



# Research to Inform a Workforce Attraction Strategy for Residential Retrofit Excellence

**EXECUTIVE SUMMARY**

**August 2024**

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## **Disclaimer**

This report was produced as part of the UBC Sustainability Scholars Program, a partnership between the University of British Columbia and various local governments and organizations in support of providing graduate students with opportunities to do applied research on projects that advance sustainability across the region.

This project was conducted under the mentorship of Home Performance Stakeholder Council staff. The opinions and recommendations in this report and any errors are those of the author and do not necessarily reflect the views of the Home Performance Stakeholder Council or the University of British Columbia.

## **Acknowledgements**

The author acknowledges that the work for this project took place on the unceded ancestral lands of the xwməθkwəy̅əm (Musqueam), Skwxwú7mesh (Squamish), Stó:lō and Səl̓ílwətaʔ/Selilwitulh (Tseil- Waututh) Nations.

The author would like to thank the following individuals for their contribution, feedback, and support throughout this project: Tanya Ratzlaff, Senior Manager of Strategic Relations, HPSC and Jovan Cheema, Managing Director, HPSC.

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# RESEARCH TO INFORM A WORKFORCE ATTRACTION STRATEGY FOR RESIDENTIAL RETROFIT EXCELLENCE

## EXECUTIVE SUMMARY

### INTRODUCTION

British Columbia (BC) requires the supply of an efficient, capable, and skilled workforce to meet the target of retrofitting 500,000 homes by 2032.<sup>1</sup> The Home Performance Stakeholder Council (HPSC), the leading industry organization for advocacy, engagement, and house-as-a-system training for the residential retrofit industry in BC, has identified a shortage of available skilled labour in the residential retrofit industry in the province. Given these shortages and capacity-building requirements, the HSPC has commissioned this study on “Research to Inform a Workforce Attraction Strategy for Residential Retrofit Excellence” to generate insight into the labour market demand and supply of skilled trades in the retrofit industry, including heating, ventilation, and air conditioning (HVAC) mechanics, insulation, windows and doors, and renewable energy (e.g. solar panels) installers as well as energy advisors, general retrofit contractors, electricians, and plumbers in the province of BC. This study is the first step towards designing a comprehensive workforce development strategy.

The objectives of this report are threefold. Firstly, the report aims to determine the major barriers and roadblocks to the recruitment and retention of key trades in the retrofit industry in BC. Secondly, it examines how the current federal and provincial policies address labour shortages in the retrofit industry in BC and how successful they are in building the current and future workforce in the retrofit industry. Thirdly, it identifies the human resource solutions, best practices, key policies, and case study achievements in expanding the workforce in the retrofit industry in other countries.

In terms of methodology, substantial desktop review of government, non-government, educational, and business institutions’ reports, articles, toolkits, and other research materials was carried out for in-depth analysis of federal and provincial government and non-government institutions’ workforce development strategies, policies, programs, and initiatives. In addition, three interviews with government officials from Employment and Social Development Canada and representatives from non-governmental institutions, such as Jumpstart Refugee Talent and Multilingual Orientation Service Association for Immigration

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<sup>1</sup> Tom-Pierre Frappé-Sénéclauze, Dylan Heerema, and Karen Tam Wu, ‘Deep emissions reduction in the existing building stock’ (Pembina Institute 2017) <[www.pembina.org/reports/retrofit-strategy-bc-report-2017.pdf](http://www.pembina.org/reports/retrofit-strategy-bc-report-2017.pdf)> accessed 26 May 2024.

Countries (MOSAIC), were conducted between 12 July – 2 August, 2024. Furthermore, the HPSC Board of Directors and the Industry Advisory Committee meetings were held between 22-25 July, 2024 for presentation of the research results, feedback, comments, and recommendations, which were reflected into the final report.

“Without increased recruitment, the report projects a deficit of 13,166 workers in the residential construction industry.”

