HOME PERFORMANCE
STAKEHOLDER COUNCIL

2020 HOME PERFORMANCE CONTRACTORS FORUM

FEBRUARY 25, 2020

2020 HOME PERFORMANCE CONTRACTORS FORUM	
9:00AM to 9:15AM	Welcome & HPSC Background
9:15AM to 11:00AM	Moderated Panel and Q&A *The Industry Needed to Meet the Targets – Getting Ready* *Moderated by Corey Diamond (Executive Director, Efficiency Canada)* • Nat Gosman (Executive Director, BC MEMPR) • Paul Shorthouse (Senior Director, Delphi Group) • Alexandre Hebert (Manager, BCIT Zero Energy / Emissions Buildings) • Matt Horne (Climate Policy Manager, City of Vancouver)
11:00AM to 12:00PM	Presentation: *Getting to Deep Retrofits* • Peter Sundberg (Executive Director, City Green) • Lisa Westerhoff (Principal, Integral Group)
12:00PM to 12:45PM	Lunch
12:45PM to 2:45PM	Moderated Table Discussions: *Getting to Deep Retrofits* • Topic #1 – Consumer Supports and Contractor Connectivity • Topic #2 – Energy Evaluations and Online Tools • Topic #3 – Financing and Rebate Programs • Topic #4 – Policies and Regulation • Topic #5 – Other Innovations and Ideas
2:45PM to 3:00PM	Thank You & Next Steps

BACKGROUND & CONTEXT

HOME PERFORMANCE STAKEHOLDER COUNCIL

STEERING COMMITTEE | **EXECUTIVE GROUP**

SECTOR COUNCILS

RENOVATORS

HEATING & HVAC

INSULATION & AIR SEALING

FENESTRATION

ENERGY ADVISORS

UTILITIES & GOVERNMENT

COUNCIL PARTICIPANTS

CONTRACTORS & SUB TRADES | **TRADE SUPPLIERS** | **MANUFACTURERS & SUPPLIERS** | **SECTOR LEADERS**

HPSC FOCUS

Advocacy
Creating opportunities for industry to work together to provide input and recommendations that remove barriers and promote growth.

Market Growth
Develop effective, long-term strategies, tools and resources to accelerate industry growth and expand business opportunities.

Capacity Building
Cultivate and support a trained and qualified workforce that reliably delivers home performance related products and services.

Quality Workmanship
Help the development and implementation of programs, training and accreditation that supports quality workmanship.

HPSC PURPOSE

The Home Performance Stakeholder Council is working together with BC's home improvement industry sectors to develop and grow the home performance industry into a sustainable and profitable market segment that delivers products and services to:

- **Lower** utility bills through reduced energy use
- **Improve** home comfort and building durability
- **Reduce** environmental impact
- **Improve** air quality, health and safety

HPSC DEVELOPMENT

STRATEGY & INFRASTRUCTURE BUILDING

IMPLEMENTATION & DEVELOPMENT

2015

- Establishing organization and presence
- Building contractor network and Sector Councils
- Industry engagement on issues and opportunities
- Increasing profile and consultation with U&G

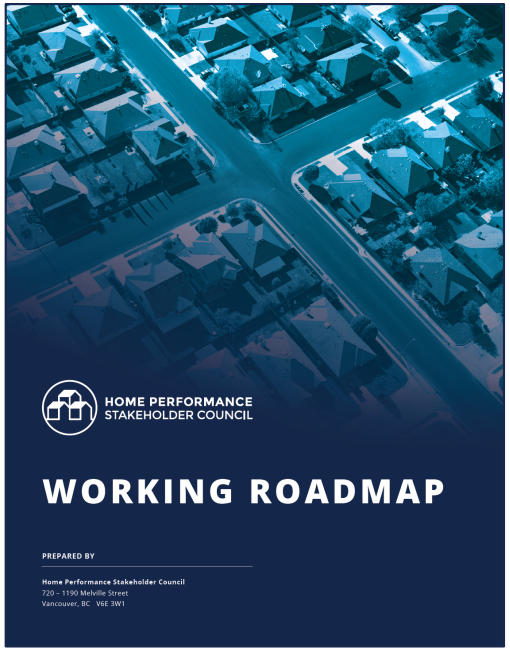
2018

- Vision for home performance from industry, U&G and consumer lens
- Industry roadmaps to guide priorities and recommendations
- Coordination and alignment through HPSC Steering Committee
- Expanded presence and communication with industry sectors

2019

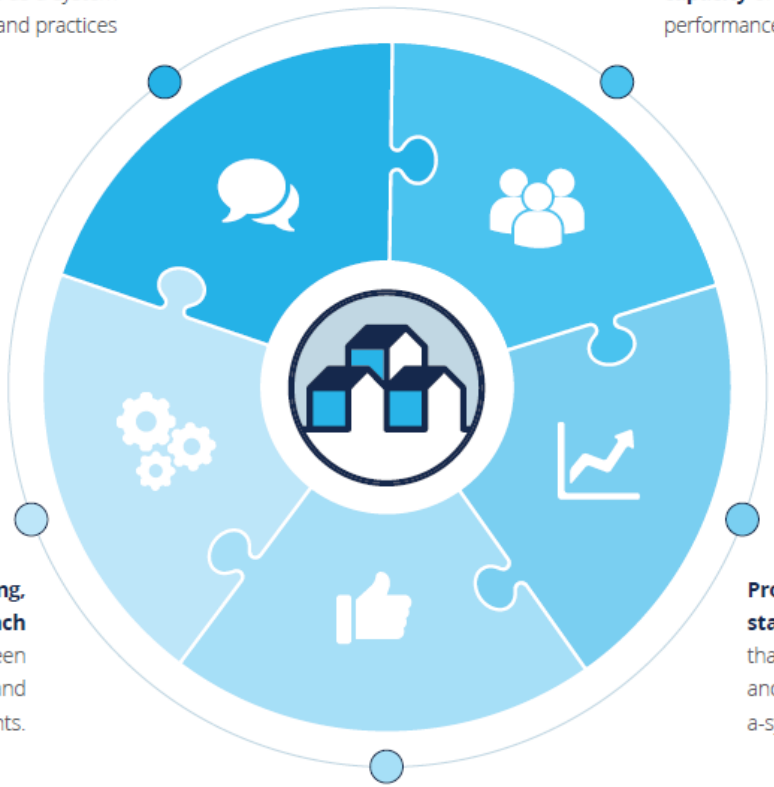
- Transition from strategy to industry development
- Projects supporting industry roadmap priorities
- Broader engagement through forums and webinars
- Increasing collaboration between industry and U&G

HPSC STRATEGIC PRIORITIES



Increase awareness of house-as-a-system concepts and practices

Define and increase the capacity of trained home performance professionals.



Establish a functioning, systematic approach to consultation between industry, utilities and governments.

Provision of clear and stable market signals that illustrate the need and desire for house-as-a-system renovations.

Build a clear and definitive brand that communicates that carrying out a home performance project is a wise decision and there are recognized contractors who provide quality work.

INDUSTRY DEVELOPMENT PROJECTS

- Initial industry development projects have been focused on contractors and increasing the availability and demand of quality trained professionals.

INSULATION SECTOR:
Accreditation & Training

HVAC INDUSTRY:
Best Practices Guide & Training

2.4 IDENTIFYING QUALITY INSTALLATIONS

Several important ASHP installation best practices can be observed visually. Exhibit 9 below provides a comparison between installation best practices and poor installation practices for reference purposes.

Exhibit 9: Comparison of Poor Installation Practices and Best Practice Installations

POOR INSTALLATION	BEST PRACTICE INSTALLATION
Outdoor Units	
Ground not properly compacted	Best practices installation of outdoor unit
No clearance between ground and base of outdoor unit	
Frozen discharge water poses serious safety hazards	Unit on brackets attached to foundation wall

HOME PERFORMANCE STAKEHOLDER COUNCIL | HEAT PUMP BEST PRACTICES GUIDE | FALL 2015 17

RENOVATOR & WINDOWS SECTOR:
Accreditation & Training

RENOVATORS

ENERGY ADVISORS

FENESTRATION

INSULATION
& AIR SEALING

HVAC &
Water Heating

UTILITIES &
GOVERNMENT

RECOGNIZING OUR SECTOR COUNCILS:
77 PARTICIPANTS

RECOGNIZING OUR STEERING COMMITTEE

RENOVATORS

Mika Fryling
Robert Capar

ENERGY ADVISORS

Peter Sundberg

FENESTRATION

Cam Drew
Anton Van Dyk

INSULATION & AIR SEALING

John Fahey

HVAC & Water Heating

Charles Frass
Dave Hoare

RECOGNIZING OUR STEERING COMMITTEE

UTILITIES & GOVERNMENT

Katherine Muncaster
Katie Terhune
Patrick Mathot
Beth Ringdahl
Jennifer Shum
Erica Gugay
Brady Faught
John Ho
Erik Blair

HPSC

Christine Gustafson
Peter Sundberg
Murray Bond
Ryan Coleman

HPSC FUNDING PARTNERS

We gratefully acknowledge the financial support of BC Hydro, Fortis BC, and the Province of British Columbia.

