

Home Performance Stakeholder Council Renovation Sector Roadmap

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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.

Table of Contents

Executive Summary	3
1 Introduction	10
1.1 Background	10
1.2 Vision	10
1.3 Mission and Core Objectives	10
1.4 Organizational Structure	11
2 Roadmap Development Process.....	12
2.1 Roadmap Toolkit.....	13
3 Home Performance Industry Overview	14
3.1 Political Landscape	14
3.2 Industry Landscape	14
3.3 Renovation Sector Landscape	14
3.4 Home Performance Industry Vision.....	18
3.5 Summary of Renovation Sector Issues.....	19
4 Recommendations to Address the Issue of Quality Workmanship: Industry Reputation, Standards of Practice, and Installation Quality.....	21
4.1 Current Situation	21
4.2 Goals for Sector.....	21
4.3 Recommendations for Achieving Goals	22
5 Recommendations to Address the Issue of Market Growth: Consumer Demand and Quality Awareness.....	25
5.1 Current Situation	25
5.2 Goals for Sector.....	25
5.3 Recommendations for Achieving Goals	26
6 Recommendations to Address the Issue of Advocacy: Effectiveness and Enforcement of Codes, Regulations, and Bylaws	31
6.1 Current Situation	31
6.2 Goals for Sector.....	31
6.3 Recommendations for Achieving Goals	32
7 Recommendations to Address the Issue of Capacity Building: Availability of Trained Trades, Workforce Development, and Professionalism	35
7.1 Current Situation	35
7.2 Goals for Sector.....	35
7.3 Recommendations for Achieving Goals	36
8 Recommendations to Address the Issue of Advocacy: Connectivity to and Engagement in Utility and Government Program & Policy Design	38
8.1 Current Situation	38
8.2 Goals for Sector.....	38
8.3 Recommendations for Achieving Goals	39
9 Resources Available.....	41
10 Challenges and Barriers	41
11 Summary and Next Steps.....	41

Executive Summary

The Home Performance Stakeholder Council aspires to assist industry stakeholders involved in residential renovation in delivering exceptional services and solutions, priced at affordable levels for consumers, to support the growth of a long-term, sustainable market for home performance related activities that significantly reduce energy use and carbon emissions in homes across the province while enhancing building durability, occupant comfort, and health.

To this end, the HPSC has established six Sector Councils (HVAC, Fenestration, Insulation, Renovation, Energy Advisors, and Utility and Government) composed of key industry players tasked with amalgamating and addressing the fragmented interests, opportunities, and challenges that exist in a home performance industry, which is evolving and growing.

The following *Renovation Sector Working Roadmap* documents the recommendations made by the Renovation Sector Council to address the issues and opportunities prioritized by the Sector Council. The recommendations are directed primarily at industry, by industry, but also include recommendations for Utilities and Government. The recommendations are directed at achieving the following goals in response to the issues identified in Table 1 below. The priority of each recommendation is indicated by the following key:

HIGH	MEDIUM	LOWER
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Recommendations are prioritized according to when their development must begin in order to meet the 2025 Vision. Some recommendations are dependent on the development of other recommendations and some will take several years to reach full implementation. High priority recommendations include those whose development needs to start in 2018, and those which can start right away as soon as resources are available.

Table 1: Summary of the Issues and Goals for the Renovation Sector Council's Draft Home Performance Roadmap

ISSUE	INDUSTRY ASSOCIATIONS	UTILITIES	GOVERNMENT
Quality Workmanship: Industry Reputation, Standards of Practice, and Installation Quality	Support	1. Undertake the development of a consumer education program to provide consumers with a basic understanding of how to select a quality contractor.	
	2. Develop and promote an accreditation program to allow consumers to easily find qualified renovation contractors, and to differentiate them from non-professionals in the business.	Support	Support, Consult Local Government
	Support	3. Include accreditation as a requirement for participation in home performance related programs.	
	4. Develop a contractor training program to fully support renovation contractor accreditation. This program should include all training required for certification, although the actual training may be provided by a number of different suppliers.	Support	Support, Consult Local Government
	5. Undertake the development of a trades training program, preferably with some type of certification (which may vary by trade), to ensure that quality renovation contractors and consumers can find qualified trades and subcontractors for their projects.	Support	Support, Consult Local Government
	Support	Support	6. Develop better standards for construction, equipment, and equipment installation.
	Support	Support	7. Develop better codes, standards (Industry led), and bylaws, and enforce them more consistently.

Market Growth: Consumer Demand and Quality Awareness	Support	1. Develop and implement a consumer information and education program.	
	Support	2. Provide consumer training.	
	3. Help consumers through the renovation process.	Support	Support, Inform Local Government
	4. Build capacity to generate and carry out work.	Support	Support, Inform Local Government
	Support	Support	5. Carry out inspections and QA.
	6. Develop and operate a contractor accreditation program.	Support	Support
	7. Provide warranties.	Consult	Support, Consult with Local Government
	Support	8. Provide incentives related to energy/emissions savings to reduce customer investment and also to reduce the high cost of hazardous materials mitigation.	
	Consult	Consult	9. Use tax credits to reduce customer net investment.
	10. Provide financing options to help deal with lack of capital resources.	Support	Support
	Consult	11. Design utility rates to encourage energy/GHG emissions savings.	Consult, Inform Local Government
	12. Promote home labelling to appeal to pride of ownership and help to boost resale value.		
	Support	Consult	13. Use regulation to mandate that home performance measures be included in home renovation projects meeting certain criteria.
	Support		

		14. Leverage marketing efforts to raise the profile of home performance and its benefits, generate interest, and lead to initial contacts.	
Advocacy: Effectiveness and Enforcement of Codes, Regulations, and Bylaws	1. Approach municipalities and regional districts to discuss what can be done to increase consistency and provide more simplicity in bylaws and regulations.	Inform	Support
	Support	Inform	2. Review bylaws with the aim of simplifying as much as possible and streamlining approval processes to prevent long delays in providing renovation project approvals.
	Support	Support	3. Provide training for those responsible for enforcing codes, regulations, and bylaws to improve consistency in interpretation and provide greater certainty to contractors and consumers, while maintaining the flexibility to deal with hardship cases.
	Support	Inform	4. Jointly review, with other local governments, options aimed at ensuring permits are taken out when required and inspections are carried out on a more frequent and systematic basis to ensure compliance with local regulations.
	Support	Support	5. Consider developing outreach programs to consumers who are considering renovations to educate them about the reasons for regulations, the importance of meeting them, and the consequences of not meeting them.
		Inform	Inform, with Support from Local Government

