

Appendix 5: Key Findings

What We Heard During Interviews

This section highlights the main findings and recommendations that were identified through key informant interviews. It is separated by the three types of stakeholders interviewed:

1. Policy Makers
2. Enablers
3. Beneficiaries

i. Policy Makers

Challenges Identified

Policy makers include those who participate in or influence federal, provincial, or municipal governments and energy regulators. We interviewed 8 policy makers.

Challenges fell under two categories:

- A. Energy Efficiency in Implementation of Retrofits
- B. Engaging Marginalized Communities in Skilled Trades

A. Incorporating Energy Efficiency into the Implementation of Retrofits

Permitting and Rebates

- Unfamiliarity with permitting processes and accessing rebates to undertake energy efficiency retrofits by homeowners, contractors, and municipalities creates delays and discourages project implementation.
- Compulsory certification requirements in Nova Scotia related to energy efficiency retrofits can overcomplicate and prolong project approvals, especially when adopting new technologies.

- The process to access federal funding, grants, and other incentives is complex, slowing down the adoption of energy-efficiency measures and frustrating those willing to go through the arduous process.

Resistance to Stricter Building Codes

- Developers' are resistant to adopting higher energy efficiency standards due to perceived increased costs and misalignment with market demand for affordable and quickly available housing.
- Current codes can be perceived as inadequate for driving meaningful energy efficiency gains, yet enforcement of stricter codes is met with significant pushback, as it can result in added construction costs for projects.
- The lack of climate literacy among developers and existing tradespeople generates resistance to change and in the adoption of new efficiency initiatives. There is a limited sense of the urgency and importance of these initiatives.

Low green literacy

- A general lack of awareness and urgency exists among developers and property owners, about the financial and environmental benefits of retrofits and energy efficiency. This is partly due to the perceived non alignment between the government's emissions goals & rising housing demand.
- There is a need to educate and inform communities in smaller and rural areas as many of them remain unaware of green career pathways, opportunities and the support available for retrofits. Tailored community outreach must be consistent and respect cultural differences.
- Misaligned communication channels have resulted in low public engagement, particularly in rural regions. There is support for individuals and incentives they can access, but a lack of centralization and consistent outreach to generate necessary climate literacy remains.

Delivery and Navigation Support

- The skilled trades sector can have pinch points in service delivery due to inefficiencies in deliveries of material to construction sites, rendering workers unable to start working. This can be misinterpreted as a labour or supply shortage.

- Property owners struggle with navigating the complexity of available supports and construction permits. Accessible advisory services and awareness campaigns are needed to guide residential property owners through complex information about financial incentives and rebates, as well as retrofit strategies and options.

Awareness

- Retrofits often focus on superficial fixes like heating systems without prioritizing foundational measures like insulation, even though there are incentives to support deeper retrofits.
- Scheduled residential retrofits do not always take full advantage of efficiency opportunities, accessing all available incentives.
- Collaboration between tradespeople and policymakers could better align retrofit designs with practical needs of homeowners and developers. Collaboration is needed to build workforce capacity and match increasing demand.

Complexity of Retrofit Requirements

- There is a burden on residential property owners to navigate energy retrofit requirements without professional support. Support offered is not centralized and can be challenging to access.
- Limited architectural or engineering guidance often leads to suboptimal decisions, reducing the effectiveness of retrofits. Especially when not taking advantage of all available financial incentives.
- Programs providing education and advisory services for property owners could alleviate this challenge, and although more are being developed, there is still a long way to go.

B. Engaging Marginalized Communities

Workplace Harassment, Cultural and Systemic Barriers

- Prevalence of workplace harassment and lack of inclusivity are significant deterrents for women and underrepresented groups to participate and thrive in skilled trades.
- Personal protective equipment (PPE) often does not accommodate diverse needs, creating a poor fit that can be hazardous to individuals and peers.

