

# Appendix 6: Jurisdictional Scan

This section analyzes the landscape of energy efficiency in North America, focusing on Canada, for governmental and non-governmental programs to improve energy efficiency and support marginalized groups.

## Items in Jurisdictional Scan Section:

1. Energy Efficiency Index (Scorecard)
2. Energy Efficiency Programs by Province
3. Tool to Support Local Climate Action & Workforce Development
4. Programs to Include Marginalized Groups in Skilled Trades & Green Jobs in Canada
5. Construction Industry Sectors
6. Building Codes in Canada

## 1. Energy Efficiency Index (Scorecard)

### Efficiency Canada – 2024 Canadian Energy Efficiency Scorecard

Energy efficiency and a green energy transition have been a priority across all Canadian provinces, as they all must work together to achieve the country's net-zero objectives. A good way to conceptualize current efforts and progress in energy efficiency at a provincial level is through Efficiency Canada's Scorecard. The most recent version was released in 2024 ([Efficiency Canada, 2024](#)).

The scorecard tracks Canadian provinces and territories on 45 metrics across 16 topics and categorizes them into five main policy areas to provide an overall score: Energy Efficiency Programs, Enabling Policies, Buildings, Transportation, and Industry. The report measures progress on energy efficiency programming and takes all of these factors into account when rating each province's efforts. The ranking scores provinces out of 100 available points, with the highest score representing best-in-class benchmarks and best-practice policy.

The maximum points should not be analyzed as percentage grades but rather as reflecting best-in-class policies and performances consistent with the ambitious requirements to meet and surpass the national policy objectives ([Efficiency Canada, 2024](#)). The 2024 scorecard was released in December 2024, and it is an update to their 2022 scorecard. Both maintained virtually the same scoring mechanisms and give us an insight of the energy efficiency progress across Canada.

### **Efficiency Canada 2024 Energy Efficiency Scorecard (Scored out of 100)**

1. British Columbia (54)
2. Prince Edward Island (45)
3. Quebec (45)
4. New Brunswick (43)
5. Nova Scotia (40)
6. Ontario (33)
7. Yukon (32)
8. Manitoba (30)
9. Saskatchewan (16)
10. Newfoundland and Labrador (14)
11. Alberta (8)

Compared to the 2022 scorecard, British Columbia retained first place, while Prince Edward Island rose to second place, and Quebec City climbed to third place. Nova Scotia slipped from second to fifth ([Efficiency Canada, 2022](#)).

Nova Scotia's lower ranking in the latest scorecard can be attributed to a few reasons, most notably the struggle to keep up with neighbouring provinces with efficiency rebates and outreach and education campaigns. Time lags in new building code adoptions and a lack of a timeline to reach net-zero energy-ready code requirements has been another downfall. Another reason is the failure to adopt and implement mandatory energy and emissions performance standards for existing buildings ([Efficiency Canada \[NS\], 2024](#)).

## 2. Energy Efficiency Programs by Province

This section will provide an overview of the current state of 5 of the provinces listed on the scorecard from the previous section: British Columbia, Nova Scotia, Quebec, Prince Edward Island and Ontario. It will highlight the province's net-zero targets and energy efficiency objectives as well as their flagship programs related to energy efficiency. This discussion is followed by a table that summarizes the main programs across all provinces.

### A. British Columbia

The province of British Columbia has been a national leader in reducing greenhouse gas emissions by developing proactive policies and investing in green energy. One of the primary drivers of this success is the CleanBC Roadmap to 2030, released by the province in 2021, setting ambitious goals for reducing greenhouse gas emissions. The roadmap aims for a 40% reduction below 2007 levels by 2030, making all new buildings zero carbon, requiring space and water heating to be 100 percent efficient by 2030, and implementing energy efficiency labels during home sales ([CleanBC, 2021](#)).

BC plans to achieve these goals through several initiatives, including prioritizing energy efficiency in buildings through retrofits, and low-carbon construction to transition the province's housing and commercial sectors toward net-zero energy standards ([Efficiency Canada, 2022](#)). To address the retrofit challenge, the province has directed resources to their [Better Homes](#) and [Better Buildings](#) programs to reduce emissions.

One of the province's flagship energy efficiency retrofit programs is CleanBC's Better Homes Energy Savings Program. The program is designed to make energy-efficient retrofits more accessible to homeowners, businesses, and building operators across the province. Some of the key offerings are rebates for energy-saving upgrades like insulation, energy efficient windows and doors, heat pumps, and ventilation systems. The incentives take into consideration the income levels of the households, providing accessible solutions to low-and-moderate-income households to ensure equitable access to energy saving upgrades.

The program also offers tools for energy assessments, which helps users understand the most cost-effective improvements for energy efficiency. Their energy savings program offers up to \$44,900 to any B.C. citizen who lives in an eligible home and meets income qualification

requirements, and it is funded by the government of Canada, the Province of British Columbia, and BC Hydro ([Clean BC - Energy Savings Program](#)).

