What Canada Can do to Support Residential Decarbonization: Policy Perspectives from Contractors

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Efficiency Canada

Carleton University

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About Efficiency Canada

Efficiency Canada is the national voice for an energy-efficient economy. Our 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. Efficiency Canada is housed at Carleton University's Sustainable Energy Research Centre, which is located on the traditional unceded territories of the Algonquin nation.

The views expressed, as well as any errors or omissions, are the sole responsibility of the authors.

Executive summary

Meeting Canada's 2050 greenhouse gas emission goals requires significant efforts to decarbonize existing homes. Central to this challenge are the people and businesses that drive the installation of heat pumps, insulation upgrades, home air sealing, etc. However, few policy initiatives are focused on their perspective.

Building on our previous paper which initiated a discussion on the need for business support policies to align business models in the home improvement sector with net-zero pathways, this paper takes a contractor-driven approach to policy development.[1] Compiling a database of promising home-performance business models business support policies and conducting semi-structured interviews with twenty home-performance business models firms across Canada, we gathered valuable insights directly from contractors.

Using these insights, we outline policy initiatives that can strategically transform the industry — from the contractors' perspective — towards delivering high-quality residential retrofits at the pace and scale required to achieve Canada's net-zero goals. The initiatives also seek to foster a sustainable 'home-performance business models'[2] sector nationwide, driving profitable growth for Canadian businesses while creating good jobs and stable careers for Canadian workers.

Our findings indicate that contractors underscore the need for policies supporting market transformation, creating market demand and unlocking value for homeowners. They stress the importance of tailored business supports that cater to the specific needs and contexts of different businesses within the sector as they evolve towards innovative business models that can deliver home-performance business models upgrades aligned with net-zero pathways.

Key insights from contractors include:

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[1] Kantamneni, Haley, and Maas, "Designing Home Retrofit Policy for the People Who Do the Work."

[2] 'Home-performance business models' is a term used in building science to emphasize how all aspects of a home work together as a comprehensive system, where performance considers the seen and unseen factors like affordability, comfort, health, durability and energy efficiency. Business models centered around this concept would offer integrative services to make the home work better as a system.

Incentives and financing: While homeowner incentives drive demand, they can also create disruptive boom-and-bust cycles. Product-based incentives often reinforce existing market dynamics rather than create demand for comprehensive home-performance business models upgrades. Enhanced financial solutions with more extended repayment periods, such as utility on-bill financing, and more targeted incentives are necessary to encourage market transformation. Shifting incentives to contractors or upstream to distributors and manufacturers, coupled with regulations such as performance standards, could further drive market improvements. However, caution is needed to avoid unintended consequences and ensure equitable benefits across businesses of different sizes.

Consumer awareness and confidence: Consumer awareness is critical for driving demand in the home-performance business models industry, but current efforts are fragmented and limited, leading to a reactive market. The lack of consumer understanding of the full benefits of home-performance upgrades makes it challenging for businesses to educate and compete against lower-cost, minimal-service contractors. To enhance awareness and drive demand, consumer education campaigns and policies like mandatory building energy labelling are recommended, focusing on whole-home approaches rather than specific upgrades. While third-party credentialing for contractors could increase consumer confidence and quality of work, concerns about added costs, administrative burdens, and potential disadvantages for smaller businesses highlight the need for carefully designed and targeted business support policies to ensure equitable benefits.

Workforce development: Comprehensive solutions to hiring, training, and retaining skilled workers are crucial for overcoming barriers to business growth and alignment with decarbonization. Recommendations include facilitating faster onboarding for skilled workers from other sectors, as well as high school shop programs to attract younger talent. Centralized, accessible training resources tailored to career advancement and policies that promote employer-sponsored on-the-job training programs for continuous learning are also recommended. Workforce training should encompass technical skills, leadership, technology integration, business innovation, and small business management, particularly for small enterprises facing accessibility and cost challenges. Practices like Employee Shared Ownership Plans (ESOPs) are also recommended to attract and retain skilled workers, with targeted support for businesses to help them navigate the potential administrative challenges.

Contractors emphasize the need for policy certainty and stability to enable effective planning and investment. They note that frequent changes or uncertainty can disrupt operations and deter long-term investments. They advocate for a comprehensive and integrated approach that addresses workforce development, financial incentives, consumer awareness, technological innovation, and business transformation.

Tailored business support is also crucial, with policies needing to be flexible and adaptable to cater to the diverse needs of businesses within the sector. This ensures all businesses — regardless of size, geography, or specialty — have the resources to thrive and contribute to the broader goals of enhancing home-performance business models and putting Canadian homes on the path to a net-zero future.

Given the role domestic service sectors will need to play in creating stable middle-class jobs and the societal challenge of decarbonization, it might be time to direct this aspect of industrial policy toward encouraging home-performance business models business models.

To address the need for tailored services to facilitate business model changes within the home-performance business models sector, we recommend creating the Home-performance business models Business Assistance Program (HP-BAP). Modelled after the National Research Council of Canada's Industrial Research Assistance Program (NRC IRAP), HP-BAP would provide targeted funding, advisory services, and networking opportunities to drive innovation, modernization, and decarbonization.

The program would support small and medium enterprises (SMEs) in the HVAC, insulation, energy advisory, and home renovation sectors. Strategic objectives include facilitating market transformation towards comprehensive home-performance business models upgrades, creating high-quality jobs, promoting sustainable business practices aligned with Canada's net-zero goals, and coordinating government-level policies. Example activities include providing innovation funding, offering low-interest loans, implementing targeted incentives for contractors, offering consulting services, and developing collaborative networks and mentorship initiatives.

This program will align with our vision of a sustainable and resilient Canadian home-performance business models sector, where industry professionals and homeowners collaborate to achieve cleaner, more efficient and more comfortable homes.

Sommaire

L'atteinte des objectifs en matière d'émissions de gaz à effet de serre d'ici 2050 du Canada nécessite des efforts considérables pour procéder à la décarbonisation des maisons existantes. Les personnes et les entreprises qui procèdent à l'installation de thermopompes, à l'amélioration de l'isolation, à l'étanchéisation à l'air des maisons, entre autres, sont au cœur de ce défi. Cependant, peu d'initiatives stratégiques sont axées sur leur point de vue.

S'appuyant sur notre document précédent, qui a lancé une discussion sur la nécessité d'adopter des politiques de soutien aux entreprises pour harmoniser les modèles d'affaires dans le secteur de la rénovation domiciliaire avec des voies vers la carboneutralité, le présent document adopte une approche de l'élaboration de politiques axée sur les entrepreneurs.[3] En compilant une base de données sur les politiques prometteuses en matière de soutien aux entreprises pour le rendement énergétique résidentiel et en réalisant des entrevues semi-structurées avec 20 entreprises de rendement énergétique résidentiel au Canada, nous avons recueilli des renseignements précieux directement auprès des entrepreneurs.