	6. Work with local governments to ensure there is adequate industry input into codes, bylaws, and regulations.		
Capacity Building: Availability of Trained Trades, Workforce Development, and Professionalism	1. Determine training requirements for each trade and conduct a gap analysis.	Support	Support, Consult Local Government
	2. Develop a trade designation/certification that includes training and experience requirements.	Support	Support, Consult Local Government
	3. Develop a plan to promote residential trades careers to students in secondary schools, vocational schools, and technical institutions, and to the general public.	Support	Support, Inform Local Government
	4. Support training needs of employees as deemed appropriate. Examples could include funding and/or time off for training, recognizing the qualified trade designation (additional \$), travel support, and celebrating achievements.	Support	Support
	Support	Consult	5. Consider providing stipends, subsidized tuition, or accelerated EI while people are training.
Advocacy: Connectivity to and Engagement in Utility and Government Program & Policy Design	Support	1. Employ a systematic approach to getting industry input on a continuous basis in a coordinated fashion when developing programs, policies, regulations, rate designs, and taxation regimes.	
	Support	2. Inform industry of plans at an early design stage, before details are worked out, and ensure industry is given ample time to prepare input and subsequently be kept informed of progress and allowed further input as the design moves ahead into program mobilization and management.	
	Support	3. Value and incorporate industry input where needed. When input is not fully utilized, communication should be provided on decision-making.	

	4. Evaluate potential unintended consequences with industry.	Support	Support
	5. Take an active role in assisting with program and policy design, and set up a simple and reliable mechanism for Utilities and Governments to get industry input and to facilitate ongoing collaboration, rather than ad hoc discussions.	Support	Support
	6. Work to ensure that all industry members have the opportunity to provide their input.	Support	Support, Inform Local Government
	7. Recognize that a modest investment of time to provide input on programs and policies will provide long-term value through programs and policies that truly reflect the needs of the industry.	Support	Support
	8. Be willing and able to scale up capabilities as Utility and Government marketing efforts approach implementation.	Support	Support

This *Renovation Sector Working Roadmap* herein organizes recommendations by issue and presents the current situation, goals, and recommendations along with the suggested lead(s).

This Roadmap has been developed by Home Performance Stakeholder Council with input from the Renovation Sector Council and other industry representatives. The members of the HPSC Renovation Sector Council include:

- Jeff Sininger, Accent Renovations
- Doug Wittal, DW Builders
- Jennifer Hamilton, Hamilton View Contracting
- Joe Hart, Icon Homes
- Ken Dahlen, Keith Construction
- Steve Kemp, Kemp Construction
- Doug Kerr, Kerr Construction
- Lesa Lacey, Lacey Construction
- Graeme Huguet, My House Design/Build
- Matthew Senf, Sasen Renovations

The information and recommendations within this Roadmap are intended to represent the input of the HPSC Renovation Sector Council and other industry representatives. However the information and recommendations within the Roadmap may not be representative of the views or opinions of the broader industry.

The primary purpose of the *Renovation Sector Working Roadmap* is to provide input into the broader, cross-sector *Home Performance Industry Roadmap*, although it will also be used to provide greater detail about the needs of the Renovation sector.

1 Introduction

1.1 Background

Home performance is a holistic approach to identifying and addressing energy efficiency, comfort, health, and safety related issues to make a home perform better.

It is estimated that nearly 500,000 single detached houses in BC may benefit from home performance upgrades. Row houses and townhouses present an additional opportunity. Whole home performance renovations in BC could represent a four-billion-dollar industry over the next 10 years.

The Home Performance Stakeholder Council (HPSC) is composed of key industry players tasked with amalgamating and addressing the fragmented interests, opportunities, and challenges that exist in the home performance industry, which is evolving and growing. We gratefully acknowledge the financial support of BC Hydro, FortisBC, and the Province of British Columbia.

1.2 Vision

The HPSC aspires to assist industry stakeholders in delivering exceptional services and solutions, priced at affordable levels for consumers, to support the growth of a long-term, sustainable market for home performance related activities that significantly reduce energy use and carbon emissions in homes across the province while enhancing building durability, occupant comfort, and health.

1.3 Mission and Core Objectives

The mission of the HPSC is to work 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:

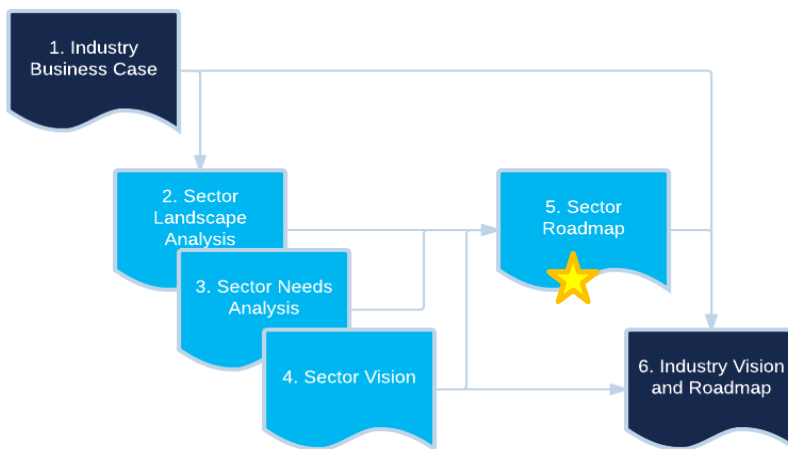
- Lower utility bills through reducing energy use
- Improve home comfort and building durability
- Reduce environmental impact
- Improve air quality, health, and safety

1.4 Organizational Structure



2 Roadmap Development Process

The Roadmap is a key step in organizing the industry to reach their vision.



The Roadmap aims to:

- bridge the gap between the Needs Analysis and Industry Vision,
- take into consideration the issues and priorities of other sectors operating in the home performance industry and identify areas for potential synergies,
- and provide a specific set of actionable recommendations for the public and private sectors.

2.1 Roadmap Toolkit

Recommended solutions to the issues identified draw from a common “toolkit,” which includes:

Information

- Businesses

Consultation and Collaboration

Capacity Building

Education and Training

- Consumer
- Trades
- Business
- Real Estate Industry

Incentives

- Consumer
- Contractor
- Supply Chain

Marketing and Lead Generation

- Home Labelling
- Branding

Tax Credits

- Federal
- Provincial
- Municipal

Standards

Financing

Codes and Regulations

- Product
- Installation

- Utility
- Bank (for Energy Efficiency)
- Municipality

Legislation

Utility Rates

Inspections and Quality Assurance

Consumer Advocacy

Accreditation

- Tradespeople

Warrantees

- Contractor
- Third Party

3 Home Performance Industry Overview

3.1 Political Landscape

Canada's Buildings Strategy has the following goals:

- Federal, provincial, and territorial governments will work to develop a model code for existing buildings by 2022, with the goal that provinces and territories adopt the code.
- Federal, provincial, and territorial governments will work together with the aim of requiring the labelling of building energy use by 2019.