As part of CleanBC, they also offer the Better Buildings Program, tailored to commercial properties. It offers incentives both for energy-efficient renovations and for new constructions. The incentives for upgrades to existing buildings target sectors like small businesses, non-profit organizations, and multi-unit residential buildings. The funding targets improvements such as advanced lighting, HVAC systems, insulation, and energy management systems. Part of the program also offers energy assessments, which help businesses identify what upgrades would be most impactful for energy savings and emissions reduction. Incentives go as high as \$100,000 per project([Clean BC - Better Buildings](#)).

## **B. Nova Scotia**

Nova Scotia has set ambitious climate and sustainability goals, such as achieving net-zero by 2050. All of these objectives were laid by their 2021 Environmental Goals and Climate Change Reduction Act (EGCCRA), which mandates progressive targets to achieve greenhouse gas reductions and improved energy efficiency ([Environmental Goals and Climate Change Reduction Act. 2021](#)).

Initiatives that help support these objectives are essential to achieving the province's long-term environmental objectives. Building retrofits play a significant role in energy use, being the third largest source of greenhouse gas emissions in the province ([Urgent Action - Gov. of NS](#)). There is significant alignment with federal initiatives and most provincial level programs are delivered primarily through partnerships. The most important organization delivering support through energy efficiency programs and incentives is Efficiency ONE. They offer services at the residential level, such as home energy assessments (after which households could qualify for up to \$30,000 in rebates), rebates for heating systems, heat pumps (up to \$10,000) and other energy saving products (up to \$400) ([Efficiency ONE - Residential](#)).

Other energy efficiency-focused programs by Efficiency ONE are the New Home Research Project, which offers energy efficiency evaluations at no charge, and the Affordable Housing Development Program, focused on funding affordable housing providers' energy efficiency improvements like insulation and heating and window upgrades, on the condition that the housing providers commit to long-term affordable rent prices ([Gov of NS New Supports, 2024](#)).

The second program targets multi-family housing complexes that serve low and moderately low income tenants, and helps to keep operating costs low for housing providers. The funding available is up to 50% of the rental units in a project. For projects with fewer than 10 rental units, the funding available is for 100% of the units ([Gov of NS - apply for funding](#)). The remaining costs will be paid for by the owner. The projects must offer rental units at least 20% below the average market rent, for a minimum of 15 years ([Turner & Drake, 2024](#)).

Lastly, Efficiency ONE also provides a program targeted to small businesses through the Small Businesses Energy Efficiency Solutions Program. This involves financial incentives (24-month interest-free financing) for energy assessments and upgrades to improve energy efficiency in small commercial spaces. Some eligible upgrades include HVAC, refrigeration, lighting, and insulation ([Efficiency - Small Businesses](#)). This program is important because improving the operational costs and energy uses from local businesses is an important step to reducing overall emissions levels.

### C. Quebec

Quebec has made important progress towards achieving a greener energy and economy, and all of its efforts are consolidated in the province's 2030 Plan for a Green Economy. This plan signals the start of an ambitious project to fight climate change and improve energy efficiency. It commits to a reduction of 37.5% of greenhouse gas emissions below 1990 levels by 2030, and for the improvement of energy efficiency in buildings, transportation, and industry to support the province's environmental and economic goals ([QC - Plan for a Green Economy, 2020](#)).

Quebec's flagship program for residential energy efficiency is Rénoclimat, which focuses on offering financial incentives for energy-efficiency upgrades. The financial assistance supports improving insulation, improving airtightness, replacement of doors and windows, and installing mechanical systems. After the retrofitting takes place, the participant must schedule an assessment. For insulation, the program offers up to \$1,500 for roof upgrades, up to \$3,750 for wall upgrades, up to \$2,500 for foundation improvements, and \$370 for exposed floor upgrades. If the airtightness performance is improved by 20%, it offers up to \$800 in financial assistance, and up to \$150 per door/window if it meets ENERGY STAR standards ([Renoclimat](#)).

As part of Quebec's energy efficiency programs offered for businesses, they have created the ÉcoPerformance Program. This program targets energy saving projects in the commercial, industrial, and institutional sectors. It also offers financial assistance for projects like HVAC system upgrades, lighting retrofits, and energy-efficient process improvements. The amount of financial support offered is case and scope dependent, for some cases, providing up to 50% of eligible costs for retrofits ([EcoPerformance](#)).

#### **D. Prince Edward Island**

The province of Prince Edward Island has identified the objectives of reducing greenhouse gas emissions by less than 1.2 megatons of carbon dioxide equivalent per year, and by 2040 onwards be carbon neutral. About 18% of total emissions in PEI come from residential, commercial and government buildings, and approximately 78% of existing homes still rely on heating oil ([Gov. PEI - Net Zero Framework](#)).

To implement the objectives the province has for 2040, PEI has developed the Building Resilience: Climate Adaptation Plan, which focuses on addressing climate change by improving energy efficiency across buildings, transportation, and other key sectors ([Gov. PEI - Climate Adaptation Plan](#)). As a part of this plan, the province offered to prioritize rebates available for retrofits for energy efficiency, taking into account low-income households, and climate disaster mitigation. The goal is to reduce emissions and lower energy costs, helping residents and the commercial sector transition to a low-carbon economy.

