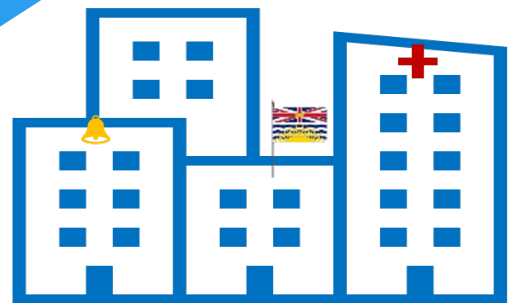




Building a better, more affordable BC



Better Homes



Better Buildings

Taking action to make life more affordable in BC



A proposal from MoveUP:
the Movement of United Professionals
2023

Building a better, more affordable BC: Better Homes, Better Buildings

A proposal from 

Contents

- Introduction.....3**
- Summary3**
- The Challenges Ahead for BC.....3**
- Goals of BC’s Building Energy Retrofit Program4**
- Measuring the Effectiveness of Current Energy Retrofit Programs.....4**
- The Challenges of our Current Programs5**
- For Every Dollar Invested, Retrofitting Buildings Creates Many Jobs. In Fact, More Than Any Other Industry6**
- New Jobs in Manufacturing.....7**
- Research Shows Major Tax Benefits for Government and Big GDP Growth from Retrofitting 7**
- The MoveUP Advantage to Support Transition.....8**
- Inflation and Affordability in BC8**
- Creating a New BC-Canada Partnership.....9**
- BC is more than Metro-Vancouver: Rural BC9**
- GBA+: The Impact of Intersectional Analysis to Promote Equity10**
- What Can we Learn from Other Retrofit Programs11**
 - Area-based Approaches12
 - The Deeper the Retrofit the Bigger the Value to All12
- What Will the Retrofit Provincial Building Retrofit Agency do?13**
- The Building Blocks for a Made-in-BC Retrofit Program13**
 - Direct Outreach14
 - Equity: Affordability – Targeting low-income communities.....14
 - Equity: Hiring and Training Programs.....15
- One-stop-shop16**
- Recommendations and Timing.....18**

Introduction

BC can reach its climate target aspirations both for 2030 and 2050 and scaling up retrofitting in BC will help bring BC closer to these important goals. We can **build a better, more affordable BC**, fight **climate change**, create a new **green economy** that works for people with **good-paying sustainable jobs**, and **increase equity**.

Summary

MoveUP proposes the creation of a new made-in-BC agency to coordinate building retrofits that will maximize the reduction of GHGs from buildings at the same time as maximizing the number of jobs that are created for each grant. The agency will be a **people-centred program** that provides **one-stop-shopping** for grants, applications and information and also reaches out directly into the community. The agency will help to **reduce the cost of materials** for building retrofits for people, organizations, and businesses **through bulk purchasing** of energy efficiency materials such as heat pumps, windows and doors. The goal is to **support BC businesses to create and expand local manufacturing** of these in-demand energy efficiency materials and decrease dependency on strained supply chains. The agency will also create **specialized programs for renters**. The agency's goal will be to help **increase equity in BC** by reducing energy poverty in lower-income communities, support existing training and hiring programs that recruit new workers from equity-seeking groups, and ensure an **increased pool of trained hammer-ready construction workers**. Finally, the agency will serve as a centre for excellence to monitor new innovations in energy efficiency and supporting local businesses and communities to thrive.

In order to achieve this BC will need to take the next step in creating a new generation retrofit program. The agency will take a **people-centred approach** with a **one-stop-shopping response team** that allows people to get the support they need to make informed decisions that help reduce their energy bills. We will also coordinate densification of retrofits in communities and neighbourhoods—ensuring the work happens in close proximity to maximize efficiency for people and the contractors. Trained public engagement teams doing direct outreach to home and business building owners to recruit participation to increase efficiency and decrease cost (read more ¹).

This new people-centred approach will be essential for BC to meet climate target aspirations by scaling up retrofitting. **A people-centred approach is important because buildings do not retrofit themselves, people do, and it is people who are the decision makers.** BC can make it easier for people and businesses to make informed decisions and to use precious program dollars to get the most GHG reductions, cost savings, and job creation from every dollar spent.

The Challenges Ahead for BC

British Columbia, Canada, and the world are facing a crisis on four major fronts.

- 1) An **energy crisis** made worse with the Russian invasion of Ukraine, and increasing demands on electricity generation with the transition from gas or other carbon-based fuels;



A people-centred approach

Retrofitting can be complicated.
Let's make it easy.



¹ By organizing retrofits, programs densify the geographic location of retrofits (into a neighbourhood or a street) this increases contractor efficiency and decreases cost. "Area-based approaches can deliver up to 30% lower costs through the bulk purchase of insulation measures and productivity levels gained from reducing travel time between installations and can be 50% higher." Duncan McLaren, Energy Poverty and the Future of Urban Retrofit, Urban Retrofitting for Sustainability: Mapping the Transition to 2050, Routledge, 2014

- 2) An **economic affordability crisis** including rapid inflation, unaffordability of housing and food, and precarity of jobs and has been made worse by the pandemic;
- 3) A **climate emergency** that threatens lives and economies as we see rapidly increasing disasters of flooding, forest fires and violent storms; and
- 4) **Systemic inequity that manifests** in exclusion from work, education, healthcare and a lack of diversity in our economic and social solutions.

The good news is that there is a solution for BC to take action on these four major crises and insulate ourselves from each of the four areas worsening rapidly. **The answer is found in retrofitting our buildings to make them more resilient and efficient.** Buildings are where we live, where we study, and where we work and they have a major impact on public health, safety, and affordability.

Furthermore, as BC comes out of the largest health crisis in recent history, and hopefully looks at the end of this global pandemic, both old and new concerns are on the rise. Worsening affordability is a reality as housing prices continue to rise, the cost of food – often related to climate change – continues to rise, and real wages for most people are barely keeping up with inflation or actually losing ground. While COVID-19 changed the conversation and concern for most people to health and safety, it has also revealed significant inequities in BC: racism and wage gaps for many, including Indigenous and racialized communities, women and young people, and people with disabilities.

We have an opportunity to use the global reset that the pandemic has given us to address climate change and in so doing create good paying jobs, increase affordability, and address inequities with real change. That is what this retrofit program will do for BC. It provides hope.

