

Investment in Retrofits

Key to Canada's Green Recovery Post-Crisis

January, 2021





Who we are

The Mechanical Contractors Association of Canada (MCAC) is a national, non-profit federation of autonomous provincial associations working for the betterment and advancement of the trade and mechanical contracting industry in Canada. Established in 1895, MCAC is a vibrant and diverse national association serving the needs of mechanical contractors of all sizes engaged in such disciplines as plumbing, heating, ventilation, air conditioning, controls systems, medical gases, welding, and fire suppression primarily within the industrial, commercial and institutional sectors. With offices in each province and 15 regional offices in Ontario, the MCAC is Canada's largest trade contractor Association.



Founded in Montreal in 1933, **the Canadian Institute of Plumbing and Heating (CIPH)** is a not-for-profit trade association that is committed to providing members with the tools for success in today's competitive environment. More than 283 companies are members of this influential Canadian industry association. They are the manufacturers, wholesaler distributors, master distributors, manufacturers' agents, and allied companies who manufacture and distribute plumbing, heating, hydronic, industrial PVF, and waterworks, and other mechanical products. CIPH wholesalers operate more than 700 warehouses and showrooms across Canada. Total industry sales exceed \$7 billion annually and CIPH members have more than 25,000 employees from coast to coast.

Executive Summary

COVID-19 continues to take a severe economic and social toll in Canada. Nearly a year into the outbreak of COVID-19, every sector of the economy has been hit hard, including the construction sector. Policymakers and economists agree that the recovery from the current crisis will be slow and uneven across industries.

As immunization ramps up and countries around the globe set their sights to the post-COVID era, Canada needs to take bold steps to 'build back better.' We are at a crossroads and the actions we take today will shape the future. It is critical that Canada seizes this opportunity and implements a robust plan for recovery and long-term prosperity. This recovery plan needs to include a strong national strategy for building, home retrofits and supporting the skilled trades. Investments in retrofits, with a focus on mechanical systems, insulation, heat sources and plumbing will strengthen the economy and create jobs post-crisis. A comprehensive national approach, including innovative investments in retrofits, regulatory harmonization and support for skilled trades, will not only spur the economy post-pandemic but also lead to immense environmental and health benefits.

Last year, the Mechanical Contractors Association of Canada (MCAC) and the Canadian Institute of Plumbing & Heating (CIPH) held a roundtable with key officials across the federal government. From those discussions, it became increasingly clear that Canada needed to build on previous successes and prioritize investments in retrofits, regulatory harmonization and support for skilled trades during the recovery. This policy document highlights the economic and environmental impact of these measures and makes concrete recommendations on how Canada can leverage innovative investment in retrofits to unleash economic growth and job creation post-pandemic.

With additional support from the Government of Canada, the mechanical, plumbing and heating sector are poised to make significant contributions to the economic recovery and work to build back a stronger, more resilient Canada.

Summary of Recommendations

National Retrofit Strategy

- We recommend that the federal government includes home and building retrofits as part of the \$100 billion recovery fund.
- We recommend that the federal government invest \$20 billion over five years in retrofit projects, including federal buildings, to stimulate the economy post-pandemic. This measure will generate thousands of well-paying jobs and boost GDP.
- We recommend that the federal government work with the private sector to introduce innovative retrofit financial instruments such as the ESPA™.
- We recommend that the government implement a low-cost retrofit loan program to make retrofits more affordable and more accessible for Canadian homeowners and landlords.
- We recommend that the federal government work with provinces and territories to broaden and expand the scale and scope of existing provincial, territorial and municipal retrofit projects.

Regulatory Harmonization

- We recommend that the federal government work closely with the Provincial/Territorial Policy Advisory Committee on Codes to ensure timely adoption of the National Codes at the provincial and territorial levels by the first quarter of 2022.