The Government of Prince Edward Island has established Energy Efficiency rebates and programs. The focus is on providing rebates on energy-efficient equipment and products, and offering free services. Islanders with an annual household net income of \$100,000 or less may be eligible for a free heat pump and electric water heater for their home.

Another incentive provides rebates for improving attic, walls, floors, windows, doors, and skylight insulation. A unique incentive is offering instant rebates on energy efficiency products like smart thermostats (up to \$100), dehumidifiers (up to \$30), utility fans (\$25), and many more items that fall under their energy efficiency product list. The program also offers up to up to 40% of installed costs, to a maximum of \$10,000 in rebates for residential, businesses, and farms to install solar photovoltaic (PV) systems ([Gov PEI - Energy Efficiency](#)).

## E. Ontario

In 2018, Ontario introduced its Made-in-Ontario Environmental Plan, originally set the goal of reducing greenhouse gas emissions by 80% below 1990 levels by 2050. To help keep progress on track, two midterm targets were set at achieving 15% below 1990 emissions levels by 2020, and 37% below 1990 levels by 2030 ([Ontario Climate Strategy](#)).

These targets were scaled back from their original levels by the government of Ontario to now cut emissions by 30% below 2005 levels. This change of targets caused a controversy, after a youth-led climate case against the Ontario government in October of 2024 claimed these weaker targets exacerbate climate risks. The case is currently being reevaluated ([Global News, 2024](#)). The province's key priorities focus on enhancing the energy performance of buildings through financial incentives to help residents and businesses making energy-efficient upgrades.

The flagship energy efficiency program in Ontario is the Save ON Energy Platform, which helps to use energy more efficiently at homes and businesses, and offers the incentives and programs created by the Independent Electricity Systems Operator ([IESO, 2024](#)). Save ON Energy offers support in four key areas: homeowners, businesses and industry, First Nations energy programs, and support resources and training programs.

For homeowners, it offers AC yearly checkups, up to \$10,000 in heat pump rebates, up to \$1,360 rebates on insulation, air sealing, and HVAC installations. For businesses the program offer rebates of up to \$3,000 for lighting upgrades, and \$2,500 for non-lighting upgrades, and instant point-of-sale discounts on many lighting products. For First Nations, there is up to \$330,000 in funding for the installation of energy-efficiency upgrades on reserve band-owned and operated commercial and institutional buildings. This program also gives them on-site energy assessments, community benchmarking to compare with other similar facilities, and project support ([Save ON Energy, 2024](#)).

## F. Summary of Key Targets & Programs

Table 22: Summary of Provinces' Efficiency Outlooks

Province	Net-Zero Target	Key Programs & Initiatives	Residential Focus	Commercial Focus	Incentives & Support
British Columbia	40% GHG reduction below 2007 levels by 2030	CleanBC, Better Homes Energy Savings, Better Buildings Program	Energy-saving rebates (insulation, windows, heat pumps), income-based support	Energy-efficient renovations for small businesses, multi-unit buildings	Up to \$44,900 in rebates for homeowners, up to \$100,000 for commercial projects
Nova Scotia	Net-zero by 2050	Efficiency ONE (home energy assessments, small business energy programs)	Rebates for heating, heat pumps, insulation, energy assessments, up to \$30,000	Incentives for energy upgrades in multi-family and small businesses	Up to 50% rebates for affordable housing improvements, 24-month interest-free financing for small businesses
Quebec	37.5% GHG reduction below 1990 levels by 2030	Rénoclimat, ÉcoPerformance Program	Rebates for insulation, windows, air sealing, and mechanical systems	Financial support for HVAC, lighting, and energy-efficient improvements	Up to \$3,750 for residential upgrades, up to 50% of costs for commercial upgrades
Prince Edward Island	Carbon neutral by 2040	Energy Efficient Rebates and Programs, Building Resilience Plan	Rebates for heat pumps, insulation, and energy-efficient products	Support for energy-efficient systems in businesses, farms	Up to 40% of installed costs for solar PV systems, rebates up to \$10,000
Ontario	30% GHG reduction below 2005 levels by 2030	Save ON Energy Platform	Rebates for heat pumps, insulation, HVAC, air sealing, and more	Rebates for lighting and non-lighting upgrades for businesses	Up to \$10,000 for residential rebates, up to \$3,000 for business lighting upgrades

### 3. Tool to Support Local Climate Action & Workforce Development

#### Climate Opportunity Map - Brown University

The Climate Opportunity Map, created by [Brown University's Climate Solutions Lab](#), in Providence, Rhode Island, is an interactive tool that helps users discover the local benefits of investing in clean energy and climate solutions. The user is presented with the U.S. map, and can access information on the following topics: potential job creation in renewable energy, energy efficiency upgrades, and other climate-positive actions within their area by providing a zip code. The map also highlights important community impacts, such as reduced travel delays, energy savings, and improved air quality, offering a clear picture of how climate action can enhance local well-being.