BuildForce Canada, ‘Construction and Maintenance Looking Forward: ‘British Columbia, Highlights 2021-2030’

## **PART I. SHORT AND LONG-TERM GAPS IN THE RESIDENTIAL RETROFIT INDUSTRY**

One of the foremost authorities in construction industry statistics, BuildForce Canada’s latest report on the *Construction and Maintenance Industry*, has projected that the province of BC will face challenges in replacing the aging and retiring workforce of 24,300 workers in the residential construction industry in the coming decade of 2024-2033, which will require the recruitment of around 32,800 new workers.<sup>2</sup> This report further highlights that the entrance of approximately 19,674 workers from the local labour force under the age of 30 will help offset the demands; however, without increased recruitment, the report projects a deficit of 13,166 workers in the residential construction industry.<sup>3</sup> Consequently, the availability of workers of most retrofit industry occupations in this study, including electricians,<sup>4</sup> plumbers,<sup>5</sup> HVAC mechanics,<sup>6</sup> insulators,<sup>7</sup> and window and door and renewable energy installers<sup>8</sup> are projected to be limited in the local labour market, which will require employers to compete to attract skilled workers.<sup>9</sup> More specifically, the BC Government’s statistics<sup>10</sup> for the retrofit industry

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<sup>2</sup> BuildForce Canada, ‘Construction and Maintenance Looking Forward: ‘British Columbia, Highlights 2021-2030’ (March 2024) 3  
<[www.constructionforecasts.ca/sites/default/files/highlights/2024/2024\\_BC\\_Constr\\_Maint\\_Looking\\_Forward.pdf](http://www.constructionforecasts.ca/sites/default/files/highlights/2024/2024_BC_Constr_Maint_Looking_Forward.pdf)> accessed 22 May 2024.

<sup>3</sup> *ibid* 3.

<sup>4</sup> Under NOC 72200. Here, the National occupational classification (NOC) is critical to this study to conduct a detailed analysis of the retrofit industry occupations and trades to generate accurate statistical data on the demographic and social characteristics of employees such as age, gender, education, migration status, and employment attributes such as the activity throughout the year and wages.

<sup>5</sup> Under NOC 72300.

<sup>6</sup> Under NOC 72402.

<sup>7</sup> Under NOC 72321.

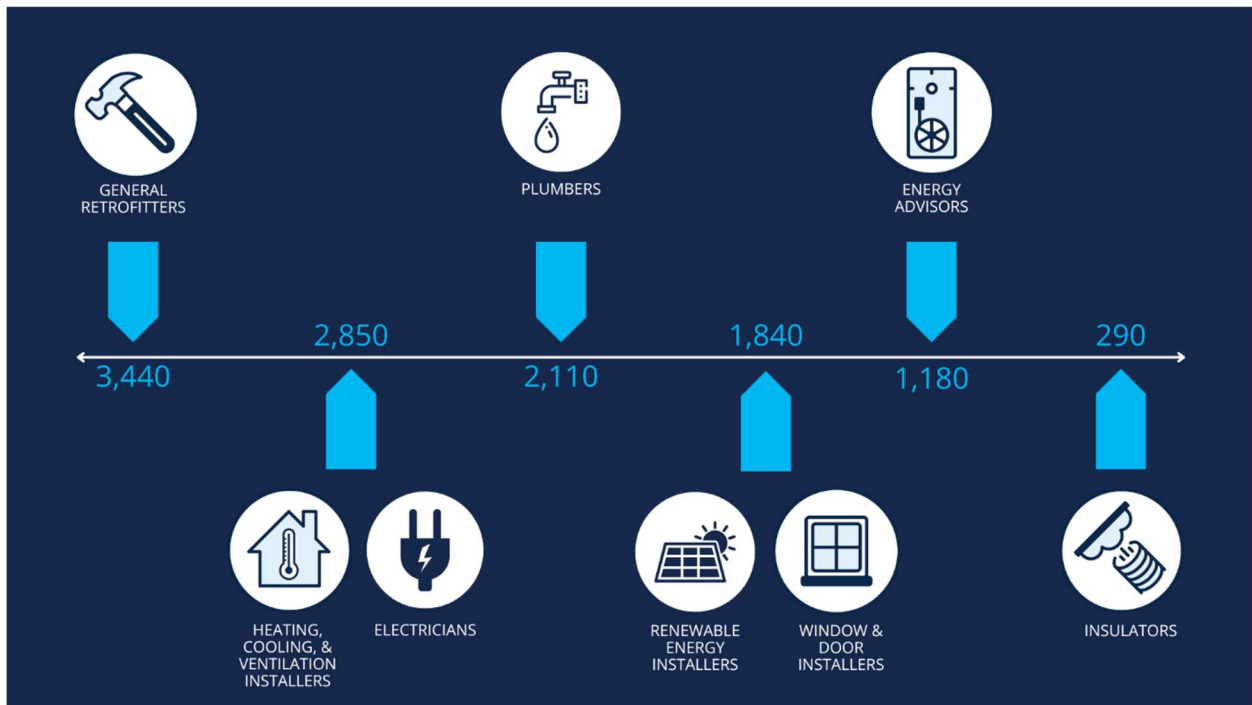
<sup>8</sup> Windows and doors installers and renewable energy installers both fall under NOC 73200.

