



Recruit, Train, Retain

Fostering low-carbon industries
through regional workforce planning

May
2025

Megan Gordon

PEMBINA
Institute

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The Pembina Institute recognizes that the work we steward and those we serve span the lands of many Indigenous Peoples. We respectfully acknowledge that our organization is headquartered in the traditional territories of Treaty 7, comprising the Blackfoot Confederacy (Siksika, Piikani and Kainai Nations); the Stoney Nakoda Nations (Goodstoney, Chiniki and Bearspaw First Nations); and the Tsuut'ina Nation. These lands are also home to the Otipemisiwak Métis Government (Districts 5 and 6).

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Executive summary

The Canadian economy is shifting towards low-carbon industries, with hundreds of thousands of workers already employed in low-carbon jobs. This movement has driven demand for workers with green skills, those aligned with a low-carbon economy, but to meet that demand, the number of such workers would have to double by 2050. Rapid training and upskilling are needed, which is made more challenging by general labour shortages, the waning capacity of post-secondary institutions and the economic challenges exacerbated by U.S. tariffs.

To identify how governments are spurring the growth of the workforce needed for a low-carbon economy, we examined publicly funded workforce development programs in British Columbia, Alberta and Ontario. Across all programs, we identified instances where labour, industry and government collaborated to enable innovative approaches in four key categories: labour market readiness, education and training, recruitment and retention, and career development. We also compared these programs with examples from the digital economy and healthcare sectors in Canada, where labour market interventions have been successfully used. Lastly, we identified strong workforce development approaches in the U.S.

Key takeaways

- In 2021 there were already 430,000 workers employed in the low-carbon economy, with the potential to grow to nearly 2 million by 2050 if Canada achieves its climate targets.
- Canada has a major shortage in the skilled trades, with a projected 1.2 million openings between 2022 and 2031. Low-carbon industries need recruitment and retention strategies to compete for workers within a limited labour pool.
- More publicly supported region- and sector-specific workforce development initiatives are needed as the existing suite of government programs does not always connect workers to jobs that advance strategic economic and environmental objectives.
- Few programs support youth in career decision-making, and stigma around careers in skilled trades continues to hold young people back from pursuing these careers.
- The most effective programs have clearly identified objectives, take multi-pronged approaches to workforce development and bring government, industry, labour and post-secondary institutions together.

Recommendations

To meet the growing demand for workers in the low-carbon economy, both direct and structural interventions are needed. Region- and sector-focused approaches — those that address industry needs while improving outcomes for Canadian workers — offer the greatest potential. However, care should be taken as lack of coordination between key stakeholders is a major obstacle to effective policy. Our recommendations to the Government of Canada include the following:

- Take a strategic approach to publicly funding regional workforce development. The federal government can have the greatest impact by contributing to economically aligned programs that convene stakeholders and provide capital for collaborative initiatives.
- Support youth in career decision-making to fill labour market gaps. Many students self-select out of low-carbon energy jobs in high school, so early interventions could help young people identify career opportunities and increase uptake in the skilled trades.
- Develop industry-specific, shared-cost programs. Tailoring programs to specific sectors and building support from networks of stakeholders leads to stronger, better-resourced programs.
- Tackle workforce development challenges from multiple angles: labour market readiness, education and training, recruitment and retention, and career development.
- Improve work standards so that workers are attracted to industries in the low-carbon economy and remain in the long term.
- Integrate job-creating industrial strategies with workforce development plans to support training, recruitment and career progression.

By addressing the shortage in skilled labour with interventions like these, the Canadian government can meet its climate goals, create a more diverse and resilient economy, and secure energy sovereignty — all while connecting workers with high-quality, meaningful jobs.

1. Introduction

Over the last decade, Canada has seen an unprecedented wave of climate initiatives.¹ From clean-energy tax credits and funds to regulations and standards, our economy has shifted in favour of low-carbon initiatives, generating hundreds of thousands of jobs along the way. In 2021, there were 430,000 jobs in the low-carbon economy,² with the potential to grow to nearly 2 million by 2050 if Canada achieves its climate targets.³ The sheer volume of activity in the low-carbon economy has reshaped the world of work, making it in some ways more challenging for our education and training systems to keep pace. Investments in clean energy have catalyzed demand for new skills, and this demand is occurring alongside other challenges such as labour shortages, waning capacity of post-secondary institutions and tariff-induced economic shocks.

More must be done to recruit, train and retain workers to enable thriving low-carbon industries. According to LinkedIn's 2024 Global Green Skills report, the number of workers with green skills — that is the knowledge and abilities that enable workers to support economic growth while directly combatting climate change and supporting broader environmental sustainability — needs to double between now and 2050 to keep up with projected demand.⁴ Achieving this feat will require finding a balance between rapid training and upskilling for the jobs of today, while simultaneously predicting and planning for the workforce needs of tomorrow.

This leads to the question of “How can the Canadian government help train people more efficiently to meet the growing and evolving demand for workers in the new energy economy?” Our report strives to answer that.

We scanned public workforce development programs across British Columbia, Alberta and Ontario to identify to what extent provincial governments are helping to accelerate workforce development for the low-carbon economy. We then compared these programs to those in other sectors where targeted labour market interventions increased the supply of workers, and hence the success of burgeoning industries. Throughout this analysis, we noted the ways government, industry, labour and post-secondary institutions came together to enable more effective and innovative approaches to workforce development. Finally, we developed recommendations on

¹ Climate Action Network Canada, “Justin Trudeau accomplished more on climate action than any other Prime Minister – and less than what’s needed for a safe future,” January 6, 2025. <https://climateactionnetwork.ca/justin-trudeau-accomplished-more-on-climate-action-than-any-other-prime-minister-and-less-than-whats-needed-for-a-safe-future/>

² Clean Energy Canada, *The New Reality* (2021). <https://cleanenergycanada.org/report/the-new-reality/>

³ Megan Gordon, *A Sustainable Jobs Blueprint: Part II* (Pembina Institute, 2023). <https://www.pembina.org/pub/sustainable-jobs-blueprint-part-ii>

⁴ LinkedIn, *Global Green Skills Report 2024*. <https://economicgraph.linkedin.com/content/dam/me/economicgraph/en-us/PDF/Global-Green-Skills-Report-2024.pdf>

actions Canada could take to develop the workforce to achieve the overlapping objectives of reducing greenhouse gas emissions, securing energy sovereignty, promoting economic growth and establishing a healthy labour market.