PANEL DISCUSSION

The Industry Needed to Meet the Targets – Getting Ready





HOME PERFORMANCE
STAKEHOLDER COUNCIL

THE INDUSTRY NEEDED TO MEET THE TARGETS – GETTING READY

February 2020

Corey Diamond, Efficiency Canada

- Efficiency Canada is the national voice for an energy efficient economy.
- Efficiency Canada's mission is to create a sustainable environment and better life for all Canadians by making our country a global leader in energy efficiency policy, technology, and jobs.

2015 – 2050: PLANS, GOALS & TARGETS IMPACTING THE BC HOME PERFORMANCE INDUSTRY

HOME PERFORMANCE STAKEHOLDER COUNCIL

2050

- The City of Vancouver has set goals to get **100% of its energy from renewable sources and be carbon neutral before 2050.**
- Metro Vancouver has committed to **becoming a carbon neutral region**.

2030

- The Government of Canada has committed to **lowering greenhouse gas emissions by 30% below 2005 levels**.
- The Government of BC has a goal of **reducing carbon pollution by 2 million tonnes in the built environment.**
- The Government of BC has a goal of **converting home space heating to clean electricity in 70,000 homes by 2030**.
- The City of Vancouver has a goal that **55% of energy used in Vancouver is derived from renewable sources**.
- The City of Vancouver has a **goal of 50% reduction of carbon pollution**.
- Metro Vancouver has mandated that **carbon emissions be reduced by 45% from 2010 levels**.

2025

- The Home Performance Stakeholder Council is **working towards a contractor-led home performance industry** with trained and accredited professionals across the province, coordinated two-way communication of issues and ideas to utilities and governments, and the means to easily estimate and offer benefits to homeowners.

2024

- The Government of BC has committed to **adopting the model National Building Code** for existing buildings.

2022

- The Government of Canada has committed to **releasing a model National Building Code** for existing buildings.

2019

- The Government of Canada has **committed to building labelling** as early as this year.

2018

- The Government of BC released **CleanBC**, a plan to reduce climate pollution, build a low-carbon economy. CleanBC will **invest $102 Million** towards better buildings and communities.
- **Work on the HPSC Sector Roadmaps wrapped up** marking the transition from industry development strategy to action.

2017

- The City of Vancouver developed the **Renewable City Action Plan**. Buildings are identified as the largest source of emissions in Vancouver accounting for 59% of the city's total emissions in 2017.

2016

- The Government of Canada ratified the **Paris Agreement**, a pathway to a lower carbon future and limiting the global average temperature rise to 1.5°C.
- The Government of Canada published the **Pan Canadian Framework on Clean Growth and Climate Change**. 17% of greenhouse gas emissions in Canada come from heating and cooling buildings.

2015

- The City of Vancouver developed the **Renewable City Strategy** that imagines a city powered only by renewable energy.
- **The HPSC formed** as a project, funded by the Province of BC, BC Hydro, and FortisBC, with the goal of building a larger, self-sustaining home performance industry in BC.

Nat Gosman, BC Government

- CleanBC is a Government of British Columbia plan aimed at reducing climate pollution, while creating more jobs and economic opportunities for people, businesses and communities.
- The Province has set goals to reduce greenhouse gas emissions by at least 80% below 2007 levels by 2050.

Matt Horne, City of Vancouver

- On April 29, 2019 Vancouver City Council approved the Climate Emergency Response report to increase the City's efforts to tackle climate change.
- The City of Vancouver has set goals to get 100% of its energy from renewable sources and be carbon neutral before 2050.

Paul Shorthouse, The Delphi Group

- Delphi has been analyzing the economic, investment, and job creation potential of the green building sector in BC and more broadly across Canada over the last decade, including in the retrofit sector.
- Working with the Ministry of Advanced Education, Skills and Training on developing the CleanBC Workforce Readiness Plan.

Alexandre Hebert, BCIT

- The BCIT Zero Energy Buildings (ZEB) Learning Centre was created to support the construction industry with **transitioning** to the new BC Energy Step Code and new City of Vancouver Zero Emissions Building bylaws. We provide a full suite of courses that are **short and hands-on**. We offer courses at BCIT (in the High Performance Building Lab) and courses on the road (with our lab-in-a-box kit).

HOME PERFORMANCE
STAKEHOLDER COUNCIL

ACCELERATING (MORE AND DEEPER) HOME RETROFITS

February 25th, 2020

Agenda

1. Introduction – Accelerating Retrofits
   - Definition: Deep Energy Retrofits
   - Current Context
   - House-As-A-System

2. Retrofit Acceleration Options and Opportunities

3. World Café Exercise

Introduction to Accelerating Retrofits

Residential Retrofit Acceleration Project Transition 2050

To mobilize **government & industry collaboration** and **accelerate energy and greenhouse gas reduction strategies and projects** to double the emissions reductions achieved from residential retrofits in program communities in the short term while establishing a clear path to achieving medium-term and 2050 targets.

FCM FEDERATION OF CANADIAN MUNICIPALITIES FÉDÉRATION CANADIENNE DES MUNICIPALITÉS

The "New Retrofit Experience"

To create a **retrofit package for existing homeowners that is marketed/supplied through the trades industry**, that ensures homeowners will choose **low-carbon options** during their renovation or equipment replacement.

Deep Energy Retrofits

A Deep Energy Retrofit is the renovation of an existing home that results in an overall improvement in building performance. Exact definitions vary:

- Profound reduction in energy consumption, OR
- Reduction of 50% or more compared to baseline energy consumption
- May include a fuel switch to lower carbon option

Current Context: Retrofits in BC

Experiencing positive growth curve rate of retrofits over recent years (more per month/year). But….

- Very few **deep retrofits**
- Very few **multiple retrofits per home**
- Not at levels needed to maximize the **business and job creation opportunities** from more energy retrofits
- Not at levels needed to **meet Provincial/Federal GHG reduction targets**

Current Context:
Climate Emergency Declarations

496 Councils in Canada have declared a Climate Emergency

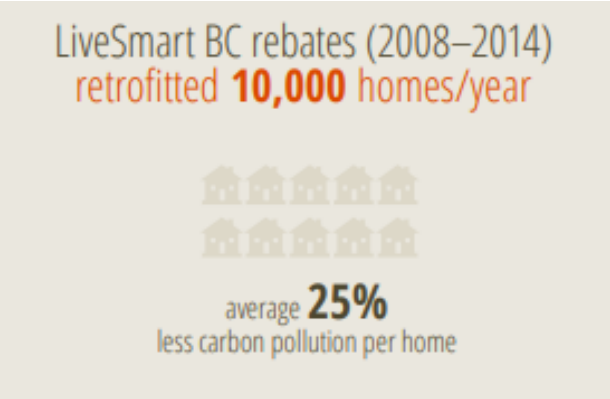
Spurring efforts to include retrofit strategies into climate action plans

Current Context:
What Does Meeting Our Targets Mean?

Retrofitting 30,000 homes

or **3%** of homes province-wide

every year until 2050...?



https://www.pembina.org/reports/retrofitbc-infographic-2018-3.pdf

House-As-A-System (HAAS) Approach

HAAS is a building science concept that defines the **house as an energy system made up of interdependent components**, each of which affect the performance of each other and the entire system.

- ✓ Air Seal
- ✓ Ventilate
- ✓ Insulate
- ✓ Efficient Windows
- ✓ Efficient Heating Systems

Understand the intended or unintended effects that changing one component can have on other components

Why use the HAAS Approach?

HAAS =

Deeper & More Retrofits

By taking HAAS into consideration when planning each home retrofit, contractors can advise homeowners on the importance of well-planned, whole-home renovations

Why use the HAAS Approach?