Goals of BC’s Building Energy Retrofit Program

- 1) Build a people-centred building energy retrofit program that provides one-stop-shopping for grants, applications and information and also reaches out directly into the community.
- 2) Reduce BC’s GHG emissions by decreasing energy loss from buildings through retrofits.
- 3) Build retrofit program that increases equity in BC:
 - a. Reduce energy poverty and increase affordability through decreased energy bills.
 - b. Training and hiring programs that recruit new workers from Indigenous and racialized communities, women and people with disabilities.
 - c. Reduce energy poverty in BC by targeting greater funding to lower-income communities.
- 4) Create sustainable jobs that strengthen people and communities.
- 5) Create a made-in-BC energy efficiency manufacturing sector.
- 6) Coordinate bulk buying of energy efficiency building materials to reduce costs and save people money.

Measuring the Effectiveness of Current Energy Retrofit Programs

Multiple retrofit programs, including BC’s, use grants to incentivize participation, based on the assumption that offering financial support will increase the number of participants who retrofit the buildings they live or work in.

Studies show that retrofit grant incentive programs fund many free-riders (higher income earners).

This approach can be effective for getting a program started but ultimately does not have the depth and reach necessary to make major change. It prioritizes those individuals and organizations who often have less need for the measure from an affordability standpoint and doesn’t necessarily reach the buildings where the GHG emission reductions are most significant.

In fact, many studies have shown that retrofit grant incentive programs fund many free-riders (higher income earners who already have the funds and would have already done the retrofitting without incentives).



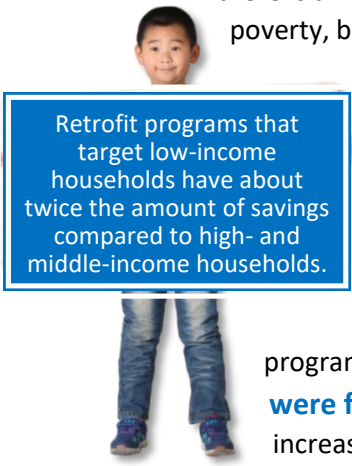
Estimates of the numbers of free-riders using retrofit grant money in a recent 2019 study found that almost 1/3 of participants would have already done the retrofitting.²

BC's retrofit program needs to incentivize new groups of people who have not yet considered retrofits and in addition this will **increase affordability in BC** by **reducing energy poverty** for middle- and lower- income people who spend a high proportion of their income on heating. In a study by Carleton University, they found that

there is an added incentive to target lower-income households not only to deal with energy poverty, but also that it was the most effective use of program dollars. “**Programs that targeted**

low income, fuel-heated households tended to have higher savings and also had lower costs of conserved energy. Our systematic review found that studies and/or programs that targeted low-income households saw 12% in savings, **which is about twice as much saved than middle- and high-income households**, and about 5% more than the sample average.”³

BC's retrofit incentive program appears to be performing similarly to programs in other jurisdictions. This is not a result of mismanagement in any form, but incentive programs fund free-ridership of high-income households. **In 2020 only 23% of applicants were from low-income households** (under \$<59,999) and in 2021 there was a slight increase to 28% of low-income households.



The Challenges of our Current Programs

Our current building retrofit programs are well intentioned, and staff in BC have done a great job trying to make the existing system work. But sadly, these legacy programs are following what is now an outdated model and the systemic assumptions within those programs are increasing inequity.

At the core there are several major flaws to the models of our legacy programs:

Subsidize Wealthy People: Our programs use a [self-selection model](#) and as a result we subsidize wealthy people who can most afford to undertake retrofits and those with the most education to take advantage of the subsidies. This model is akin to handing a person a jigsaw puzzle in a box that has all the right pieces but leaves the individual scrambling to figure out how to put it all together. Which means those with less means, less education and training are often facing insurmountable barriers and more often will give up.

Programs Overly Complicated: The programs are confusing and are difficult to navigate – there are multiple programs delivered by multiple agencies, and navigating these complex system favors those with the most resources and knowledge. Further, complications reduce efficiency of program delivery, and reduce the likelihood that individuals who do proceed will maximize benefits of existing programs, meaning less energy savings.

Not Based on Science and Outcomes: Our building retrofit grants are not based in science or on outcomes as they focus on maximizing the grant size to lure in those who self-select. The programs are not focused on important outcomes such as maximizing the amount of GHG reductions or on maximizing the creation of jobs.

Our Supply Chain is Broken: The current programs foster a [competition model](#) when they give grants to people who then compete with each other for increasingly more expensive energy efficiency materials that are often imported through a weak supply chain. These programs do nothing to build stronger local economies as they have no mandate for people to buy local or even create local manufacturing of energy efficiency materials. In fact, importing energy efficiency materials contributes to GHG emissions through transportation.

² Henri van Rensburg, Andrew Dionne, Leila Sepahi (Nexant, Inc.) and Joanne O'Donnell, Julian Ricardo (NMR Group, Inc.), 2019 Interim Framework Retrofit Evaluation Report, The Independent Electricity System Operator (IESO), <https://www.ieso.ca/-/media/Files/IESO/Document-Library/conservation/EMV/2019/PY2019-Interim-Framework-Retrofit-Evaluation-Report.ashx>

³ Lauren Giandomenico, Maya Papineau, Nicholas Rivers, A systematic review of energy efficiency home retrofit evaluation studies, Carleton University, Department of Economics, October 2020, <https://carleton.ca/economics/wp-content/uploads/cewp20-19.pdf>

High Retail Prices: Individuals and contractors pay high retail prices to buy materials because they buy in small quantities and our programs do nothing to solve this problem. This problem will only get worse and will put even more pressure on governments to continually increase the total amount of each grant to keep up with costs.

Lost Opportunity: Retrofitting buildings is one of the best ways for governments to invest in sustainable jobs and to create opportunities for traditionally marginalized communities. Extending the value of government dollars means local training and job creation, a boost for local manufacturing, and more GHG reductions.

For Every Dollar Invested, Retrofitting Buildings Creates Many Jobs. In Fact, More Than Any Other Industry

Making buildings energy efficient is labour intensive and creates more jobs than all other industries according to research from the Pembina Institute using data on input-output multipliers from Statistics Canada.⁴

The job creation estimates are amazing. For every million dollars invested in energy efficiency, an average of 9.5 direct and indirect jobs are created.

There are other savings for governments as well. A 2015 study found that retrofitting residential buildings in Toronto to comply with minimum building code regulations saves US\$2.3 billion/year in health care.⁵ For **every \$1 that we invest in infrastructure adaptation to prepare for a changing climate** it is estimated to **save \$3 to \$6 in recovery costs**.⁶ Retrofitting is one of the most effective ways of not only reducing GHG emissions, but also to prepare British Columbians for the harsh climatic events/impacts that we will face—such as colder winters and hotter summers both of which will drive up energy use. Retrofitting is a powerful mitigation and adaptation tool.