Investment in Skilled Trades

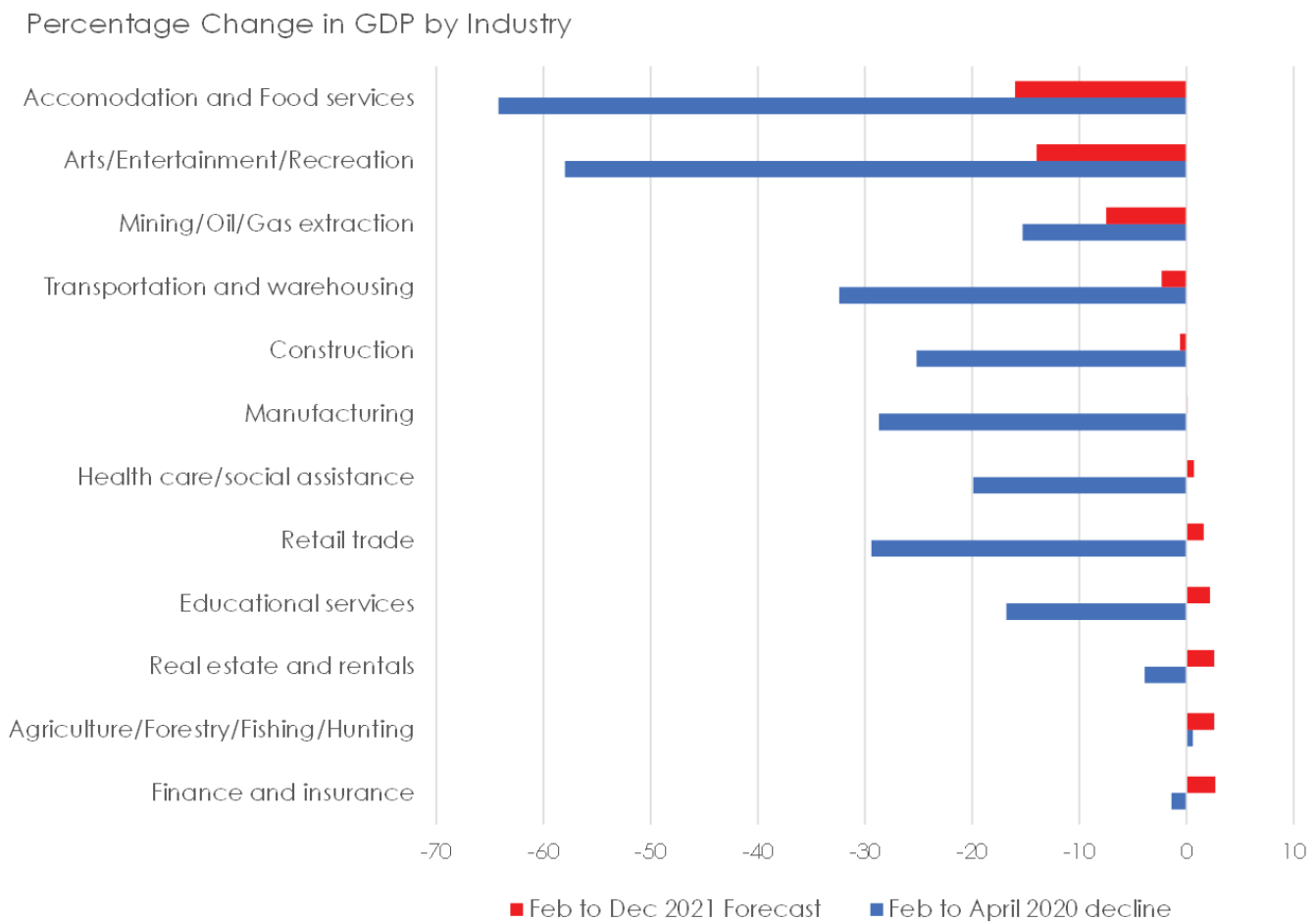
- We recommend that the federal government invests to provide training opportunities to upskill trade workers and retrain workers from other sectors to join the skilled trades.
- We recommend that the federal government fully implement the recommendation from the Recovery Task Force to invest \$1.25 billion in workforce development for energy efficiency and climate resiliency, including for enhancing access to training programs, developing new approaches, and working with Canadian colleges for a resilient recovery.
- We recommend that the federal government invest \$10 million per year over the next five years in marketing and promoting skilled trades professions to the public at large, with \$2 million earmarked toward promoting skilled trades training opportunities to newcomers to Canada, women, Indigenous peoples and other marginalized communities.

Build Back Better

The Canadian economy is reeling from the devastating economic impact of COVID-19. Virtually, all sectors of the economy have been hit hard and no business has been spared. The impact of the global pandemic has been particularly severe for many industries, including the construction sector, where activity declined by over 25 per cent¹ between February and April 2020.