<sup>9</sup> BuildForce Canada (n 2) 4.

<sup>10</sup> BC Government, ‘British Columbia: Labour Market Outlook’ (2023) <[www.workbc.ca/research-labour-market/bcs-labour-market-outlook-2023-edition](http://www.workbc.ca/research-labour-market/bcs-labour-market-outlook-2023-edition)> accessed 16 June 2024.

forecast, for the same period, predict that most job openings are expected for general retrofit contractors<sup>11</sup> (3,440 new jobs), HVAC mechanics and electricians (2,850 new jobs for each sector), and plumbers (2,110 new jobs); conversely, the sector with the least amount of expected new jobs is insulation (290 new jobs). (See Figure no.1)<sup>12</sup>

**Figure no.1: Predicted job openings for retrofit sectors, BC, 2023-2033<sup>13</sup>**



The major barriers to workforce development in the retrofit industry include the underrepresentation of equity-deserving groups such as women, visible minorities,<sup>14</sup> and immigrants. The construction sector in general has struggled to attract, recruit, and retain skilled workers from among women, visible minorities, and immigrants, and the retrofit industry is no stranger to this negative trend. For instance, the percentage of women in the eight occupational groups in the retrofit industry in BC amount to an average of 7.2% (out of a total of 2,180) with the highest percentage of women among energy advisors (19.3%) and the

<sup>11</sup> Under NOC 72014.

<sup>12</sup> Other job openings include windows, doors, and renewable energy installers – 1,840 new jobs, and energy advisors (NOC 22233) – 1,180 new jobs.

<sup>13</sup> BC Government (n 10) 61-62.

<sup>14</sup> Other equity-deserving groups under the Employment Equity Act of Canada include the Indigenous people and people with disabilities, who are not studied in this report due to the availability of information and time constraints.

least among HVAC mechanics and plumbers (1.9% each).<sup>15</sup> The percentage of visible minorities in these occupations is slightly higher amounting to an average of 16.5% (out of a total of 11,630) with the highest percentage of visible minorities among the general retrofit contractors (26.9%) and the least among energy advisors (1.7%).<sup>16</sup> Another critical labour stream to fill the gap in the skilled workforce comes from the recruitment of immigrants into trade occupations. The potential of migrant labour to address the skilled workforce shortage in the retrofit industry is illustrated by a relatively high percentage of their representation in the skilled trades amounting to an average of 22% (out of a total of 24,115) with the majority among the windows and doors and renewable energy installers (30.7%) and the least among HVAC mechanics (16%).<sup>17</sup>

Some of the substantial barriers to these equity-deserving groups' representation in the retrofit industry includes several challenges such as the lack of enforcement of Diversity, Equity, and Inclusion (DEI) policies at the corporate level, the majority of which are small and medium enterprises (SMEs). In fact, the available data highlight that out of 26,262 construction companies in BC, businesses with less than 20 employees amount to 24,161 (92%).<sup>18</sup> Detailed statistical data under the North American Industry Classification System (NAICS) reveal that the number of residential building construction (NAICS 236110<sup>CAN</sup>)<sup>19</sup> companies amounts to 6,543, comprising 3.2% of the total industries in BC, which is slightly higher compared to Canada (2.8%).<sup>20</sup> Most of these companies are small business contractors comprising 6,528 (99.7%), while the medium-sized businesses amount to 15 (0.2%) with no large companies operating in this industry in BC.<sup>21</sup>