Consumer Benefits

- ENHANCED HOME COMFORT
- AFFORDABLE TO OPERATE
- A HEALTHIER HOME
- IMPROVED HOME EQUITY
- SMALLER ENVIRONMENTAL FOOTPRINT
- IMPROVED HOME DURABILITY

Why use the HAAS Approach?

Stakeholder Benefits

- ✓ **Business opportunities** for industry
- ✓ Distributed **job creation**
- ✓ **Supports objectives** of utilities and government (energy savings & emissions reductions)
- ✓ **Homeowner benefits**

Retrofit Acceleration Options and Opportunities

Today's Objective

To explore, & get your input on, options & tools to accelerate Deeper & More Home Retrofits

1. Homeowner Supports & Contractor Connectivity
2. Energy Evaluations and Online Tools
3. Financing and Rebate Programs
4. Policy and Regulation
5. Other Innovations and Ideas

No Silver Bullets

But Possibly (and More Likely)

MULTIPLE COMBINATIONS OF EFFECTIVE SOLUTIONS

And Lots of Unknowns…

Demand Side Management Regulations?

Federal government direction?

Upcoming Retrofit Codes?

New Utility Models?

Local Government or Regional Programs?

Private Sector Innovation?

Public Interest in the Climate Emergency?

New Standards and Technologies?

New Sources of Investment?

Homeowner Supports and Contractor Connectivity

Homeowner Awareness and Education

IS LOW AWARENESS THE BARRIER?

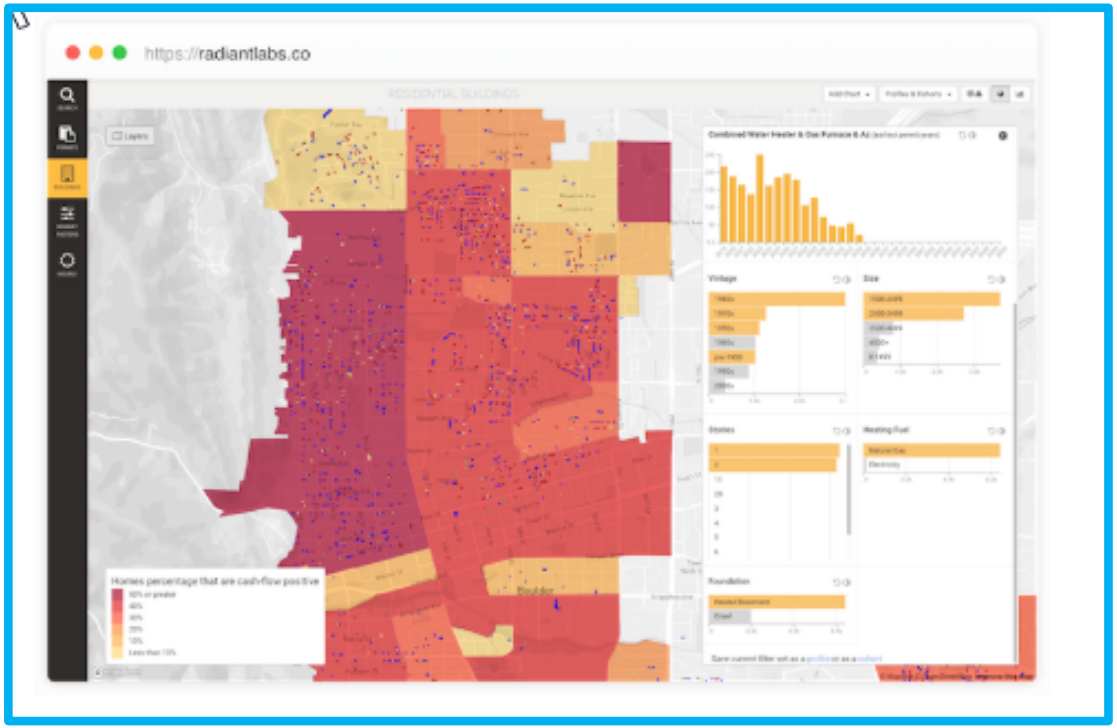
Develop clear, compelling and factual messaging and information on **the value** of undertaking deeper and more retrofits

- Targeted using compelling narratives (why retrofit..)
- Disseminated by a wide range of stakeholders
- Communicated via multiple channels
- Sustained

Mapping and Target Marketing

Target market by:

- Community
- Neighbourhood
- Block
- Fuel type
- Heating System type
- Housing type/age
- Demographics
- Communities of interest



Energy Coaching Services

cleanBC
BETTER HOMES

SELF – SERVE ONLINE RESOURCES

- Resources to learn about energy efficiency products and services
- For homeowners, business owners & contractors
- Incentives, rebates and financing search tool
- Frequently Asked Questions

FREE ENERGY COACHING SUPPORT

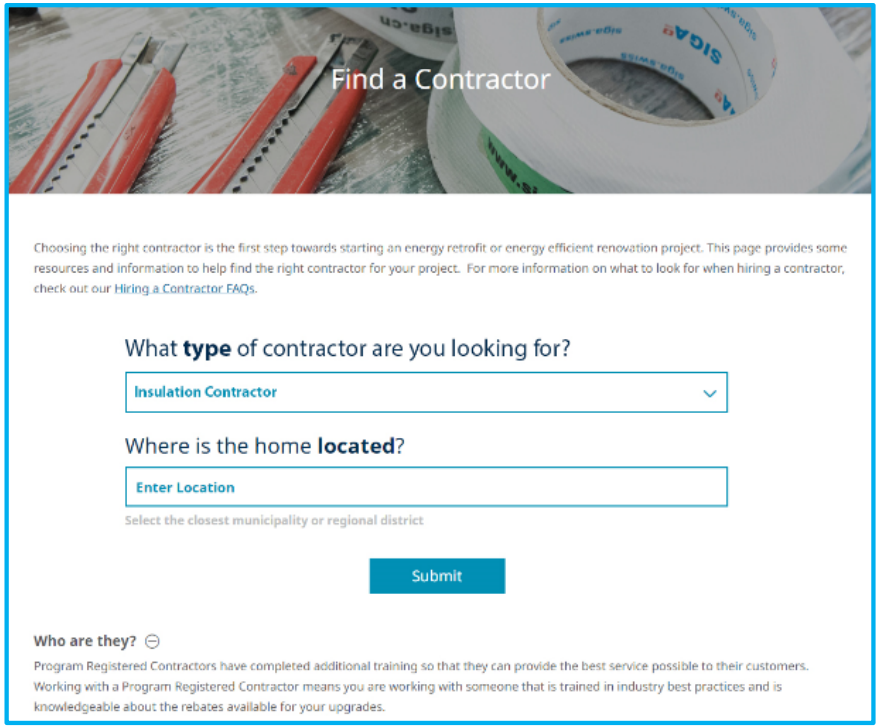
- Free phone and email support
- Any related home energy improvement questions answered or provide guidance.

Contractor Search Tools

Easier for Homeowners to Find a 'Good' Contractor Online

- Qualified by rebate program
- Listed by communities where they provide services

Hey Mom, I found a great Insulation and Heating System Contractor – Yes Mom…they are going to do air sealing too!



Homeowner Registration in Rebate Program

Is registration a barrier or start of a relationship?

1. Starts relationship
2. Gathers data about homeowner/home
3. Opportunity for the program to provide information about all the rebates available
4. Provides an opportunity to provide prompts, reminders and info about new rebates and offers

Integrating Energy Retrofits into General Renovations

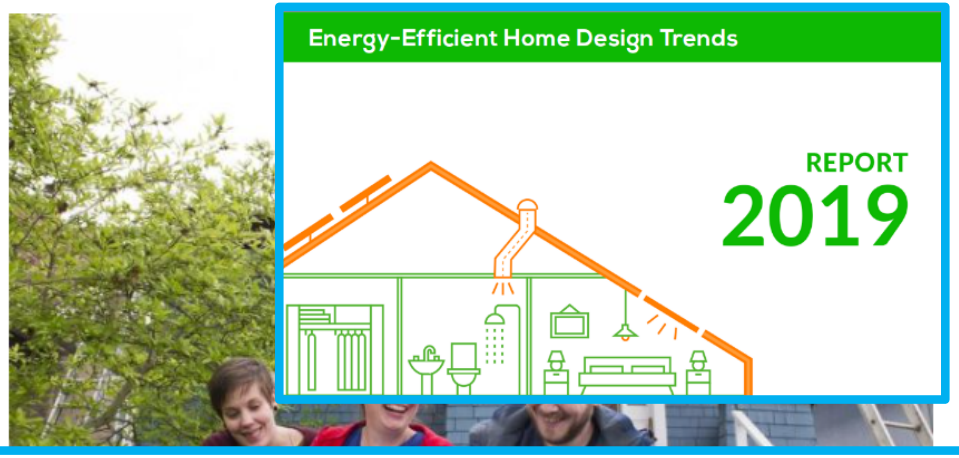
How?