#### Some of the filters that can be applied to the map and information available include:

- Renewable Construction Jobs
- Renewable Operations Jobs
- Energy Efficiency Jobs
- Reduced Travel Delays
- Electricity Savings
- Lives Saved by Cleaner Air
- Labour Hours Saved

This tool can be useful to empower individuals, policymakers, and organizations to better understand the positive benefits of investing in climate solutions and energy efficiency in their communities. By illustrating how taking action on climate change can lead to job opportunities, health improvements, and cost savings, the Climate Opportunity Map encourages people to engage in building a more sustainable and equitable future. Although it is only available for the US, a model could be developed to have similar capabilities at the Canadian level. It will most likely prove a helpful tool in advancing advocacy efforts for energy efficiency, and education of its benefits to the population ([Brown University, 2022](#)).

## 4. Programs to Include Marginalized Groups in the Skilled Trades & Green Jobs in Canada

This section analyzes some programs and organizations that are focused on supporting individuals from traditionally underrepresented groups entering the skilled trades sector. Although some of these programs have offerings that focus on energy efficiency, which directly supports the green energy transition, they primarily focus on helping people have successful careers in the trades.

The entire skilled trades sector will be working to implement the green energy transition. There is significant overlap between their current skills and what is considered green skilled trades skills. The same fundamental skills like carpentry, plumbing, electrical work, HVAC and others, will be adapted to support energy efficiency. The green aspect refers more to what types of retrofitting and renovations are implemented, like energy efficiency, renewable energy adoption, sustainable materials, water conservation, and environmental compliance. The difference lies in the context and application rather than the fundamental skill set needed. This is why programs that support the growth of the skilled trades workforce will directly support the growth of the green skilled trades workforce.

### The three types of programs analyzed in this section are:

- A. Programs and Organizations helping **Women** join the skilled trades workforce
- B. Organization helping the **Indigenous** join the skilled trades workforce
- C. Organizations helping **all equity-deserving groups** join the skilled trades workforce

### A. Programs and Organizations helping Women join the skilled trades workforce

#### Shift Change - YWCA Halifax

Shift Change is dedicated to fostering inclusive skilled trade workplaces for women, gender-diverse individuals, and other marginalized groups, who often face significant barriers like harassment. Through initiatives like the Women in Skilled Trades Advocacy Network (WiSTAN), which provides resources via [nstrades.ca](http://nstrades.ca), and the Gender-Inclusive Leadership Course (GILC), Shift Change equips leaders with the tools to create safer, more equitable work environments, addressing the skilled trades labor shortage by improving retention. Resources like the We Are Trades Toolkit and great training offered further support for this mission, encouraging businesses to embrace diversity and build a more resilient industry ([YWCA Halifax](#)).

## **Women in the Skilled Trades Initiative - Government of Canada**

The first program we will outline is the “Women in the Skilled Trades Initiative”, which was created by the Government of Canada in support of their Canadian Apprenticeship Strategy. This initiative focuses on providing funding to projects across Canada that help recruit, retrain and help women apprentices succeed in the 39 eligible Red Seals trades, mostly for construction and manufacturing. In 2022, this initiative funded 15 projects, with a total investment exceeding \$30 million.

The projects focused on providing mentorship by female role models, networking opportunities, and wraparound support, including child care assistance and travel subsidies. The initiatives supported many groups, especially Indigenous and Immigrant women. A new set of programs were announced on March 7, 2024 that will be receiving funding in the upcoming months ([Gov. CAN, Women in the Skilled Trades, 2024](#)).

## **Women of Steel - CWB Foundation**

The CWB Foundation launched their “Women of Steel” program during the 2022-23 period. This program focuses on bridging the skilled labour gap and addressing the underrepresentation of women in the skilled trades workforce across Canada. Women of Steel identified the high demand for welding professionals, and the risk of the welding workforce as only 4,088 Red Seal completions were projected for the 2023-27 period, with 12,485 required to meet industry demand.

Although the female Red Seal completion rates have increased by 8% between 2017-22, women are a considerable untapped resource of labour and potential to drive economic growth and innovation, representing only 4.5% of the skilled trades workforce ([CWB Foundation, 2024](#)).

The Women of Steel initiative was launched to address this gap in the workforce, providing access to hands-on pre-employment welding training, soft skills development, and wrap-around support for all of its participants. These included racialized women, Indigenous women, women with disabilities, and women from the 2SLGBTQI+ community. The program also prioritized workplace inclusivity across Canada by closely working with employers to improve access to employment and the long-term retention of women. The program exceeded expectations, having 212 participants in 18 cohorts across Canada, surpassing the initial target of 180. This resulted in 620 welding qualifications issued, and 77% of participants reported becoming employed or continuing education in a welding-related field after completion of the program ([CWB Foundation - Forging Forward \(Impact Report\), 2024](#)).