À l'aide de ces renseignements, nous décrivons des initiatives stratégiques qui peuvent transformer l'industrie – du point de vue des entrepreneurs – en vue de réaliser des rénovations résidentielles de grande qualité au rythme et à l'échelle requis pour atteindre les objectifs de carboneutralité du Canada. Les initiatives visent également à favoriser un secteur du « rendement énergétique résidentiel » durable à l'échelle nationale, en stimulant une croissance rentable pour les entreprises canadiennes tout en créant de bons emplois et des carrières stables pour les travailleurs canadiens.

Nos constatations indiquent que les entrepreneurs soulignent la nécessité de politiques qui soutiennent la transformation du marché, créent une demande sur le marché et dégagent de la valeur pour les propriétaires. Elles font ressortir l'importance de mesures de soutien adaptées aux entreprises qui répondent aux besoins et aux contextes particuliers des différentes entreprises du secteur à mesure qu'elles évoluent vers des modèles d'affaires novateurs qui peuvent offrir des améliorations du rendement énergétique résidentiel conformes aux voies vers la carboneutralité.

[3] Kantamneni, Haley, and Maas, "Designing Home Retrofit Policy for the People Who Do the Work."

Voici les principales observations des entrepreneurs :

- **Incitatifs et financement** : Bien que les incitatifs destinés aux propriétaires stimulent la demande, ils peuvent également créer des cycles d'expansion et de ralentissement perturbateurs. Les incitatifs fondés sur les produits renforcent souvent la dynamique du marché plutôt que de créer une demande pour des améliorations complètes du rendement énergétique résidentiel. Des solutions financières améliorées avec des périodes de remboursement plus longues, comme le financement sur facture des services publics, et des incitatifs plus ciblés sont nécessaires pour encourager la transformation du marché. Le transfert des incitatifs aux entrepreneurs ou en amont aux distributeurs et aux fabricants, conjugué à des règlements comme des normes de rendement, pourrait stimuler davantage l'amélioration du marché. Toutefois, il faut faire preuve de prudence pour éviter les conséquences imprévues et assurer des avantages équitables à l'échelle des entreprises de tailles différentes.

- **Sensibilisation et confiance des consommateurs** : La sensibilisation des consommateurs est essentielle pour stimuler la demande dans l'industrie du rendement énergétique résidentiel, mais les efforts actuels sont fragmentés et limités, ce qui mène à un marché réactif. Le fait que les consommateurs ne comprennent pas tous les avantages des mises à niveau du rendement énergétique résidentiel rend difficile pour les entreprises de les informer et de faire concurrence à des entrepreneurs offrant des services minimaux et à moindre coût. Afin d'accroître la sensibilisation et de stimuler la demande, des campagnes d'éducation des consommateurs et des politiques comme l'étiquetage énergétique obligatoire des bâtiments sont recommandées, en mettant l'accent sur les approches globales plutôt que sur des améliorations particulières. Bien que la délivrance de titres et certificats par des tiers pour les entrepreneurs pourrait accroître la confiance des consommateurs et la qualité du travail, les préoccupations au sujet des coûts supplémentaires et des fardeaux administratifs, et les désavantages potentiels pour les petites entreprises, soulignent la nécessité de politiques de soutien aux entreprises soigneusement conçues et ciblées pour assurer des avantages équitables.

- **Perfectionnement de la main-d'œuvre :** Des solutions complètes pour l'embauche, la formation et le maintien en poste de travailleurs qualifiés sont essentielles pour surmonter les obstacles à la croissance des entreprises et à

l'harmonisation avec la décarbonisation. Les recommandations comprennent la facilitation de l'intégration plus rapide des travailleurs qualifiés d'autres secteurs, ainsi que des programmes d'ateliers dans les écoles secondaires pour attirer les jeunes talents. Des ressources de formation centralisées et accessibles, adaptées à l'avancement professionnel et aux politiques qui favorisent les programmes de formation en cours d'emploi parrainés par l'employeur pour l'apprentissage continu sont également recommandées. La formation de la main-d'œuvre devrait englober les compétences techniques, le leadership, l'intégration des technologies, l'innovation commerciale et la gestion des petites entreprises, en particulier pour les petites entreprises qui font face à des défis en matière d'accessibilité et de coûts. Des pratiques comme les régimes d'actionnariat des employés (RADE) sont également recommandées pour attirer et maintenir en poste des travailleurs qualifiés, avec un soutien ciblé aux entreprises pour les aider à relever les défis administratifs potentiels.

Les entrepreneurs insistent sur le besoin de certitude et de stabilité en matière de politiques pour permettre une planification et des investissements efficaces. Ils font remarquer que des changements fréquents ou l'incertitude peuvent perturber les opérations et décourager les investissements à long terme. Ils préconisent une approche globale et intégrée qui tient compte du perfectionnement de la main-d'œuvre, des incitatifs financiers, de la sensibilisation des consommateurs, de l'innovation technologique et de la transformation opérationnelle.

Un soutien adapté aux entreprises est également essentiel, les politiques devant être souples et adaptables pour répondre aux divers besoins des entreprises du secteur. Ainsi, toutes les entreprises, peu importe leur taille, leur emplacement géographique ou leur spécialité, disposent des ressources nécessaires pour prospérer et contribuer à l'atteinte des objectifs plus généraux d'amélioration du rendement énergétique résidentiel et de mettre les maisons canadiennes sur la voie d'un avenir carboneutre.

Étant donné le rôle que les secteurs des services nationaux devront jouer dans la création d'emplois stables pour la classe moyenne et le défi sociétal que représente la décarbonisation, il serait peut-être temps d'orienter cet aspect de la politique industrielle vers l'encouragement de modèles d'affaires axés sur le rendement énergétique résidentiel.

Pour répondre au besoin de services personnalisés afin de faciliter les changements de modèle d'affaires dans le secteur du rendement énergétique résidentiel, nous

recommandons la création du Programme d'aide aux entreprises pour le rendement énergétique résidentiel (PAE-RER). Inspiré du Programme d'aide à la recherche industrielle du Conseil national de recherches du Canada (PARI-CNRC), le PAE-RER offrirait un financement ciblé, des services consultatifs et des occasions de réseautage pour stimuler l'innovation, la modernisation et la décarbonisation.

Le programme appuierait les petites et moyennes entreprises (PME) des secteurs du chauffage, de la ventilation et de la climatisation (CVC), de l'isolation, des services consultatifs sur l'énergie et de la rénovation domiciliaire. Les objectifs stratégiques comprennent la facilitation de la transformation du marché en vue d'apporter des améliorations complètes au rendement énergétique résidentiel, la création d'emplois de grande qualité, la promotion de pratiques commerciales durables conformes aux objectifs de carboneutralité du Canada et la coordination des politiques gouvernementales. Parmi les activités, mentionnons le financement de l'innovation, l'offre de prêts à faible taux d'intérêt, la mise en place d'incitatifs ciblés pour les entrepreneurs, l'offre de services de consultation et l'établissement de réseaux de collaboration et d'initiatives de mentorat.