2. Background

2.1 Labour requirements of a low-carbon economy

While defining a low-carbon economy is a challenge given its fluid and evolving nature, we presently refer to low-carbon energy jobs as jobs that involve technologies, services and resources that increase renewable energy supply, enhance energy productivity, or improve the transmission, storage, and use of energy while reducing carbon pollution.⁵ This definition includes jobs in which workers create, use and deploy low-carbon technology in secondary activities like construction and manufacturing.

When modelling the impact of labour market interventions, such as retraining support and targeted regional economic incentives, we discovered that Canada could realize a higher GDP — increasing by as much as \$55 billion between 2040 and 2050.⁶ The same exercise found that regions and workers, particularly those affected by the energy transition, could see better socioeconomic outcomes over the long term, characterized by fewer workers moving out of region and lower unemployment rates. The case for more deliberate regional and workforce development planning is clear according to these promising indicators.

While many new jobs will be created in the low-carbon economy, others will experience change or disruption. According to RBC's Green Collar Jobs report, 3.1 million jobs could change in some way as new skills and knowledge are required as Canada attempts to achieve net-zero emissions.⁷ However, in nearly every credible modelling scenario, the country is projected to emerge from this transition with more jobs under a more ambitious climate policy scenario compared to scenarios where climate policies are clawed back or no new climate initiatives are implemented.⁸ While some sectors will experience job decline, others, such as cleantech and renewables, will see rapid and potentially volatile growth.⁹ Electricity Human Resources Canada

⁵ Douglas Bryan, Sam Harrison, and Jotham Peters, *Sustainable Jobs Blueprint: Modeling annex*, prepared by Navius Research for the Canadian Labour Congress (2023). https://www.naviusresearch.com/publications/sustainable_jobs_modeling_annex/

⁶ Pembina Institute and Canadian Labour Congress, *A Sustainable Jobs Blueprint, Part II: Putting workers and communities at the centre of Canada's net-zero energy economy* (2023). <https://www.pembina.org/pub/sustainable-jobs-blueprint-part-ii>

⁷ Colin Guldemann and Naomi Powell, "Green Collar Jobs: The skills revolution Canada needs to reach Net Zero," *RBC*, February 16, 2022. <https://thoughtleadership.rbc.com/green-collar-jobs-the-skills-revolution-canada-needs-to-reach-net-zero/>

⁸ Beata Caranci and Francis Fong, "Don't Let History Repeat: Canada's Energy Sector Transition and the Potential Impact on Workers," *TD*, April 6, 2021. <https://economics.td.com/esg-energy-sector>

⁹ CIET, "Report on the Impact of Canada's Energy Transition on Jobs and Labour." <https://cietcanada.com/news/report-on-the-impact-of-canadas-energy-transition-on-jobs-and-labour/>

projects increased electricity demand and population growth will require the current electricity workforce to grow by 25% over the next five years.¹⁰

In some sectors, the situation has become more complex as tariffs imposed by the U.S. have thrown a curveball into growth projections. For example, this ongoing trade dispute has highlighted structural challenges in the oil and gas and auto industries in Canada, threatening the potential success of Canada's burgeoning electric vehicle sector.¹¹ Among other cumulative labour market issues, these circumstances create additional challenges that underscore the importance of concerted workforce planning now more than ever before.

2.2 Compounding labour market challenges

Canada is experiencing a skills imbalance — unemployment rates have been increasing as workers struggle to find jobs,¹² and while the job vacancy rate is declining overall in Canada,¹³ industries and employers are still struggling to find workers.¹⁴ Skills shortages and imbalances accounted for a 7% labour productivity gap where Canada lagged behind the United States over three distinct periods starting in the early 2000s.¹⁵ Projections of new clean energy jobs are normally encouraging, however, a number of challenges must be addressed to ensure that workers have the skills to participate and benefit from these new opportunities. We have highlighted below several of these challenges for Canada.

Skills shortages: Nearly every sector of the economy is experiencing labour shortages, which are particularly pronounced in skilled trade occupations, and this trend is projected to continue. The Canadian Occupational Projection System estimates there will be an estimated 1.2 million job openings in the skilled trades between 2022 and 2031.¹⁶ This phenomenon is not unique to

¹⁰ EHRC, *Electricity in Demand: Labour Market Insights 2023-2028* (2023). <https://ehrc.ca/labour-market-intelligence/electricity-in-demand-labour-market-insights-2023-2028/>

¹¹ Abdul Matin Sarfraz, "Trump tariffs threaten Ontario's EV industry," *Canada's National Observer*, January 30, 2025. <https://www.nationalobserver.com/2025/01/29/news/trump-tariffs-threaten-ontario-green-jobs-EV>

¹² Bank of Canada, "The factors behind the rise in unemployment: Monetary Policy Report—October 2024—In focus." <https://www.bankofcanada.ca/publications/mpr/mpr-2024-10-23/in-focus-1/>

¹³ Statistics Canada, "Analysis of labour challenges in Canada, fourth quarter of 2024," December 12, 2024. <https://www150.statcan.gc.ca/n1/pub/11-621-m/11-621-m2024017-eng.htm>

¹⁴ Brandie Weikle, "Shortage of skilled tradespeople is hitting all Canadians in the pocketbook, economists say," *CBC Radio*, April 22, 2024. <https://www.cbc.ca/radio/costofliving/skilled-trades-shortage-cost-of-living-1.7169441>

¹⁵ Conference Board of Canada, *Skills and Productivity: Which Skills Shortages Are Impacting Canadian Productivity?* (2024). https://fsc-ccf.ca/wp-content/uploads/2024/08/skills-shortages-impacting-productivity_aug2024.pdf

¹⁶ Employment and Social Development Canada, *Building a Modern 21st Century Workforce – Discussion Paper*. <https://www.canada.ca/content/dam/esdc-edsc/documents/programs/training-agreements/workforce-summit/wf-discussion-paper/21st-century-workforce-summit-en.pdf>

Canada, as skills and labour shortages in the energy sector are evident around the world.¹⁷ Consequently, different industries, regions and countries are now competing for a limited pool of skilled labour, and low-carbon industries may not have well established recruitment and retention strategies or resourcing when compared to incumbents.

Aging and retiring workforce: Canada's working population is growing older and retiring later — more than one in three workers was over the age of 55 in 2023, an increase from one in four in 1998.¹⁸ In Ontario's construction sector alone, an estimated 100,000 workers will be needed by 2030 to replace retiring workers and keep pace with industry demands.¹⁹

Stigmatization of the trades: Evidence suggests that a stigma towards skilled trades work is a major barrier, deterring youth from pursuing these jobs and career paths. Societal perceptions and misconceptions about work in the trades have led many to believe earnings are lower, career pathways are limited and work is less stable.²⁰ A survey of 1,000 high school students in the United States found that nearly three quarters of respondents received messages that a vocational education held less value when compared to a university education.²¹

Changes to international recruitment: In 2024, Canada introduced a cap on the number of international student study permits and post-graduation work permits in order to reduce the number of temporary residents in Canada.²² These caps mean fewer new recruits and reduced access to talent for employers. Canada's labour market is expected to grow nearly entirely through immigration. Thus, its role in fulfilling workforce requirements in the low-carbon economy should not be overlooked.