1. Work with renovators to upsell retrofits into general renovations?
2. Retrofit Codes that set requirements for retrofits
3. Every renovation permit comes with info on rebates?
4. Consumer education?

Multi-generational households drive renovation revolution

Builders say nearly every renovation client they meet wants to accommodate an extra generation — or two — on the property they already own.

RANDY SHORE Updated: May 24, 2019



Renovation spending in Canada still trending up

POSTED January 01, 2018

SOURCE Patrick Langston, All Things Home

Retrofit Program Coordinator

Providing a single point of contact to reduce complexity and streamline the process

- Home assessment
- Support measure selection
- Identify and coordinate trades
- Rebate application
- Installation quality verification

Energy Evaluations & Online Tools

EnerGuide For Homes (ERS) Energy Evaluations

For Homeowners

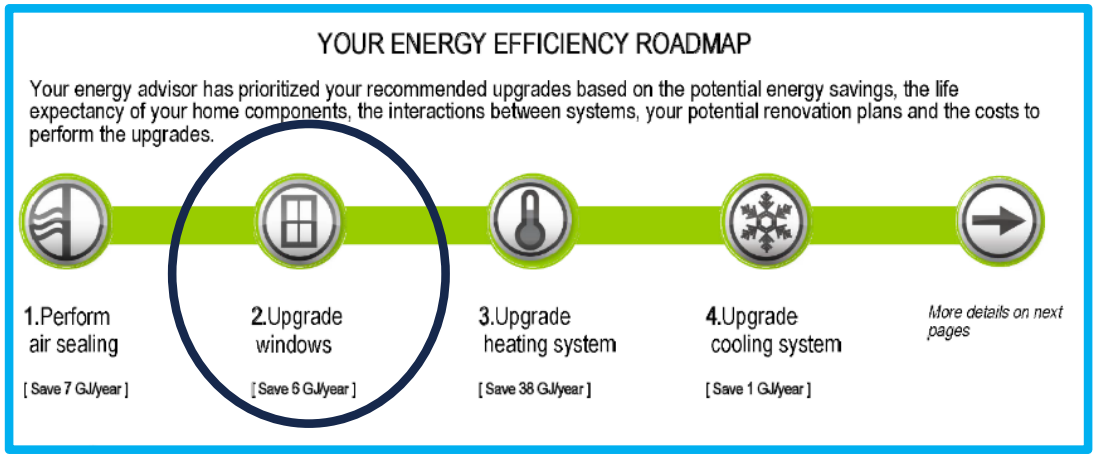
- Home Visit, Blower Door Test, and Homeowner Engagement
- Home Energy Rating and Label
- Homeowner Report with prioritized HAAS recommendations

For Stakeholders

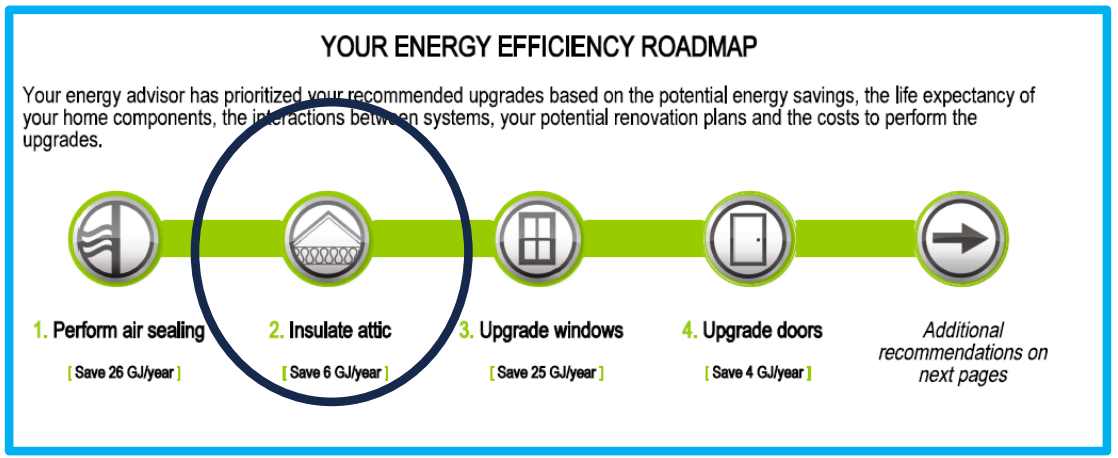
- Lead generation for contractors
- ERS database and data sharing agreement:
  - Comprehensive data on homes
  - Reporting to stakeholders – retrofits completed, retrofits not completed, GJ/GHG savings, etc.
  - Application Programming Interface (API)

Getting to More than One Retrofit?

Air Sealing: 7 GJ



Air Sealing: 26 GJ



Online Home Energy Roadmap

Your Home Upgraded

Estimated Upgraded Home Energy Use:

112 GJ a year

That's enough energy to run your dryer non-stop for 9.8 months.

9 months less than your current home!

Estimated Upgraded Home Carbon Output:

4.5 tonnes a year

21,424 square meters of forests (or around 14 NHL hockey rinks) would be needed to offset this amount.

26,185 square metres (or 16 hockey rinks) less than your current home!

Your Recommended Upgrades

Your home evaluator recommends the following personalized top improvements, to your home in order to reach your upgraded home's potential as shown above. For more details on each of the improvements please see your Renovation Upgrade Report or contact your home evaluator. Please note that there may be renovation opportunities beyond those recommended by your home evaluator.

Perform air sealing

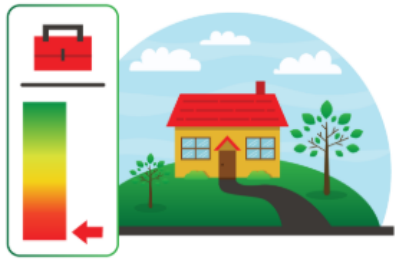
Insulate main walls

Upgrade doors

ENERGUIDE

Annual Energy Consumption Rating

Your Current Home



219 GJ

Lots of opportunities to improve!

Your home is using MORE energy than other homes built in the same decade, and there are lots of opportunities to make it more energy-efficient. See your report to find out how you can lower your energy bills and your environmental impact as well as make your home more comfortable.