A unique initiative from this program was the Workplace Inclusivity Pilot, which aimed to break stereotypes and improve the workplace environments for women in welding and skilled trades. The program did this by addressing misconceptions about physical, technical skills, and worksite suitability. The program provided training to managers and staff, reviewed HR policies, and helped to foster better communication in the workplace. The end result was a significant shift in attitudes among industry partners, especially from employers who had been hesitant to hire women, which began offering permanent placements as they were impressed with their performance. This pilot also offered wraparound support like grocery cards, childcare, and rent subsidies to help participants overcome barriers to employment ([CWB Foundation - Forging Forward \(Impact Report\), 2024](#)).

The Women of Steel program reported over \$9 million dollars in revenue during their funding fiscal year of 2024, with about \$4.89 million coming from government grants, \$991,132 from corporate donors, \$80,812 from non-profits, foundations and individuals, and the rest from other sources. Their expenses on programs and investments were for the same period were approximately \$7.73 million dollars, with \$5.28 million invested in pre-employment and up-skilling, \$1.05 million in secondary school programming support, \$733,641 in youth programs, and the rest on other types of programs ([Annual Report, 2024](#)).

### **Women Building Futures (WBF) - Non-Profit Organization**

Women Building Futures (WBF) is a not-for-profit organization that focuses on offering free skills training and support services to women and gender-diverse individuals who seek to enter skilled trades careers, including trucking and related fields. The organization makes it a priority to surround women with the support they need to succeed. The organization was founded in 1998 in Edmonton, AB where it began supporting women to get into entry-level roles in the skilled trades industry ([WBF, 2024](#)).

The organization offers support in readiness and coaching, both in skills needed to join new jobs, academic and personal life skills. It also provides safe and affordable housing for participants while they are enrolled in a WBF program, at their apartments in Edmonton, or through access to funding for accommodation in other places. They also offer 18 different programs in Alberta and Saskatchewan, including Journey to Trades, a 12-17 week construction trades program that prepares students to begin apprenticeships. It had 89 graduates in the 2022-23 period across 6 classes offered across Edmonton & Fort McMurray.

Another program is the Construction Bootcamp, which is a 4-week program focused on equipping students with skills needed to start entry-level work in the construction industry. It had 18 graduates during the 2022-23 period across 3 classes in Edmonton, Calgary, and Grande Prairie ([WBF \(impact report\), 2022-23](#)). A unique quality of this organization is its industry-sponsored programs. Some of these programs include BHP Trades Readiness, Power Engineer Career Accelerator, Suncor Heavy Equipment Operator, Vestas Wind Turbine Readiness, Driver and Operator, Pre-Apprenticeship Heavy Equipment Technician, and Introduction to Heavy Equipment Operating. Across all of these programs there have been about 81 graduates. Programs ranged from 2-6 weeks in duration and were offered in Saskatoon, Lanigan, Edmonton, Lloydminster, Fort McMurray, and Lethbridge.

The program promoted a positive change in the workforce by working with employers to raise the bar on inclusivity and building safe workplace cultures where people feel comfortable and supported. During 2022-23 they had 45 partners from industry, government, community organizations, and post-secondary institutions, where they delivered 8 inclusivity workshops. They also make an effort to collaborate with Elders, Indigenous partners and community members to shape strategies, community relations, education and inclusion with these groups ([WBF \(impact report\), 2022-23](#)).

WBF's funding for their 2023 year reported revenues of about \$9.56 million, with \$3.98 million coming from grants, \$969,793 coming from sponsorships, \$146,300 from donations, and the rest from other sources. Their expenses for the same year were about \$9.68 million, of which \$5.4 million came from salaries and benefits, \$1.5 million from administrative tasks, \$1.5 million from program expenses, and the rest from other sources ([WBF \(impact report\), 2022-23](#)).

## **B. Organization helping the Indigenous join the skilled trades workforce**

### **AKI Solutions Group - Non-Profit (First Nation Managed Social Enterprise)**

AKI Solutions Group, a First Nations-managed non-profit social enterprise, prioritizes community needs, developing customized solutions through an Indigenous-based business model. Incorporating traditional teachings into its operations and governance, AKI empowers communities by making them project board members, ensuring client needs are central. Focused on building opportunities, communities, enterprises, and entrepreneurs, AKI creates sustainable business units that generate employment, develop local capacity, and leave a legacy of self-sufficiency in each partner community ([AKI Energy](#)).

## **NEWO - Non-Profit**

Newo, meaning "four" in Plains Cree and given its name by Elder Roy Louis, is a social enterprise born from the University of Alberta Augustana's Spirit of the Land program. Guided by principles of community collaboration and respect, Newo operates as a non-profit, using market tools to achieve its goals of fostering positive social and ecological change. Beyond its work in the solar industry, Newo provides education and training, particularly for marginalized groups and those transitioning from fossil fuels, while prioritizing a holistic approach that addresses both the technical and cultural aspects of sustainability ([NEWO](#)).

## **Trade Winds to Success - Non-Profit Organization**

The Trade Winds to Success was established in 2005 and provides free programming for participants and pre-apprenticeship training programs. It partners with Indigenous community organizations and government funding agencies to provide First Nation, Metis, and Inuit people pre-apprenticeship training and shop experience in the following trades Boilermaker, Carpenter, Construction Craft Labourer, Electrician, Ironworker, Industrial Mechanic (Millwright), Plumber, Steamfitter-Pipefitter, and Welder ([Trade Winds to Success, 2024](#)).