⁴ Statistics Canada, "Input-output multipliers"

<https://www150.statcan.gc.ca/t1/tb11/en/tv.action?pid=3610059401&pickMembers%5B0%5D=2.3&pickMembers%5B1%5D=4.6&cubeTimeFrame.startYear=2013&cubeTimeFrame.endYear=2017&referencePeriods=20130101%2C20170101> Efficiency Canada, *Written Submission for the Pre-Budget Consultation in Advance of the Upcoming Federal Budget*.

⁵ M.S. Zuraimi, and Z. Tan, *Impact of residential building regulations on reducing indoor exposures to outdoor PM_{2.5} in Toronto* (Building and Environment, 2015), 89.

⁶ *Investing in Canada's Future*, <https://data.fcm.ca/documents/reports/investing-in-canadas-future-the-cost-of-climate-adaptation.pdf> 15.

RETROFIT FACTS

Investments in Building Retrofits will create substantial tax revenue for BC.



For every \$1 invested in retrofitting, government can see anywhere from \$2 to \$5 returned in taxes.

Investments in Building Retrofits will increase our GDP and create jobs.



For every \$1 spent on retrofits there is a \$2.3 growth in GDP.

So \$1 billion dollars invested would see a:

- ➔ \$2.3 billion growth in GDP
- ➔ Create 9,500 new good-paying jobs.
- ➔ Generate between \$2 - \$5 billion in taxes for government.

Pembina Institute, 2021

New Jobs in Manufacturing

Retrofitting creates jobs in construction work, and in manufacturing of key elements of retrofits: doors and windows and heat pumps. Doors and windows manufacturing alone are estimated to be a \$3.6 billion industry in 10 years.⁷

BC plans a 40 percent reduction of carbon emissions by 2030, aided by the BC Energy Step Code, which will help with new buildings by 2032 and will drive an increase in the supply chain. BC currently imports much of the materials we need to retrofit buildings. BC has the natural resources to manufacture retrofit materials, but sadly many products have to be imported. BC can build the supply chain that we need to substantially scale-up retrofitting in the province, and we need to scale-up in order to get to net-zero.

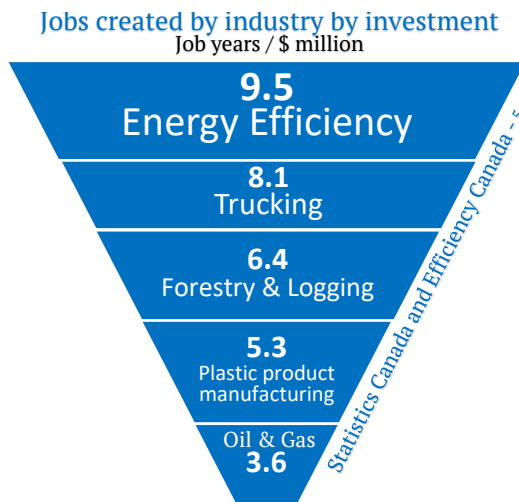
Construction of buildings to meet these high-performance standards is set to drive a \$3.3 billion market for building products in Metro Vancouver (2019–2032) and is estimated to be worth over \$6.5 billion in BC in only 10 years.⁸ BC can become a key

manufacturer of energy efficient retrofit materials.

BC can be a key exporter of retrofit materials (doors, windows, heat pumps, etc.) across Canada and especially into the Cascadia region of the US.⁵

But the economic benefits get even better, **“each manufacturing job in BC supports an additional 3.5 indirect or “spinoff” jobs** (e.g. in transportation, packaging or accounting), and procurements from local businesses recirculate at least 30% of revenues within the local economy.”^{9 10}

Globally, the **green building materials market** is estimated to be worth over **\$350 billion** by 2023.⁸



Research Shows Major Tax Benefits for Government and Big GDP Growth from Retrofitting

According to research in 2021 by the Pembina Institute the financial benefits for government investment need not be altruistic at all. In fact, the research indicated that for every \$1 invested in retrofitting, government could see anywhere from \$2 to \$5 returned in taxes. The research shows that retrofitting could actually be profitable for the government, which could create a revenue stream that would enable government to address many other pressing issues.

The same research measured the impact retrofitting has on the economy: estimates show that for every \$1 spent, there is a \$2.30 growth in GDP¹¹. At scale, \$1 billion invested would see a \$2.3 billion growth in GDP, create 9,500 new good-paying jobs and generate between \$2 - \$5 billion in taxes for government.

⁷ SHIFT - Vancouver Economic Commission. <https://shift.opentech.eco/>

⁸ MARC Group. “Green Building Materials Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2018-2023”. 2018

⁹ BCStats. BC Economic Multipliers and How to Use Them. (2008)

¹⁰ Compared with 16-18 percent of revenues from purchases from multinational counterparts. Pringle, Anthony. The Power of Purchasing: The Economic Benefits of Local Procurement. May 2013

¹¹ Madi Kennedy and Tom-Pierre Frappé-Sénéclauze, Canada’s renovation wave: A plan for jobs and climate (Pembina Institute, 2021). <https://www.pembina.org>

The MoveUP Advantage to Support Transition

Building a retrofit agency to coordinate building retrofits is essential for BC to succeed in meeting our goals: affordability, climate action, creating jobs, and increasing equity. But change that brings together multiple resources into one place can also create challenges as we recruit some of BC's experts already working in energy efficiency programs (such as FortisBC and BC Hydro). For decades MoveUP has been proud to represent members working in demand-side management at BC Hydro and FortisBC helping to make BC more energy efficient, workers who will be critical to the success of the new provincial building retrofit agency.

BC is already experiencing change as we decarbonize our economy and some of our members at Fortis Gas are already being impacted by these new policies. The disruption of moving away from natural gas to electrification must be done with an eye to fighting climate change and **protecting family-supporting jobs**. This new provincial building retrofit agency can be part of a **just transition** for those workers whose jobs end as a result of decarbonizing policies.

The vast majority of those who will be impacted by the re-alignment (creation of the new provincial building retrofit agency) will be our members at both Fortis and BC Hydro. **One of the key advantages of MoveUP's involvement in this change, is our ability and desire to work on solutions that support members and allow BC to build this next generation retrofit program.** We understand BC Hydro and FortisBC, its leadership and its workers. We are ready and our members are excited.