The necessary strict containment measures put in place in many jurisdictions and the resulting steep decline in economic activity have led to an unprecedented drop in jobs and GDP in Canada and around the world. There is a recognition among economists that the current crisis is one of the deepest economic downturns since the Great Depression and that the recovery will be slow and uneven across industries. It is estimated that it will take three to four years for the economy to fully recover back to pre-pandemic levels.

CHART 1: UNEVEN RECOVERY ACROSS INDUSTRIES



Source: Statistics Canada, RBC Economics Forecast

While the federal government's financial response to COVID-19 has helped to mitigate job losses in the economy and provided some much-needed liquidity to bridge the gap to better times, more needs to be done now to ensure Canada builds a resilient, sustainable and green economy of the future.

1 Navigating 2021: 21charts for the year ahead, <http://www.rbc.com/economics/>.

TABLE 1: GDP GROWTH FORECAST – CANADA (%)

	2019	2020	2021	2022
GDP Growth Forecast	1.7	-5.7	4.2	3.7
CPI Inflation	1.9	0.6	1.0	1.7

Source: Bank of Canada, Monetary Policy Report, October 2020

With the COVID-19 vaccination campaign underway and as countries around the globe are shifting their sights to the post-COVID era, Canada needs to start putting together the building blocks to 'build back better.' We are at a crossroads and the actions we take today will shape the future. It is critical that Canada seizes this opportunity and implements a robust plan for recovery and long-term prosperity. This recovery plan needs to include a strong national strategy for building, home retrofits and supporting the skilled trades.

Investment in retrofits, particularly in mechanical systems, insulation, heat sources and plumbing, will not only create well-paying jobs and stimulate the economy post-crisis, but it will also help Canada achieve its 2030 greenhouse gas emission targets through significant energy savings in retrofitted buildings and homes. It is a win-win situation for government and industry.

A well-funded national home and building retrofit program based on a public and private partnership carries with it many direct and indirect benefits. These include but are not limited to the following:

- » Reduction of carbon footprint
- » Job creation
- » Energy efficiency
- » Health benefits
- » Economic stimulus
- » Building and home resilience to climate and natural disasters
- » Increased asset value for businesses
- » Utility cost savings

While we are pleased that the federal government announced a number of retrofit investments in the Fall Economic Statement and the Climate Change Plan, Canada needs a long-term sustainable retrofit strategy to truly create green jobs and impact GHG emissions.

This brief aims to provide detail on the effectiveness of a national retrofit strategy and policy recommendations from the industry experts who will deliver these services and equipment to Canadians.

National Retrofit Strategy

1. Investment in home and building retrofits

The pandemic has put Canada and the global economy in the deepest recession since the 1930s. COVID-19 has considerably altered the economy and exposed many vulnerabilities in our socio-economic system in an unprecedented manner. Bold actions from governments are required to ensure a strong and resilient recovery post-crisis.

In the Speech from the Throne in September 2020, the federal government committed to creating one million jobs in the next couple of years. While this is an ambitious goal, investments in retrofits will help stimulate the economy and create a considerable number of well-paying jobs during the recovery phase and beyond. The buildings sector already employs millions of Canadians. The construction industry alone employs over 1.4 million workers and supports over 260,000 businesses¹, many of which are small and medium-sized businesses.

This crisis has highlighted the need to ensure that our homes and buildings are continuously retrofitted with the most efficient technology and products to make them safe and resilient to climate and natural disasters. There are over 15 million private residential buildings and over 480,000 commercial and institutional buildings in Canada, including offices, retail and warehouses.

Buildings, including our homes, account for 13 per cent of Canada's greenhouse gas emissions, if we include the combustion of fossil fuels for space and water heating; electricity use for cooling, lighting and appliances, the total rises to 18 per cent.² Therefore, investing in retrofits can help Canada reach its climate change goals and create good well-paying jobs in communities across the country.