The Ministry of Energy, Mines and Petroleum Resources has been given the mandate to make substantial progress on the following priority:

- Create a Roadmap for the future of BC energy that will drive innovation, expand energy efficiency and conservation programs, generate new energy responsibly and sustainably, and create good, lasting jobs across the province.

3.2 Industry Landscape

- Includes disparate industries with some key players interested in home performance.
- There are few coordinated home performance contractors in BC.
- Representatives from the HVAC, Renovator, Insulation, Energy Advisors, and Fenestration industries, as well as Utilities and Government, are interested in working together to develop and grow a home performance industry into a sustainable and profitable market segment.

3.3 Renovation Sector Landscape

Sector Infrastructure And Business Models

Renovation Contractors

Product: Home energy retrofits/renovations and home improvement

- Some professional renovation contractors also build new homes.

Market: Residential Part 9 (existing single-family, homes, townhomes and duplexes)

- Local to BC

Active Players (examples only)

- As of June 2012, there were approximately 14,000 "residential building construction" establishments in BC, active in new construction and/or existing home renovation for Part 9.
- Approximately 14,500 carpenters, 4,600 contractors/supervisors, and 5,100 construction managers were actively employed in BC's residential construction sector in 2010.
- There are likely up to 1,000 professional residential renovators and perhaps up to 10,000 small firms/individuals doing residential renovations in BC.

- Contractors should have a business licence and insurance, and be registered with WorkSafeBC, but this is not always the case for “non-professionals.”

Associations

Market: Local to BC

Active Players (examples only)

- CHBA BC and nine regional chapters – tend to focus more on new construction
- CHBA BC Renovation Council
- GVHBA Renovation Roundtable
- Victoria Residential Builders Association (VRBA)
- BC Housing (HPO) – currently focused on new homes but could evolve to take on more in the existing home space
- BC Building Envelope Council
- Building Officials’ Association of BC (BOABC)
- Building Supply Industry Association (BSIA)
- Western Regional Lumber Association (WRLA)

Workmanship Practices

Codes:

- BC Building Code 2012 applies to the construction of Part 9 buildings in BC, including extensions, substantial alterations, and “green” building specifications.
- BC Building Code and Energy Efficiency for Part 9 Buildings (covers new construction only).
- There is a shift from prescriptive to performance-based codes in progress.
- The Vancouver Building Bylaw requirements try to preserve pre-1940s homes, and are having a positive impact on the renovation industry – rather than having people demo older homes, they are encouraged to renovate.

Standards:

- No licensing requirements in BC for renovators.
- No formal mandatory training requirements in BC for renovators.
- Quality Assurance is mainly through CHBA and its local codes of ethics, Renomark, and the BBB.
- The future of Homeowner Protection Act regulation licensing might help drive more education if it is extended to the existing building/retrofit market.

Installation and Warranty:

- Most professional builders/renovators offer one to two year warranties on their work and up to \$5 million liability insurance. Many have adopted the 2/5/10 standard of the HPO.

Best Practice Guides:

There are few guides specific to “renovation” or home performance contractors in BC, although there are some tools and resources available online, including:

- City of Vancouver: <http://vancouver.ca/home-property-development/green-building-and-renovating.aspx>, <http://vancouver.ca/home-property-development/green-home-renovation-guides.aspx>, and <http://vancouver.ca/files/cov/green-home-renovations.pdf>
- CMHC has Green Renovation Guide: <https://www.cmhc-schl.gc.ca/en/inpr/su/regrgu/index.cfm>
- CHBA: <http://www.renomark.ca/Assets/GreaterTorontoArea/Images/Homeowners%20Guide%20to%20Green%20Renovation.pdf>
- RenoMark Reno Guide: <http://www.renomark.ca/assets/National/Renoguide/RenoGuide.pdf>
- HPO’s Best Practices Guide for Air Sealing and Insulation Retrofits: <https://hpo.bc.ca/best-practices-air-sealing-and-insulation>
- HPO’s Illustrated Guides to EE Requirements for Houses in BC: <https://www.bchousing.org/research-centre/library/residential-design-construction/best-practices-air-sealing-insulation-retrofits>
- HPO’s Building Envelope Guide for Houses – Part 9 Residential Construction: https://www.crownpub.bc.ca/Product/Details/7610003506_S#/?statesave=true.

Training and Quality Programs:

- There are no specific mandatory requirements for training or ongoing professional development related to becoming a renovator in BC. CHBA BC has a Certified Professional Renovator program that may need some updates.
- There are 13 public universities, colleges, and technical institutes in BC that offer some form of apprenticeship or trades training related to the residential construction sector, some with multiple locations or campuses across the province.
- “Carpenter” is a nationally designated trade under the interprovincial Red Seal four-year program and is the most common occupation/trade in the residential construction/renovation sector. The trade is offered at public post-secondary institutions.
- Other relevant post-secondary programs and courses are offered by BCIT, UBC, Douglas College, and Okanagan College.
- Private training providers include industry associations such as CHBA BC and private colleges such as Sprott-Shaw.
- CHBA BC offers online courses through the Canadian Home Builders’ Institute that count towards certification programs including their:
 - Building Science for Renovations (course)
 - BC Building Code – Single Family Dwellings (course)
 - Other education seminars (not many as of late)
 - Certified Renovation Professional (for an individual): <https://education.chbabc.org/page.php?id=133&cid=146>
 - Certified Renovation Company: <https://education.chbabc.org/page.php?id=133&cid=147>

- Master Residential Builder Program (which includes reno-related courses): <https://education.chbabc.org/page.php?id=133&cid=150>
- The RenoMark Program: <http://www.renomark.ca/Home> and <http://www.renomark.ca/GreaterVancouverArea/Home>
- Built Green offers a “Built Green Renovator” designation <http://www.builtgreencanada.ca/renovations>
- The Homeowner Protection Office (HPO) runs occasional industry and building seminars to inform industry of the latest technologies, practices, and changes in the BC Building Code – primarily focused on new construction.
- The Passive House Institute offers its Passive House Design and Construction courses
- Canadian Green Building Council (CaGBC) offers various LEED related courses / programs.
- The Canadian Construction Association offers its Gold Seal certification program for construction managers: see <http://www.goldsealcertification.com/>.
- Utilities have offered “house-as-a-system” related seminars: see <https://education.chbabc.org/page.php?id=132&cid=171>.
- High schools also play a role in terms of offering foundation and youth-focused programs such as ACE IT and Yes-2-It that act as feeders into apprenticeship programs throughout the province.