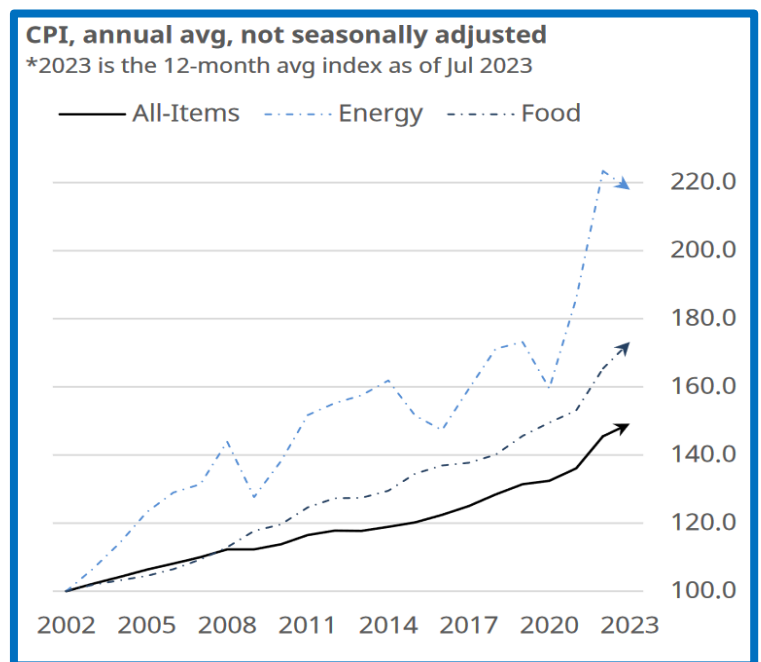
Affordability and the Cost of Living in BC

British Columbians are facing an extreme affordability crunch in 2023-24. As of July 2023, the 12-month average index for all-items in British Columbia was 149.2, a **5.6% increase from to 2022** and this is far out stripping salary increases (if any) that most British Columbians are receiving.

The same is the case for housing affordability with Vancouver now becoming even more unaffordable the New York City. This is true for home ownership as it is for renters who are paying huge amounts of their incomes just for rent.

For many low- and middle-income residents there is an on-going cycle of energy poverty. Many people often live in housing that is older with higher energy loss that often comes from poor insulation and older appliances that are far less efficient. This increases their energy usage and thus increase their energy bills, which further impoverishes them. This also means they pay larger amounts to make repairs as older buildings require more repair. Indigenous and rural communities also often face even higher rates of energy poverty. Interestingly, it is for these exact reasons that targeting low- and middle-income residents with energy efficiency grants actually maximizes the return of funding for greater GHG reductions and increased labour-intensive work which means more job creation for every dollar spent.

Reducing energy poverty through building retrofits has a higher reduction rate of GHG emissions and it creates more jobs.



Creating a New BC-Canada Partnership

In May 2021 the Canadian federal government quickly announced a new federal building retrofit program. This new program has seen some considerable new grant funding and a new-to-Canada approach of direct outreach to engage participants.

The new federal plan is problematic in its current inception as it requires an energy audit to make retrofit grants available to people. While the program is well-intentioned, in its current inception it is not incentivizing participation, but in fact is delaying and, in some cases, stopping people from doing building retrofits. The national program needs adjustments.

One of the bright lights in the announced the funding was for 2,000 Energy Advisors to be hired who will go and meet with people in the community to do energy audits and provide advice. The current delivery method of this federal program relies on the hope that many non-profits will apply to recruit/hire, train and manage these 2,000 Energy Advisors. Many do simply not have the capacity.

One of the biggest problems in retrofitting in BC currently is that there are multiple programs run by multiple governments, businesses and agencies sadly some work in competition and at cross purposes to each other. The federal model of disbursing these 2,000 Energy Advisors amongst many non-profits makes the existing problem of competing programs even worse.

However, the new federal program that funds these new Energy Advisors could assist our provincial government by funding the outreach staff (Energy Advisors) we will need in BC as well as providing wages and some funding for training. What is needed is negotiations between elected officials to make a made-in-BC program that would have provincial and federal programs align to work together.

BC would be well served to negotiate a new partnership in retrofitting (see our recommendations on page 18). The partnership could provide initial start-up funding for the provincial building retrofit agency, a federal commitment for BC to manage 250 Energy Advisors (with federal funding of wages, benefits, and training). This could also be the start of a longer process to re-align the federal program to work with BC.



National Confidence and Supply Agreement

The governing Liberals and opposition New Democrats have recently negotiated a *Confidence and Supply Agreement* that includes a commitment to home energy efficiency programs with the goal of both enhancing energy affordability for Canadians and reducing emissions. This also includes investments to support multiple streams including low-income and multi-unit residential apartments as well as funding to create Canadian supply chains. This will help to ensure the jobs stay in Canada and that we will create the skills to export these valuable energy efficiency products around the world.

Additionally, the federal government has recently committed to strong 2030 climate targets that will need bold action on areas such as building retrofits in order to reach these goals. The commitment contained in the *Confidence and Supply Agreement* could fund MoveUP's proposal for a provincial agency. ***The BC government would be a natural and strong partner in this area with the federal government and funding this new agency would show a strong commitment to western Canada.***

BC is more than Metro-Vancouver: Rural BC

What works in Metro-Vancouver will not necessarily work in more rural areas of BC. In fact, this urban-rural dichotomy is also a reason why a solely website-based approach to retrofitting programs is biased in favour of urban areas. We can see this in Canadian federal government data from the CRTC that recently revealed the state of internet connectivity of Canadians. The study says that while 87% of Canadian households have access

to high-speed internet, that number falls to less than 50 per cent for rural households¹². While a web-based retrofit program certainly provides a cost-effective delivery system, it does not provide equal access to all British Columbians.

This is also the case when it comes to direct outreach. In small town rural BC it is much harder to disburse an Energy Advisor to provide expert advice and support—simply the distance needed for travel can be huge and it can be cost prohibitive. Technology can help facilitate some of this through remote connection with trained advisors. However, given the CRTC's findings that only 50% of rural households have access to high-speed internet a purely remote method of delivery can be problematic. This further points to the need for an area-based approach that targets participant recruitment geographically.

As government consulted with municipalities about the development of new PACE programs, the need for rural inclusion was heard repeatedly, as was the need for simplified, consistent applications that did not vary from place to place. Municipal leaders, small businesses and rural community members need opportunities to engage in retrofitting proposals that meets their specific needs and that is readily available to them.

We strongly advise that one of the key goals of the new provincial building retrofit agency is to develop engagement strategies that meet the needs of different communities. This includes urban and rural, but also single-family homes, MURBs (Multi Unit Residential Building), and commercial buildings. But also, a strategy how we support renters versus homeowners. All of these require targeted approaches and will require targeted training of outreach staff.