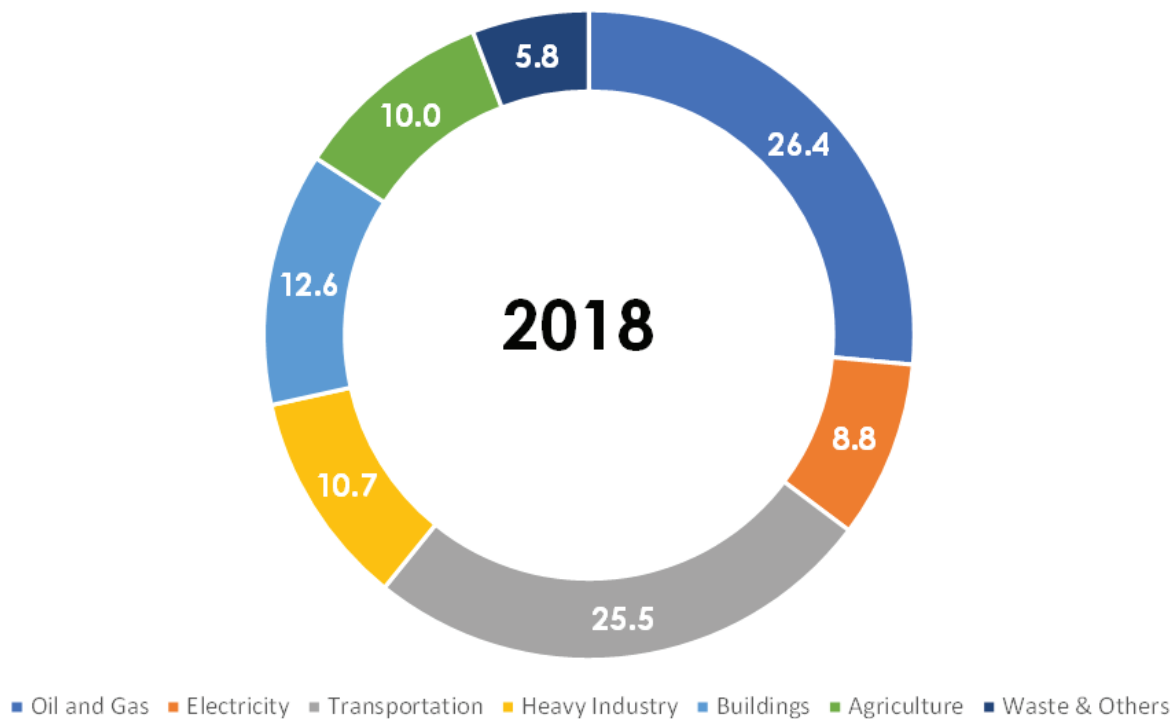
TABLE 2: GHG EMISSIONS PROJECTIONS BY ECONOMIC SECTOR FROM 2018 TO 2030 (MT CO₂ EQ)

	Historical	Projected		Change 2005 to 2030
	2018	2020	2030	
Oil and Gas	193	177	194	36
Electricity	64	38	21	-98
Transportation	186	155	178	17
Heavy Industry	78	65	82	-5
Buildings	92	90	82	-4
Agriculture	73	73	77	5
Waste & Others	42	39	41	-5
Total	729	637	674	-56

Source: Historical and Projected emissions data, Canada's National Inventory Report (NIR) 2020.

¹ Canada's Building Trades Union: <https://buildingtrades.ca/where-we-stand/industry-facts/>
² **A Healthy Environment and A Healthy Economy**, December 2020.

CHART 2: GHG EMISSIONS BY SECTOR – 2018 (%)



Source: Historical and Projected emissions data, Canada's National Inventory Report (NIR) 2020

Including retrofits as part of a post-COVID-19 recovery plan will bring economic, health and environmental benefits, create jobs and build cities' resilience to future crises. Retrofitting homes and buildings, including social housing, can create thousands of jobs and spur the local economies, especially if upskilling and contracts are targeted at local small and medium-sized enterprises.

A study¹ conducted in the United States shows that \$1 million invested in energy efficiency can generate up to five more FTE jobs than if it was invested in the oil and gas sector. Energy efficiency could be a strong job stimulator, particularly following a deep recession such as the current pandemic-induced recession.

Investment in retrofits will help households and businesses save on energy bills. These savings will be reinvested in the local economies through increased consumer spending and create jobs in the local communities across Canada. More jobs will also be created as demand for retrofit projects increase and businesses in the energy efficiency sector purchase more materials and tools, spurring manufacturing, and hiring more staff. Investment in retrofits can generate a powerful economic chain of reaction that will catalyze Canada's economic recovery post-crisis.