Ce programme s'harmonisera avec notre vision d'un secteur canadien du rendement énergétique résidentiel durable et résilient, où les professionnels de l'industrie et les propriétaires collaborent pour obtenir des maisons plus propres, plus efficaces et plus confortables.

Introduction

Meeting Canada's 2050 greenhouse gas emission goals requires significant efforts to decarbonize existing homes. While much of the technology needed to achieve this goal already exists — and the benefits are broadly well-understood — the market uptake of technologies like heat pumps and efficiency measures such as insulation and air sealing has been slow.

A crucial part of solving this puzzle involves people decarbonizing homes by installing heat pumps, upgrading insulation, air sealing homes, etc. Policy initiatives should be more focused on their perspective.

Our previous research paper initiated a discussion on designing home energy efficiency and decarbonization policy for the people and businesses that do the work.[4] We outlined the critical role of changing business models and what policy can do to facilitate productive business model changes that meet societal goals for net-zero emissions and good jobs.

Building on that work, this paper proposes policy initiatives that can — from the perspective of contractors themselves — work together to support and empower the home improvement industry to drive retrofits at the scale, pace, and quality needed to achieve Canada's net-zero goals while achieving the vision of a sustainable and resilient home-performance business models sector.

The vision

Creating a residential home-performance business models business sector that excels at making homes more comfortable and affordable while achieving Canada's decarbonization goals. Businesses in this sector provide good jobs, with seasonal and long-term job security and competitive wages. They can provide these good jobs because customers recognize the value of home-performance business models and rapidly adopt the latest productivity-enhancing technologies and practices.

[4] Kantamneni, Haley, and Maas.

What we did

Business supports policy discussion

Our earlier paper initiated a discussion on practical, applicable policies that support industry professionals and their businesses in their decarbonization work.[5] It underscores the importance of supporting the alignment of business practices with net-zero pathways while creating good jobs and successful business outcomes for workers.

The paper explores the challenges and missed opportunities in Canada's home improvement sector, where short-term planning and reactive approaches dominate. These dynamics can lock in energy and carbon-intensive technologies for another generation, presenting a climate problem. Addressing these issues presents an economic opportunity to enhance productivity, create new entry points for economic activity, and secure better, more stable jobs for workers.

The paper then discusses the concept of home-performance business models to capture more value for all stakeholders by treating homes as complex, integrated systems. This approach involves sequential retrofit strategies planned over the years, aligning upgrades with the end of equipment or material lifetimes. Business models centered around this concept offer integrative services that value long-term and proactive planning. The paper introduces a framework to conceptualize existing and emerging home-performance business models business models along a spectrum of value propositions for contractors and homeowners.

The discussion paper then outlines how home-performance business models business models enable homeowners to undertake improvements sequentially, fitting them within their budget and maximizing co-benefits. For contractors, these models can lead to higher revenues per customer, spread demand from peak to slower seasons, fewer call-backs, and rewarding long-term customer relationships. Different business models are also needed to change industry dynamics. We list the evolving nature of homeownership, complex home heating and cooling systems, new digital technologies, business consolidation, and talent acquisition and retention challenges.

[5] Kantamneni, Haley, and Maas.

While the benefits of shifting to a home-performance business models-based approach are clear, the paper highlights how such transformation involves substantial upfront expenses and risks for businesses in the sector. Overcoming these barriers requires concerted external support to make the transition feasible and attractive for businesses. The paper examines how public policies can assist by providing tailored services through intermediary organizations, ensuring businesses can access the right people, resources, and assurances for success.

We developed a database of promising home-performance business models business support policies

Our research into effective support policies for the home-performance business models sector began by identifying individual policy instruments that could significantly enhance the industry's overall performance and sustainability. Two domains were considered:

- Energy efficiency retrofits and/or decarbonization of existing single-family housing.
- Business supports for retrofit contractors and consultants.

We focused on pinpointing specific measures that have the potential to drive positive outcomes across various aspects of home-performance business models, such as workforce development, consumer engagement, financial accessibility, and technological adoption.

We began with keyword searches using web-based search engines and academic databases to identify reports, journal articles and websites. References of key papers were then reviewed. The snowball method continued: a set of identified policies, programs and/or databases would lead to new search terms and policy areas to investigate. All searches were limited to national and subnational jurisdictions in Canada, the European Union and the United States, where authors are most familiar with the policy, programs and governance landscape. We excluded income-qualified programs, policies for multi-family, non-residential or newly constructed buildings, and business supports unlikely to be accessible to retrofit contractors.

To identify retrofit policies, we used the following databases tracking building energy efficiency programs and policies: Efficiency Canada,[6] NRCan,[7] DSIRE,[8] USGBC,[9] BPA,[10] and BPIE.[11] The Canadian Business Benefits Finder[12] and Mentorworks[13] were searched for relevant business support in Canada.

We also conducted a jurisdictional scan of national, state, and local government departments and programs for business support programs appropriate for HVAC and retrofit contractors. We examined Industry associations, trade unions, apprenticeship programs, trade magazines, and training institutes for business support services.

Through this research, we explored a variety of policy instruments, including incentives for workforce training and development, streamlined financing options, consumer awareness campaigns, and support for adopting advanced technologies. We aimed to create a cohesive set of policies that collectively foster a robust and resilient home-performance business models sector, ultimately contributing to Canada's decarbonization goals and creating high-quality jobs.

By examining these individual policy instruments, we aimed to understand how each could contribute to overcoming the unique challenges faced by contractors and businesses in the sector, as highlighted in our earlier discussion paper. This approach allowed us to develop a comprehensive framework for policy support, ensuring that the identified measures are practical, impactful, and tailored to the needs of the industry.

Each policy instrument identified was added to a policy database and categorized into nine groups in an iterative process. A summary table of the nine policy categories was

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[6] Efficiency Canada, "Energy Efficiency Policy Database".

[7] Government of Canada, Natural Resources Canada, "Directory of Energy Efficiency Programs for Homes – Search."

[8] DSIRE, "Database of State Incentives for Renewables & Efficiency®."

[9] USGBC, "U.S. Green Building Council| Public Policy Library."

[10] Building Performance Association, "Overview of Residential Energy Efficiency Programs."

[11] BPIE, "Knowledge Hub > BPIE - Buildings Performance Institute Europe."

[12] Innovation Canada, "Business Benefits Finder – Canada.ca | Outil de Recherche Des Programmes de Soutien Aux Entreprises – Canada.Ca."