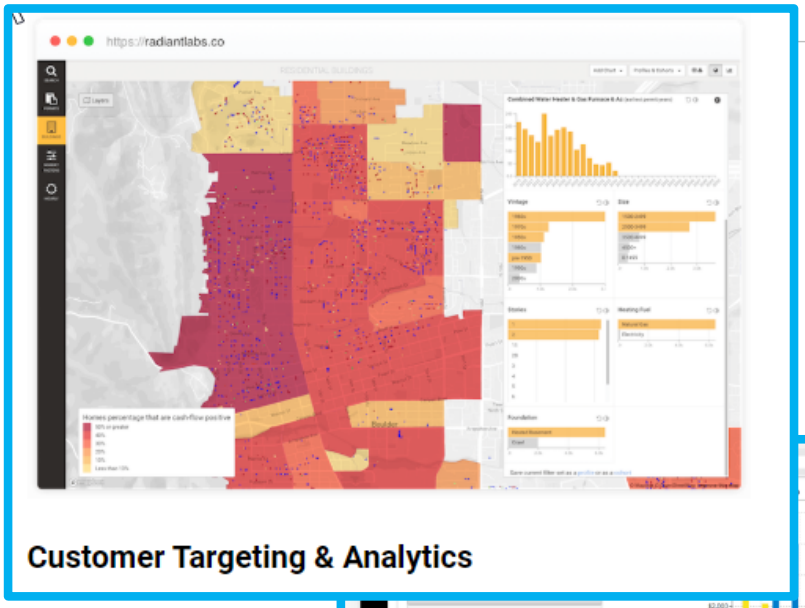
New Online Tools

City of Vancouver looking to develop

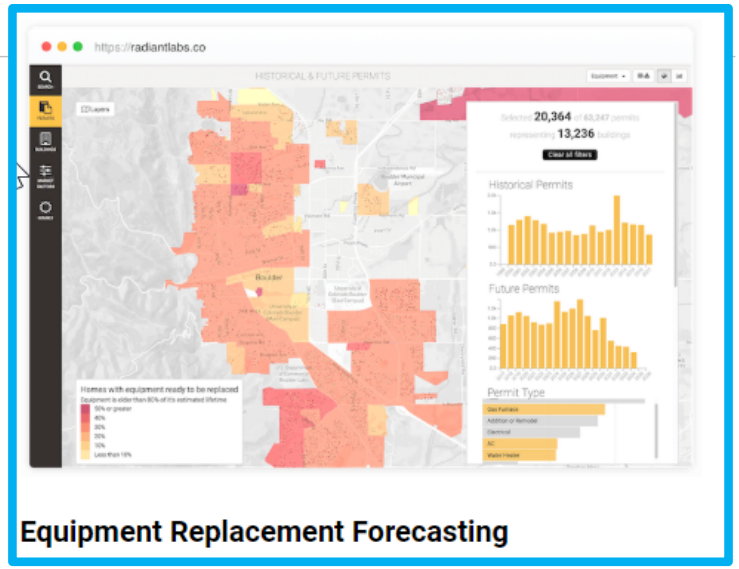
1) A **database of housing stock data** for internal analysis & informing policy

2) A **publicly accessible "Decision Tool"** where homeowners/ renters can get information about their energy use and carbon emissions, recommended upgrades for their house, and available rebates, among other tools.

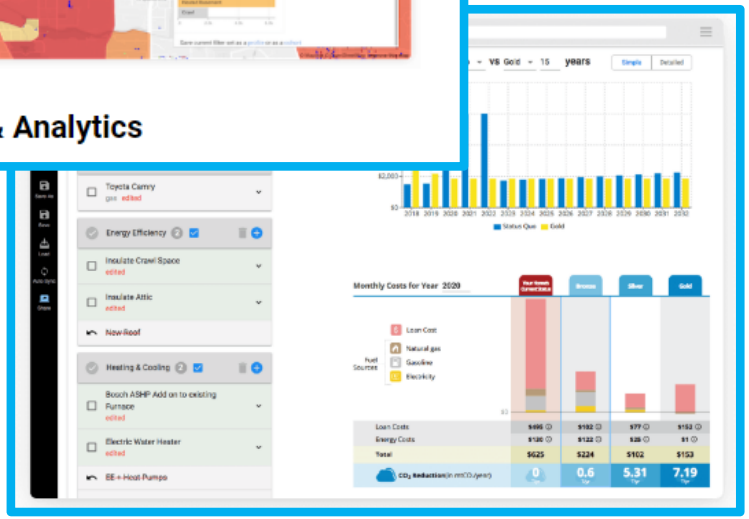
New Online Data & Insight Tools



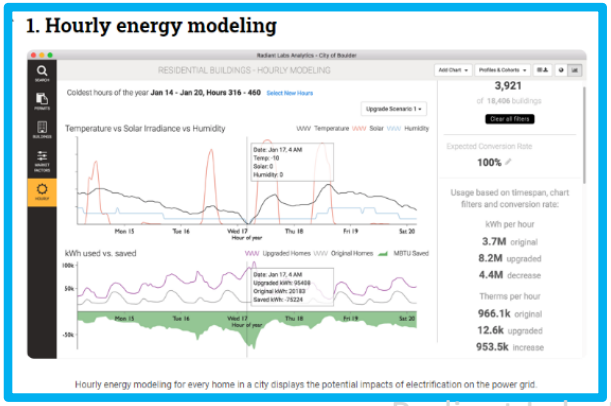
Customer Targeting & Analytics



Equipment Replacement Forecasting



Sales propositions to feature savings through bundling



Radiant Labs Images

Virtual Energy Assessments

Emerging technology…

Collect Data (meter, weather, info about similar buildings, etc.)

+ Fancy algorithms
+ New innovations
= Energy Retrofit Recommendations

Virtual Energy Audits: Industry Fad or the Next Big Thing?

Scalable
Data Driven
Cheaper?
Gateway to next step?

Simplified Energy Evaluations

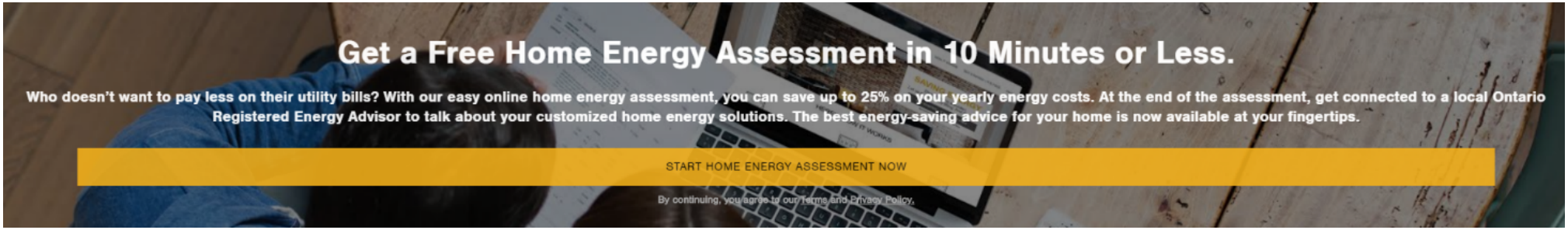
Benefits

- Lower cost to provide, cost effective to subsidize
- Fewer inputs and detail
- Identifies retrofit opportunities & motivates consumer action

Options

- Simplified version of EnerGuide?
- New energy evaluation online platform?
- Checklist type evaluation?

Online DIY Energy Assessments



YOU'RE SO CLOSE TO SAVING UP TO 25% ON YOUR ENERGY BILLS!

Welcome to MyEnergyXpert - a FREE home energy assessment designed to help Ontario families save energy at home. Tell us about your home with our easy 11-step questionnaire and get a customized report with energy saving tips, advice and rebates.

We help transform your home to be more comfortable, energy efficient...and did we mention that average family gets recommended over $1,800 worth of annual energy cost savings?

To qualify for incentives and rebates through Enbridge, you must be an Enbridge customer using Natural Gas as your primary heating fuel.

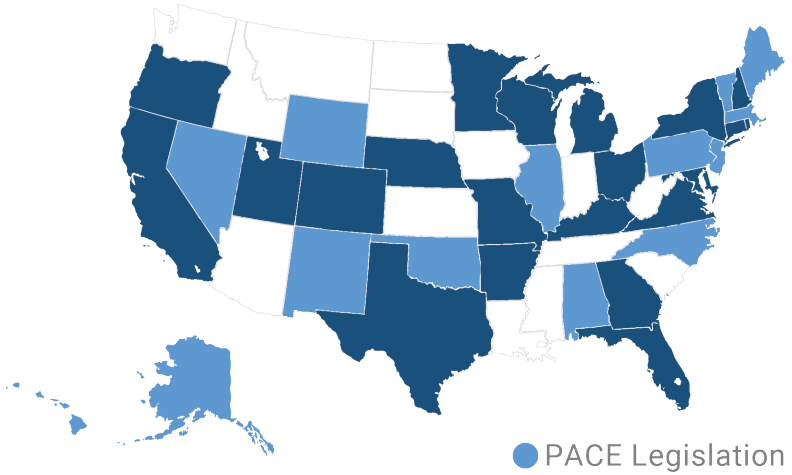
- Step 1?
- Step 1 + Energy Evaluation?
- Step 1 + ?