Post-secondary financial hardship: Canada's colleges, universities and technical institutes have seen declining rates of public revenue over the last few decades.²³ To sustain growth and high-calibre educational offerings, post-secondary institutions have often relied on revenue from international student tuition fees. With the recently announced caps on study and work

¹⁷ International Energy Agency, *World Energy Employment 2024*. <https://www.iea.org/reports/world-energy-employment-2024>

¹⁸ *Building a Modern 21st Century Workforce – Discussion Paper*.

¹⁹ College Trades, "Why There's a Shortage of Skilled Trades Professionals in Ontario." <https://trades.ontariocolleges.ca/discover/why-there-s-a-shortage-of-skilled-trades-professionals-in-ontario/>

²⁰ Fanshawe, "Why is there a shortage of skilled trade workers?," January 23, 2024. <https://www.fanshawec.ca/blog/why-shortage-skilled-trade-workers#>

²¹ Jobber, "Jobber's Blue-Collar Report: Gen Z and the Uncertain Future of the Trades," 2023. <https://www.getjobber.com/bluecollarreport/>

²² Immigration, Refugees and Citizenship Canada, "Strengthening temporary residence programs for sustainable volumes," media release, September 18, 2024. <https://www.canada.ca/en/immigration-refugees-citizenship/news/2024/09/strengthening-temporary-residence-programs-for-sustainable-volumes.html>

²³ Alex Usher, "The State of Postsecondary Education in Canada, 2024," Higher Education Strategy Associates, September 4, 2024. <https://higherstrategy.com/the-state-of-postsecondary-education-in-canada-2024/>

permits, these institutions have begun to cut programs and lay off staff, weakening the capacity of these institutions to help solve labour market challenges.^{24,25}

Automation: Increased labour automation (machines performing simple, routine, non-cognitive tasks) and developments in artificial intelligence (technologies that can perform more-complex, non-routine cognitive tasks) are impacting the world of work. Research from the C.D. Howe Institute in 2020 found that as many as one in five jobs in Canada could be at risk of becoming automated.²⁶ While the potential impact of AI on the workforce is still uncertain, experimental research finds that around 60% of jobs in Canada are highly exposed to AI, with a rough split between workers that would benefit and workers that would be negatively affected.²⁷

Tariffs: U.S. tariffs are already impacting Canada's workforce and could significantly disrupt the labour market in major Canadian industries. Between 12–22% of total jobs across the provinces are tied to exports.²⁸ A report by the Canadian Chamber of Commerce revealed that top energy-exporting cities such as Calgary and Saint John, as well as several cities in southwestern Ontario's auto and manufacturing hub, are particularly at risk of experiencing tariff-induced impacts, including increased unemployment.²⁹ A significant proportion of jobs in the auto sector have been redefined as green jobs given the industry's shift toward electric vehicles in recent years. Consequently, any threats to its supply chains could affect projected job growth.³⁰

²⁴ Colleges and Institutes Canada, "Colleges and Institutes Speak Out on the Community Impact of International Student Policy Reforms," November 25, 2024. <https://www.collegesinstitutes.ca/colleges-and-institutes-speak-out-on-the-community-impact-of-international-student-policy-reforms/>

²⁵ Universities Canada, "Universities Canada's submission to the Standing Committee on citizenship and immigration," December 19, 2024. <https://univcan.ca/publication/universities-canadas-submission-to-the-standing-committee-on-citizenship-and-immigration/>

²⁶ Rosalia Wyonch, "The Next Wave: Automation and Canada's Labour Market," *Future Skills Centre*. <https://fsc-ccf.ca/research/the-next-wave-automation-and-canadas-labour-market/>

²⁷ Tahsin Mehdi and Marc Frenette, "Exposure to artificial intelligence in Canadian jobs: Experimental estimates," *Statistics Canada*, September 25, 2024. <https://doi.org/10.25318/36280001202400900004-eng>

²⁸ John McNally, "Canada-US Trade: Getting Up To Speed," *Scotiabank*, January 31, 2025. <https://www.scotiabank.com/ca/en/about/economics/economics-publications/post.other-publications.canada-and-us-economics-.canada-and-us-decks.trade-stats--january-31--2025-.html>

²⁹ Canadian Chamber of Commerce, "Canadian Chamber's Research Pinpoints Most Tariff-Vulnerable Cities in Canada," February 11, 2025. <https://chamber.ca/news/canadian-chambers-research-pinpoints-most-tariff-vulnerable-cities-in-canada/>

³⁰ Abdul Matin Sarfraz, "Trump tariffs threaten Ontario's EV industry," *Canada's National Observer*, January 30, 2025. <https://www.nationalobserver.com/2025/01/29/news/trump-tariffs-threaten-ontario-green-jobs-EV>

2.3 Calling for a new approach to workforce development

Given the intersecting challenges stated above, growing evidence suggests that the methods used to recruit, train and retain workers to fill current labour market gaps require a new approach. As many Canadians experience hardship with the rising cost of living, providing pathways to stable, decent employment is key to helping alleviate this financial strain. Recognizing the massive job growth potential of a low-carbon economy and collaborating with regional actors to turn employment projections into real, community-supporting jobs is crucial for resolving modern economic challenges and fighting climate change.

Labour, post-secondary institutions, governments and employers must work together to streamline training and education systems, accelerating worker readiness for the low-carbon economy. Stakeholders including labour organizations and research institutions have identified the need for government to better connect workers with training and jobs in such an economy. However, clear strategies remain scarce due to the complexities of the current labour market. In the next section, we provide insights on how this issue can be tackled.

2.3.1 The role of industrial strategy

Markets alone are not likely capable of maximizing the socio-economic benefits of the low-carbon economy. Industrial strategies offer an alternative by leveraging a strategic set of policy instruments to achieve favourable outcomes for select industries, such as those critical to the low-carbon economy.³¹ Led by federal and provincial governments, such strategies are meant to set forth a clear vision and path for industry growth and thereby create greater certainty around what corresponding labour market plans are needed.³²

Industrial strategies also bring together industry, governments, labour and other actors to achieve a common objective; many of the same actors needed to support effective workforce development planning.³³ The combination of a strong industrial policy approach and accompanying labour market plans that account for existing labour market challenges have the potential to turn employment projections into real jobs for workers.