[13] Mentor Works, "Mentor Works Funding Directory."

then used in the next stage of our research process — semi-structured interviews to solicit policy preferences.[14]

Contractor perspectives on home-performance business models business support policies

Building on the discussion paper and our policy database, we conducted semi-structured interviews with key informants. Participants were selected to ensure representation of practitioners from a range of geographical locations, company sizes, business model archetypes, location in the supply chain, and leadership from historically marginalized groups. In total, twenty (20) home-performance business models firms serving the single-family residential sector were interviewed with head offices located in seven different provinces and territories (Ontario, Quebec, Nova Scotia, British Columbia, Manitoba, Prince Edward Island, Alberta).

Participants were interviewed by phone, video call, at their place of work or during one-on-one discussions at industry events. They were asked to describe their current business practices and outline the anticipated future trajectory of their businesses. Next, they were invited to review the categories of business support policies in our database and encouraged to describe how they expect these policies might impact their current and future business plans. Participants were invited to describe how they expect these individual policy instruments interacting and working together to support them in achieving their goals.

Each interview was transcribed and iteratively coded using NVivo to identify and extract common themes across all the participants.

What we heard

Contractors consistently supported business support policies to evolve towards innovative business models that can deliver home-performance business models upgrades aligned with net-zero pathways. Key highlights are presented in the subsection below.

[14] See Appendix.

Incentives matter, but can reinforce prevailing market dynamics

Participants had mixed opinions about homeowner incentives and rebates. Non-HVAC participants, such as insulators and energy auditors, credited these incentives with generating interest and demand for their services. In contrast, HVAC participants observed that rebate-based programs disrupt their core business operations by creating boom-and-bust market cycles that require rapid adjustments, leading to lower service quality and friction in making sales. Nearly every HVAC participant pointed out that start-stop programs disrupt their business models, complicate operations, and leave them with stranded inventory when programs end abruptly, despite the short-term business boost these programs provide.

Select participant quote: "Only if you get big enough as a residential contractor can you afford all that overhead, non-billable hours, and extra employees whose only job is to stay up on it, navigate it, find equipment, make sure that things homeowners want are eligible for incentives, and talk homeowners through it."

Select participant quote: "I'm not basing our business or building a company based on the availability of rebates, when the next government change could mean those programs and requirements could go away, like those energy advisors went away after the Greener Homes program ended."

There is broad consensus among participants in three other areas of financing and incentives.

Firstly, many participants pointed out that product-based rebates and incentives tend to reinforce prevailing market conditions, with customers focusing on specific upgrades rather than transforming markets towards whole-home-performance business models upgrades. Programs like Canada Greener Homes, intended to help homeowners plan whole-home upgrades, are often used by homeowners to access grants and loans for specific products, such as solar panels or heat pumps, which they have already decided upon. Only some homeowners have the means, motivation, and opportunity to undertake comprehensive home-performance business models upgrades simultaneously. Projects need to be sequenced over their time in the house. Incentive programs and rebates available only for short periods reinforce prevailing customer preferences and market dynamics that seek quick-fix solutions rather than pursue a

whole-home diagnostic approach and long-term sequencing of home-performance business models upgrades.

Select participant quote: "Having those itemized incentives, you're kind of creating a market that makes homeowners think 'I have only the money to maybe do just the heat pump this year or just the windows this year.' And then you're kind of losing the potential that you would need to do the whole house in itself, right toward the whole envelope in itself, which are more impactful retrofits."

Participants suggest enhanced financial solutions with more extended repayment periods to transform markets towards whole-home retrofits. Although contractors typically offer third-party financing options to homeowners, homeowners often prefer using home equity or other lines of credit for upgrades due to the reduced burden of longer repayment terms. Additionally, participants highlighted utility on-bill financing as a preferred solution. This approach allows the cost of home upgrades to be repaid through a surcharge on energy bills, which can be transferred to new homeowners upon resale. This method extends the repayment period beyond the current homeowner's tenure, making it a more attractive and feasible option for comprehensive home-performance business models upgrades.

Secondly, there is consensus on strategically deploying incentives to encourage market transformation. Participants suggest that public investments in market transformation could be more effective by influencing consumer preferences with smaller, more targeted incentives. This approach would make public investments last longer and reach more homes, maximizing the impact of the investments. As an example, covering the cost difference between a heat pump and an AC unit could naturally steer consumers toward heat pumps that provide heating and cooling.

Additionally, contractors support shifting the focus from homeowners and moving incentives upstream to contractors or manufacturers. This would include implementing regulations and incentives for manufacturers to exclusively produce heat pumps,[15] ensuring every AC unit in Canada is also a heat pump and helping decarbonize homes by offering auxiliary heating during cold seasons. Furthermore, providing direct incentives to home-performance business models contractors based on key performance indicators, such as actual whole-home energy savings or proper system

[15] Gard-Murray, A., Haley, B., Miller, S., Poirier, M. "The Cool Way to Heat Homes: Installing Heat Pumps Instead of Central Air Conditioners in Canada."

sizing and commissioning according to manufacturer specifications, would reward high-quality contractors and drive the market towards high-performance standards.

Select participant quote: "In order to attract good quality techs that are competent and good with customers, I have no problem compensating them well, but it is hard to compete with 'one plain white vans' — companies that pay their people less but can come in at a much lower costs, when there is no quality control over checking if they are getting it done right."

However, several participants urge caution when deploying strategic upstream or contractor incentives to drive market transformation, pointing to potential downsides that must be considered. Firstly, they are concerned about unintended consequences, such as manufacturers passing down compliance costs to consumers. Secondly, contractor incentives might disproportionately benefit larger, more established businesses that can track and meet performance indicators and handle additional administrative burdens. At the same time, smaller firms struggle to compete, potentially accelerating trends toward market consolidation and reduced competition. Finally, enforcing quality control through selective key performance indicators can be challenging. Participants worry that some contractors might game the system without meeting targets, such as promised energy savings. They suggest regular audits and transparency could mitigate risks and increase public confidence in the industry.

Consumer awareness is key for driving demand, but solutions are disjointed

Most participants indicated that home-performance business models is a reactive industry[16] driven primarily by feast-and-famine cycles of consumer demand, with its potential for decarbonization limited by consumer awareness and confidence.

First, consumers often need more awareness of the comprehensive benefits of high-performance upgrades, such as energy savings, comfort improvements, and health advantages. While businesses strive to educate their customers about these benefits,

[16] The dynamics shaping the reactive industry - from short-term homeowner decision making under duress of equipment failure, to contractor business models focused cost rapid service and offloading inventory - is discussed in greater detail in "The home improvement sector now: Challenges and missed opportunities" section of Kantamneni, Haley, and Maas, "Designing Home Retrofit Policy for the People Who Do the Work."

their efforts are often fragmented and individualized, making it difficult to scale. Additionally, home-performance business models businesses sometimes face the challenge of educating homeowners and selling services to them, which can be perceived as “upselling” by consumers. Furthermore, after investing time and resources in consumer education, these businesses may still need to compete with contractors who bid solely on price and offer minimal value-added services.

