



TRADING UP

How Alberta's Trades Can
Build a Zero Carbon Future



EXECUTIVE SUMMARY

Canada's goal to decrease greenhouse gas emissions (GHGs) by 30 per cent below 2005 levels by 2030 requires a significant change, especially among carbon-intensive industries.

The building industry has the opportunity to be a leading contributor to this change, as over a quarter of all emissions come from the materials, construction, and operation of buildings.

The entire building industry must transition to zero carbon buildings if Canada is to meet its GHG obligations. New buildings designed today must set zero carbon emissions as their target and retrofits of existing buildings must likewise emphasize deep emission reductions. However, high-performance buildings demand new skill sets and knowledge; further, they require an integrated approach to ensure new technologies and systems work seamlessly together.

Following Canada Green Building Council (CaGBC) reports including *Trading Up: Equipping Ontario Trades with the Skills of the Future* and *Accelerating to Zero: Upskilling for Engineers, Architects, and Renewable Energy Specialists*, this report focuses on Alberta's trades workforce.

While all of Canada must transition to zero carbon building construction, the approach in each province will differ due to its construction marketplace, labour force, and the systems in place for training the construction trades. Alberta has a comparative advantage to other provinces, given its well-established apprenticeship training system, which provides an ideal platform for facilitating the uptake of zero carbon skills.

This study explores the following questions: What are the zero carbon skills Alberta's construction trades need, and how can this workforce be upskilled to meet the design, construction and retrofitting of zero carbon buildings?

The purpose of the research is to:

1. Identify gaps in the knowledge and skills training that will be required for Alberta tradespeople to meet the demands of the construction of zero carbon buildings.
2. Describe the barriers Alberta tradespeople face when accessing zero carbon building training.
3. Recommend future education planning, program approaches, and training resources for tradespeople in Alberta.



RECOMMENDATIONS

To address these knowledge gaps and encourage skill uptake in this sector, CaGBC recommends actions designed to incentivize the adoption of zero carbon building expertise within the Alberta trades and to ensure that zero carbon training is relevant and accessible. The recommendations are structured to reflect the suggested lead organizations and bodies, including policy decision-makers, accreditation and professional bodies, and education and training providers.

Provide Incentives for Acquiring Zero-Carbon Skills

Recommendations for policy decision makers, accreditation and professional bodies:



Create a “Green Seal” Certificate

Similar to the existing Gold Seal and Blue Seal certifications for management and business skills, create an industry-led “green seal” certification. The existence of a recognized industry credential will incentivize tradespeople to upskill, and help employers recognize the value of the skills workers have acquired.



Incorporate Zero-Carbon Skills into Apprenticeships

Individual trade apprenticeship programs should be enhanced by incorporating zero-carbon technical skills. Further, as construction becomes more complex and multi-disciplinary, all apprentices should be literate and skilled in building science, and buildings as a system as it applies to advanced construction.



Require Continuous Learning

Require mandatory continuing education to ensure that Alberta’s tradespeople are ready for the growing market demand for zero carbon buildings. A system of mandatory continuing education for construction trades should be modelled on what is currently required for Master Electricians in Alberta.



Strengthen Provincial and Local Apprenticeship Committees

Local Apprenticeship Committees (LACs) and Provincial Apprenticeship Committees (PACs) can help address the challenges of balancing emerging technologies and practices into the apprenticeship curricula without overwhelming learners. More frequent meetings, collaboration with post-secondary training institutions and industry members can help improve zero-carbon skills training through Alberta’s well-established apprenticeship programs. Helping ensure access to current training is especially important, as in many cases, the apprenticeship will be the only formal training tradespeople receive in their career.



Establish Micro-Credentials

Education and training partners need to offer education in micro-credentials to appeal to busy tradespeople. Micro-credentials are best utilized as an enhancement to apprenticeship training. This approach allows tradespeople to learn the skills or portions of skills that they require in a flexible manner that makes sense to their individual circumstances.



Create Additional Designated Occupations

Create new designated occupations for construction workers to attract new entrants, including younger people, or to allow displaced workers, such as those from the oil and gas industry, to transition to a new field. Further growth could be driven by including more occupations under the Registered Apprenticeship Program, which would make participants in those programs eligible for government financial support. Suggested occupations could include building envelope installers, cladders, window installers, heat pump technicians, refrigeration and air conditional mechanics or gasfitters.



Make Zero Carbon Part of the Procurement Process

For Canada to drive market demand for zero carbon buildings, governments at all levels could lead the way by adapting their bid processes for construction projects. Contract agreements should be amended to require project teams to demonstrate experience with zero carbon buildings or to create incentives for on-the-job zero carbon training.



Encourage Governments to Demonstrate Leadership and Increase Directed Funding

Governments own large portfolios of buildings and are well-positioned to show leadership by prioritizing zero carbon when constructing or retrofitting buildings. Such action will provide a strong signal to the market and set an example by procuring construction in a way that advances zero carbon.

Ensure Relevant and Accessible Zero Carbon Training

Recommendations for education and training providers:



Create an Inventory of Available Zero Carbon Training and Funding

A comprehensive inventory of low-carbon training and available funding resources in Alberta would help address the zero-carbon skill gaps by creating a central training directory making it easier to find and access upskilling programs, as well as government funding for training. A comprehensive inventory could identify topic areas training partners could expand on and ensure all accredited zero carbon construction-related courses and training are accessible from a single location.



Establish Partnerships to Develop Relevant Training Content

Form partnerships between training providers, product manufacturers, suppliers, and distributors to address technology and product-specific gaps in education and training. Leverage partnerships between these key stakeholders to update and expand existing training, with industry bodies ensuring it is relevant and practical for tradespeople.



Mobilize Alberta's Construction Ecosystem to Champion Zero Carbon Building

Establish a coalition of diverse stakeholders to champion policy, business, and regulatory actions that will accelerate zero carbon upskilling for trades. An independent secretariat should oversee the coalition and advocate on behalf of the industry to help develop and deliver zero-carbon education, curriculum, and training initiatives, as well as drive enrollment.



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