Permits and Inspections:

Permits are required by most municipalities in BC for undertaking renovations of any building structures. In many municipalities, homeowners need a building permit and at least one trade permit for:

- Moving interior walls and partitions
- Moving existing plumbing, electrical, or gas lines
- Installing new plumbing, electrical, or gas lines
- Making structural repairs, doing renovations, or building additions that are permitted outright (specifically allowed) by your district zoning schedule
- Building an accessory building (garage, carport, garden shed, etc.) that is permitted outright (specifically allowed) by your district zoning schedule
- Substantial alterations to the building envelope

A development permit may be need if the building or use is a designated heritage building or site.

Trade permits are required for:

- Any work on a fire sprinkler system
- Any work on a gas system
- Most work on an electrical system
- Most work on a plumbing system

Special renovation-related permit requirements by municipalities include:

- Vancouver Building Bylaw (VBBL) 10908 – includes various trigger points for taking action related to EE, based on the size of the renovation project:

- \$5,000–\$25,000 reno: As of January 1, 2015, one- or two- family homes completing renovations valued at between \$5,000–\$25,000 in the City of Vancouver require an EnerGuide report from a CEA done within the last four years to obtain a renovation permit.
- \$25,000–\$50,000 reno: As above, plus if the EGH report indicates greater than five air changes per hour, building envelope air sealing is required.
- > \$50,000 reno: As above, plus: If attic insulation is less than R12 (2.11 RSI), increase to R28 (4.93 RSI); If attic insulation is equal to or greater than R12 (2.11 RSI), increase to R40 (7.04RSI). Attic insulation should not exceed R43.7 (7.7RSI).
- Township of Langley – Green Building Permit (see <http://www.tol.ca/Current-News-Initiatives/Environmental-Sustainability/Sustainable-Community/Green-Building-Permit-Rebate-Program>).
- Current bylaws and the permitting process are difficult to manage between the variety of municipalities. There is a struggle for contractors on both new construction and retrofit with respect to zoning between municipalities (i.e., interpretations of building code, variations between municipalities, etc.). Opportunity to become more streamlined.
- Hazardous materials mitigation measures can be expensive and challenging, requiring specialized sub-contractors. Hazmat tests are required any time “suspicious material” is being demolished (no matter how small the volume).
- The Building Act, BC’s first act dedicated to building and construction, passed in 2015. New opportunities for uniform regulation will result.
- Inspections vary based on the expertise and knowledge of building officials.

3.4 Home Performance Industry Vision

3.4.1 2025 Consumer Vision:

- Valued Services: Home performance contractors are a valued and major component of whole home multiple-measure projects.
- Increased Volume: Retrofits that value home performance are being carried out at a significantly greater rate, and are in steady demand, resulting in greater energy savings and GHG emission reductions.
- Consumer Understanding: Consumers understand the benefits of home performance retrofits, including more comfortable and durable homes with a higher resale value, and the importance of selecting a qualified contractor.
- Consumer Resources: There are viable resources and mechanisms for consumers to seek out industry advice if they have questions or concerns about their certified contractor or their home performance project.

3.4.2 2025 Industry Vision:

- **Accredited Professionals:** There are recognized, accredited professional home performance contractors available to advise consumers and guide them through the process of home improvements, often in combination with broader home performance projects.
- **Benefits Tools:** Home performance contractors have the means to easily estimate customer benefits and include these benefits as part of their standard offerings of products and services.
- **Industry Organization:** A contractor-led industry organization represents accredited contractors by ensuring ongoing, coordinated two-way communication of issues and ideas to utilities and governments, providing coordinated communication to consumers about the industry, its members, and its benefits, and working to ensure sufficient capacity and geographic coverage within the province so consumers have reasonable access to its members.
- **Home Performance Education:** Building science, product knowledge, and related business training and support are required and available on an ongoing basis for home performance contractors and their employees.

3.4.3 2025 Utility and Government Vision:

- **Utility and Government Support:** Utilities and Government promote professional home performance upgrades within renovation projects by providing credibility to potential benefits and encouraging consumers by giving them information and examples of success.
- **Regional and Community Goals and Targets:** Cities, regional districts, and municipalities play a key role at the regional and community level in encouraging residents to participate in home performance upgrades by setting local goals and targets around GHG emission reductions and energy savings, along with specific local programs help spur consumers to act.
- **Home Labelling System:** A well-known and well-understood home labelling system for energy efficiency is supported by government, utilities, mortgage lenders, the real estate industry, and purchasers.

3.5 Summary of Renovation Sector Issues

The following five issues were identified by the Renovation Sector Council as priorities in working towards the vision of a home performance industry in BC:

- **Quality Workmanship:** Industry Reputation, Standards of Practice, and Installation Quality
- **Market Growth:** Lack of Consumer Demand for Quality Projects and Home Performance Improvements
- **Advocacy:** Effectiveness and Enforcement of Codes, Regulations, and Bylaws
- **Capacity Building:** Availability of Trained Trades, Workforce Development, and Professionalism
- **Advocacy:** Connectivity to and Engagement in Utility and Government Program & Policy Design

While the recommended actions in this Roadmap are specific to the Renovation Sector being discussed, each of the other Sector Councils identified their priority issues. The HPSC recognizes the many synergies between the sectors' issues, as shown in Table 2 below.

Table 2: Roadmap Issues Across the HPSC Industry Sectors

Issue	U&G	HVAC	EA	Reno.	Insul.	Fen.
Quality Workmanship: Industry Reputation, Standards of Practice, and Installation Quality	✓	✓	✓	✓	✓	✓
Market Growth: Consumer Demand and Quality Awareness	✓	✓	✓	✓	✓	✓
Capacity Building: Availability of Trained Trades, Workforce Development, and Professionalism	✓	✓	✓	✓	✓	✓
Advocacy: Connectivity to and Engagement in Utility and Government Program & Policy Design	✓	✓	✓	✓	✓	✓
Advocacy: Effectiveness and Enforcement of Codes, Regulations, and Bylaws	✓	✗	✗	✓	✗	✓
Advocacy: Longevity and Consistency of Utility and Government Programs	✓	✗	✓	✗	✓	✗
Advocacy: Industry Representation for Contractors	✓	✗	✓	✗	✓	✗
Capacity Building: Changing Landscape and Demands on Industry	✗	✗	✓	✗	✗	✗
Market Growth: Limited Ability to Connect Consumers with Quality Contractors	✓	✗	✓	✗	✗	✗

4 Recommendations to Address the Issue of Quality Workmanship: Industry Reputation, Standards of Practice, and Installation Quality

4.1 Current Situation

There is a need to differentiate professional renovation contractors from low-quality, low-cost companies whose work and behaviour reflects poorly on the entire industry and makes the sale of quality projects and installations difficult. There needs to be some method of differentiating those who do this work professionally and are familiar with the process from those who do not and impede the efficient running of the system. Contractor selection should be based on value, not price. There is a significant disconnect between what people think a project is worth and what it is actually worth. This confusion is in no way remedied by the “construction media” featured on TV (HGTV, etc.).