To address these challenges, many participants recognized the importance of public education campaigns to enhance general awareness and drive widespread demand for home-performance business models. An idea frequently mentioned was the implementation of policies that encourage homeowners to develop "end-of-life plans for their HVAC systems," ensuring they are prepared for the inevitable failure of a furnace or air conditioner and can make informed purchasing decisions without the pressure of an emergency replacement.

To build on this, participants noted that public awareness campaigns often focus too narrowly on specific upgrades, like heat pumps, instead of promoting a customized, whole-home approach grounded in building science principles. While some businesses benefit from educating consumers and guiding them through the best options, public campaigns might be more effective if they help homeowners plan and budget for system replacements at the end of their lifespan or during home renovations, using these moments as opportunities for whole-home retrofits and enhanced home-performance business models.

Select participant quote: “Too often, the contractor can be well-spoken on all the costs, rebates, benefits and efficiencies. But they’re there on the sales call, and many people get sales resistance, their backs get up, and they’re not listening too much to that contractor. But if homeowners were being educated through media or other sources, you’d have a more educated consumer.”

Secondly, the value of home-performance business models investments could be more apparent and easily captured compared, such as with other home improvements like new kitchen appliances or roofing which have clear benchmarks for resale value recovery. Homebuyers often need help differentiating between homes with energy efficiency upgrades and those without.

Policies encouraging or requiring mandatory building energy labelling received enthusiastic support from nearly every participant. They emphasized that such labelling

could help drive demand for home-performance business models upgrades by providing a clear, standardized way to showcase the benefits of home-performance business models improvements. If these labels highlighted vital performance indicators such as energy savings and improved comfort, the value of such investments would be rendered visible and tangible to potential buyers. This transparency encourages homeowners to invest in energy-efficient upgrades, knowing these improvements will be recognized and valued in the market, promoting wider adoption of home-performance business models enhancements.

Select participant quote: "Reducing costs is generally what brings us contractors in the door, but what often happens is that the increased occupant comfort is the first thing that homeowners cite afterwards. Yet, there is no way for them to communicate this value to a future buyer when they sell this place."

To maximize the impact of labelling, some participants suggested pairing these efforts with capacity-building training for adjacent sectors, such as realtors, home insurance providers, and home auditors who interact with homebuyers and homeowners. By enhancing their understanding and ability to communicate the value of energy efficiency improvements, these professionals can further elevate the perceived value of labelled homes. This ensures that the benefits of energy labelling are effectively conveyed to homeowners at every touchpoint, driving greater demand and adoption of home-performance business models upgrades. A few participants expressed an interest in a closer coupling and working relationships with such allied sectors that have credibility and whose expertise is recognized by homeowners.

Select participant quote: "Why do we pay attention to the kilowatt hour sticker on the dryer? Why do we look at the range or the mileage of the vehicle? Yet, we don't pay attention to that in the home in any way, shape or form."

Finally, homeowners need a meaningful way to differentiate and value the hired contractors' credentials, skills, and abilities. Most businesses rely on word-of-mouth and consumer referrals to build their reputations. While some policy solutions have been proposed, such as third-party credentialing and preferred contractor networks, support for these ideas among home-performance business models businesses is mixed.

Some participants highlighted potential downsides to third-party credentialing, such as the added administrative burden and costs for contractors, which may be incredibly challenging for smaller businesses with limited resources and may limit choices in rural and remote areas. The concern is that the credentialing process could become overly bureaucratic, stifling innovation and flexibility. Moreover, the standards set by third-party organizations might not fully align with the diverse practices of different contractors or the specific needs of homeowners, potentially leading to a one-size-fits-all approach that doesn't suit all business models. Additionally, some participants are wary of the risk that credentialing could create an uneven playing field, where only those who can afford the time and money to obtain and maintain certifications can compete, potentially marginalizing smaller businesses or newer business models. Homeowners might find it confusing to navigate multiple credentialing systems, reducing the intended clarity and trust in choosing a contractor. A few participants are skeptical that policies can meaningfully address these potential downsides to ensure that credentialing would effectively benefit both contractors and homeowners.

To address these concerns while still aiming to elevate industry standards, some participants suggested that a balanced approach could involve coupling third-party credentialing with robust contractor support systems. This approach would ensure that while high standards are maintained, contractors — notably smaller businesses — are not disproportionately burdened.

To enhance consumer confidence in more efficient heating and cooling systems, HVAC contractors expressed support for requiring installations made through programs to adhere to manufacturer-specified installation and commissioning standards. While some pushback is anticipated due to the increased accountability for proper installations, corrections, and additional paperwork, this resistance can be mitigated by offering contractors capacity-building and on-the-job training opportunities. These complimentary wrap-around programs would focus on continuous improvement and learning, raising professional installation standards. As a result, improved consumer confidence would drive greater market demand for high-quality installations and correctly sized equipment.

Workforce development can be a bottleneck, but supports must go beyond entry-level technical training

Participant perspectives on the importance of business support for workforce development were varied. Most identified hiring, training, and retaining a skilled workforce as their biggest barriers to business growth and innovation. These challenges span the entire employment spectrum, from onboarding entry-level apprenticeships to retaining experienced technicians.

Select participant quote: "My largest inhibiting factor in business has not been a lack of business; it's been the ability to execute it and hire more staff to grow the business."

The industry struggles to attract young people as a viable career option, with a limited pool of entry-level talent coming in and an impending wave of retirements, and these challenges are particularly more pronounced in the residential HVAC sector.[17] The industry's cyclical nature, characterized by seasonal boom and bust cycles, complicates the maintenance of steady paychecks and work-life balance, further diminishing its appeal. While creating more entry-level opportunities through technical training and apprenticeships has been a conventional - and perhaps convenient — solution, contractors remain skeptical about the effectiveness of formal education pathways for improving or expanding the workforce, especially when much of the home retrofit workforce lacks - and doesn't require — formal credentials.

Select participant quote: "Workforce is my single largest headache and has been for the past couple of years. We are not equipping enough skilled trades. The colleges, despite the rhetoric, are far from meeting what needs to be done. And so this is a long game in my opinion and it's one that needs to start with Junior High and High School. Talking about the viability of skilled trades and the good career paths that are out there."

Several participants emphasized the need for high school shop programs to engage students early. Participants also suggested attracting skilled workers from other sectors and trades that experience seasonal and chronic economic downturns, such as

[17] New dynamics - including 'grey tsunami' of retirement of HVAC workforce, and challenges attracting new people to careers in trades - are discussed in greater detail under section titled Navigating emerging dynamics: more complexity, fewer resources in Kantamneni, Haley, and Maas, "Designing Home Retrofit Policy for the People Who Do the Work."

manufacturing and mining. Policies and initiatives facilitating faster onboarding for mechanically skilled workers with existing trade certifications were regarded as particularly appealing.