Between 2022-23, the program had 485 individuals who attended information sessions, and 89 started training across 7 cohorts. There were 53 graduates who completed training across 6 different cohorts, and 32 of the graduates were able to secure employment. The make-up of the participants was 24% women, and 81% youth aged 18-30. The way the programming is offered starts with Pre-Program Support. There are a series of screening processes, including information sessions, which lead to academic assessments and training (6-weeks total), where living allowances are provided. Cultural practices like smudging, talking circles, and resiliency workshops, alongside employment readiness preparation are integrated into the curriculum ([Trade Winds \(annual report\), 2024](#)).

The participants of the programs can then choose between three different program streams. The first one focused on residential construction, where they learn hands-on carpentry training through eco-smart home construction. Another one is focused on commercial & industry trades where participants receive training for pipe trades, welding, and electrical work in partnership with unions. The last one is a specialized program offering apprenticeship preparation for electricians, pipe trades, and welders. During 2023 they offered 12 scholarships of \$500 each to students, between the fall and spring sessions ([Trade Winds \(annual report\), 2024](#)).

The program received \$2.48 million in funding, with 32.2% coming from the Government of Alberta, 20.9% from the Government of Canada, 8.7% from general donations, and the rest through various other sources ([Trade Winds \(annual report\), 2024](#)).

### **C. Organizations helping all Equity-Deserving groups join the skilled trades workforce**

#### **PREP Academy (Partnership with Efficiency Nova Scotia)**

This initiative represents a strategic partnership between the PREP Academy and EfficiencyOne, focused on expanding career pathways for African Nova Scotian youth within the energy efficiency sector. EfficiencyOne's support of the PREP Academy's Micro-Internship Program for 2025 will provide students with practical experience, mentorship, and exposure to the diverse opportunities within green building and energy-efficient practices. This collaboration aims to address the underrepresentation of minority groups in these crucial fields.

A key component of the partnership is the emphasis on mentorship, with EfficiencyOne actively supporting the PREP Academy in recruiting Black mentors within the clean energy industry. This mentorship, combined with hands-on learning experiences such as workshops and site tours, will provide students with valuable insights and connections, empowering them to pursue successful careers in sustainable industries. ([PREP, 2025](#)).

#### **Building UP - Non-Profit Social Enterprise**

Building UP is an organization that operates in Toronto, ON, which aims to improve the environmental efficiency and affordable housing stock in the city by giving people who experience barriers to employment paths to successful careers in the skilled trades industry. Their primary focus is to break the cycles of systemic inequity through support to participants to rebuild careers and access upward wealth mobility in the long-run. The organization has offered training to over 800 individuals across their different support streams which include 1:1 coaching, mentorship, long term wraparound support (hard & soft skill development & real life and on the job experience), training, and employment opportunities. They have been in operation for over 9 years, over which they have completed over 6,500 retrofits of 30,000 units, and about 90% of their grads have obtained full time employment thanks to the over 90,000 hours of paid training the program offers every year ([Build UP, 2024](#)).

One of their flagship offerings is the Pre-Apprenticeship Training Program, which is a 16-week training program offering full time paid training, with wages of up to \$17.20 per hour through its duration. It provides hands-on learning and 85% of its graduates end up working full time in the trades. The program is broken down into 8-weeks in-class training where participants have access to trades math, trades class, and career success class. The following 8 weeks are in-field training where they work on site, gain general labour experience, and general contracting experience ([Build UP, 2024](#)).

The non-profit's operating model offers services to its clients through which their students are able to get hands-on experience. As insurance, they offer a 1-year warranty on all of their labour, and they are a licensed contractor in the City of Toronto. People can hire Building UP for projects like, general contracting, retrofits, insulation, general labour, temporal labour, and recruitment services ([Build UP, 2024](#)).

### **Iron & Earth - Non-Profit Organization**

Iron & Earth is a Canadian worker-led organization dedicated to helping workers from the fossil fuel industry, Indigenous communities, and other underrepresented groups transition into the growing renewable energy sector. It was founded in 2016 as a response to the oil crash of 2015. It provides practical training programs, like the Renewable Skills Initiative, and resources through tools such as the Climate Career Portal, helping individuals gain the skills needed to thrive in the green economy. By focusing on inclusive, community-driven solutions, Iron & Earth works to create equitable opportunities and ensure a fair transition to a sustainable energy future for all ([Iron&Earth, 2024](#)).

### **Energy Trailblazer Program - Efficiency Canada**

Efficiency Canada's Energy Trailblazer Program celebrates and supports professionals from diverse and underrepresented backgrounds who are making an impact in Canada's energy efficiency sector. This program shines a spotlight on their achievements, giving them a platform to share their stories, inspire others, and demonstrate the importance of diversity in driving innovation and sustainability. The goal is to, by amplifying these voices, participants will build a stronger and more inclusive energy efficiency community.