One important piece of this proposal relates to geo-targeting specific projects: in rural areas, the ability to further reduce costs and have a greater GHG reduction impact can be amplified by targeting particular neighbourhoods, blocks or even streets. When multiple residential buildings in a single area are engaged, that **coordination means an economy of scale and efficiency. If we rely purely on a strategy of people self-recruiting, we lose the efficiency that comes from an economy of scale, and as is reflected elsewhere in this proposal self-recruitment favours more higher income participants who form a high percent of free-ridership.**

GBA+: The Impact of Intersectional Analysis to Promote Equity



Indigenous and racialized residents of the province, as well as those with disabilities, women and youth, are more likely to be in lower income employment and face challenges with respect to labour force attachment and affordability. This proposal offers multiple benefits for historically marginalized and oppressed people, affecting affordability, labour force attachment and climate adaptation.

Starting with the proactive outreach to increase program participation among low-income earners and multi-unit residential buildings, this proposal can have significant positive affects on affordability. Reducing emissions loss means reducing energy bills, savings that can help alleviate energy poverty and improve housing affordability.

As we demonstrate below, one of the successes of similar programs is an investment in training and job creation targeted to Indigenous and racialized people, women, youth, and people with disabilities. By providing long-term, red seal trade certification, opportunities created by this investment in GHG reductions will help build careers for people who have been too long pushed away from meaningful, well-paying, union work in certified trades. Creating opportunities for marginalized people can help move them from poverty to long-term, stable employment.

¹² Canadian Radio-television and Telecommunications Commission (CRTC), Broadband Fund, Closing the digital divide in Canada, March 2021, <https://crtc.gc.ca/eng/internet/internet.htm>

Repeatedly, studies have demonstrated that marginalized and oppressed people are the most likely to experience the most deleterious affects of climate change. Whether that is through lack of adequate, safe housing that can withstand extremes of temperature, increased exposure to air pollution at low-waged, precarious employment, or food and water insecurity, climate change will continue to be experienced differently – and more harshly – by people who live in poverty. Failure to meet our GHG reduction targets is a social justice issue.

What Can we Learn from Other Retrofit Programs

The vast majority of people do not have the knowledge needed to assess energy loss of their buildings, nor devise the solutions that make their buildings energy efficient. They also may be unable to find and assess financial support programs available through a web portal (even the best created one). This frequently means that programs are overly utilized by those with higher educations and higher literacy rates in terms of problem solving and understanding program structures and applications.

When other energy efficiency retrofit programs are examined in other provincial jurisdictions, such as Manitoba and Nova Scotia, they too use grant-based incentive programs and web-based delivery of program information and application. This delivery method has unintended bias to urban residents with higher incomes and education.

Addressing Equity

As we look further to other jurisdictions, outside of Canada we can learn from many success stories. The first is a foundation in Portland Oregon. The program, Enhabit (formerly Clean Energy Works Oregon), has created more than 1,000 jobs and provided training for women, people of colour, and veterans. Enhabit has grown from a 500-home City of Portland pilot project to the region’s largest home renewal service, completing more than 4,500 projects and generating over \$90 million in local economic activity as of 2015. More than half of the hours worked on Enhabit projects have been performed by women and people from racialized communities.

Households who struggle to fulfil their home energy demands, such as air temperature (heating and cooling), lighting, heating water, and cooking, are said to be living in energy poverty. A report last year from Ecotrust Canada evaluated BC’s current path on equity. In the study the found that “British Columbia currently experiences a rate of energy poverty that is higher than the national average, with around 272,000, or 15%”. “Over 17,000 of these households have residents that identify as Indigenous.”¹³

Better Homes BC already has programs for **Indigenous communities** as does **BC Housing** and Better Buildings BC, with programs geared to **social housing**. These programs are important not simply for their social value, but also because these programs garner greater energy savings and greater GHG reductions.

BC has an opportunity to target more energy efficiency program investment towards action on energy poverty. This could include targeting greater program investments towards social and low-income housing but also targeting greater funding for retrofitting Indigenous housing. Increased targeted investments in

CONCLUSION

The conclusion from jurisdictional scans is that there is no singular retrofit program model that will accomplish all of BC’s goals. But instead, BC can build upon a mixture of successful programs from around the world that builds on the three-pillar principle: legal requirements, incentives, and direct outreach.

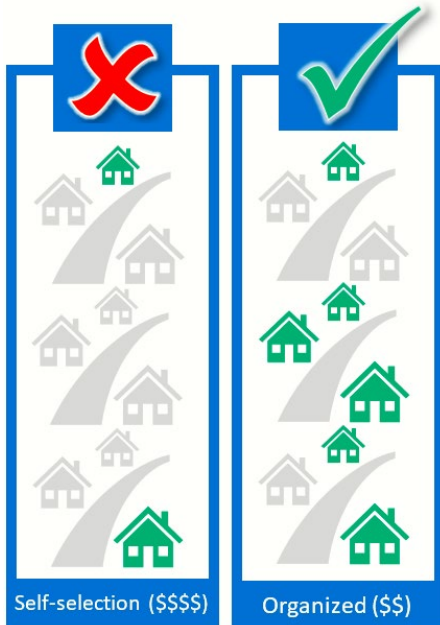


¹³ Rethinking energy bill protections in British Columbia, Ecotrust Canada, August 2020, https://ecotrust.ca/wp-content/uploads/2020/08/Rethinking-Energy-Bill-Protections-in-British-Columbia.August2020_updated_WEB.pdf

these programs would yield a better ROI as well as meeting other critical goals such as GBA+. In addition, programs like BUILD in Manitoba working with the John Howard Society has shown that equity recruitment for building retrofit training and construction has actually lowered incarceration rates.

Area-based Approaches

An important part of Enhabit is use of a direct recruitment model as they do outreach directly in the community by knocking on doors. This method also allows them to target low-income neighbourhoods and allows them to organize multiple retrofit projects and densify the retrofiting activity.