Select participant quote: "There's a lot of people who get laid off from the [automotive plant], at some point and in their mid-40s or something, they're looking to make a change, but they can't go down to minimum wage, which is what a lot of first-year apprentices make. So, if there were programs for subsidizing their technical training at a community college, you'd have a better workforce."

Participants note that technical training is widely available through manufacturers, municipal or utility programs, industry associations, and private coaching and training. Despite several training opportunities for technical upskilling, these resources are often disjointed, inaccessible and hard to find. Workers and employers usually find it challenging to identify and enroll in training specific to their needs and are matched with their career advancement goals. Courses are offered by various providers such as colleges, manufacturers, industrial associations, and distributors. The lack of centralization and guidance hinders effective professional development and career advancement.

Investing in employee upskilling is perceived as risky by some employers despite recognition of productivity gains. The burden of upskilling often falls on employees, who are typically reluctant to pursue additional learning after work hours with uncertainty of employer support. Moreover, most training programs are typically delivered in person, requiring in-class participation, making it challenging for employees to take time off work for training and for employers to grant such requests. Participants found policies that encourage workplaces to become sites of organizational learning and provide support for employer-sponsored on-the-job training programs to be highly attractive. This gap may reflect a broader trend in Canada, where workers with higher education credentials and advanced skills are more likely to receive and benefit from employer-sponsored training programs than workers without post-secondary education.[18]

[18] Future Skills Centre, "Employer-Sponsored Skills Training: A Picture of Skills Training Opportunities Provided by Canadian Employers."

Select participant quote: “I’m terrified. We finally built a decent team but we have at least three guys that I know I can send (for further training), but it terrifies me that we’ve spent so much blood, sweat and tears building this business and that another company comes along and poaches them. It’ll hurt big time.”

Several participants observed that workforce training should extend beyond technical education to encompass critical areas such as organizational leadership, technology integration, and small business management. Small business training equips business owners with the skills to run their operations efficiently, make informed financial decisions, and effectively manage their teams. Training in organizational leadership helps workers advance in their careers into management positions while helping create motivated, cohesive and high-functioning teams. Knowledge of modern business tools, technologies and software and their practical business applications can streamline business processes, improve project management, reduce wasted time and increase overall productivity.

Furthermore, transitioning towards a new business model requires significant changes in core operations, extending beyond the upskilling of technical personnel. Changing business practices often requires changes across the board, from dispatch to sales to service technicians. This may involve redesigned systems and processes, moving beyond what has worked in the past.

To facilitate this transformation, participants highlighted the need for dedicated support to mitigate the risks, uncertainty, and costs associated with adopting new business models and introducing value-added services through home-performance business models. This support could include innovation funding to hire or train personnel with the necessary skills to drive these changes. While some existing programs, such as MITACs or the Canada Jobs Grant, are designed to attract specialized talent and promote small business innovation through on-the-job learning, these programs were not widely recognized among participants, revealing a gap in awareness. Additional support could also involve mentorship, pilot programs, hands-on learning and workshops, business development advisory services, peer-to-peer knowledge exchange,

and partnership development opportunities common in other industries like professional services,[19] creative industries[20] and digital technologies.[21]

Some participants recognized business practices like Employee Shared Ownership Plans (ESOPs) as crucial for retaining skilled workers, giving them a sense of ownership that leads to improved productivity. ESOPs were also noted as a significant component of organizational succession planning, allowing for business continuity and facilitating long-term planning and decision-making. However, despite generally positive opinions about business practices like ESOPs, some participants highlighted the administrative burdens, complexities, costs, and concerns about the dilution of control over major decisions as significant barriers to implementing ESOPs in their organizations. Advisory services to help employers and owners understand and implement ESOPs were seen as beneficial in overcoming these uncertainties and fears.

On a positive note, some participants reported no difficulty finding technicians, attributing their success to their company's strong reputation and attractive work perks. These employers understand the importance of providing growth opportunities to keep employees engaged and satisfied with their workplace.

A few participants also reported high demand for their open positions, as the high-performance building sector is viewed as a desirable career path for some skilled trades, such as carpenters. This indicates that a robust and resilient home-performance sector can serve as an entry point for new economic activity and an attractive career path for a growing workforce. This public good needs to be supported by effective public policy to ensure its growth, vitality and long-term sustainability, particularly for most small to medium enterprises in this sector.

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[19] Profiles of companies in the 2020 cohort of companies entering Canadian business accelerators and incubators highlights the underrepresentation of the home improvement sector in business model innovation support in Canada. See - Innovation, Science and Economic Development Canada, “The Effect of Business Accelerators and Incubators on Business Performance.”

[20] Canada Media Fund’s master list of Canadian business accelerators that focus primarily - but not exclusively - on supporting businesses in Canada’s creative and media industries: CMF-FMC, “List of Accelerators.”

[21] NRCAN’s ‘Digital Accelerator’ aims to introduce or improve artificial intelligence-related capabilities at NRCan and to broadly inform Canada’s natural resource sectors on how to best incorporate digital solutions in their operations. Government of Canada, Natural Resources Canada, “About the Digital Accelerator.”

What we recommend

Across all participant interviews and policy areas, contractors strongly supported policy initiatives to transform markets towards home-performance business models. Several common themes emerged from their policy preferences.

First, participants emphasized the importance of policy certainty and stability. Contractors need a reliable and predictable policy environment to plan effectively and confidently invest in their businesses. Frequent changes or uncertainty in policy can disrupt business operations, deter long-term investments, and hinder the overall growth of the home-performance sector.

Stable and consistent policies enable contractors to develop comprehensive strategies for workforce training, technological adoption, and market expansion. This, in turn, fosters innovation and improves the quality of services provided to homeowners. Furthermore, a stable policy framework encourages contractors to participate in incentive programs and other initiatives to drive market transformation, knowing that the rules and benefits will not change unexpectedly.

Secondly, participants recognize that business support policies must work together to transform markets towards home-performance business models effectively. No single policy alone can achieve this transformation; no magic solution or silver bullet exists.

A comprehensive and integrated approach is essential for market transformation. Policies must simultaneously address various aspects of the home-performance sector, including workforce development, financial incentives, consumer awareness, and technological innovation. Each policy should complement and reinforce the others, creating a cohesive framework that drives sustained growth and improvement across the industry.

For example, consumer education campaigns could be aligned with regulatory measures, such as building energy labelling, that promote transparency and quality assurance in the market. Policies that support technological advancements should be integrated with experiential training initiatives that facilitate the adoption of these technologies by contractors and homeowners alike.

These examples illustrate how interconnected and mutually supportive policies can help the home-performance sector achieve a coordinated path towards decarbonization

and market transformation, fostering a resilient and dynamic industry capable of meeting long-term environmental and economic goals.