In fact, a recent macroeconomics modelling² by Clean Energy Canada and Efficiency Canada indicates that for every \$1 million invested in energy efficiency 16-30 net FTE jobs could be created. The same study also shows that if energy efficiency measures, including home and building retrofits, in the Pan-Canadian Framework are fully implemented, Canada could cut an estimated 79 million tonnes of GHG by 2030 — close to 40 per cent of Canada's Paris climate commitment. Moreover, an environmental impact study conducted in New Mexico (U.S.)³ on a sample of residential homes built in the 1960s, shows that retrofitting those homes, particularly retrofitting heating sources and insulation, can result

¹ Heidi Garrett-Peltier, *Green versus brown: Comparing the employment impacts of energy efficiency, renewable energy, and fossil fuels using an input-output model*, *Economic Modelling*, Volume 61, February 2017, Pages 439-447.

² Efficiency Canada and Clean Energy Canada (2020), "Less is more."

³ *Environmental Impact of Housing Retrofit Activities: Case Study*, October 2014.

in a decline of carbon emissions by more than half. Thus, energy efficiency improvements in the built environment could represent a significant portion of the GHG savings needed to achieve the 2030 target.

While it is clear that investment in retrofits and energy efficiency could generate considerable economic spin-offs post-pandemic, access to capital and funding for homeowners and businesses remains a significant barrier to investment. Government intervention is needed to facilitate access and spur investment in retrofits across Canada. The government needs to work closely with the private sector to bring forward innovative policy instruments to increase access to retrofit funding by Canadian homeowners and businesses.

For example, between 2015 and 2018, The Atmospheric Fund partnered with Toronto Community Housing Corporation⁴ to undertake retrofits in seven buildings on three sites. The project was in part financed through an innovative, non-debt financing instrument called the Energy Savings Performance Agreement (ESPA™). ESPA is a non-debt retrofit financial instrument that covers retrofit project costs and repayment is made from savings on energy costs. The project mainly focused on a variety of resource conservation measures targeting all fuel types and resulted in significant energy savings and CO₂ emissions reduction.

These community-based projects could be scaled up and implemented across the country, helping building owners save on energy costs and reduce carbon emissions while addressing one of the most fundamental impediments to retrofitting in Canada — access to capital and funding.



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Recommendations

- We recommend that the federal government includes home and building retrofits as part of the \$100 billion recovery fund.
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⁴ Retrofitting R.J. Smith Apartments: <https://taf.ca/publications/retrofitting-rj-smith-apartments/>.

2. Regulatory Harmonization

Canada has a well-developed regulatory regime for codes development, implementation and enforcement, however, the misalignment of codes and regulations across jurisdictions remains a significant issue. The disparity in building codes and standards adoption across jurisdictions in the country creates difficulties and slows the process of bringing new and efficient products to the market.

For many years, manufacturers and contractors in the plumbing and heating industry have developed and built products that use fuels and water more efficiently. As a result, many of the technologies needed to enhance efficiency in Canada's buildings and homes already exist. Over this time, the industry has coped with disparities in building codes and equipment standards that make it more expensive, difficult, and often impossible to provide the most efficient systems to customers. Many provinces are years behind in adopting national model building codes and this is creating inefficiencies for wholesale distributors that inventory and sell these products across Canada.

Our research estimates that different regulatory requirements, time frames for code adoption, and uneven enforcement costs can create added cumulative costs throughout the supply chain of between 30 to 40 per cent on a given project. These issues are creating bottlenecks in the construction industry that are limiting progress and economic growth across the board. This translates into hundreds of millions of dollars in extra costs annually and Canadian consumers are bearing the brunt of a fragmented system.

Our National Code development has failed to keep pace with emerging technologies. Not only is our national code cycle slow but certain provincial jurisdictions further exacerbate the issue by their lagging adoption of the national codes, which often references outdated standards or does not include new standards.

That said, the Canada Free Trade Agreement (CFTA) represents an important step in the right direction as it will contribute to eliminating or reducing barriers to the freedom of movement of goods, persons, services and investments between provinces. Our industry is pleased that all governments signed on to the plan and believe that harmonization of provincial and territorial regulations and codes is an issue that needs to be prioritized in this context.