- Cultural sensitivity training for instructors and employers is insufficient, leading to uncomfortable or hostile work environments where stigmas and stereotypes are commonly accepted.

Lack of Rural Access & Transportation

- Opportunities are often concentrated in urban areas, making them inaccessible to rural and Indigenous communities who lack proper access to transportation.
- There is a significant need for distributed education models to bring affordable and accessible training closer to rural and on-reserve apprentices, both via online resources, and extending training to rural areas.
- Lack of transportation and infrastructure in rural areas worsens the accessibility challenge, as individuals who are interested cannot mobilize to where the training is offered, and satellite campuses or spaces available are scarce.

Inaccessible Training Schedules Wraparound supports like childcare and transportation are essential to help people from marginalized communities participate in training.

- Many programs do not offer flexible scheduling, leaving individuals unable to balance work, training, and personal responsibilities.
- There is limited financial assistance for tools and resources like PPE, which is expensive and required for some base-level trades training.
- Creating new opportunities for marginalized communities is not addressing the root cause of all the challenges which stem from historic racism and harassment.

Long Certification Process

- Trades requiring multiple certifications, such as heat pump installation, discourage new entrants due to complexity. This happens more for trades with compulsory red seal requirements.
- Variability in certification standards across provinces further complicates entry into the skilled trades. Some provinces have more relaxed compulsory trades requirements, making them more appealing for some individuals.
- Addressing certification challenges requires simplification and alignment of standards, particularly for new green technologies.

Historical Mistrust, Low Representation, & Lack of Tailored Outreach

- There is a lack of tailored communication efforts to inform equity-deserving communities about skilled trade opportunities. It is necessary to ensure outreach reaches beyond traditional bubbles.
- Historical mistrust of institutions and initiatives has created barriers to engagement. This is especially true with initiatives to improve schooling success of Indigenous communities. Education and training options must be made available in Mi'kmaw communities.
- Trusted community champions are needed to act as bridges for building awareness and trust. These individuals can inspire and guide youth members to succeed in the industry. But first, there must be an increase in representation rates of people from equity-deserving communities.

Low Apprenticeship Completion Rates

- Financial constraints and a lack of support systems contribute to low completion rates among marginalized groups often struggling financially or with hard skills like math.
- Exam anxiety and inadequate preparation are barriers to successful certification, especially to those individuals who do not have a history of thriving in schooling systems.
- Programs offering mentorship and academic assistance have shown promise in improving completion rates but remain limited in scope.

ii. Enablers

Challenges Identified

Enablers include those in the private sector (construction & energy efficiency retrofits), training providers, academic institutions, and local job agencies. We interviewed 21 enablers). They identified challenges in two categories:

- A. Implementation of Retrofits
- B. Engaging Marginalized Communities in Skilled Trades

A. Challenges in the Implementation of Retrofits

High Upfront Costs

- The high initial costs (reimbursable) for upgrading electrical panels or installing heat pumps are a significant burden for low-income households. Rebate programs often require upfront payments for complementary required services or contractors, which excludes those without access to sufficient capital.
- Even with rebates, the out-of-pocket expenses remain prohibitive for many homeowners, especially when not covered by financial incentives.
- Financial incentives are heavily reliant on government funding, creating uncertainty and instability with political shifts.

Low Awareness of Incentives

- Many homeowners, especially in rural and low-income areas, are unaware of available programs, financial incentives and other benefits they can access.
- Green literacy among professionals and the general public is inconsistent; even architects and tradespeople lack basic knowledge about energy-efficient practices.
- Education efforts fail to emphasize practical benefits such as cost savings and improved air quality, limiting uptake and interest.
- Misaligned promotion and communication strategies hinder engagement with marginalized groups who still report low awareness of career pathways for green jobs and how to access energy efficiency support.