Area-based approaches “typically involve all households in a particular area being offered face-to-face energy advice together with insulation measures and are seemed to offer the potential for high rates of uptake, including identifying and engaging consumers who might not otherwise access centrally provided services. Area-based approaches can deliver up to 30% lower costs through the bulk purchase of insulation measures and productivity levels gained from reducing travel time between installations and can be 50% higher.”¹⁴

Area-based schemes can also help with targeting energy poor households, but only if a door-to-door approach is linked with universal grant support. Otherwise, the energy poor might be neither identified nor willing to participate if ineligible for support (CAG Consultants, 2010). The benefits of area-based approaches vary with the levels of support and the degree of voluntarism involved. In UK area-based schemes, unless free measures are provided, the proportion of properties treated remains low, around 10

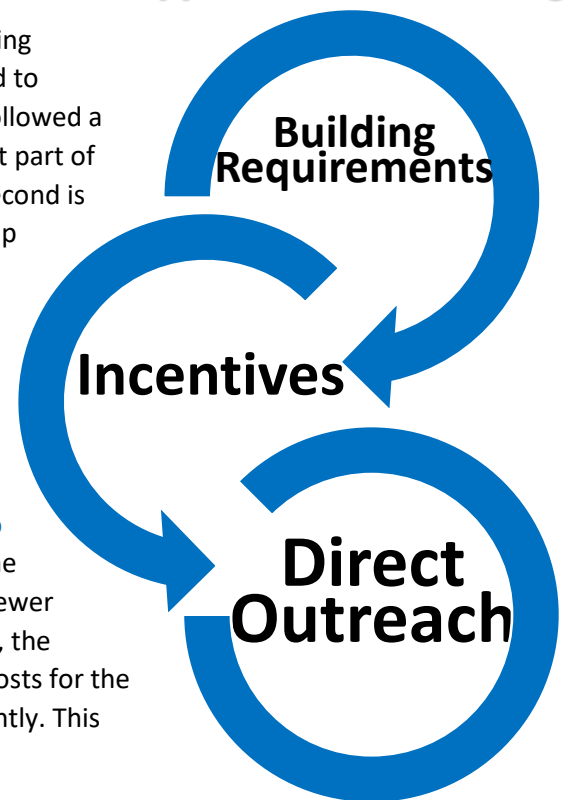
per cent. Where at least some of the measures offered are free and universally available, take up rates may be as high as 37.7 per cent or even 57%.”¹⁵

The Deeper the Retrofit the Bigger the Value to All

In Europe we see countries like Germany and Austria experiencing amazing success. They realized early on that in order to have success they needed to deliver deep retrofits and increase participation rates. To do this, they followed a three-pillar policy when designing program and delivering them. The first part of the pillar is legal requirements to make buildings energy efficient. The second is targeted subsidy programs (that target driving up participation, driving up deeper retrofitting and driving up equity). Thirdly is motivation through information, advice and direct support. These three are fondly referred to as: **stick, carrot and tambourine**. This approach delivers 75 to 80% energy consumption reductions from retrofits.

Lastly, **the vast majority of participants will only conduct a retrofit once** as it can be significantly interruptive. Thus, **if only minor retrofits are done the first time it will be significantly harder to get people to do a deeper retrofit later**. What Europeans have learned is that it pays in the long run to do deeper retrofits from the start and that can mean doing fewer each year, but the GHG reduction is significantly higher. As earlier noted, the deeper the retrofit and the more retrofits in close proximity decreases costs for the participant and contractors as well the efficiency rates increase significantly. This

Europe’s Three Pillar Approach to Retrofitting



¹⁴ Duncan McLaren, Energy Poverty and the Future of Urban Retrofit, Urban Retrofitting for Sustainability: Mapping the Transition to 2050, Routledge, 2014
¹⁵ Duncan McLaren, Energy Poverty and the Future of Urban Retrofit, Urban Retrofitting for Sustainability: Mapping the Transition to 2050, Routledge, 2014

means program investments are allocated far more efficiently and effectively. **Building retrofits in BC should also include water retrofits at the same time as building energy retrofits such as hot water heating, toilets and even showerheads. BC has a long tradition of including this work.**

What Will the Retrofit Provincial Building Retrofit Agency do?

- The provincial building retrofit agency will reduce greenhouse gas emissions and create good sustainable jobs.
- **Provide a “one-stop-shopping” resource** that in addition to a web portal has trained and dedicated staff to assist people, organizations and businesses in understanding options: energy audits, financing and grants, contractors, types of retrofits, materials, etc.
- **Coordinate and administer** all of the various retrofit financing and grant programs (including provincial, national, local, utility, and private grants).
- **Coordinate on-bill financing with energy utilities** (BC Hydro and FortisBC), including **administering the PACE financing program**.
- **Dedicated outreach teams who literally knock-on doors and present in boardrooms to recruit participants directly.** Energy Advisors would work in the community doing targeted recruitment to densify neighbourhood participation to increase the economy of scale of retrofits. Some teams will focus on single family residential, others on multiple dwelling (such as low-rise or apartments) and others on businesses and institutions. This will build upon the new federal government Energy Advisor program.
- **Recruiting existing provincial DSM professionals** at BC Hydro and FortisBC to build upon BC’s existing knowledge base and expertise.
- **Bulk buying of energy efficiency building materials** to reduce costs and save people money, using the power of a provincial agency to purchase on a larger scale and reduced costs for people.
- **Support the development of a made-in-BC retrofit manufacturing supply chain** (especially doors, windows, and heat pumps) by auditing the existing market, **identifying gaps, and working with government to develop incentives to expand a made in BC supply chain.**
- **Helping to create new jobs in retrofit construction through supporting new and existing constructions companies** who would do the retrofit work, and this would include ensuring:
 - that all work is done by **red-seal qualified tradespeople** to protect the consumer.
 - that **red-seal apprenticeship programs** target those too often left out of the job market and especially those more impacted by the pandemic including:
 - Indigenous people, women, young people, racialized workers, persons with physical and intellectual disabilities, and other equity-seeking groups.
- **Working with the Ministry of Advanced Education and Skills Training**, post-secondary and trades training institutions, and the Industry Training Authority (ITA) to plan for the growth of the industry and prepare people to be trained and ready for sustainable jobs.
- The provincial building retrofit agency will also be responsible for program data collection and will consider conducting **on-going research into new trends and technologies in building energy efficiency to make recommendations to government for implementation.**



The Building Blocks for a Made-in-BC Retrofit Program

Below is a list of retrofit programs that fall under three categories that are essential for BC’s retrofit program to excel and meet its goals. They also fit well with the three-pillar approach in Europe. Although many of the examples are non-profits, the model recommended here is a fully publicly owned and operated agency, not a privatization of service delivery. In the USA, the privatized model of delivery is common as government has not effectively taken on their responsibility. As a result, often the innovation has come from non-profits that eventually get funding from government and/or utilities. But their learning and testing is invaluable for us to have a made-in-BC program. The three areas are:

- 1) Direct Outreach
- 2) Equity:
 - a. Affordability – Targeting low-income communities
 - b. Hiring and Training from equity communities
- 3) One-stop-shop

Direct Outreach

Increasing participation rates of those retrofitting buildings is essential if BC is going to make our aspiration of getting to net zero. Generally speaking, there are three primary groups of people who respond well to direct outreach and marketing.