Currently there is a lack of standards, and a lack of enforcement of those standards that do exist. This leads to an “unlevel playing field” where quality contractors who meet the existing standards and properly deal with hazardous materials must compete with others who do not.

Sometimes energy improvement processes or technologies are not well researched and can lead to future problems. There may be conflicting theories and “factual data” between suppliers and presenters of home energy solutions.

4.2 Goals for Sector

Education of consumers with respect to:

- What is entailed in a quality job/renovation, and realistic cost expectations.
- What process they should go through in selecting and working with a potential contractor.
- What types of issues can be expected to arise and how they can be dealt with.
- What can go wrong if they choose the wrong contractor.
- How they can recognize a professional contractor.

Fewer low-quality projects through:

- Contractor education to improve quality.
- A systematic inspection process targeting contractors whose projects have a history of problems.
- A well-recognized designation for qualified, professional contractors.
- More effort towards informing homeowners regarding regulations and the importance of following them.
- Utility and government programs need to have more focus on ensuring quality installations, and ensuring that permits are acquired by contractors when required by regulation, bylaw, or building code.
- More “fact-based” information for contractors regarding new equipment, technologies, and installation practices.
- Better standards for equipment and installations, and enforcement of these standards.

4.3 Recommendations for Achieving Goals

The following table outlines the HPSC’s recommendations for the Renovation Sector best achieving these goals:

INDUSTRY ASSOCIATIONS	UTILITIES	GOVERNMENT
<p style="text-align: center;">Support</p>	<p>1. Undertake the development of a consumer education program to provide consumers with a basic understanding of how to select a quality contractor, covering:</p> <ul style="list-style-type: none"> • the process that should be followed in selecting a renovation contractor • the differences between a high-value, quality project and a minimum-cost project • how they can recognize a professional contractor • when and why permits are required and the consequences of not taking out permits when required • what questions they should ask potential contractors • the risks involved in hiring a contractor who cuts corners <p>INITIATIVE LEADERSHIP: Shared (Utilities and Government)</p>	
<p>2. Develop and promote an accreditation program to allow consumers to easily find qualified renovation contractors, and to differentiate them from non-professionals in the business. The accreditation program should have requirements around: training, experience, business licence, WorkSafe BC registration, recognizing and dealing with hazardous materials, insurance, business processes, warranties, and business ethics.</p> <p>The program should include a phased-in approach and available training which will allow contractors who meet critical requirements, but are not fully qualified, to register and get full accreditation over time. It must also include an agreement with participating contractors that provides for the loss of accreditation for poor performance. Development by governments, contractors, and industry associations with support from utilities. Operation of the program should be by an</p>	<p style="text-align: center;">Support</p>	<p style="text-align: center;">Support, Consult Local Government</p>

<p>independent third party.</p> <p>INITIATIVE LEADERSHIP: Industry Associations</p>		
<p>Support</p>	<p>3. Include accreditation as a requirement for participation in home performance related programs. This will help to ensure consumers get the quality work they expect and that energy savings, GHG emissions reductions, and other homeowner benefits are actually achieved. It will also reduce potential issues and liability around improper handling of hazardous materials, indoor air quality, equipment performance, and moisture problems.</p> <p>INITIATIVE LEADERSHIP: Shared (Utilities and Government)</p>	
<p>4. Develop a contractor training program to fully support renovation contractor accreditation. This program should include all training required for certification, although the actual training may be provided by a number of different suppliers. Development by contractors, utilities, governments, educational institutions, and industry associations.</p> <p>INITIATIVE LEADERSHIP: Industry Associations</p>	<p>Support</p>	<p>Support, Consult Local Government</p>
<p>5. Undertake the development of a trades training program, preferably with some type of certification (which may vary by trade), to ensure that quality renovation contractors and consumers can find qualified trades and subcontractors for their projects. Contractors, industry associations, and educational institutions, supported by utilities and government.</p> <p>INITIATIVE LEADERSHIP: Industry Associations</p>	<p>Support</p>	<p>Support, Consult Local Government</p>

<p>Support</p>	<p>Support</p>	<p>6. Develop better standards for construction, equipment, and equipment installation. This needs to be focused on fact-based information, with caution to avoid mistakes around materials and processes that have caused problems in the past. Contractors, governments, utilities, and research organizations.</p> <p>INITIATIVE LEADERSHIP: Government, Consult with Local Government</p>
<p>Support</p>	<p>Support</p>	<p>7. Develop better codes, standards and bylaws and enforce them more consistently. This includes a process to ensure permits are taken out when needed, as well as more and systematic inspections with the frequency of inspections determined, to a degree, by past experience with the contractor.</p> <p>INITIATIVE LEADERSHIP: Local Government and Industry Associations</p>

5 Recommendations to Address the Issue of Market Growth: Consumer Demand and Quality Awareness

5.1 Current Situation

Consumers don't understand what is required for a quality job and don't appreciate the value available through improving home performance. Consumers often make their decisions around cosmetic or functional upgrades, with little thought to energy efficiency, envelope upgrades, or building science issues. Educating them regarding efficiency options, performance improvements, the need to comply with regulations, potential for hazardous materials, and basic building science at this point is extremely challenging.

Too often consumers select a contractor based on low cost rather than value and quality. Consumers face conflicts between their wants, needs, and available budget. Many do not understand that cost-effective home performance upgrades can actually improve affordability due to lower operating costs.

TV programs often set unrealistic cost expectations leading consumers to choose a lowest cost proposal. They may also over-simplify the renovation process, leading to people believing that they can do it themselves or that they don't need skilled labour to do the job. People don't want to pay more for quality plumbing, electrical, etc. because it cannot be seen, and the sense is that if water comes out of the tap and the lights turn on without causing a flood or a fire, everything must be fine... why pay more? The existence of multiple home performance programs in the marketplace confuses consumers.

5.2 Goals for Sector

Increase consumer knowledge and awareness of home performance and renovation projects regarding:

- What is home performance?
- What is entailed in a quality job?
- What process should be used when selecting a contractor?
- What types of issues can be expected to arise and how they can be dealt with?
- What can go wrong if an unsuitable contractor is selected?
- What assistance may be available from utilities and governments?
- What should consumers know about how their home works?