³¹ Net-Zero Advisory Body, *Collaborate to Succeed: The Government of Canada's role in growing domestic clean technology champions* (2025). <https://www.nzab2050.ca/publications/collaborate-to-succeed-the-government-of-canadas-role-in-growing-domestic-clean-technology-champions>

³² Amanda Stiebris, "Industrial Policy for Good Jobs," *Malcom Wiener Centre for Social Policy*, May 24, 2024. <https://www.hks.harvard.edu/centers/wiener/programs/economy/our-work/reimagining-economy-blog/industrial-policy-good-jobs>

³³ Smart Prosperity Institute, *Planning for sustainable jobs 101* (2024). <https://institute.smartprosperity.ca/planning-for-sustainable-jobs-101>

3. Methodology and findings from the program scan

3.1 Methodology

We identified four broad categories of interventions and tools to assess how well equipped a publicly resourced workforce development system is in supporting workers' transition to a low-carbon economy:

- **Labour market readiness:** Providing resources and supports for job seekers to learn about different employment options and help them attain employment.
 - Example: Regional labour market reports that show potential growth trajectories for occupational jobs, such as demand for electricians.
- **Education and training:** Equipping workers with the education, skills and proficiencies needed in their chosen careers.
 - Example: Apprenticeship programs that combine classroom training with hands-on work experience in the skilled trades.
- **Recruitment and retention:** Attracting workers to certain sectors or occupations and creating fulfilling work environments.
 - Example: Hiring bonuses offered to new employees in sectors experiencing labour shortages.
- **Career development:** Supporting workers to thrive in their chosen career or enabling them to pivot to a new one.
 - Example: Employer-sponsored upskilling programs that equip workers with the skills to operate new low-carbon technology.

Table 1 provides a breakdown of tools found within each category. A combination of these mechanisms from all four categories is needed to support accelerated and targeted growth of the labour market across every sector.

Table 1. Workforce development tools by category

Category	Tools
Labour market readiness	<ul style="list-style-type: none"> • Job searching, resume building and interview skills • Labour market analysis • Career exploration, guidance and counselling • Job banks, inventories and databases • Essential-skills building (e.g., literacy, numeracy)
Education & training	<ul style="list-style-type: none"> • Apprenticeships • Union-sponsored training • Post-secondary education • On-the-job training and work-integrated learning • Capacity building for training providers • Subsidies for tuition; loans for students; grants for course materials
Recruitment & retention	<ul style="list-style-type: none"> • Marketing and promotions (e.g., career fairs, video, social media) • Wage subsidies • Hiring bonuses • Workforce succession planning • Immigration and international recruitment
Career development	<ul style="list-style-type: none"> • Upskilling • Mentorship programs • Continuous education • Information on different pathways for career transition • Credential recognition

For each workforce development program assessed, we noted the following:

- **Target recipient:** The support is directed primarily to an individual worker, a training institution, or an employer, or a combination of recipients.
- **Sectoral focus:** The support is aimed at the broad economy, a specific sector, or a certain occupational classification such as the skilled trades.
- **Target demographic:** The support is designed entirely or partially for equity-deserving groups or another demographic (e.g., seniors, single parents, underemployed persons).
- **Career stage:** The support is directed towards students; early-, mid-, or late-career workers; or across multiple career stages.

The scale of the workforce challenge (isolated vs. nation-wide labour shortage), the capacity of employers (small or medium enterprise vs. large corporation), and the resources available also contribute to the success of workforce development initiatives. However, a detailed assessment of these factors was outside the scope of this project.

3.2 Findings: Across jurisdictions

“Labour market readiness” and “education and training” most common program categories

Federal and provincial governments are well positioned to develop and administer initiatives that increase labour market participation and that flow capital through organizations that design and deliver more targeted programs. We know from our research for our [Sustainable Jobs Blueprint](#) series that workers broadly support these kinds of interventions, and there is a clear demand for these supports given the labour market challenges across Canada.

Programs under the career development category are more often led by employers and by post-secondary institutions through continuing education programs, both which receive little public support. Aimed at mid-career workers, these programs will become increasingly important to those impacted by tariffs, automation, and the low-carbon transition where upskilling or career transitions are required.

Industry- and region-specific workforce development supports lacking, particularly in British Columbia and Alberta

Across all provinces studied, industry- and region-specific workforce development programs were uncommon. Programs were usually designed to meet the needs of a specific population or demographic (e.g., underemployed or unemployed persons). These programs broadly serve the objective of increasing employment levels across the working-age population, rather than strategically connecting workers to job opportunities that advance economic objectives. In Ontario, however, a number of programs are in place that explicitly support the advanced manufacturing industry.

Few programs support youth in career decision-making

Workforce development programs are often aimed early-career workers, missing the opportunity to support youth who have yet to enter the workforce. Programs that support youth in making career decisions that align with economic and labour market realities typically fall under the “recruitment and retention” category, which have primarily been led by market-based actors.

Direction on determining local labour market needs not provided

Canada's largest investment in workforce development occurs through federal transfers to provinces and territories through labour market development agreements. These agreements stipulate that recipient governments must design programs that align with local labour market needs, but do not specify how these needs are determined. The agreements also do not facilitate collaboration and engagement among key actors such as post-secondary institutions, labour groups or employers.

Some programs facilitate place-based, multi-stakeholder partnerships

Some provincially run programs require that stakeholders from industry, communities, and education and training centres collaborate on problem identification and program development and implementation. These often involve competitive processes where government grants are awarded on a project-by-project basis, compelling actors to identify and recruit relevant project partners and establish the strategic value of their initiative.

Support for apprentices and skilled trades evident across all jurisdictions

British Columbia, Alberta and Ontario all offered programs designed to support apprentices and to promote work in the skilled trades. This is an approach that has significant strength for developing regional workforces given forecasted labour gaps in the skilled trades and clear evidence from other jurisdictions about the effectiveness of such targeted incentives in addressing these gaps. Apprenticeships in particular are an effective way to train workers and create direct pathways to employment once completed. What is unclear is whether these initiatives are sufficiently resourced to address the scale of the labour market challenges ahead. In some cases, funding for these programs is coming to an end, and it is not clear whether governments will renew the funding. Further data on apprenticeship completion rates is also needed to determine barriers that prospective apprentices may be facing.

3.3 Findings: British Columbia

A number of B.C.'s workforce development initiatives stood out during our scan. For example, Work BC provides a wealth of labour market information, such as industry outlooks and career planning resources. Tools such as [Find Your Path](#), which support labour market readiness, enable workers to learn about and explore different career and education options in the B.C. labour market.