The prevalence of SMEs presents additional challenges such as the lack of funds to sufficiently invest in workforce training due to the shortage of human and material resources,

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<sup>15</sup> Statistics Canada, 'Employment income statistics by occupation unit group, visible minority, highest level of education, work activity during the reference year, age and gender: Canada, provinces and territories' (10 May 2023) <[www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=9810058601](http://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=9810058601)> accessed 16 June 2024.

<sup>16</sup> *ibid.*

<sup>17</sup> Statistics Canada, 'Employment income statistics by occupation minor group, immigrant status and period of immigration, highest level of education, work activity during the reference year, age and gender: Canada, provinces and territories' (10 May 2023) <[www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=9810058501](http://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=9810058501)> accessed 17 June 2024.

<sup>18</sup> BCCA, 'Construction industry survey' (2023) 8 <<https://bccasn.com/wp-content/uploads/2023/04/BCCA-Industry-Survey-2023-Web-Final-V1.pdf>> accessed 13 June 2024.

<sup>19</sup> The construction companies under this classification are involved in the construction or remodeling and renovation of single-family and multi-family residential buildings.

<sup>20</sup> Statistics Canada, 'Canadian Business Counts, with employees, December 2022 (20 February 2020)' <[www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3310066101](http://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3310066101)> accessed 11 July 2024.

<sup>21</sup> *ibid.*

resistance to change, leadership commitment<sup>22</sup> as well as the compounding economic and market conditions affecting cashflow. Furthermore, due to the cyclical and seasonal nature of the construction industry generally,<sup>23</sup> the instances of part-time or precarious employment are substantial in the retrofit industry sectors. Notable highlights include the insulation, windows and doors, and renewable energy sectors, along with electricians, who have the highest rates of part-year, part-time employment all around 50%.<sup>24</sup>

“According to the 2023 BCCA survey, 44% of respondent skilled tradespeople changed their employers at least once in a year due to higher pay opportunities.”

BCCA, ‘Construction industry survey’ (2023)

The precarious nature of employment, low wages, and the poor image of the construction industry generally constitute critical factors affecting the high labour turnover. According to the 2023 BCCA survey, 44% of respondent skilled tradespeople changed their employers at least once in a year due to higher pay opportunities.<sup>25</sup> In addition to these compounding effects of SMEs, the barriers to immigrant labour, as a significant source of skilled workforce supply, include the presence of educational bias towards highly educated individuals in the federal and provincial immigration pathways and programs, which overlook those with trades occupations.<sup>26</sup> For example, current immigration programs do not recognize foreign trade certificates and credentials related to Canadian National Occupational Classification (NOC) occupations in the retrofit industry; additionally, there is a need to streamline migrants’ skills assessments to support the attraction and recruitment of the immigrant workforce into the skilled trades.

## **PART II. FEDERAL AND PROVINCIAL (BC) POLICIES, PROGRAMS, AND INITIATIVES THAT SUPPORT, HINDER, OR OVERLOOK THE RETROFIT INDUSTRY**

Several important federal-level workforce development programs and initiatives include those implemented by Employment and Social Development Canada (ESDC) such as the

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<sup>22</sup> Kirsty Gardiner, ‘A Leadership Guide to Diversity and Inclusion in the Workplace’ (*Positive Workplace*, 12 February 2024) <<https://positivepsychology.com/diversity-and-inclusion-in-the-workplace/>> accessed 17 July 2024.

<sup>23</sup> A Kantamneni, B Haley, and C Maas, ‘Designing Home Retrofit Policy for the People Who Do the Work’ (Efficiency Canada 2024) 13.

<sup>24</sup> Statistics Canada (n 15).

<sup>25</sup> BCCA 2023 (n 18) 3.

<sup>26</sup> BuildForce Canada, ‘Immigration Report: Update’ (2024) 3 <[www.buildforce.ca/en/immigration](http://www.buildforce.ca/en/immigration)> accessed 23 July 2024.