Delayed Building Codes

- Delays in implementing updated building codes, such as Nova Scotia's slow adoption of national standards, impede energy efficiency progress.
- New codes do not require energy efficiency upgrades during major renovations, missing opportunities for impactful retrofits.
- Lack of integration between energy efficiency goals and affordable housing development creates tension, as higher energy efficiency is perceived to come at a higher cost.
- Voluntary measures in building codes fail to drive widespread adoption of energy-efficient retrofits.

Complex Incentives & Inconsistent Funding Multiple steps and extensive paperwork make rebate programs challenging to navigate, particularly for marginalized groups.

- Inconsistent funding for programs like Canada Greener Homes creates uncertainty for consumers and contractors of what is available at the moment of application.
- Coordination between different programs, such as those managed by Efficiency Nova Scotia and Nova Scotia Power, is lacking, and information is not centralized.
- Homeowners often lack guidance to choose and access the most suitable incentives, and take advantage of their retrofitting project.

Worker Shortages

- There is a shortage of tradespeople trained in emerging technologies like solar installations and deep retrofits. Despite transferable skills, more efficiency specific knowledge is needed.
- Microcredentials for tasks like HVAC installation address gaps but need scaling and alignment with industry needs in regards to energy efficiency.
- Practical training on energy efficiency retrofits is insufficient, with 60–70% of skills learned on the job site rather than through formal education.
- Some universities resist non-credit training models, such as microcredentials, slowing upskilling.

Price Sensitivity

- The construction industry prefers minimal compliance with energy efficiency standards due to cost concerns coming from more expensive materials and longer duration of construction.
- Builders prioritize speed over meeting net-zero goals to be able to meet high housing demand.
- Subcontracting specialized tasks like solar installations prevents companies from building internal capacity to implement energy efficiency at a large scale.
- Industry members often resist stricter building code requirements, even when feasible, because the permitting processes take too long.

B. Challenges in Engaging Marginalized Communities in Skilled Trades

Workplace Culture, Harassment, and Exclusion

- Persistent harassment and exclusion in male-dominated worksites deter women and other marginalized groups from succeeding.
- Toxic masculinity reinforces dangerous behaviours. Lack of accessibility accommodations prevents injured workers from joining the trades workforce after healing.
- Predominantly white workplace cultures make it hard for Black, Indigenous, and People of Colour to integrate, unless they conform to norms and accept discrimination.
- Inadequate accommodations, such as Personal Protective Equipment (PPE) that doesn't fit women and disabled workers, creates exclusion in the workforce.

Inaccessible Education

- Training programs are geographically concentrated in urban areas, making them inaccessible for rural residents and Mi'kmaw communities.
- Apprenticeship programs don't have standardized teaching methods, which leads to uneven learning and skill development.
- Unpaid training periods disproportionately affect marginalized individuals with family responsibilities who cannot afford to stop receiving an income.
- Awareness of alternative training models like microcredentials, offering more flexible and affordable options, is limited due to lack of publicity and scarcity of such programs.

Lack of Representation

- Women and people from equity-deserving communities rarely see role models in trades, reducing interest and confidence due to their low representation.
- Recruitment efforts often fail to connect with grassroots networks in marginalized communities, which are better positioned to help.
- Racism and sexism in unions and industry bodies create barriers for the certification and advancement opportunities for Black workers.
- DEI initiatives are seen as superficial and fail to address root causes of exclusion, there is an opportunity to have a more honest discussion about the topic. These initiatives are very important but perhaps it is useful to start talking more about inclusivity and equity, and not diversity for the sake of diversity. reassess implementation.

Transportation and Finances

- Costs associated with training and relocating for programs are significant hurdles for many participants who cannot continue their development after a rural training centre is closed.
- Lack of transportation and childcare options disproportionately impacts marginalized individuals who do not have the financial means to cover these expenses.
- Criminal records and test anxiety prevent individuals from entering or succeeding in skilled trades even if support programs are offered.
- Insufficient wraparound supports, such as wage subsidies, limit program effectiveness as participants cannot fully concentrate on succeeding in the training to meet their other responsibilities.