Skilled Trades BC delivers a suite of [Youth in Trades](#) programs to pique interest and kickstart careers in the skilled trades. The programs offer educational resources and hands-on

experience, as well as paid apprenticeships that generate credits towards a high school diploma. Engaging youth early is an important recruitment tactic to increase the likelihood that they will pursue careers in key occupations.

B.C. also supports various types of collaboration. For example, the [Sector Labour Market Partnerships Program](#) funds collaboration within or between sectors, populations or economic regions for projects that anticipate or address labour market challenges, investigate knowledge and skills gaps, and identify and test innovative solutions.

Among all the jurisdictions studied, B.C. had the only program — the [Stronger BC Future Skills Grant](#) — that tied eligibility for receiving a short-term training grant (\$3,500) with provincial labour market outlooks, targeting in-demand job areas (e.g., healthcare, firefighting, cybersecurity and construction).

3.4 Findings: Alberta

Many of Alberta's workforce development supports fell under the labour market readiness category in the form of educational resources and webpages. Several are aimed at increasing the profile and reputation of the skilled trades, such as the websites [Career to be Proud Of](#) and [Tradesecrets](#), which explores apprenticeship and industry training. This suggests that Alberta relies more heavily on employers, labour, non-profits and post-secondary institutions to fill the training and workforce development needs of the province's labour market.

Funded workforce development programs in Alberta are mainly geared toward equity-deserving groups, such as underemployed persons, persons with disabilities or newcomers to Canada. A strength of many of these programs was that they provided wrap-around supports, such as childcare and transportation costs to remove barriers to participation. For example, the [Foundational Learning Assistance](#) program covers tuition costs and living expenses such as food and rent for students seeking essential skills to find employment.

As part of Alberta's 2030 Skills for Jobs plan, the province piloted a [Work-Integrated Learning Industry Voucher](#) providing paid work placements for students in their respective fields to increase post-graduation employment rates. The program was launched in partnership with post-secondary institutions and industry associations, including Technology Alberta, the Alberta Construction Association, and BioAlberta, and provided students with a \$5,000 voucher to be matched by employers.

Alberta's Ministry of Advance Education also developed [New Apprenticeship-Style Programs](#) to expand the apprenticeship model of learning by encouraging post-secondary institutions to

collaborate with industry to propose new certificate and diploma programs in key sectors such as energy, agriculture, finance, and hospitality.

3.5 Findings: Ontario

Across the three jurisdictions studied, it was most common in Ontario to find industry-specific training and workforce development supports. The [Regional Development Program: Advanced Manufacturing and Innovation Competitiveness Stream](#); the [Career Ready Fund - Auto Stream](#); and the [FIRST Tech Challenge](#) (with funds provided by the provincial government) are all programs designed to support Ontario's automotive and advanced manufacturing sectors. Skills development programs such as these are seen as key to achieving provincial economic objectives, specifically those set out in the province's Driving Prosperity plan.

Ontario's [Specialist High Skills Major](#) program allows students to focus their learning on a specific sector while earning credits towards their high school diploma, enabling them to earn industry-specific certifications, training and work experience before graduating. This facilitates their recruitment into the skilled trades.

Some programs in Ontario are structured to address specific economic challenges. For example, the [Skills Advance Ontario Pilot](#) funds partnerships that connect employers in key growth sectors with employment and training services. It also helps jobseekers obtain employment by offering sector-specific training services and connecting them with employers.

The [Skills Development Fund - Training Stream](#) supports projects that address challenges to hiring, training, or retaining workers, including apprentices, in order to drive Ontario's economic growth in manufacturing, technology and construction.

4. Workforce approaches to accelerate industry growth

The experience of other industries in managing labour market challenges can provide important lessons for the low-carbon economy. Sectors pivotal to Canada's economic priorities, including healthcare and the digital economy, have in recent years taken strategic actions to spur sector- and region-specific growth through innovative and multi-pronged approaches to developing their workforces. By examining the workforce development approaches for the digital economy in British Columbia and the healthcare sector in Ontario, as well as tactics used in the U.S. to support the clean energy economy, we've identified several best practices that resulted in positive employment outcomes.

4.1 Lessons from Canada's digital economy accelerator

To strengthen innovation ecosystems, Canada provided over \$2 billion in funding for five Global Innovation Clusters. Each one represents a promising, regionally concentrated industry poised for growth, such as the digital economy.³⁴ Investments in these clusters were to create networks among key stakeholders, catalyze skills development, and drive the growth of small- and medium-sized enterprises — all with the aim of creating a global advantage and drawing investment in the Canadian economy.

A primary objective for these clusters was to support companies to build a diverse and skilled talent pool and enhance worker skills to meet industry needs. The information and communication technologies sector in particular has seen a steady increase in demand for tech talent. The sector employed more than 800,000 workers in 2023, representing 4.5% annual employment growth between 2018 and 2023,³⁵ and demand is expected to continue to grow in fields like quantum technology.³⁶

Through the Digital Technology Cluster, a number of initiatives were launched in British Columbia to build skills and provide training, with many targeting equity-deserving and

³⁴ Government of Canada, "Global Innovation Clusters," February 14, 2025. <https://ised-isde.canada.ca/site/global-innovation-clusters/en#s1>

³⁵ Government of Canada, "Canadian ICT Sector Profile 2023," October 9, 2024. <https://ised-isde.canada.ca/site/digital-technologies-ict/en/canadian-ict-sector-profile>

³⁶ Invest in Canada, "Technology." <https://www.investcanada.ca/industries/technology>

underrepresented groups. In total, these initiatives facilitated over 15,000 learning and development placements as of 2024.³⁷

The skill-building initiatives under the Digital Economy Cluster have several strengths that can be leveraged and replicated to design effective labour market supports for workforce growth in the low-carbon economy.

Clear program objectives and evaluation frameworks

The skill-building initiatives have clearly stated problems and objectives that address labour market issues that are specific to a sector, region, particular population, or a combination of any of the three. For example, the [Coding in Colour](#) program targets the underrepresentation of Black, Indigenous people, and People of Colour (BIPOC) in tech by providing industry-relevant skills training. In terms of measuring success, the [Canadian Tech Talent Accelerator program](#) uses an evaluation framework. Through a partnership with Blueprint ADE, an evidence and data gathering organization, the program is able to measure and analyze outcomes to enable continuous improvement.