*Industrial Workforce Solutions Program*, which aims to assist SME employers to attract and retain a skilled workforce through training of skills necessary to succeed in key industries of the economy, including the construction industry.<sup>27</sup> The program has invested \$410 million dollars in 21 projects to facilitate systemic and enduring change in Canada’s key industries.<sup>28</sup> *The Community Workforce Development Program (CWDP)* is another government program that supports communities through workforce planning and skills development to meet the needs of regional economic growth. The ESDC funded 13 projects reaching over 100 rural and remote communities in Canada.

The *Skills for Success (SFS)* program supported 20 projects in 2023-2024 to offer foundational and transferrable training to participants for upskilling or training new entrants into the industry.<sup>29</sup> Another notable federal government initiative is the *Apprenticeship Service*, which offers sponsorship to employers to hire new apprentices in 39 Red Seal Trades while helping first-year apprentices to acquire on-the-job training to successfully transition into a career in the skilled trades; \$470 million dollars will be invested through this program starting from 2021-2022 for over three years.<sup>30</sup> While this program is useful for medium- and long-term workforce development, it does not solve the immediate workforce needs of the retrofit industry as most Red Seal programs take up to 4-5 years to complete and not all participants will work in the residential industry.

“While [the Apprenticeship Service] the program is useful for medium- and long-term workforce development, it does not solve the immediate workforce needs of the retrofit industry as most Red Seal programs take up to 4-5 years to complete and not all participants will work in the residential industry.”

In 2024–2025, the Government of Canada will allocate over \$394 million to BC under labour market agreements.<sup>31</sup> Because employment-related issues fall under the joint jurisdiction of

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<sup>27</sup> ESDC, ‘About Sectoral Workforce Solutions Program’ (*Government of Canada*, 9 March 2023) <[www.canada.ca/en/employment-social-development/programs/sectoral-workforce-solutions-program.html](http://www.canada.ca/en/employment-social-development/programs/sectoral-workforce-solutions-program.html)> accessed 24 June 2024.

<sup>28</sup> From an interview with the Employment and Social Development Canada (ESDC) public official (Vancouver, 26 July 2024).

<sup>29</sup> *ibid.*

<sup>30</sup> *ibid.*

<sup>31</sup> These agreements are the Labour Market Development Agreement (LMDA) and the Workforce Development Agreement (WDA). The base funding offered to BC through these agreements amounts to \$2.8 billion dollars. The primary purpose of the bilateral labour market agreement is to address the skilled workforce shortages through the delivery of training and employment support programs to connect individuals seeking employment with potential employers, which is critical for the retrofit industry (*Government of Canada*, ‘Budget 2024:



federal and provincial governments, the programming decisions and industrial support services under the labour market agreement funding fall under the responsibility of the BC government. The Ministry of Post-Secondary Education and Future Skills (MPSEFS) oversees the implementation of programs and services delivered under the Workforce Development Agreements (WDAs) in BC, ensuring their compliance with provincial labour market demands.<sup>32</sup> Furthermore, the specific workforce development program of the BC government is focused on the *Workforce Shortages Stream*, which supports industries to address their immediate workforce shortages within key occupations by offering funding for occupational

“The proliferation of numerous programs and sometimes conflicting public policies with short-term duration (3-4 years) that do not specifically target the retrofit industry cannot properly address the labour market shortage in this industry, where SMEs lack sufficient time or resources to navigate through complex bureaucratic processes.”

skills training and employment support for residents of BC who are unemployed or precariously employed in part-time or seasonal jobs.<sup>33</sup> Other workforce support programs by the BC government include the Employer Training Grant Program (ETGP), which funds both SMEs and large enterprises (98% of clients were SMEs and 13% were from the construction sector) to support skills training for their workforce, including new entrants, to help them address skills shortages and increase productivity.<sup>34</sup>

While the federal and provincial workforce development programs and initiatives assist business contractors in the retrofit industry to address their skilled workforce shortages, they are also hindered by unique challenges such as a lack of public awareness, complex application procedures, short-term durations, and inconsistent policies and programs. For instance, the policies, programs, and initiatives by the federal and provincial governments on workforce development are not sufficiently promoted, leading to a lack of awareness among the target groups of retrofit contractors; participation is further constrained by the shortage of available staff to participate in the training programs. The proliferation of numerous programs and sometimes conflicting public policies with short-term duration (3-4 years) that do not specifically target the retrofit industry cannot properly address the labour market shortage in

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Fairness for every generation’ (2024) <<https://budget.canada.ca/2024/home-accueil-en.html>> accessed 24 July 2024).