Students Struggle to Pass Exams

- High failure rates on certification exams, like the Red Seal, discourage participation. The training received and what candidates are tested on can have disparities causing challenges, and expensive retakes limit success rates.
- Training programs often lack alignment with real-world job requirements, creating skill gaps.
- Apprenticeship structures do not adequately prepare marginalized groups for industry demands.
- There is limited guidance for educators on addressing the diverse needs of students' cultural backgrounds and learning styles, including learning disabilities.

Stigma

- Trades are undervalued in some communities, viewed as a last resort compared to university education. This is partly due to low awareness of career pathways and negative stereotypes.
- Negative perceptions of trades discourage women, minorities, and young workers from exploring these careers.
- Efforts to promote trades fail to highlight their financial viability and societal importance.
- Marginalized communities face generational and cultural barriers to seeing trades as viable career options.

iii. Beneficiaries

Challenges Identified

Beneficiaries are Black, Indigenous or People of Colour, or are Newcomers to Canada, women, students, or early/mid-career professionals. We interviewed 10 beneficiaries.

A. Challenges to joining skilled trades workforce and entering green jobs

Low Green Literacy and Awareness of Opportunities

- Green literacy levels are low, especially with individuals who are not actively involved in green jobs, and in rural areas.
- Green jobs are poorly marketed, and sometimes don't have accurate job titles or clear descriptions.
- With the high demand for trades, there is an opportunity for the government to increase promotion of trades and green jobs to match with the increased demand for housing and combat labour shortages.

Financial & Systemic Barriers

- Older and mid-career professionals face hardships securing access to loans and financial support for their education and training. They can be stereotyped and expected to already be established professionals.
- Lack of clear guidance of required certifications creates confusion and leaves candidates unprepared when neither job postings or educational institutions can articulate clear career pathways and requirements.
- Common preconception of trades as a white male-dominated field creates cultural and systemic barriers. Women report struggling to be taken seriously, and racial biases discourage entrants from diverse backgrounds, reporting having some clients initially doubting their skill level due to their background

Underrepresentation of People from Equity-Deserving Communities

- Underrepresentation is a self-reinforcing cycle. Lack of clear representation of women and other equity-deserving groups discourages participation. Informants say few women are present in the HVAC industry, conferences, and classrooms.
- Younger generations want more role models and relatable mentors to see green jobs as viable career paths, especially for Black, Indigenous and People of Colour in rural areas.
- Due to deeply entrenched stereotypes about people from equity-deserving communities, they have to put in extra effort to succeed. A young professional even reported facing criticism for being young and stereotyped as a “dumb blonde.”

Access to Education

- Training programs are often too time-intensive and expensive, making them inaccessible to a large number of individuals who lack the financial resources and transportation.
- Rural and Mi'kmaw communities lack access to training because of a lack of training facilities and no adequate availability of transportation.
- Sustainability and green literacy education are introduced too late in children's schools and even post-secondary programs, creating a lack of basic knowledge and interest.

Low Retention

- Comparatively lower salaries for green job professionals in Nova Scotia causes skilled workers to leave the province, stifling innovation and local expertise.
- Perceived limited job opportunities, even for qualified professionals, can be discouraging for those who are interested in joining the local workforce.
- Lack of suitable facilities and amenities in construction worksites, specially with smaller non-unionized businesses, creates a challenging working environment. This includes washrooms and changing facilities, PPE, and other necessities.

Low Prioritization of Sustainability

- Individuals with experience in trades have noted that often contractors prioritize cost over sustainability and quality in retrofitting projects.

- Education centres fail to highlight green career pathways and connect students with key organizations, worsening the lack of centralization of resources and fomenting low awareness and interest levels.
- Older generations and contractors have demonstrated friction in the adoption of green energy initiatives. This issue tends to be experienced to a greater degree in rural communities.