- 1) The first are those in single or multifamily dwellings where the decision maker is the resident of the building.
- 2) The second are those in community-based and affordable housing where a government or NGO is the decision maker.
- 3) The third are buildings where the decision maker is a building management company, building owner, or a property-owner associations such as a strata.

Each group requires a different approach in terms of recruitment, but also in terms of approach and knowledge around energy audits, complex payments, financing and granting. However, the commonality is that direct outreach engages new participants and densifies the number of retrofit projects in one geographic area. Advanced training of the outreach teams will prepare them for the best marketing approach.

Enhabit (formerly Clean Energy Works Oregon), has taken a very interesting approach to marketing. Part of their mandate is to ensure that lower-income communities see real cost-savings and as such they have used an area-based approach by directly reaching out to the community. They target low-income communities by knocking on doors, holding local events and leafleting homes in those neighbourhoods. It started out a 500-home City of Portland pilot project and turned into the region's largest retrofit program.

Efficiency Vermont took up the challenge set by the State of Vermont who had set a goal of achieving 25% energy savings in 25% of Vermont homes (80,000 homes) over a 10-year period. This significant scale-up of retrofitting meant they had to develop a community door-to-door outreach campaign. The challenge was to increase the number of homes retrofitted each year by about six-fold. They engaged community-based social marketing measures to increase the number of residents who participated. They went out into the community knocking on doors, hosting public events, and engaging community volunteers. This approach also allowed programs to gather deeper information about barriers to participation in particular communities and understand what further methods would aid recruitment.

Equity: Affordability – Targeting low-income communities



As was reviewed earlier, current incentive-based programs attract a substantial number of free-riders and as such the program over-serves higher income groups. Additionally, the research shows a higher ROI of program investment by focusing more resources to recruiting participants from lower-income groups. The studies show the ROI reduces the most GHG emissions and thus increases the effectiveness of the program.

Here are some of the examples from multiple jurisdictions that have targeted outreach and program dollars towards lower-income communities:

California Low Income Weatherization Program (LIWP) targets low-income households to reduce greenhouse gas emissions and help vulnerable communities become more resilient to the effects of climate change. The program supports property owners and their residents to lower utility costs, save energy, and reduce greenhouse gas emissions in residential properties. A subset of this program specifically addresses large multi-family properties. LIWP is part of California Climate Investments, a statewide initiative that puts billions of Cap-and-Trade dollars towards reducing greenhouse gas emissions, strengthening the economy, and improving public health and the environment.

<https://camultifamilyenergyefficiencydotorg.files.wordpress.com/2019/07/liwp-service-delivery-plan-v3.pdf>

The Nova Scotia Home Warming Program offers free energy assessments, insulation, draft-proof installation of energy efficient products to income-qualified homeowners across Nova Scotia. Home Warming is sponsored by Nova Scotia Power and the Province of Nova Scotia as part of a broad, province-wide initiative to provide energy efficient upgrades to income-qualified homeowners.

Elevate Energy in Chicago has several retrofit support programs. One supports specifically low-income households and another targets public housing. They provide direct support of energy advisors, information, grants and free retrofit materials such as LEDs, including exterior, garage, and TLEDs, free weatherization products and services, free programmable or smart thermostats and incentives for boiler replacements and other HVAC system upgrades.

Efficiency Vermont has maintained strong relationships with the non-profit affordable housing providers in the state. As a result of these relationships and outreach to architects and designers, virtually all the multi-family housing that has been built or renovated in Vermont by the non-profit community over the last 10 years has participated in Efficiency Vermont’s programs.



Equity: Hiring and Training Programs

Enhabit (formerly Clean Energy Works Oregon) has created more than 1,000 jobs and provided training for women, people of colour, and veterans. Enhabit has grown from a 500-home City of Portland pilot project to the region’s largest home renewal service, completing more than 4,500 projects and generating over \$90 million in local economic activity by 2015. More than half of the hours worked on Enhabit projects have been performed by women and people of colour.¹⁶

Brandon Energy Efficiency Program (BEEP) is a construction training program for individuals who have barriers to employment in Brandon, Manitoba. BEEP seeks to improve energy and water efficiency of existing homes

¹⁶ Derek Smith, From our CEO: 2013, a year of impact and momentum, December 16, 2013: <https://enhabit.org/blog/from-our-ceo-2013-a-year-of-impact-and-momentum/> & Enhabit website: <https://enhabit.org/about/>

and also builds energy and water efficient affordable housing in Brandon and surrounding communities. BEEP crews are led by red seal carpenters and consist of trainees ranging from limited experience to apprentice level carpenters. The program has also focused recruitment in Indigenous communities.

T’Sou-ke First Nation’s Clean Energy Project is a solar project that provided full-time employment to 15 Band members in its first year. Among the 15 members, 11 – including one woman – were trained and later employed as PV and hot water installers. Most of these employed members came from the struggling forestry and fishery sectors. Several of these members (three youths and an elder) were employed for a year in the energy conservation program and later as a result of their training worked as trained installers on Colwood solar project.

BladeRunners began in 1994 in Vancouver as a pilot project to address the needs of at-risk youth in the Vancouver Downtown Eastside. Twenty-five youth received job placements as labourers to support the construction of GM Place (now Rogers Arena). The program included: life skills training, job readiness skills, certification courses (WHMIS, WCB Awareness and First Aid Level 1), apprenticeship training, on-the-job training and job placement. **ACCESS** has continued the good work of BladeRunners and is working as part of a national training model pioneered by BUILD in Manitoba. **The work ACCESS is doing will be a vital component of the BC Retrofit program and should especially be noted as they are Indigenous led and running training programs for indigenous people.**

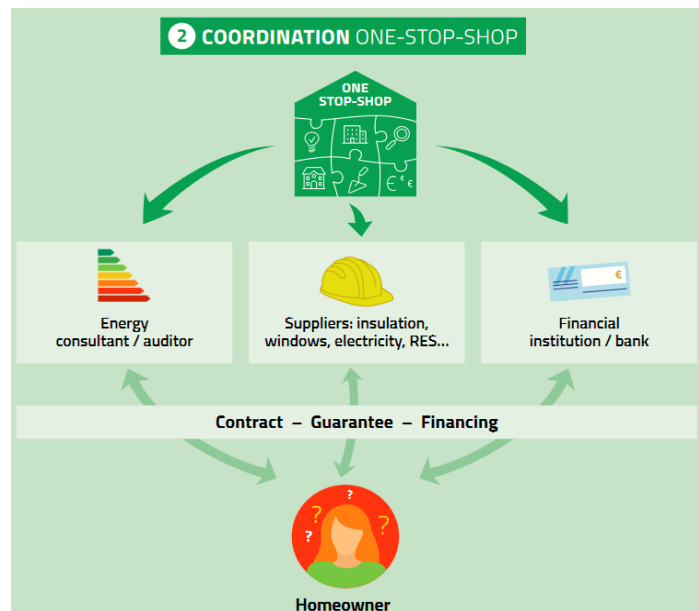
One-stop-shop

Retrofitting is complicated and successful retrofit programs build in solutions to make it easy by supporting people, organizations and businesses with a single point of entry and with a live person to support and coach people.