Participants, or as the program refers to them, "trailblazers", benefit from mentorship, networking opportunities, and connections with industry leaders. This helps them grow personally and professionally and opens doors to new opportunities and leadership roles. The program also serves as a welcoming space for individuals from all backgrounds to engage with the energy efficiency field

and find meaningful pathways into the industry. By supporting and empowering these leaders, the Energy Trailblazer Program is shaping a more equitable and sustainable energy future for everyone in Canada ([Efficiency Canada, 2024](#)).

## 5. Building Codes in Canada

This section analyzes the impact and background of building codes in Canada, it is separated into three main sections:

- A. Impact of Building Codes in the Construction Industry Sectors
- B. Background on Canadian Building Codes
- C. Absence of Alteration of Existing Building Code (AEB)

### A. Impact of Building Codes in the Construction Industry Sectors

Building Regulations play a crucial role in guaranteeing that residential buildings have predetermined requirements of energy efficiency, durability, and safety. These rules are governed by the Building code Act in Nova Scotia and a complete guide is provided by the Nova Scotia Building Code regulations. ([Nova Scotia Building Codes Regulations](#)).

Beginning on 1 April 2025, the province is ready to begin implementing the 2020 National Building Codes. To improve accessibility and energy efficiency in building construction, these standards implement a tiered approach. The building industry will have enough time to adjust to the new regulations due to gradual implementation. ([Nova Scotia Access News](#))

Anticipated effects from the implementation of new building codes:

#### Increase in energy efficiency:

Improved energy performance is emphasized in the new standards, which could raise the construction prices because more insulation, energy-efficient windows, and sophisticated heating systems are required. Nonetheless, it is expected that these actions will save households money in the long run by lowering energy usage. ([Nova Scotia News](#))

## Energy efficient Retrofits

Energy-efficient retrofits involve upgrading building systems to enhance energy efficiency. Key measures include replacing outdated equipment, such as HVAC systems, with energy-efficient alternatives ([Redaptive](#)), improving or updating insulation and sealing air leaks using weatherstripping and caulking ([Natural Resources Canada](#)).

Upgrading to energy-efficient windows and doors is another critical step. Sustainable energy sources like solar panels or wind turbines can also be installed ([wattlogic](#)). Additional measures include installing smart thermostats for better temperature regulation ([British Columbia real estate association](#)), improving ventilation systems ([Natural Resources Canada](#)), and using energy modelling to optimize energy performance. Ensuring an energy-efficient fresh air supply further enhances building efficiency. ([zero energy project](#)).

## **B. Background on Canadian Building Codes**

### How do Building Codes Work?

In 2022, the Government of Canada passed the Canadian Commission on Building and Fire Codes (CCBFC)'s 2020 National Building Code (NBC). They operate at the federal level and aim that all new buildings will be built to net-zero energy-ready standards by 2030.

These standards operate on a tier structure, with Tier 1 being the lowest and reflecting current energy efficiency standards, and Tier 5 being the highest reflecting 80% efficiency compared to today's building code minimum energy occupancy. Achieving Tier 5 is one of the standards a Net Zero Energy (NZE) building needs, with the addition that this one needs to be able to produce as much clean energy as it consumes. Meanwhile, if a building achieves Tier 5 but does not have on- or off-site renewable energy components in place, it is considered a Net Zero Energy ready (NZEr) building.

The 2020 models include the National Energy Code for Buildings (NECB) for large buildings and the NBC for low-rise residential buildings. The main points for net-zero energy readiness are that buildings must have improved air sealing, increased insulation levels, and high-performance windows and doors to reduce thermal demand and facilitate appropriately sized space and water heating equipment ([Efficiency Canada "Net-Zero Energy Ready Buildings in Canada", 2024](#)).

It is estimated that in Canada, less than 1% of buildings can be considered NZEr, which quickly needs to change through the adoption of more ambitious building codes. Although these codes affect only the construction of new buildings, it is very important to understand that if the stock of newly constructed buildings is unable to meet the future energy efficiency requirements, they will need to be retrofitted if Canada wants to meet their reduction targets. Even with the proliferation of low-cost renewable energy, if energy usage from buildings does not become more efficient, it won't help to reduce the amount of energy consumption and emission levels of the nation. These upgrades will have an envelope-first approach, which emphasizes improving airtightness, insulation, window performance, and more efficient HVAC equipment ([Efficiency Canada “Net-Zero Energy Ready Buildings in Canada”, 2024](#)).

### **C. Absence of Alteration of Existing Building Code (AEB)**

Although progress is being made with the 2020 NBC and the NECB, the scope of operations of these is to new constructions only. The absence of requirements to drive energy efficiency and emissions performance of the existing building stock has been recognized in [Canada’s Pan-Canadian Framework on Clean Growth and Climate Change](#) (PCF). Here, governments laid out a new future for the building sector of Canada, focusing on fostering commitments at the federal, provincial and territorial levels to work together in developing a model code for existing buildings to help guide energy efficiency improvements during renovations.