Finally, participants emphasized the importance of tailoring business support to the specific contexts of individual businesses. The home-performance business models sector encompasses a wide range of industries, including HVAC, insulation, energy advisors, contractors, and home renovators, and is diverse in terms of business size, number of employees, experience, and expertise.

To be effective, policies aimed at market transformation must account for this diversity and address disparities in access to business support. These supports must be designed to work collaboratively with businesses, catering to their unique needs and circumstances while aligning with the overarching objectives outlined in the vision statement.

This means creating flexible and adaptable support mechanisms, funding and resources that recognize the varied challenges and opportunities faced by different types of businesses within the sector and tailor solutions to meet their needs. This will ensure that all businesses, regardless of size or specialty, have the resources and assistance they need to thrive and contribute to the broader goals of enhancing home-performance business models and putting Canadian homes on the path to a net-zero future.

Tailored and specific business support policies have existed and are widely available for businesses in sectors like manufacturing, digital media and software. They are less common in the blue-collar industry of home-performance business models. However, given the role domestic service sectors will need to play in creating stable middle-class jobs and the societal challenge of decarbonization, it might be time to direct this aspect of industrial policy toward encouraging home-performance business models business models.

Call to action: the home-performance business models business assistance program

Given the need for tailored services to different businesses focused on facilitating business model change, we recommend creating a Home-performance business models Business Assistance Program.

Such a program can be modelled after The NRC IRAP. IRAP is described as “Canada's leading innovation assistance program for small and medium-sized businesses.”

IRAP provides funding, advisory services, and networking opportunities to help Canadian small and medium-sized enterprises (SMEs) innovate and grow. NRC IRAP supports various industries, including information and communications technology, health and life sciences, manufacturing, energy, and environmental technologies. The program has been in place for 70 years. It focuses on enhancing businesses' technological and commercial success through research and development, helping them bring new products, services, and processes to market.

Numerous innovation and industrial policy reports have emphasized IRAP as a successful organization due to its focus on supporting the widespread use and diffusion of technology.[22] A key component of its success is that — despite the name — it is not solely focused on research but on coupling knowledge of technology with business advisory services. A recent proposal is to transition IRAP into a new Canada Innovation Corporation.[23]

To implement the business supports preferred and desired by those actively engaged in home decarbonization, we propose the Home-performance business models Business Assistance Program (HP-BAP), modelled on the principles of IRAP.[24] This program will align with our vision of a sustainable and resilient Canadian home-performance business models sector, where industry professionals and homeowners collaborate to achieve cleaner, more efficient and more comfortable homes.

Program mission

The program aims to support businesses in the Canadian home-performance business models sector by providing targeted funding, advisory services, networking opportunities and policy coordination to drive business innovation, process modernization, wealth creation, and residential energy efficiency and decarbonization goals. The program will emphasize support for small and medium enterprises (SMEs).

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[22] Kantamneni, Haley, and Maas, “Designing Home Retrofit Policy for the People Who Do the Work.”

[23] Canada, Department of Finance, “A Blueprint for the Canada Innovation Corporation.”

[24] We focus on the history of IRAP as a model, given that we are uncertain if the new Canada Innovation Corporation will be as focused on business support policies and technological diffusion, given suggested focus on business investment and R&D.

Target industries: HVAC, insulation, energy advisors, contractors, renovators and related fields.

Strategic objectives

- Facilitate the market transformation of home energy retrofits and home improvement upgrades towards comprehensive home-performance business models upgrades.
- Facilitate business model innovation and business practice transformation towards home-performance business models in the home improvement sector.
- Support the creation of high-quality jobs and the growth of a resilient and sustainable home-performance business models sector.
- Promote the growth of wealth generation and sustainable business practices that align with Canada's net-zero pathways.
- Liaise between business sector needs and public policy development and implementation to make policies across government levels more effective.

Example program activities

These program activities are just examples to illustrate how the program could operate. Numerous other activities the program could undertake exist, and our policy database offers additional examples and ideas to explore.

- Targeted funding and financing
    - Partner with business accelerators and incubators to help contractors refine business strategies, adopt new technologies and scale their operations, fostering innovation and growth towards home-performance business models.
    - Provide tailored business development programs customized to address specific challenges and opportunities, such as training on modernizing operations, marketing strategies, and financial planning to manage the cash flow impacts of new business models focusing on long-term projects.
    - Coordinate across institutions to arrange low-interest loans and financial assistance with long-term repayment options that businesses can offer customers.

    - Work with provincial and federal governments to implement tax incentives for employee-shared ownership plans, on-the-job employee-sponsored workforce training, and other resources.
- Advisory services
    - Offer consulting services to help businesses develop strategies, modernize operations, recruit and retain talent, and navigate regulatory environments and funding programs.
    - Provide technical assistance and access to experts in home-performance business models to guide the implementation of new technologies (such as high-efficiency cold-climate heat pumps) and novel business practices (such as ESOPs).
    - Supply businesses with market intelligence and data to inform decision-making and identify growth opportunities.
- Networking opportunities
    - Facilitate the creation of networks for businesses to collaborate, share resources, and innovate together across industry silos. Facilitate strategic coordination and consolidation of different aspects of home-performance business models, such as HVAC and building envelope services.
    - Develop peer-to-peer mentorship initiatives where experienced industry professionals guide and support newer or smaller firms.
    - Encourage collaborative partnerships between the private sector, government agencies, and academic institutions to drive business innovation and market transformation.
- Policy coordination
    - Align policies to ensure business support policies work well with national and regional climate, workforce development, housing and energy efficiency policies.
    - Create and champion a cohesive policy framework that harmonizes efforts across various stakeholders to maximize the impact of building support policies.
    - Integrate perspectives from ‘boots on the ground’ businesses into policy solutions and coordinate implementation across various government agencies and relevant industry stakeholders.

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Appendix: Business support policies database

Policy category	Policy or program	Description	Jurisdiction
Upstream incentives.	U.S. Home Owner Managing Energy (HOMES) Rebates.	A whole-home, performance-based incentive will be available to homeowners and aggregators. $200 million is allocated to training contractors.	USA
Upstream incentives.	NYS Clean Heat Contractor Rebate.	Financial incentives are available for efficient heating systems, with the contractor retaining a portion. Some incentives are delivered on an annual energy-saving basis of $/MBTU.	New York
Upstream incentives.	Puget Sound Energy's instant contractor rebate.	Instant discounts on high-efficiency electric heat pump technologies are now available to equipment installers and are applied at the wholesaler or distributor point-of-purchase.	Puget Sound
Upstream incentives + capacity building + performance standards + concierge services.	NYSERDA Comfort Home Contractors Pilot.	Participating contractors may elect either to provide comprehensive services, meaning both envelope improvements and heat pump installation, or only perform envelope improvements to make the home heat pump ready, followed by passing a referral to a qualified NYS Clean Heat air-source or ground-source heat pump installer.	New York

