven its efficiency in other jurisdictions.

Partnerships between the utilities companies and the government would be required to make this tool work. Potential partners → B.C. Hydro, Fortis, government

   a. Needs to be more/deeper contact feed-in tariff
   b. Address developer depreciation on equipment
   c. Reduce municipal feeds - recognize the municipal goals in a more meaningful way – reduction of fees/fast tracking as an incentive

Incentives can be set up at any time.

5. **Loan Guarantees**
Improve the financing environment and make it easier for financial institutions by mitigating the higher risk project – this could tie into social purpose financing by philanthropic organizations.
Partners could include government, philanthropic agency, utilities

Are these tools realistic?

▷ This theory aligns with developer’s market incentive; the loan will be automatically put onto the strata corporation from the developer; what this is missing is education/awareness of strata corporations
▷ All comes down to competitive market price. Once 2020 hits, the playing field will be level
▷ Even if you give them the capital upfront, real estate, homeowners, and strata corporations have to be convinced with this extra fee placed onto them
▷ To make compelling incentive packages, there needs to be incentive to reach out to house owners and strata corporations that compel them to act
  ○ There needs to be proper management and upkeep of the property
  ○ Reward the operators of the buildings – this is the next generation of incentives
▷ Regulatory issue: affordability, leverage of future savings

RESIDENTIAL BUILDINGS: RETROFITS

1. Create an unsecured loan mechanism based on track record of payment
   ○ Legal recourse for non-payment
   ○ Set up loan loss reserve fund to mitigate risk
     ▪ Get utility to provide incentives
2. Set up a special assessment phase
   ○ Lower incremental cost
3. Establish a centralized, trust worthy institution for performing retrofits
4. Loan loss reserve fund
5. Set up a few demonstration pilots which can show the track record of savings and justify the longer loan period.

Problem
  ○ Lack of awareness
  ○ Lack of motivation
  ○ Lack of one neutral, trustworthy body
  ○ Difficult to get accurate benchmarking
  ○ requires handholding from one central body – auditor
Commercial Buildings: New Construction and Retrofits

1. Retrofit
   - Loan default fund
   - Difficult to get customers to buy into the program
     - Things that could help: mandatory building labeling to help drive demand, a facilitator to ensure the whole process is done (has to be easy for commercial customer)
     - Private industry, non-profit, utilities – not clear about who should take this on.
       - Without facilitation this is not going to reach any degree of scale
   - How can we get this to the market?
     - Through contractors, municipalities
   - For retrofit: data about the building’s energy efficiency prior to the retrofit is key; marketing support needs to demonstrate the benefit of the retrofit

2. New Construction
   - Increase the ratio for energy performance
   - Create blended price
   - Pay loan upon purchase

Are these tools realistic?

Set up a Green Team: get students to go into commercial/residential for retrofits – the trust level and conversion rates would be high. This could be a campaign by a municipality and a partnership with an educational institution such as BCIT.
APPENDIX C - EVALUATION RESULTS

Participants were asked to rate their answers on a scale of 1 to 7 – 15 evaluation forms were collected.