Although COVID-19 has delayed the publication of the National Building Codes to December 2021, this is not a reason to stall adoption. Provinces should begin working now on the adoption process and compliance regime. The federal government must work closely with the Provincial/Territorial Policy Advisory Committee on Codes to ensure timely adoption at the provincial and territorial levels. Delays would undermine the beneficial work that has already been done on this issue. It is important that provinces and territories decide on a consistent adoption and enforcement time frame within a few months of the national codes' publication. This is critical to the flow of goods across the country, minimizing inventory variations and keeping costs down, while also ensuring consistent training and knowledge of building officials.

Ensuring builders can easily use the most up-to-date and energy-efficient products that limit waste and reduce environmental contaminants is fundamental to the federal government's climate change goals. This will ensure historic investments in infrastructure and retrofits can reach their full potential and will make construction more efficient and productive.

Harmonization: Positive Effects of Timely Adoption

- » Consistent application of enforcement rules;
- » Less potential for the dumping of non-compliant products;
- » Increased productivity for all stakeholders;
- » Complementary support for the National Red Seal education system;
- » Improved competitiveness for Canadian manufacturers and suppliers;
- » Innovation encouraged — new products can be marketed more quickly;
- » Increased product choice for consumers and contractors, with fewer delays and added costs on projects; and
- » Improved interprovincial trade.



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Recommendation

We recommend that the federal government work closely with the Provincial/Territorial Policy Advisory Committee on Codes to ensure timely adoption of the National Codes at the provincial and territorial levels by the first quarter of 2022.

3. Investment in Skilled Trades

Prior to the crisis, the construction industry was forecasted to grow at a moderate pace in the near-term. Demand for skilled workers was also anticipated to reach over 50,000 by 2030 while over 257,000¹ experienced skilled workers were expected to retire over the same period, increasing the need for the industry to recruit over 300,000 skilled workers to meet the market demand.

The pandemic and related restrictions have severely impacted the recruitment and training of new apprentices, resulting in a decline in the number of new apprentices joining the skill trades this year. This has exacerbated the critical need to recruit more skilled workers in the industry.

As the economy recovers post-pandemic and new retrofit projects get underway, concerns over the aging of the construction workforce remain.

The success and the speed of Canada's green and resilient recovery are closely tied to the ability to deliver key infrastructure and retrofit projects in the near and long-term. To that end, Canada needs to build capacity and invest in training opportunities to upskill workers, retrain workers from other industries and promote skilled trades as retirement in the construction workforce accelerates over the next decade.

This is especially true for the mechanical trades sector which faces major labour shortages in the next couple of years. Approximately 22 per cent² of the overall construction workforce is expected to retire by 2029 and close to 18 per cent of pipe trades (plumbers, pipefitters, sprinkler, HVAC) workers are retiring over the next decade.

Greater demands are being placed on the individuals who will remain in the construction labour force. Training and skills certifications have become increasingly complex as technologies evolve and the sector advances. Some programs, like the Union Training and Innovation Program, are assisting by providing opportunities to groups that are traditionally underrepresented, including newly arrived immigrants, Indigenous peoples and women. However, more needs to be done to ensure Canadians benefit from the changing workforce dynamics and the construction sector remains a driver of productivity.

Businesses in the construction sector needs to be supported through training opportunities for apprentices and the promotion of skilled trades. They also need certainty and Canada's ability to deliver infrastructure projects is critical to providing recruits with on-the-job experience and hours to qualify as tradespeople.

¹ Forecast by BuildForce Canada: <https://www.constructionforecasts.ca>.

² BuildForce Canada, "Investing in recruitment and training still essential to avoid future skilled labour challenges."



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Recommendations

- We recommend that the federal government invests to provide training opportunities to upskill trade workers and retrain workers from other sectors to join the skilled trades.
- We recommend that the federal government fully implement the recommendation from the Recovery Task Force¹ to invest \$1.25 billion in workforce development for energy efficiency and climate resiliency, including for enhancing access to training programs, developing new approaches, and working with Canadian colleges for a resilient recovery.
- We recommend that the federal government invest \$10 million per year over the next five years in marketing and promoting skilled trades professions to the public at large, with \$2 million earmarked toward promoting skilled trades training opportunities to newcomers to Canada, women, Indigenous peoples and other marginalized communities.

¹ Recovery Task Force, Final Report: https://www.recoverytaskforce.ca/wp-content/uploads/2020/09/TFRR-Final-Report_EN.pdf.