Performance standards.	Highest Efficiency Equipment Standards.	After 2030, all-new space and water heating equipment sold and installed in B.C. must be at least 100percent efficient in converting source energy to heat.	British Columbia
Performance standards.	Air Conditioning to Heat Pump Bylaw.	Requiring that, as of 2023, all permanently installed new air conditioning systems in detached 1-2 dwelling homes must be able to provide both low-carbon heating and cooling (electric heat pumps).	Vancouver
Long-term financing.	Michigan Saves On-Bill Financing.	Offers property owners the ability to pay for energy efficiency or renewable energy improvements through their monthly utility bill, with low-to-zero interest rates, simple contract structures, and streamlined repayment mechanisms.	Holland, Michigan
Long-term financing.	France's Serafin one-stop shop or ecoPTZ in France.	Third-party financing companies offer direct financing integrated with their typical “Integrated Home Renovation” offer. They can provide direct loans with repayment terms longer than 15 years, depending on the useful life of the financed renovation, supported by long-term credit lines provided by the European Investment Bank.	France

Long-term financing + performance standards.	USA's Fannie Mae's HomeStyle Energy Mortgage.	Allows leaders to finance retrofits during home purchase or refinance up to 15 per cent of appraised property value. Covers basic weatherization and efficiency measures, improvements to a home's resilience to natural disasters and radon remediation. It can also be used to pay off other energy-related private loans.	USA
Improved data access.	Belgium Woningpas Building Renovation Passport.	Building Renovation Passport (BRP) + Energy Performance Certificates are entered into a digital registry that public authorities can access. Building owners can update the implementation of renovation measures in the logbook. Having information on a specific building’s renovation history increases renovation rate.	Belgium
Improved data access.	U.S. National Institute of Standards and Technologies Fault Detection and Diagnostics for Air-Conditioners and Heat Pumps.	This project highlights the unique role that national institutes can play in accelerating market transformation by developing effective remote diagnostic tools, including algorithms and open-source performance measurement tools, and by formulating a standard procedure for rating different commercial fault detection products. This will allow utility rebate programs and building energy regulations to promote remote fault diagnostic	USA

		methods as cost-effective energy efficiency measures, leading to increased market acceptance.	
Consumer awareness.	Visit a Heat Pump.	Visit a Heat Pump connects interested buyers with heat pump owners in their area. This allows homeowners to get first-hand experience and builds trust through personal experiences. The goal is to make it simple and appealing for owner occupiers to get a heat pump through improving quality, consistency and accessibility of information available to consumers.	UK
Consumer awareness (contractor credentials).	U.S. Residential Green and Energy Efficient Addendum for appraisers and the National Association of Realtors GREEN Designation.	The Green and EE Addendum for Appraisers standardizes the method for appraisal of energy efficiency features in their assessment of a property. A GREEN Realtor Designation offers training and professionalization to realtors for communicating the value of an energy efficient home.	USA
Consumer awareness (building labeling) + performance standards.	Energy Rating and Disclosure at Time of Sale.	Since 2006, the sale of a dwelling must be accompanied by an energy performance diagnostic (EPR), and greenhouse gas emissions. From April 2023, lowest lowest-performing homes will be required to perform an energy audit and include it at the point of sale.	France

Consumer awareness.	Green MLS.	Green MLS: Some Multiple Listing Services in the U.S. have adopted green labeling fields including whole home ratings, appliances, financing, etc.	USA
Consumer awareness (contractor credentials) + capacity building + performance standards.	Home-performance business models Stakeholder Council.	The Home-performance business models Contractor Network (HPCN) is a database of retrofit contractors in British Columbia (BC) that meet specified trade designation and training qualifications and are subject to ongoing review and quality assurance checks.	British Columbia
Customized training.	St. Lawrence Hybrid Apprenticeship.	A hybrid training program that provides the apprentice with flexibility to work full-time while engaged in online learning and minimizes the number of weeks the apprentice is released from work compared to traditional block training. Apprentices who complete this program will be trained to install and service heat pumps.	Kingston
Specialized training (business skills upskilling).	Atlantic Trades Business Seal program for trades Achievement in Business Competencies Blue Seal (Alberta and Northwest Territories).	Continuing education program for Atlantic journeypersons to advance their business and leadership skills and to gain regional career mobility. The seal can prepare you to take over a managerial role at your company or to start your own business. If you are already a business owner,	Canada

		the program can help you develop the skills you need to take your business to the next level.	
Specialized training (business skills upskilling).	Trades Management Degree.	A degree-completion program for journeypersons, with a focus is on the business administration, managerial, accounting, project management, leadership, communication and applied research competencies needed by people working in or with the skilled trades to grow their own businesses, take on greater responsibilities in their current work environments, and/or pursue management careers in medium to large organizations. For those graduates who want to pursue further academic credentials, the program will facilitate a pathway into graduate studies in both business administration and management programs.	Ontario
Coaching, advisory and mentorship services.	Employee Ownership Expansion Network.	Eighteen states now have employee ownership centers, according to the Employee Ownership Expansion Network, which works to expand these. A center also launched in Washington, DC, in 2021. The vast majority of these centers are nonprofits supported by private funding rather than through state policy.	USA

Business accelerators and incubators.	Energy Systems Catapult Business Model Innovation Program.	Supports zero-carbon companies with a unique mix of energy, engineering and commercial experts who can help identify, design, and validate new business models. Businesses can access Home Truths, a consumer panel of thousands of homeowners, and a Living Lab of smart homes to test value propositions.	UK
Business accelerators and incubators.	Elevate Contractor Accelerator.	Elevate is a non-profit that works closely with local utilities, municipalities, trade organizations, and technical experts to offer business accelerators for contractors. They provide low interest loans paired with financial coaching to help contractors build their credit history, grow their financial expertise, and prepare for financial growth and stability in the energy efficiency or clean energy sector.	USA
Coaching, advisory and mentorship services.	U.S. Score Business Mentorship; BPI Goldstar Contractor Mentorship.	SCORE helps businesses start, grow or successfully exit a business. Small business owners who receive three or more hours of mentoring report higher revenues and increased growth	USA
Specialized training + capacity building.	Blue House's Home-performance business models Accelerator.	Deepen your knowledge of building science, construction technology, high-performance new construction, and whole-	Canada

		house energy retrofits. This program will help you save time and money when meeting new code-required energy performance targets before they are required.	
Specialized training (business skills upskilling).	HRAI's Mini MBA.	A 10-week, fully virtual executive training specifically for HVAC contractors with content based on an MBA curriculum.	Canada
Business accelerators and incubators + upstream incentives + specialized training.	New England's Heat Pump Accelerator.	“Midstream” incentives consisting of a smaller stipend to the wholesale distributor and a larger “pass-through” incentive to the contractor and/or customer, applied as an instant discount at the point of sale of a heat pump, combined with contractor training and capacity building activities.	New England, USA