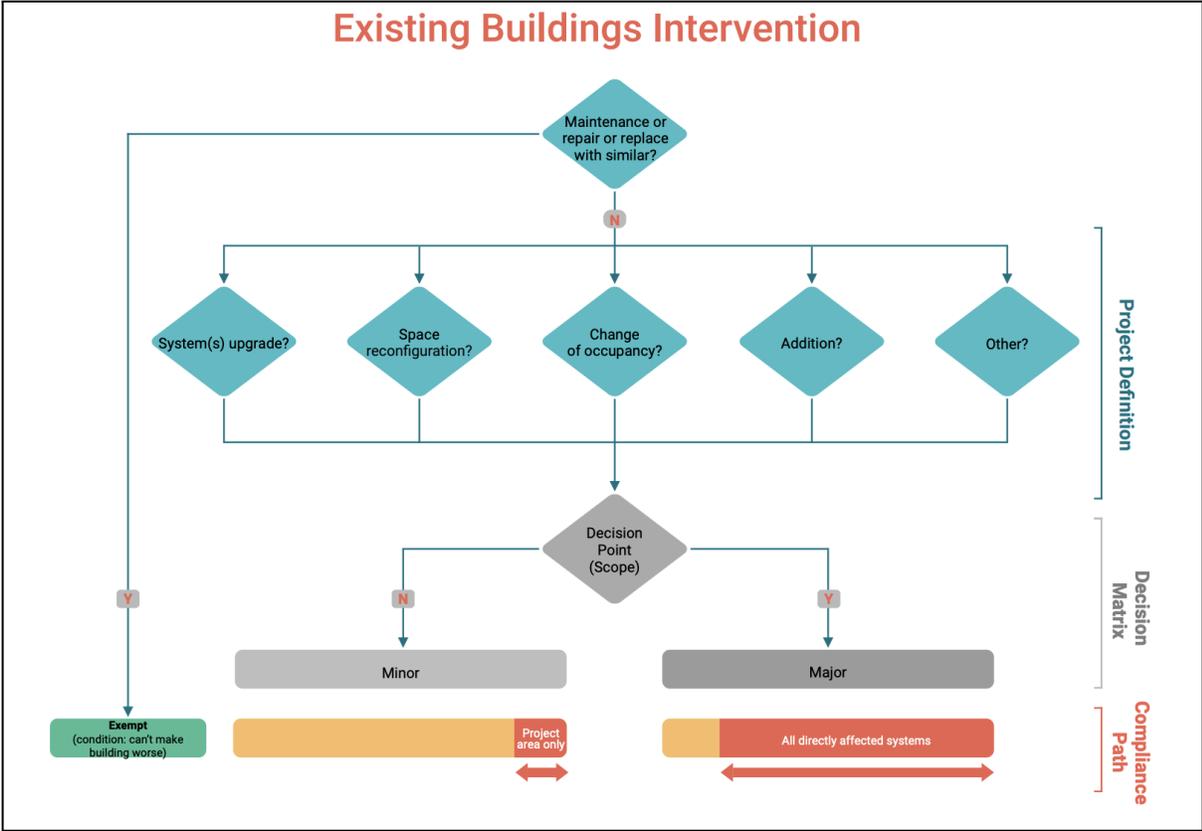
The Alterations to Existing Buildings Code (AEB) will be based on the most recent 2020 NBC and 2020 NECB, and will focus on addressing the challenges of applying current code requirements when in some cases they are based on the voluntary renovation actions of the building owner. They will try to find ways to capitalize on the opportunity a renovation presents to implement energy efficiency improvements, while avoiding unnecessary burdens on the building owner ([Efficiency Canada: “Regulating Energy and Emissions in Existing Buildings”, 2023](#)).

The AEB code will be triggered under special circumstances related to renovation actions taken by the owner, such as upgrades, repairs or replacements to a given system or component of a system. It will apply to the portion of the building that is being altered or any new additions to the existing building. How the code will be triggered is a critical challenge in the AEB, and aims to capitalize on the voluntary action of the building owner to alter or add portions to the existing building, while balancing the cost, scope, and complexity of the planned alteration in a respectful way. These voluntary renovations can be a monumental opportunity to increase the adoption of energy efficiency measures to cut emissions.

Some key triggers include, system upgrades (e.g., HVAC or insulation enhancements), new additions to the structure (space reconfiguration or changes to the building's layout), and change in occupancy type (which often necessitates safety and performance evaluations) ([Efficiency Canada: "Regulating Energy and Emissions in Existing Buildings", 2023](#)).

Once these mechanisms are triggered, the AEB renovation falls under three distinct categories, exempt, minor alteration, and major alteration. Projects that maintain, repair, or replace any system can be exempt as long as the energy efficiency performance of the building is no worse than before the intervention. On the other hand, based on building type, project size and complexity, and based off the activity level, these retrofits might fall under minor or major alterations and will require mandatory energy efficiency upgrades aligned with the corresponding alteration size ([Efficiency Canada: "Regulating Energy and Emissions in Existing Buildings", 2023](#)).

**Figure 18: Efficiency Canada: Building Intervention Decision Process**



Source: [Efficiency Canada: "Regulating Energy and Emissions in Existing Buildings", 2023](#)