Multi-pronged labour market approaches and broad impact across populations

The full complement of initiatives under the Digital Technology Cluster represents a multi-pronged approach that spans the four workforce development categories we identified earlier — labour market readiness, education and training, retention and recruitment, and career development. As a result, individuals at different stages in their careers benefit— from youth to post-secondary students to professionals. The [Athena Pathways](#) program, for instance, is tackling the gender imbalance in the digital economy by creating educational content for middle-school and high school girls, developing specialized university courses and internships for female students, and delivering workshops for female professionals and leaders.

Additionally, multiple programs have as a key objective the active outreach and recruitment of underrepresented groups, tapping into overlooked employment and talent pools to the benefit of the sector and these groups. By engaging a wide cross-section of equity-deserving groups, these programs increase the likelihood that the sector is more reflective of Canada's diversity. Moreover, flexible delivery models offered by some of these programs, such as online learning, make training more accessible.

³⁷ DIGITAL, "DIGITAL announces new collaborations to boost housing production in British Columbia," news release, March 18, 2025. <https://digitalsupercluster.ca/digital-announces-new-collaborations-to-boost-housing-production-in-british-columbia/>

Network formation and industry buy-in

The initiatives are directly aligned with labour market and employer needs, with key partners contributing funding to initiatives, ensuring their buy-in and support. One such example is the [Digital Lift](#) program. The \$3.8 million the program received from the Digital Technology Cluster was matched with contributions from 27 partners.

In contrast to these successes, there is the risk that the training received by participants could be overly sector- or employer-specific (e.g., micro credentials rather than training in line with occupational standards), limiting the transferability of their skills. As there are low levels of unionization in the tech sector, none of the cluster initiatives directly involved participation of organized labour, who would have been able to identify and correct for these risks.

As demonstrated by the Digital Technology Cluster, the multi-stakeholder initiatives established under the innovation clusters could be used as a model for growth for other regionally concentrated industries, such as electric vehicles in Ontario and Quebec. However, workforce development approaches would need to be tailored to the composition of labour in the transportation sector.

4.2 Lessons from the healthcare sector

It is widely acknowledged that in Canada, the healthcare system has been under considerable stress, which was exacerbated by the COVID-19 pandemic.³⁸ Staffing and other capacity challenges have direct impacts on the timeliness and quality of patient care. In Ontario, as the population has grown and aged, an increased demand on the system has led to higher rates of worker burnout and growing frustrations about wage gaps, among other concerns, that have increased labour shortages in the healthcare sector.^{39,40}

Ontario responded to this challenge by launching a number of strategies and programs to increase the training, recruitment and retention of healthcare workers. Ontario's approach, in tandem with federal programs with similar objectives, aims to address the labour market challenges from multiple angles.

³⁸ Government of Canada, "Summary Report of the Health Human Resources Symposium," November 1, 2022. <https://www.canada.ca/en/health-canada/services/health-care-system/health-human-resources/summary-report-symposium.html>

³⁹ Canadian Mental Health Association, "Community health sector launches campaign profiling staffing challenges and impact to patient care," October 17, 2024. <https://ontario.cmha.ca/news/community-health-sector-launches-campaign-profiling-staffing-challenges-and-impact-to-patient-care/>

⁴⁰ Government of Canada, "Executive summary: Nursing retention toolkit," March 4, 2024. <https://www.canada.ca/en/health-canada/services/health-care-system/health-human-resources/nursing-retention-toolkit-improving-working-lives-nurses/executive-summary.html>

Greater training efficiency and clearer educational pathways

The College of Nurses of Ontario has partnered with select Ontario colleges to offer nurses that hold diplomas the opportunity to earn a degree through the [Nursing Transformation: RPN to BScN Bridging Pathway](#). This program provides online, asynchronous learning for registered practical nurses (RPNs) to earn credits and become a registered nurse (RN), a role offering higher compensation and more dynamic job opportunities. This upskilling opportunity, creates greater confidence for those interested in nursing and demonstrates clear pathways to progress in their field while fulfilling critical labour market demands.⁴¹

The [Bridging Educational Grant in Nursing](#) program recruits RPNs and personal support workers (PSWs) for long-term care facilities and home and community care in Ontario. This program, delivered in partnership with the Registered Practical Nurses Association of Ontario, reimburses tuition up to \$10,000 per year over three years and offers an additional \$5,000 in financial support per year on the condition that graduates of the program take jobs in long-term care facilities or home or community care for as many years as they received funding.

Recruitment incentives for workers in occupations and regions with acute shortages

To increase the number of PSWs working in long-term care homes or home and community care organizations, stipends, hiring incentives, and rural relocation incentives are being offered to students willing to take on clinical placements (\$5,440) and graduates who commit to working for a year in a long-term care home following completion of their schooling (\$10,000). An additional relocation support (\$10,000) and recruitment incentive (a further \$10,000) is available for those relocating to rural, remote and northern communities, and signing 12-month employment agreements there.⁴²

The [Ontario Learn and Stay Grant](#) is an education assistance program that supports students pursuing post-secondary education in health fields (i.e., practical nursing, paramedic, and medical lab tech programs) within underserved communities. The grant offers full funding for tuition, compulsory fees, books and other direct educational expenses, such as supplies and equipment. In exchange for this funding, students commit to working where they studied after graduation for at least six months.

⁴¹ Government of Ontario, “A better place to live, a better place to work: Ontario’s long-term care staffing plan,” December 17, 2020. <https://www.ontario.ca/page/better-place-live-better-place-work-ontarios-long-term-care-staffing-plan>

⁴² HealthForceOntario, “Attracting New PSW Graduates to Long-Term Care and Home and Community Care Sectors.” https://www.healthforceontario.ca/en/Home/All_Programs/PSW_Initiatives

More efficient credential recognition and integration of internationally trained workers

Ontario's Long-Term Care Staffing Plan identified as a key action optimizing the system to support a growing demand for PSWs and faster employment pathways and credential recognition for new Canadians. Programs such as the Supervised Practice Experience Partnership Program in Long-Term Care offer internationally trained nurses the option to complete a supervised practicum in Ontario to demonstrate nursing skills, judgement, and language proficiency and become a registered nurse in Canada more quickly. This has improved healthcare capacity, adding 1,000 nurses to long-term care facilities as of 2020.

Emphasis on quality of work and working conditions

The Government of Canada, recognizing the widespread strain in the healthcare system across the country, has also implemented strategies to retain and improve working conditions for healthcare workers. Specifically, the Nursing Retention Toolkit is a framework for improving retention that covers eight areas that affect nurses' working conditions — from mental health and wellness to safe staffing practices — and suggests targeted initiatives. The framework does not provide funding for the initiatives. Instead, it serves as a guide for employers and organization on steps that can be taken to avoid nurses burning out and leaving the profession.