Improve consumer confidence in moving ahead with home performance projects through informing them about:

- How to find/recognize a quality contractor.
- What to expect from a quality contractor.
- Ensuring there are enough qualified people available to complete their project on schedule.
- What utilities and governments recommend including in renovation projects.
- How contractors will deal with potential hazardous materials and air quality to make their home safer and healthier.
- What strategies they can use working with their contractor to minimize nasty surprises later in their project.

Increase consumer motivation to move ahead with home performance projects through informing them about:

- How home performance work will benefit them and their families in terms of improved air quality, reduced moisture problems, the durability of their home, and resale value.
- Who can help them determine the potential benefits.
- How home performance work will save them money, and how much.
- What programs are available to help them.
- What warranties are available.
- Why they should act now.

5.3 Recommendations for Achieving Goals

The following table outlines the HPSC's recommendations for the Renovation Sector best achieving these goals:

INDUSTRY ASSOCIATIONS	UTILITIES	GOVERNMENT
Support	<p>1. Develop and implement a consumer information and education program. This may be carried out by:</p> <ul style="list-style-type: none"> • Website – perhaps one home performance website with links from the websites of all industry partners, including individual contractors – utilities, government, BC Energy Coach, contractors, industry associations, HPSC • Advertising – utilities, government, industry organizations • Home shows and community events – utilities, government, industry organizations • Literature – utilities, government, industry organizations, contractors • Bill stuffers – utilities • Program materials – utilities, government, industry organizations • Dialogue – contractors, energy advisors (EAs), utilities, industry organizations, real estate agents (once trained) <p>INITIATIVE LEADERSHIP: Shared (Utilities and Government), Consult with Local Government</p>	
Support	<p>2. Provide consumer training.</p> <ul style="list-style-type: none"> • On-line training – utilities, government, industry associations, manufacturers and suppliers • Webinars – utilities, government, industry associations, EAs. • In-person training – utilities, government, industry associations, EAs. <p>INITIATIVE LEADERSHIP: Shared (Utilities and Government), Consult with Local Government</p>	

<p>3. Help consumers through the renovation process.</p> <ul style="list-style-type: none"> • Create a plan for the consumer to upgrade their home over time, to the most effective level of efficiency and in a logical order – energy advisors, other NGOs, websites (how to). • Lead the consumer through the contracting process as an independent advisor and advocate – energy advisors, other NGOs. • Help the consumers through the decision-making process – energy advisors, HPSC, utility and government websites. • Help the consumers discover any programs that may help them and lead them through the paperwork – energy advisors, other NGOs, HPSC web site, BCEnergyCoach website, utility websites, government websites. <p>INITIATIVE LEADERSHIP: Industry Associations</p>	<p>Support</p>	<p>Support, Inform Local Government</p>
<p>4. Build capacity to generate and carry out work.</p> <p>Additional capacity to take on the additional work generated through home performance initiatives will be the responsibility of contractors in the various industry sectors. This must be carefully coordinated with promotional campaigns to ensure industry capacity is in place when needed. In addition to actual production capacity, additional capacity for marketing and sales will be needed – contractors, energy advisors, manufacturers, distributors.</p> <p>INITIATIVE LEADERSHIP: Industry Associations</p>	<p>Support</p>	<p>Support, Inform Local Government</p>

Support	Support	<p>5. Carry out inspections and QA.</p> <p>Inspections to ensure work meets applicable codes and standards, and the project is completed as contracted – governments, industry associations, energy advisors, and other independent third parties, supported by utilities. (Utility inspections will be limited those required to ensure program compliance.)</p> <p>INITIATIVE LEADERSHIP: Government, and Local Government</p>
<p>6. Develop and operate a contractor accreditation program.</p> <p>Accreditation to ensure that contractors are professional, competent, honest and reliable – government, industry associations, and HPSC, supported by utilities</p> <p>INITIATIVE LEADERSHIP: Industry Associations</p>	Support	Support
<p>7. Provide warrantees.</p> <p>Warrantees would provide consumers with confidence that their project will be done properly and provide recourse if problems arise – contractors, third party, possibly through BC Housing in the long term.</p> <p>INITIATIVE LEADERSHIP: Industry Associations</p>	Consult	Support, Consult with Local Government
Support	<p>8. Provide incentives related to energy/emissions savings to reduce customer investment and also to reduce the high cost of hazardous materials mitigation – utilities, governments.</p> <p>INITIATIVE LEADERSHIP: Shared (Utilities and Government)</p>	
Consult	Consult	<p>9. Use tax credits to reduce customer net investment – could be federal, provincial, and/or municipal.</p> <p>INITIATIVE LEADERSHIP: Shared (Government, and Local Government)</p>

<p>10. Provide financing options to help deal with lack of capital resources – governments (e.g. make annual payments for projects on the municipal property tax bill), banks (e.g. TD Greenlight). Utilities will support development of financing programs through financial institutions.</p> <p>INITIATIVE LEADERSHIP: Industry Association</p>	<p>Support</p>	<p>Support</p>
<p>Consult</p>	<p>11. Design utility rates to encourage energy/GHG emissions savings. Rate design (e.g. BC Hydro Conservation step rate) can ensure a faster return for the consumer while remaining revenue neutral overall – utilities.</p> <p>INITIATIVE LEADERSHIP: Utility</p>	<p>Consult, Inform Local Government</p>
<p>12. Promote home labelling to appeal to pride of ownership and help to boost resale value – utilities, governments, industry associations (supported by contractors and HPSC).</p> <p>INITIATIVE LEADERSHIP: Shared (Industry Associations, Utilities and Government), Consult Local Government</p>		
<p>Support</p>	<p>Consult</p>	<p>13. Use regulation to mandate that home performance measures be included in home renovation projects meeting certain criteria. (e.g. City of Vancouver requires renovations over \$5,000 to have an energy audit and get an EnerGuide rating).</p> <p>INITIATIVE LEADERSHIP: Shared (Government, and Local Government)</p>

Support	<p>14. Leverage marketing efforts to raise the profile of home performance and its benefits, generate interest, and lead to initial contacts:</p> <p>The tools used will be the same as those for consumer knowledge, with the addition of branding efforts and billing analyses to target consumers with the greatest potential savings. The marketing and branding need to be supported by all industry partners – utilities, governments, industry organizations, contractors, HPSC. Sales will be the responsibility of contractors.</p> <p>INITIATIVE LEADERSHIP: Shared (Utilities and Government)</p>
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6 Recommendations to Address the Issue of Advocacy: Effectiveness and Enforcement of Codes, Regulations, and Bylaws

6.1 Current Situation

The time and cost of compliance with regulations results in some contractors not complying in order to minimize costs and move their projects ahead. Contractors who fully comply face delays and added costs that are avoided by others. Consumers typically have little understanding of the applicable regulations and what is required in order to comply. They are often surprised at the time needed for and cost of compliance.