Financing and Rebate Programs

Financing: PACE

Property Assessed Clean Energy Financing

- Financing (for energy retrofit) is attached to the property rather than an individual
- Repaid on property tax bill over the selected term
- Options for 0% interest



Source: PACENation

Financing Details Pending

0%

Provincial Financing

- Contractor Driven
- Interest Free, OR
- Access Provincial Rebate

Federal Financing

- CMHC Administered
- Up to $40,000 Interest Free
- Federal Cash Incentive for Borrowers
- Access Provincial Rebate

Rebate Program Design Elements

1. **Require Pre-Registration** to start an early relationship with participant, send regular prompts, offer program support from day one.
2. **Require an EnerGuide Evaluation** to inform consumers about home retrofit opportunities, provide in-home engagement, provide ERS reports, etc.
3. Active Encouragement of **Direct DIY Air Sealing**
4. Provide **Ongoing Energy Coaching Support** for Contractors and Participants

Oil to Heat Pump Incentive Program Results

EnerGuide Data Analysis Showed:

- **37.7%** completed 3 retrofits
- **81.5%** completed 2 retrofits

Post Program Survey Showed

- Average **3.5 retrofits per home**

Average GHG & Energy Reductions Per Home:

- **96.5%** Reduction GHG Per Home: (7.25t CO_2e/year)
- **51%** Whole Home Energy Consumption
- **73%** Space Heating Energy Consumption

High Level of Participant Satisfaction

- **97.4%** would install a heat pump again
- **80.8%** satisfied or happy with energy bills

Details on Retrofits Completed:

- 76.3% air sealing
- 22.4% attic insulation
- 16.6% basement insulation
- 11% window upgrades
- 8.9% wall insulation
- 6.7% hot water upgrades

Using Incentive Structures To Motivate Contractor to Contactor Referrals

Heating System PLUS Rebate:

- To motivate contractors to refer homeowner to complete an additional upgrade

Referral Incentives

Example: Access an additional $200 for your heating system upgrade if homeowner completes an eligible insulation or window upgrade.

Design Rebate Programs to Meet Installation Best Practices?

Insulation + Air Sealing = **2 Retrofits**

Heating System + Insulation + Air Sealing = **3 Retrofits**

"All insulation work begins with air sealing. **Never insulate a wall, roof, or floor without first making sure the air leaks in the vicinity are addressed.**" *Best Practices Guide – Air Sealing and Insulation Retrofits for Single Family Homes, page 10.*

Group Purchase Rebates

Potential to scale up adoption of a new heating system or other measure

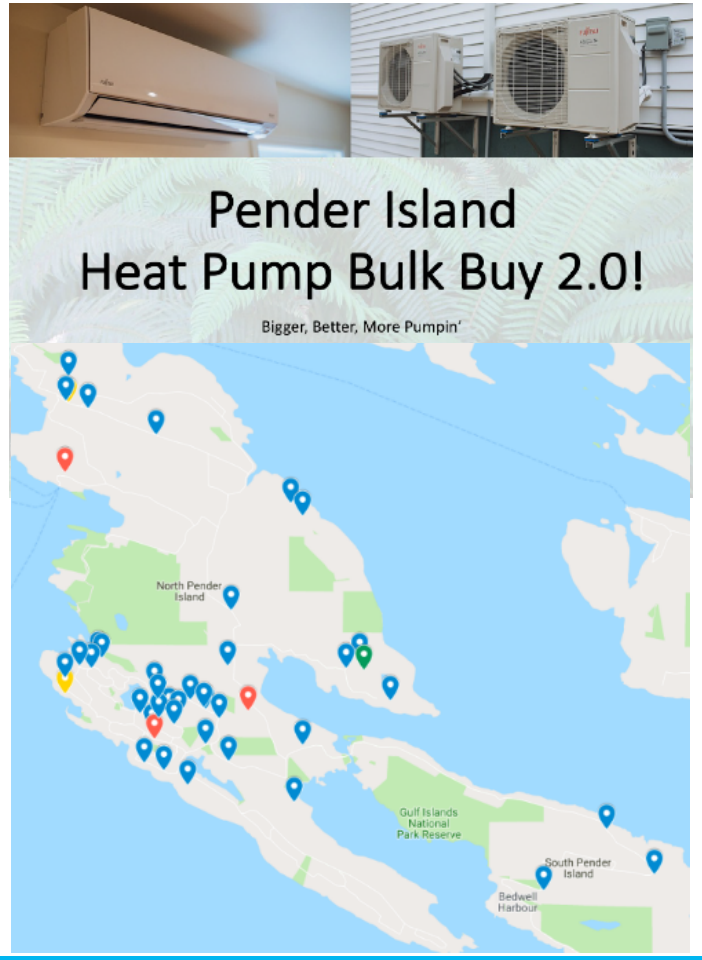
- Make use of word of mouth marketing, social networks, community marketing, + extra rebates to motivate participation

Size of Group	Each Participant Receives
2-4 homes	$200
5-9 homes	$275
10-14 homes	$350
15-19 homes	$425
20-30 homes	$500

Group Heat Pump Purchase Rebate

Bulk Buy Models

- Bulk purchase by neighbourhood, community, region
- Goal to increase # of installations and reduce cost to participants
- **Options**
  - RFP for one contractor to deliver
  - Additional rebates with criteria for multiple contractors to review
  - Private sector bulk buy
  - No down payment



Leasing Programs

- No down payment, no loan
- Monthly Payments
- Rebates cover first year's lease payments
- Lease to own or no-buyout option

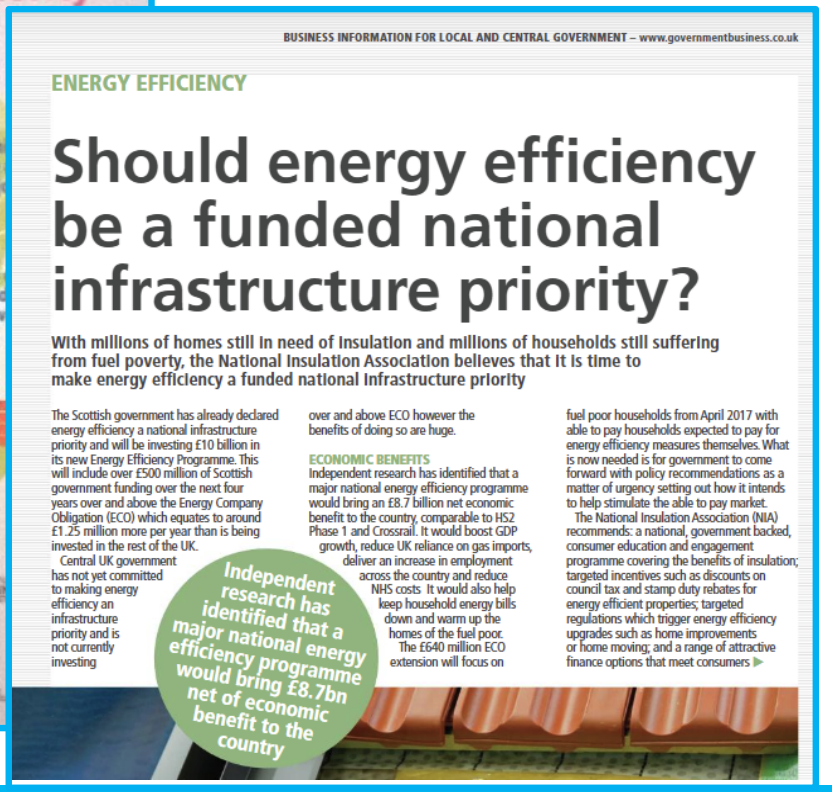
Home Renovation Tax Credits

- Building off 2009/2010 Canada Initiative
- Advocate for 2021 Home Energy Retrofit Credit?
- Only for Residential Retrofits

Policies & Regulations

Advocate for Home Energy Retrofits Infrastructure Priority

- Regional/Provincial/ National
- Targets and long-term action plan
- Funding
- Carrots – Incentives
- Sticks – Regulations



Alternations to Existing Building Codes (AKA: Retrofit Codes)

2022

- The Government of Canada has committed to **releasing a model National Building Code** for existing buildings.

2024

- The Government of BC has committed to **adopting the model National Building Code** for existing buildings.