4.3 Lessons from the U.S.

Canada can draw on lessons from the U.S., where growth in key clean energy sectors has been targeted through initiatives like the Inflation Reduction Act. These initiatives have fostered collaborative partnerships to effectively address regional labour market challenges, which is essential to achieving national economic objectives.

Focused support to accelerate careers in clean energy

The Goodwill Clean Tech Accelerator, launched in 2023 by Goodwill and Accenture, is a workforce training program that provides free training for entry-level clean energy jobs, such as solar panel and battery installation, EV charger maintenance, and heat pump installation. Amid a transitioning labour market, these fields were identified as having a critical talent gap. The program targets people who are under- or unemployed and consists of an intensive month-long course that pays participants as they learn through hands-on training with partner organizations.⁴³ Participants are also provided with employment readiness and career

⁴³ Goodwill, "Goodwill launches major green jobs program in partnership with Accenture," news release, October 4, 2023. <https://www.goodwill.org/press-releases/goodwill-launches-major-green-jobs-program-in-partnership-with-accenture/>

placement services during the course. The courses are provided at Goodwill locations in Atlanta, Houston, Nashville, and Detroit, with plans to expand the program to 20 cities and 7,000 students over seven years. The program began with an initial investment from Accenture. General Motors has provided a \$750,000 grant to expand the program across the country, and often receives additional funding from local partners.⁴⁴

Hubs to facilitate connections and support regional industrial growth

In 2023, the U.S. government announced the creation of five Workforce Hubs as part of the Investing in America's Workforce initiative. The goal was to develop a diverse workforce that could meet the growing demand for skilled labour in industries bolstered by initiatives like the Inflation Reduction Act. The hubs were established in Columbus, Baltimore, Pittsburgh, Augusta and Phoenix.⁴⁵ Four more in Upstate New York, Philadelphia, Milwaukee, and the state of Michigan were announced in 2024.⁴⁶ Through these hubs, the federal government partners with state and local officials, employers, unions, and educational institutions to drive place-based workforce development in key industries, with a focus on high technology manufacturing and clean energy.

Each hub is designed to meet the needs of the local region. By bringing local stakeholders together and fostering industry buy-in, the hubs can develop programs to rapidly fill skilled labour shortages. In the first year of the initial hubs, 10,000 construction workers were trained in Columbus and a registered apprenticeship program for manufacturing semiconductors was developed in Phoenix.

⁴⁴ Adele Peters, "This Detroit Goodwill wants to be the center of a new EV workforce," *Fast Company*, July 8, 2024. <https://www.fastcompany.com/91151211/goodwill-green-job-training>

⁴⁵ The White House, "Fact sheet: Biden-Harris administration announces strategies to train and connect American workers to jobs created by the president's Investing in America agenda," media release, May 16, 2023. <https://bidenwhitehouse.archives.gov/briefing-room/statements-releases/2023/05/16/fact-sheet-biden-harris-administration-announces-strategies-to-train-and-connect-american-workers-to-jobs-created-by-the-presidents-investing-in-america-agenda/>

⁴⁶ The White House, "Fact sheet: President Biden announces new workforce hubs to train and connect American workers to good jobs created by the president's Investing in America agenda," media release, April 25, 2024. <https://bidenwhitehouse.archives.gov/briefing-room/statements-releases/2024/04/25/fact-sheet-president-biden-announces-new-workforce-hubs-to-train-and-connect-american-workers-to-good-jobs-created-by-the-presidents-investing-in-america-agenda/>

5. Policy recommendations

Based on our assessments of (1) publicly available supports for resolving labour market challenges in the low-carbon economy, and (2) successful labour market strategies in Canada and the U.S., we have developed a series of recommendations. These recommendations are aimed at enhancing workforce development in the low-carbon economy in a manner that benefits all involved and supports Canada's vision for the economy.

Shaping the labour market to advance Canada's economic objectives and maximize the social benefits of a low-carbon economy requires both direct and structural interventions. The main finding from our work is that regionally- and sector-focused approaches — ones that address industry-specific needs while optimizing outcomes for Canadian workers — offer the greatest potential to improve workforce development. However, a lack of coordination between industry, post-secondary institutions and other key stakeholders in the skills and training ecosystem remains a major obstacle.

5.1 Direct actions to grow regional- and sector-specific labour markets

Take a strategic approach to publicly funding regional workforce development

While flexible funding supports with broad objectives are useful for increasing employment rates across the economy, they are not the most effective means of driving targeted workforce growth in priority sectors like the low-carbon economy.

Among the programs we studied, government contributions had the most impact in programs that convened stakeholders and directed capital towards collaborative initiatives. The Digital Technology Cluster was one such example. It provides top-down support for initiatives designed and led by coalitions of industry, labour, post-secondary institutions, and non-profit organizations. Similarly, the U.S. Workforce Hubs helps overcome regional labour market challenges by bringing local stakeholders together to quickly deploy place-based workforce development programs.

Achieving the right scale and scope of government support is also important. For instance, programs like the Canada Student Placement Program help increase student employment. However, without clear measurement parameters or industry boundaries, it is difficult to measure the program's effectiveness in catalyzing region- or sector-specific growth.

Develop new industry-specific, shared-cost workforce development programs

Creating regional workforce development pathways tailored to specific sectors — and supported by networks of stakeholders — can lead to stronger, better-resourced programs. The Global Innovation Cluster model is a prime example, where public funding incentivizes contributions from multiple stakeholders who directly benefit from sector-specific workforce expansion. There is growing recognition among industry actors that a lack of skilled workers stifles business growth and economic potential. This creates a strong business case for joint funding models to support recruitment, job readiness, training and career development initiatives. Involvement of industry actors in funding and developing these initiatives, as seen in the Goodwill Cleantech Accelerator program, also increases the likelihood that participants could become employed by these firms at the end of their training or placement.

Establish programs that cover all four workforce development categories

The success of the Global Innovation Cluster model highlights the need for a comprehensive workforce development strategy that spans labour market readiness; education and training; recruitment and retention; and career development. This multi-faceted approach has been effectively deployed in both the digital economy and healthcare sectors and should be replicated for the low-carbon economy.

Support youth in career decision-making to fill labour market gaps

Youth recruitment and education about opportunities in the low-carbon economy — especially in fields facing projected worker shortages — are largely missing from current workforce development efforts. Research shows that many students self-select out of critical low-carbon energy jobs if they lose interest in math and science between grades six and eight.⁴⁷ Since skilled trades and STEM career pathways often require senior-level high school math and science courses, opting out of these subjects early can limit future career opportunities. Programs like B.C.'s Youth in Trades could be scaled up nationwide to help young learners identify career opportunities, increasing uptake in the skilled trades.