Regulations are in constant flux and change everywhere. Even professional contractors have difficulty keeping up and sometimes come across to their clients as uninformed. While regulations are needed to ensure quality and comprehensive work to protect the consumer, they must be effectively communicated, consistently applied, and enforced to avoid driving work to the underground economy to the detriment of consumers, the industry, and society as a whole.

The interpretation of regulations varies across jurisdictions and sometimes even within jurisdictions, leading to uncertainty, delays, and added costs.

Contractors are not consulted enough when new codes, regulation, policies, and bylaws are developed. There are sometimes unintended consequences to regulation.

6.2 Goals for Sector

- Improved consistency in bylaws between different jurisdictions and in interpretation of codes and bylaws, both within a jurisdiction and between jurisdictions, while maintaining the flexibility to allow for legitimate relaxations due to hardship situations where 100% compliance becomes unreasonably expensive.
- More contractor consultation and communication when new regulations are developed with the aim of ensuring simplicity of regulations and avoiding unintended consequences and costs – local governments, provincial government. Include a systematic process of notification and training to ensure contractors are aware of changes and understand them.
- Increased compliance with codes, regulations, and bylaws, with permits taken out when required.
- Reduced cost and time needed for compliance.

6.3 Recommendations for Achieving Goals

The following table outlines the HPSC's recommendations for the Renovation Sector best achieving these goals:

INDUSTRY ASSOCIATIONS	UTILITIES	GOVERNMENT
<p>1. Approach municipalities and regional districts to discuss what can be done to increase consistency and provide more simplicity in bylaws and regulations. Municipalities can save time and resources by jointly dealing with issues with other municipalities and developing common solutions to issues. They will also need to spend less time in discussions with contractors around misunderstandings and disputes. Contractors can save time and resources by having a common set of rules that they need to follow and can develop business processes to achieve this more effectively and efficiently.</p> <p>INITIATIVE LEADERSHIP: Industry Associations</p>	<p>Inform</p>	<p>Support</p>
<p>Support</p>	<p>Inform</p>	<p>2. Review bylaws with the aim of simplifying as much as possible and streamlining approval processes to prevent long delays in providing renovation project approvals. Also need to ensure adequate well-trained staff are available to review applications within a reasonable time. Simplified bylaws may be easier to enforce but must still provide flexibility when needed.</p> <p>INITIATIVE LEADERSHIP: Local Government, Inform Government</p>

Support	Support	<p>3. Provide training for those responsible for enforcing codes, regulations, and bylaws to improve consistency in interpretation and provide greater certainty to contractors and consumers, while maintaining the flexibility to deal with hardship cases.</p> <p>INITIATIVE LEADERSHIP: Local Government, Support from Government</p>
Support	Inform	<p>4. Jointly review, with other local governments, options aimed at ensuring permits are taken out when required and inspections are carried out on a more frequent and systematic basis to ensure compliance with local regulations. Options considered should include new or increased fines for both homeowners and contractors who fail to take out permits when required, and determining inspection frequency, at least in part, by a contractor's past performance. Resources need to be considered to avoid any delays in inspections.</p> <p>INITIATIVE LEADERSHIP: Local Government, Inform Government</p>
Support	Support	<p>5. Consider developing outreach programs to consumers who are considering renovations to educate them about the reasons for regulations, the importance of meeting them, and the consequences of not meeting them. This will allow consumers to have more meaningful conversations with potential contractors and avoid being taken advantage of.</p> <p>INITIATIVE LEADERSHIP: Local Government, Support from Government</p>

<p>6. Work with local governments to ensure there is adequate industry input into codes, bylaws, and regulations. This should be a systematic process that is followed as changes to regulations are contemplated. A systematic process of notification and training is also needed to ensure all renovation contractors are aware of changes and understand them</p> <p>INITIATIVE LEADERSHIP: Industry Associations</p>	<p>Inform</p>	<p>Inform, with Support from Local Government</p>
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7 Recommendations to Address the Issue of Capacity Building: Availability of Trained Trades, Workforce Development, and Professionalism

7.1 Current Situation

Trained technicians/tradespeople are often not available to add capacity and meet schedules at peak demand times. Overall, the level of training in many cases is not at the level needed. Quality people who see a career in residential renovations are hard to find. The rise of demographic groups not traditionally involved in trades work in BC is a changing dynamic within the industry, and the ability to reach, communicate, train, and certify this growing segment requires planning and strategy. Employers may be reluctant to invest in training as there is little value ascribed to professional credentials and some are concerned that well-trained employees may leave and join competitors or start their own businesses. For some trades, current remuneration rates make attracting and keeping quality people challenging.

7.2 Goals for Sector

- Trained tradespeople are available to meet the current and future needs of both renovators and their subcontractors. These tradespeople are familiar with current practices and products and have the appropriate level of knowledge of building science.
- A trades designation/certification available for trained tradespeople both to encourage them to take essential training for their career development, and also so contractors can identify them when hiring. (This currently exists for some trades.)
- Trade-specific training needs is available on an ongoing basis so that new people can enter the trade and get the needed training and trade designation as quickly as possible. Ongoing training is also available to ensure tradespeople can keep current on new practices and products.
- Trades training is available to people in demographics that have been under-represented in the trades, and should include English language training for those who need it. Special outreach is carried out to attract women, who have not traditionally been participating in large numbers.
- Home renovation trades are promoted as attractive career choices in secondary schools, vocational schools, and technical institutions. People realize that well-trained tradespeople in the home renovation industry can have well-paid careers, ones that are not substantially subject to “off-shoring,” automation, or robotics. They can also contribute to reducing GHG emissions and construction waste.
- Contractors within the industry provide support to employees who wish to take training to improve their skills.
- Funding is available to determine trade-specific training needs, develop the required training, and ensure the training is available.
- Home performance renovations jobs are branded as part of the future green economy.