Equipment Regulations

Zero Emission Building Plan – Big Move #4:

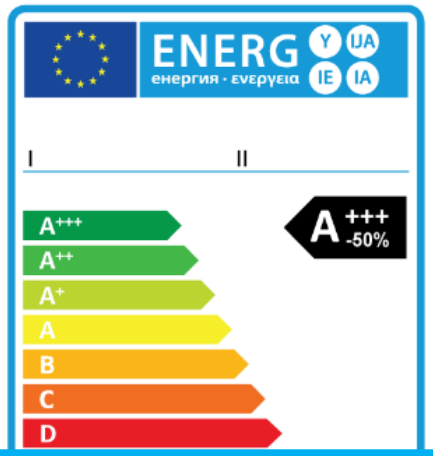
By 2025, all new and replacement heating and hot water systems will be zero emissions

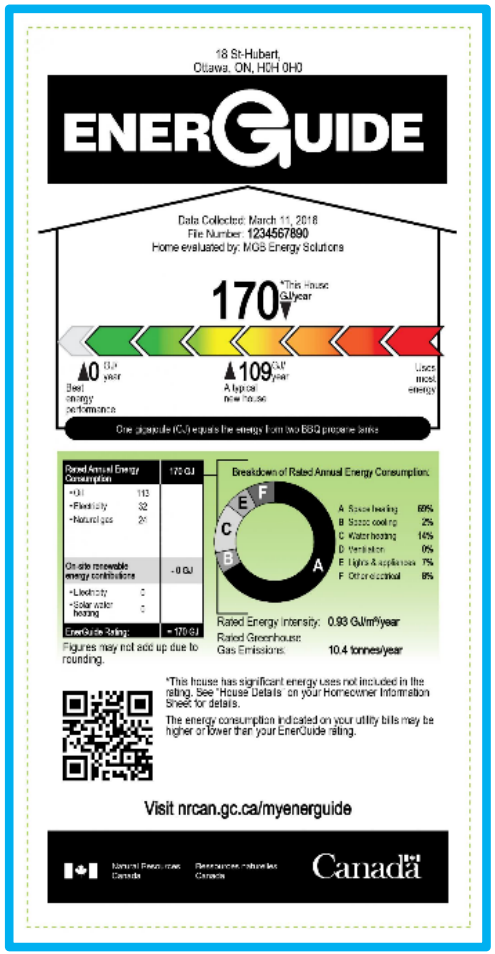
→ A retrofit strategy including incentives and investments, capacity building and regulations

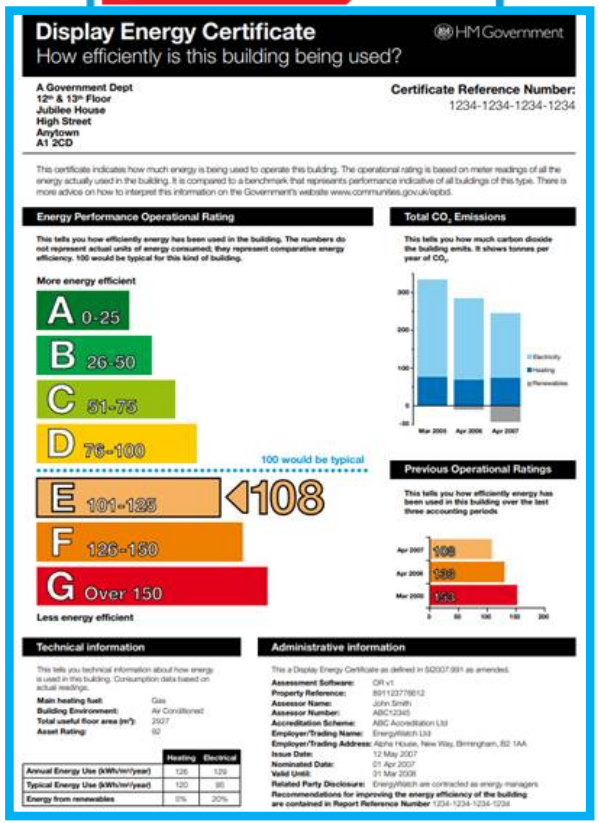
CITY OF VANCOUVER

Mandatory Labelling

- Homeowner Awareness?
- Market Demand?
- Time of Sale or Renovation Requirement?
- Requirement of Rebate?
- Regulated?







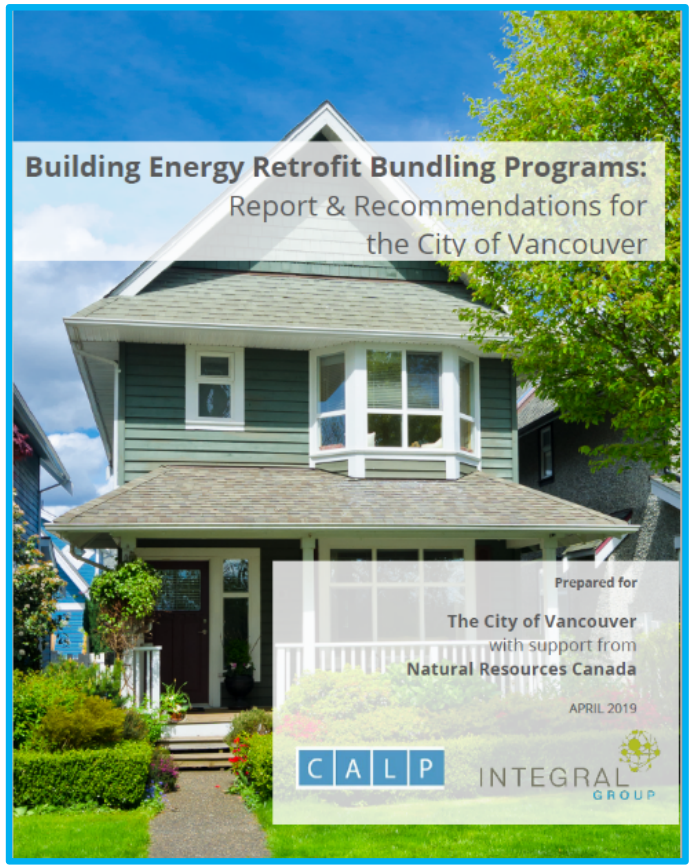
Other Innovations and Ideas

Large Scale Projects

- Neighbourhood level promotion
- Free wall insulation assessment
- Additional programs for income qualified homes
- Options for rental homes
- Also promotes other upgrades to able to pay homes

Make uninsulated walls extinct by 2025

Bundling Retrofit Programs



Tiered Standard Packages: Pre-set combination of retrofit measures based on home type (heat pump, air sealing and insulation)

Three Package Options: 3 bundled options for retrofits: good, better, best.

Bulk Scale Programs: Social housing packages or other bulk programs.

Net Zero Ready Retrofit

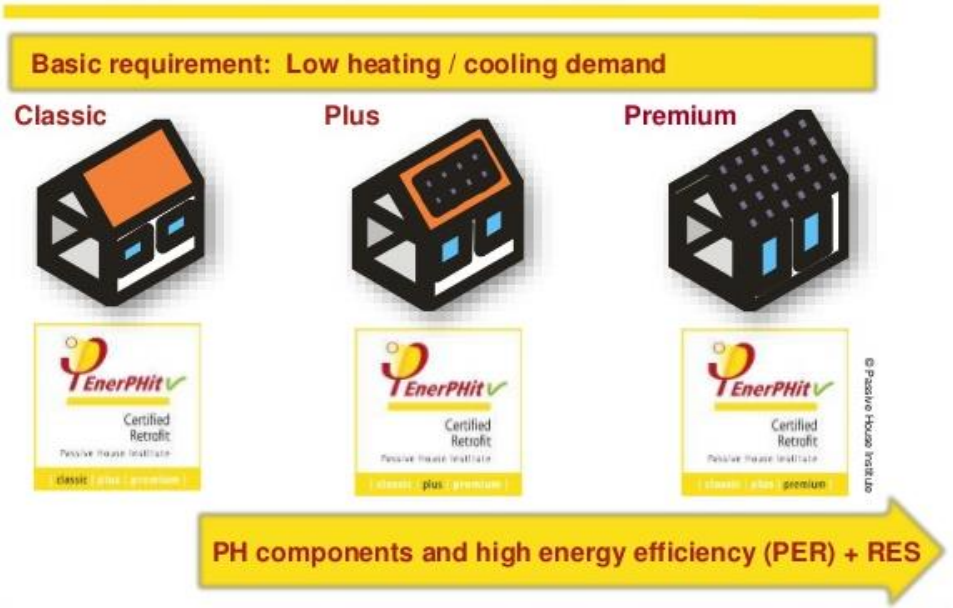
Upgrading a building's energy efficiency with the goal to make the building net-zero in the future

Example: include roof upgrades and reducing home energy usage to plan for a future solar installation to power the home.

Passive House EnerPHit

A Passive House standard aimed at older buildings

Three levels & three different methods, focusing on **upgrading components**, **energy demand**, **or general efficiency**



Energiesprong

- Prefabricated upgrades for tenants of housing developments
- No up-front cost, tenants do not have to leave
- Upgrades paid for through tenant Energy Service Fees equivalent to tenant's utility cost savings.

Work Force Development

How are we developing the workforce?