Bouncing between different offices, agencies, and levels of government adds time and complexity to the retrofit process and can act as a deterrent to homeowners, businesses and NGOs who want to do the right thing. “One-stop shopping” single window of entry programs in other jurisdictions show this and can include retrofit grant administration and applications for financing.

INNOVATE Project. Between 2017 and 2020, a group of 13 organizations (municipalities, regions, energy agencies, private companies, and installers’ cooperatives) from 11 European areas have accepted a dare: to develop and roll out integrated energy retrofit packages for homeowners of single-family houses and condominiums. In short, to set up a renovation one-stop-shop. The European example takes this even further with a full turn-key approach. The participant is connected to an advisor who serves as a project manager who walks the participant through an assessment and creates a contract and payment. Then the advisor hires the contractor, acquires the materials, determines the schedule, and finally implements the retrofit. This one-stop-shop concept is very labour intensive and at the same time maximizes efficiency through a centrally planned process. The model is advanced, and is proposed as a longer-term model in BC.

National Home Retrofit scheme, launched in September 2020 and administered by the Sustainable Energy Authority of Ireland (SEAI), offers a One Stop Shop solution to homeowners who want to upgrade the energy efficiency of their home. The aim of a comprehensive energy upgrade is to reduce energy bills and increase indoor air quality. This gives homeowners a single port of call for advice, financing, design, and execution of a renovation. A burden-free experience for the customer (homeowners or board of co-owners), this holistic



service allows people to manage and upgrade their homes in a simpler and cost-effective way. It will match end-users with the right building professionals and financial options, while assembling the local capacity for deep energy renovations.

Program Offering Widespread Energy Recovery (POWER) program in Camden, New Jersey uses a model of whole-neighborhood retrofits in low-income urban communities, using a one-stop-shop approach to program delivery and financing. The program initially focused on three neighborhoods with door-to-door canvassing and outreach with local churches. The project includes efforts to provide very low interest loans for low- and middle-income families and focuses on healthy homes and life safety programs to further benefit residents.



Public Service Electric and Gas (PSE&G) in New Jersey uses a one-stop-shop model to walk owners through each step of its multifamily program. PSE&G's one-stop shop is unique as it helps customers overcome barriers associated with upfront project costs. Access to capital is a huge barrier for the multifamily sector.

Elevate Energy in Chicago is a pioneer of the one-stop shop model serving multifamily properties. Its multifamily program uses a single point of contact for program participants. The program contact follows projects and works with the customer throughout the entire project, from the initial contact to verification and reporting of project results. This model has proved very effective in gaining participation and achieving high completion rates for comprehensive retrofits.

Kingston Home Energy Retrofit Program (KHERP) is a new initiative that is just starting in Kingston, Ontario. The program sets to address the need to increase participation in retrofits by making information and support easier to get. The program will make use of a coach service to assist program applicants gain access to the financing, incentives and other supportive tools as a one-stop shop which also can be an important driver for uptake.



Recommendations and Timing

Entablement of Building Retrofit Agency

- 1) The BC government engages an independent consultant to develop an implementation strategy to develop the building retrofit agency which will allow the development of a business plan.
- 2) Based on the consultants' findings, the BC government commits to develop a building retrofit agency. The agency would use a mixture of successful programs from around the world that builds on the three-pillar principle: requirements, incentives, and direct outreach.
- 3) While the new program is being developed the BC government will continue its existing retrofit incentive program.
- 4) BC Hydro agrees serve as a program incubator for the first two years. As a program incubator BC Hydro would administer key functions such as payroll allowing the program to start up faster. The goal would be to give the new program stability, initial structure, the time needed to plan and build the new provincial building retrofit agency to coordinate retrofitting in BC.



An Initial Funding Option: A pathway to building better.

- 1) To establish this new building retrofit agency, the BC government negotiates with the federal government for stable funding for the first five years which includes:
 - a. Federal funding to start up the building retrofit agency.
 - b. Federal funding for a minimum of 250 Energy Advisors (wages, benefits, and training).
 - c. Federal government funding to invest in retrofits for at least five years, by matching dollar for dollar money the BC government invests in loans and grants.

Meeting 2030 Climate Targets – Acceleration of Building Retrofits in BC

- 1) The BC and federal governments commit themselves to a partnership to accelerate building retrofits including:
 - a. Additional annual funding scaling up to reach \$100 million per year by year five to expand the number of energy efficiency grants.
 - b. Additional annual funding scaling up to reach \$50 million per year by year five to address energy poverty by specifically target building retrofits of lower-income housing and coop housing.
- 2) The BC and federal governments commit themselves to a partnership to increase workforce participation of Indigenous people, women, young people, racialized workers, persons with physical and intellectual disabilities, and other equity-seeking groups. The partnership will include:
 - a. Funding for recruitment, training and elimination of barriers in the workplace and overall participation in the workforce.
- 3) The BC and federal governments commit themselves to a partnership addressing supply chain issues by investing in the building and strengthening of a local manufacturing sector of building retrofit energy efficiency materials such as heat pumps, windows and doors.

A National Building Retrofit Agency

One of the key components of the *Confidence and Supply Agreement* negotiated federally is home energy efficiency programs that both enhance energy affordability for Canadians and reduce emissions, with investments to support multiple streams including low-income and multi-unit residential apartments.

- 1) The federal government can achieve the goals of the *Confidence and Supply Agreement* by investing funding in a BC-based building retrofit agency.
 - a. This new agency will focus on home energy efficiency programs that both enhance energy affordability for Canadians and reduce emissions, with investments to support multiple streams including low-income and multi-unit residential apartments.
 - b. The new agency will also ensure that this funding includes support for creating Canadian supply chains for this work to ensure the jobs stay in Canada and that we create the skills to export these valuable energy efficiency products around the world.