Recognize international recruitment as a key tool for workforce growth

The healthcare sector has long recognized the value of international recruitment, but this approach remains underutilized in the low-carbon economy. Beyond filling immediate worker shortages, Canada has an opportunity to harmonize and streamline its approach to credential

⁴⁷ Mark Chapeskie, *Electricity in Demand: Labour Market Insights: 2023-2028*, Efficiency Canada, webinar. <https://www.youtube.com/watch?v=UrvnPxeP7lo&list=PL5x8Q4ECOeQSlqAmmPuh8tzIPj9eakDD7&index=19>

recognition, upskilling, and integration of internationally trained workers to simultaneously improve socio-economic outcomes for newcomers and address labour market needs.

Consider the role of occupational certification bodies

Many high-demand trades are regulated professions. Occupational regulators, such as the College of Nurses of Ontario, play a crucial role in recruitment, credential recognition, training, and retention initiatives. They have also supported increasing the supply of workers in critical roles.

Workers who are licensed or certified generally earn higher wages and find work more easily since employers are hiring from a limited pool of qualified applicants.⁴⁸ Certification bodies often collect regional workforce data, publish labour market outlooks, and have experience with worker outreach, so engaging them during the creation of workforce development strategies could help match workers to licensed low-carbon occupations, such as electricians certified to install EV chargers or energy advisors accredited to conduct home efficiency audits.

Barriers to entry to licensed or certified occupations, such as electricians,⁴⁹ can be reduced through apprenticeship grants, tuition subsidies and skill-bridging programs, giving more workers access to the wage and employment premiums that licensing affords. Further, interprovincial labour mobility could be promoted by increasing the number of trades and occupations eligible for Red Seal certification and harmonizing provincial licensing approaches.

5.2 Address systemic issues in the labour market

Strengthen the quality and accessibility of labour market information

Accurate, industry-corroborated labour market information is essential for workforce planning. It can help answer the following key questions:

- What occupations will see the highest growth?
- In which sectors and regions will these opportunities emerge?
- What training and support will workers need to access these opportunities?

⁴⁸ Maury Gittleman, Mark A. Klee, and Morris M. Kleiner, “Analyzing the Labor Market Outcomes of Occupational Licensing,” *Industrial Relations: A Journal of Economy and Society* 57, no. 1 (2018), 57–100. <https://doi.org/10.1111/irel.12200>

⁴⁹ Licensing is managed at the provincial and territorial level. As a result, not all licensed occupations are licensed in all jurisdictions. For example, electricians in B.C. and Newfoundland do not require licences.

Occupational-level data and market certainty are crucial to workforce planning. While long-term projections (e.g., to 2050) exist, their accuracy is constrained due to technological and economic uncertainties. Shorter five-year projections and planning increments may be more effective.

Increase public support for universities and colleges in Canada

A review of the capacity of post-secondary institutions to provide short- and long-term programming for the low-carbon economy is necessary. According to global labour market data from the International Energy Agency:

- 36% of energy jobs require a bachelor's degree or higher
- 51% require a vocational or technical education
- 13% require no formal education⁵⁰

Public funding should be directed to filling gaps in education and training programs that align with labour market needs. This could include quotas for graduates in relevant fields like electrical engineering and structured connections to employers after graduation. Additionally, stronger collaboration between industry and post-secondary institutions could help shape curriculums to align with industry demands.

Improve work standards in the low-carbon economy

Recruitment and training efforts will be ineffective without strategies to retain workers. Offering a prevailing wage, a safe work environment, stable employment, and opportunities for professional growth are essential. Workforce development policies should prioritize high-quality work standards as part of a comprehensive approach to retention. Unions have long been advocating for these standards, and thus must be engaged and, where possible, directly involved in developing and designing such approaches. Based on our research for this report, the healthcare sector — where workplaces have broad union representation — has visibly done the most to improve work standards and job satisfaction by introducing initiatives such as the Nursing Retention Toolkit and the [Nursing Transformation: RPN to BScN Bridging Pathway](#), which facilitates career advancement and growth.

Use industrial policy to drive regional workforce development

Turning employment projections into real jobs requires a strong industrial policy that generates economic activity in a given sector. This involves aligning workforce development strategies with industrial policy to support the training, recruitment and retention of essential workers. Such efforts will help secure the long-term success of Canada's low-carbon economy.

⁵⁰ *World Energy Employment 2024*, 27.

For example, the federal government and B.C., Alberta and Ontario (the three provinces studied in this report) each have a strategy to produce critical minerals for the clean energy transition, among other objectives. These critical minerals strategies require increasing research and development, accelerating project approvals, and building out supportive infrastructure — all activities that will need workers. A workforce development strategy based on a robust labour market analysis and tailored to the policy could help worker recruitment, training, and retention for the critical minerals sector.

6. Conclusion

The transition to a low-carbon economy presents both an opportunity and a challenge for Canada's workforce. As the demand for skilled workers in low-carbon industries continues to grow, strategic and coordinated workforce development efforts will be critical to ensuring that Canada can meet its climate and economic objectives. The findings of this report underscore the need for proactive interventions that not only address labour shortages but also create pathways for workers to access stable, high-quality jobs in these industries.

By examining workforce development programs in British Columbia, Alberta, and Ontario, we identified best practices that bring together government, industry, labour, and post-secondary institutions to create effective training and recruitment initiatives. Drawing on lessons from other sectors in Canada, such as healthcare and the digital economy, and from jurisdictions in the U.S., it is evident that a comprehensive approach — one that includes labour market readiness, education and training, recruitment and retention, and career development — is essential to success.

Canada's current workforce development programs, while valuable, do not yet fully align with the needs of the low-carbon economy. More targeted, sector- and region-specific initiatives, supported by strategic government investment, can help bridge this gap. Ensuring that youth have access to early career guidance, improving work standards, and integrating workforce development with industrial policy will further enhance the resilience and competitiveness of Canada's workforce. The foundations of industrial growth have already been laid through existing sector-specific strategies, including the [Green Buildings](#), [Hydrogen](#), [Critical Minerals](#) or [Clean Electricity](#) strategies. What's needed now are accompanying labour market plans grounded in the best practices identified through this research.

The Government of Canada has a unique opportunity to shape the country's workforce development strategy in a way that advances economic prosperity and climate action simultaneously. By fostering collaboration among key stakeholders, addressing structural barriers to workforce growth, and investing in targeted interventions, Canada can not only meet the increasing demand for skilled labour but also build a more inclusive and dynamic economy. With the right policies in place, the transition to a low-carbon economy can serve as a driver of long-term economic and social benefits for all Canadians.



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