- People to run the companies
- Skilled installers
- Support (labour, administrative)
- Develop & run the programs
- etc., etc., etc.....

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YOUR INPUT:

World Café Table Discussions

Small Group Discussions

World Café Table Discussion

A structured conversation that will give you the chance to discuss several topics at different tables and share your ideas, concerns and opinions.

- **5 tables, 5 table hosts & 5 retrofit acceleration categories**
- 90 minutes for discussion
- Choose 3 tables to join – but no requirement to change tables
- Facilitators may spread the crowd
- Table hosts will summarize input

World Café Discussion Q's

Short term results: Which are most likely to deliver retrofit acceleration results?

Medium to long term results: What is needed now for future results to happen?

Market transformation: Which actions could actually transform the market?

World Café Discussion Q's

THINK ABOUT

- **Combinations:** Which combinations could best deliver results?
- **Scalable:** Which are scalable regional, provincial, national?
- **Open competition & innovation:** Does it support a open & competitive market?
- **Feasible and cost effective:** Who will fund? Will they fund?
- **Red flags:** Which should be avoided or explored with caution?
- **Need to be tested:** Which should be piloted to gauge effectiveness?
- **What is missing:** What options are missing?

Table Host - Report Back

- What were the **key ideas** that came out of the discussion?
- What are the **most promising actions in the short vs. long term**?

Next Steps

1. Capture and compile your input and feedback
2. Summarize into key findings
3. Document and distribute
4. Opportunities for further discussion and next steps will be identified.

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THANK YOU!

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THANK YOU & NEXT STEPS

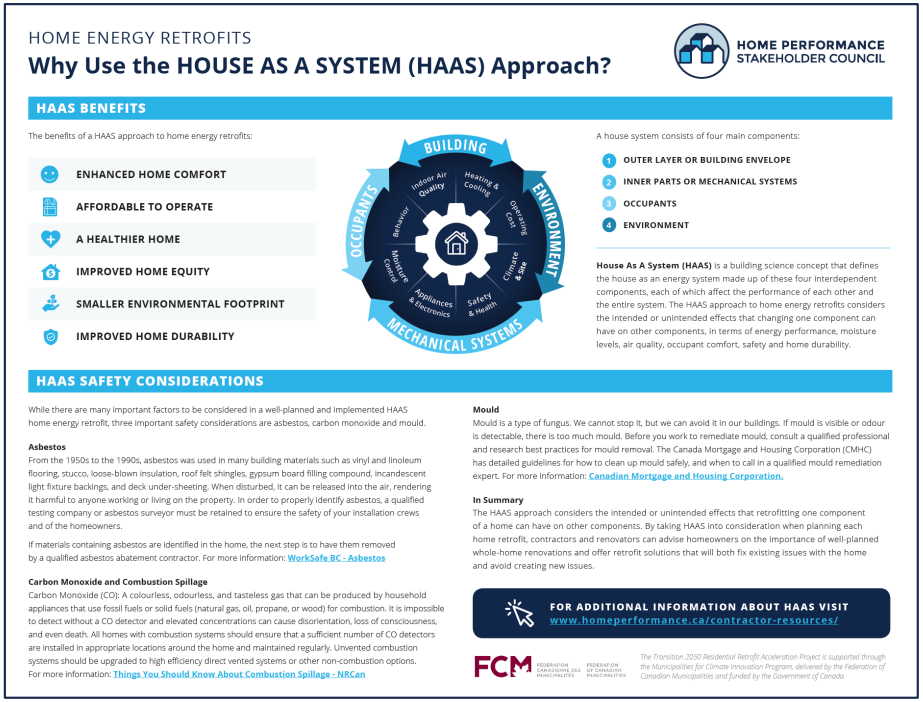
February 25th, 2020

FORUM FEEDBACK

- HPSC will be gathering notes and drawing out insights to share with contractor network including:

- Turning potential resource/tool insights into resource that contractors can reference or leave behind.

- Providing feedback to inform upcoming home performance/energy retrofit policy and program design.



HOME ENERGY RETROFITS

Why Use the HOUSE AS A SYSTEM (HAAS) Approach?

HOME PERFORMANCE STAKEHOLDER COUNCIL

HAAS BENEFITS

The benefits of a HAAS approach to home energy retrofits:

- ENHANCED HOME COMFORT
- AFFORDABLE TO OPERATE
- A HEALTHIER HOME
- IMPROVED HOME EQUITY
- SMALLER ENVIRONMENTAL FOOTPRINT
- IMPROVED HOME DURABILITY

A house system consists of four main components:

1. OUTER LAYER OR BUILDING ENVELOPE
2. INNER PARTS OR MECHANICAL SYSTEMS
3. OCCUPANTS
4. ENVIRONMENT

House As A System (HAAS) is a building science concept that defines the house as an energy system made up of these four interdependent components, each of which affect the performance of each other and the entire system. The HAAS approach to home energy retrofits considers the intended or unintended effects that changing one component can have on other components, in terms of energy performance, moisture levels, air quality, occupant comfort, safety and home durability.

HAAS SAFETY CONSIDERATIONS

While there are many important factors to be considered in a well-planned and implemented HAAS home energy retrofit, three important safety considerations are asbestos, carbon monoxide and mould.

Asbestos

From the 1950s to the 1990s, asbestos was used in many building materials such as vinyl and linoleum flooring, stucco, loose-blown insulation, roof felt shingles, gypsum board filling compound, incandescent light fixture backings, and deck under-sheeting. When disturbed, it can be released into the air, rendering it harmful to anyone working or living on the property. In order to properly identify asbestos, a qualified testing company or asbestos surveyor must be retained to ensure the safety of your installation crews and of the homeowners.

If materials containing asbestos are identified in the home, the next step is to have them removed by a qualified asbestos abatement contractor. For more information: WorkSafe BC - Asbestos

Carbon Monoxide and Combustion Spillage

Carbon Monoxide (CO): A colourless, odourless, and tasteless gas that can be produced by household appliances that use fossil fuels or solid fuels (natural gas, oil, propane, or wood) for combustion. It is impossible to detect without a CO detector and elevated concentrations can cause disorientation, loss of consciousness, and even death. All homes with combustion systems should ensure that a sufficient number of CO detectors are installed in appropriate locations around the home and maintained regularly. Unvented combustion systems should be upgraded to high efficiency direct vented systems or other non-combustion options. For more information: Things You Should Know About Combustion Spillage - NRCan

Mould

Mould is a type of fungus. We cannot stop it, but we can avoid it in our buildings. If mould is visible or odour is detectable, there is too much mould. Before you work to remediate mould, consult a qualified professional and research best practices for mould removal. The Canada Mortgage and Housing Corporation (CMHC) has detailed guidelines for how to clean up mould safely, and when to call in a qualified mould remediation expert. For more information: Canadian Mortgage and Housing Corporation.

In Summary

The HAAS approach considers the intended or unintended effects that retrofitting one component of a home can have on other components. By taking HAAS into consideration when planning each home retrofit, contractors and renovators can advise homeowners on the importance of well-planned whole-home renovations and offer retrofit solutions that will both fix existing issues with the home and avoid creating new issues.

FOR ADDITIONAL INFORMATION ABOUT HAAS VISIT
www.homeperformance.ca/contractor-resources/

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The Transition 2050 Residential Retrofit Acceleration Project is supported through the Municipalities for Climate Innovation Program, delivered by the Federation of Canadian Municipalities and funded by the Government of Canada.

NEW DEVELOPMENTS WITH HPSC

Industry Development Projects

- Expanded training, accreditation, certification, and Registered Contractor lists.
- Design and implementation of a contractor management system.
- Development of in-field evaluation and inspection protocols for programs.
- Transition of utility/government Program Registered Contractor to HPSC Registered Contractor Listing.

Operational Enhancements

- New Director to lead efforts as a dedicated resource responsible for HPSC operations.
- New Admin/Communications resource to increase awareness and industry engagement
- Pursuing additional collaboration with industry associations and identification of projects/funding opportunities aligned with HPSC roadmaps.

OPPORTUNITIES & REMINDERS

1. Get involved with your Sector Council
2. Have your say in industry development projects
3. Learn something new in the upcoming webinar
4. Stay in touch with the monthly E-Newsletter

HPSC SOCIAL EVENT

Join us
at Kelly O'Bryans Restaurant from 4PM to 5:30PM for a beverage and appetizers!

THANK YOU

Home Performance Stakeholder Council

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