7.3 Recommendations for Achieving Goals

The following table outlines the HPSC’s recommendations for the Renovation Sector best achieving these goals:

INDUSTRY ASSOCIATIONS	UTILITIES	GOVERNMENT
<p>1. Determine training requirements for each trade and conduct a gap analysis. Determine additional training needed and who/how/when it should be provided. Where practical, consider how training of multiple trades can be coordinated. Ensure appropriate communications training is available for those who need it. Engage existing training providers and consider how delivery can be done regionally, especially where “hands-on” training is required. Consider how new products and processes can be included on an ongoing basis. Contractors, distributors, manufacturers, industry associations, educational institutions, and HPSC, supported by utilities and government.</p> <p>INITIATIVE LEADERSHIP: Industry Association</p>	<p>Support</p>	<p>Support, Consult Local Government</p>
<p>2. Develop a trade designation/certification that includes training and experience requirements. Include a plan for implementation, considering the existing situation and the need for intake to allow the industry to scale up.</p> <p>Contractors, industry associations, manufacturers, educational institutions, government, and HPSC. Supported by utilities.</p> <p>INITIATIVE LEADERSHIP: Industry Associations</p>	<p>Support</p>	<p>Support, Consult Local Government</p>

<p>3. Develop a plan to promote residential trades careers to students in secondary schools, vocational schools, and technical institutions, and to the general public. Include special outreach to people in demographics that are currently under-represented in the trades. Emphasize the value of the trades designation.</p> <p>Contractors, utilities, government, industry associations, educational institutions. Supported by utilities.</p> <p>INITIATIVE LEADERSHIP: Industry Associations</p>	Support	Support, Inform Local Government
<p>4. Support training needs of employees as deemed appropriate. Examples could include funding and/or time off for training, recognizing the qualified trade designation (additional \$), travel support, and celebrating achievements. Contractors also need to consider how they can provide “hands-on” training for their employees and others.</p> <p>INITIATIVE LEADERSHIP: Industry Associations, Contractors</p>	Support	Support
Support	Consult	<p>5. Consider providing stipends, subsidized tuition, or accelerated EI while people are training.</p> <p>INITIATIVE LEADERSHIP: Shared (Government, and Local Government)</p>

8 Recommendations to Address the Issue of Advocacy: Connectivity to and Engagement in Utility and Government Program & Policy Design

8.1 Current Situation

There needs to be better connectivity and integration of industry input into government and utility initiatives. While program impacts have generally been positive, they haven't necessarily worked as well as they might have, and have had some unintended consequences. Programs that start, stop, and change frequently can negatively affect the industry as it struggles to meet significant variations in demand for its services. Government and Utility programs need better industry involvement at the design, mobilization, and management stages, including industry involvement in technical/product criteria, installation standards, specifications, scalability, and quality assurance. There is no structured and systematic approach to engaging and actually using industry input on utility program design or rate design, and government policies around fuel choice and taxation. Industry is not being effectively kept up to date on developments and changes.

8.2 Goals for Sector

- Utilities and governments systematically engage industry in the development of programs, policies, rate designs, taxation regimes, and bylaws.
- Industry is informed at an early design stage, given adequate time to respond, and is kept informed on an ongoing basis.
- Industry input is valued and incorporated as appropriate, and industry is kept informed of the status of their recommendations.
- Industry takes an active role in assisting with program and policy design and is organized to facilitate ongoing consultation and collaboration.
- Industry works to ensure broad industry-based input is available to utilities and governments.
- Industry is willing to respond to needs and requirements of Utility and Government initiatives for which there has been sufficient consultation and collaboration.

8.3 Recommendations for Achieving Goals

The following table outlines the HPSC's recommendations for the Renovation Sector best achieving these goals:

INDUSTRY ASSOCIATIONS	UTILITIES	GOVERNMENT
Support	<p>1. Employ a systematic approach to getting industry input on a continuous basis in a coordinated fashion when developing programs, policies, regulations, rate designs, and taxation regimes.</p> <p>Industry should be viewed as a partner in these developments and given time and opportunity to be involved and provide input with vested interest.</p> <p>INITIATIVE LEADERSHIP: Shared (Utilities and Government)</p>	
Support	<p>2. Inform industry of plans at an early design stage, before details are worked out, and ensure industry is given ample time to prepare input and subsequently be kept informed of progress and allowed further input as the design moves ahead into program mobilization and management.</p> <p>Once an initiative is implemented, industry must be kept informed of progress and changes on an ongoing basis</p> <p>INITIATIVE LEADERSHIP: Shared (Utilities and Government)</p>	
Support	<p>3. Value and incorporate industry input where needed. When input is not fully utilized, communication should be provided on decision-making.</p> <p>INITIATIVE LEADERSHIP: Shared (Utilities and Government)</p>	
<p>4. Evaluate potential unintended consequences with industry.</p> <p>INITIATIVE LEADERSHIP: Industry Associations</p>	Support	Support
<p>5. Take an active role in assisting with program and policy design, and set up a simple and reliable mechanism for Utilities and Governments to get industry input and to facilitate ongoing collaboration, rather than ad hoc discussions.</p> <p>INITIATIVE LEADERSHIP: Industry Associations</p>	Support	Support
<p>6. Work to ensure that all industry members have the opportunity to provide their input.</p>	Support	Support, Inform Local Government

<p>INITIATIVE LEADERSHIP: Industry Associations</p>		
<p>7. Recognize that a modest investment of time to provide input on programs and policies will provide long term value through programs and policies that truly reflect the needs of the industry.</p> <p>INITIATIVE LEADERSHIP: Industry Associations</p>	<p>Support</p>	<p>Support</p>
<p>8. Be willing and able to scale up its capabilities as Utility and Government marketing efforts approach implementation.</p> <p>INITIATIVE LEADERSHIP: Industry Associations</p>	<p>Support</p>	<p>Support</p>

9 Resources Available

Financial and in-kind resources may come from several sources. Utilities and Government contribute time and funding. Government contributions may come from federal (NRCan), provincial (MEMPR, Ministry of Housing, Building Standards Branch), and local levels of government. These potential sources have not yet been fully explored but consideration is underway.

Contractors, industry associations, manufacturers, suppliers, and distributors contribute their time and possibly funding where appropriate.

10 Challenges and Barriers

The biggest challenge in achieving the 2025 Vision will be in gaining and maintaining the required level of engagement between industry, utilities, and governments. This level of engagement has not traditionally existed. There are signs that some organizations are moving in the right direction but we have also seen challenges in that the organizations involved are not fully aware of the time commitment required for the higher levels of engagement, which are essential. This time commitment is both in people's time devoted to the project, and in the project timeline, to allow for the meaningful engagement to take place. This challenge applies to all sectors.

Another challenge is in the coordination and commitment required in building the home performance industry in a way that increased consumer demand is met by the appropriate increase in industry capacity. Contractors and suppliers need to have the confidence in their Utility and Government allies, such that they will scale up their capacity as the program is promoted to consumers. Industry capacity and consumer demand need to be synchronized as closely as possible.

11 Summary and Next Steps

Resources need to be put in place and a plan developed to move the priority initiatives ahead in 2018.

The plan would cover 2018 to 2025 and specify timing, dependencies, and resources for each initiative. It should also include a dashboard, or online tracking tool, so everyone can see progress measured against the plan.

The implementation of many of the Roadmap recommendations needs to begin in 2018. This process should focus on recommendations that have a long development cycle (e.g. the development of an accreditation program), and those that are clearly needed and don't require other recommendations to be completed first (e.g. the development of trades training). It is important that the industry starts to see real benefits from this work in 2018.