<sup>32</sup> Interview with the ESDC public officials (n 28).

<sup>33</sup> WorkBC, ‘Workforce Shortages Stream’ (2024) <[www.workbc.ca/find-loans-and-grants/community/community-workforce-response-grant/workforce-shortages-stream](http://www.workbc.ca/find-loans-and-grants/community/community-workforce-response-grant/workforce-shortages-stream)> accessed 17 July 2024.

<sup>34</sup> Governments of Canada and BC, ‘Canada-BC Workforce Development Agreement: Program Result (2022-2023)’ 9 <[www.workbc.ca/media/2070/download?inline=>](http://www.workbc.ca/media/2070/download?inline=>) accessed 31 July 2024.

this industry, where SMEs lack sufficient time or resources to navigate through complex bureaucratic processes.

### **PART III. CASE STUDIES: 6 GLOBAL SUCCESSFUL WORKFORCE DEVELOPMENT STRATEGIES**

Six workforce development strategies were analyzed for this report including the Engineering Construction Industry Training Board (ECITB, UK), Baltimore Centre for Sustainable Careers (USA), Building Futures Rhode Island (USA), Building Pathways Boston (USA), Wisconsin Regional Training Program (USA), and the Australian Government's initiatives to recognize migrant trades certificates through its agency of Trades Recognition Australia (TRA). The key takeaways from these case studies for successful workforce attraction include:

- standardization of core technical skills to open doors to new entrants into the workforce as well as future-proofing the skill set of the existing workforce;
- facilitation of an inclusive and diverse workforce through partnership with employers to integrate minority groups, people with criminal backgrounds, women, and racialized groups into the workforce;
- paid pre-apprenticeship programs recruiting under-represented, racialized, and minority members of the community into the trades; and
- prioritization of skills assessment of immigrants for targeted construction and retrofit occupations by government.

### **SUMMARY**

This report has highlighted that the supply of the future workforce in BC's retrofit industry can come from the following sources.

#### **Recruitment of workers from underrepresented groups (i.e., women and visible minorities):**

Proper implementation of DEI policies, promotion of safe and inclusive corporate culture and work environments, as well as tailor-made wrap-around support services to women and visible minorities – such as flexible work hours in consideration of childcare responsibilities and travel arrangements – could assist in addressing the underrepresentation of these equity-deserving groups in the retrofit trades.

#### **Attraction of labour supply through targeted immigration pathways and programs:**

In addition to addressing the educational biases, the federal and provincial immigration policies and programs need to ensure that trade-specific immigration pathways do not create

additional barriers to immigrants in these streams by demanding full-time employment when these might not be available in the construction industry. Moreover, inclusion of more occupations into the streamlining and recognition of foreign trade certification and credentials will greatly boost the chances of migrant workers to quickly enter the trades workforce in BC.

**Upskilling of the workforce from adjacent trades and recruitment of new entrants to the retrofit industry:**

Upskilling of adjacent trades through micro-credentials and on-the-job training constitutes another significant pathway to address the skilled workforce shortage. In addition, new entrants from non-adjacent trade occupations, such as the mining and forestry industries, could possibly be cross trained through carefully designed and tailor-made micro-credentials. These short-duration programs could assist new entrants from non-adjacent trades to adapt their skills to retrofitting energy-efficient buildings. The critical factor in any micro-credential program development is close collaboration with industry stakeholders, employers, government and non-government institutions, and education providers that offer quality assurance guarantees<sup>35</sup> to ensure that the skills gained during these programs match those desired by the employers in the retrofit industry.

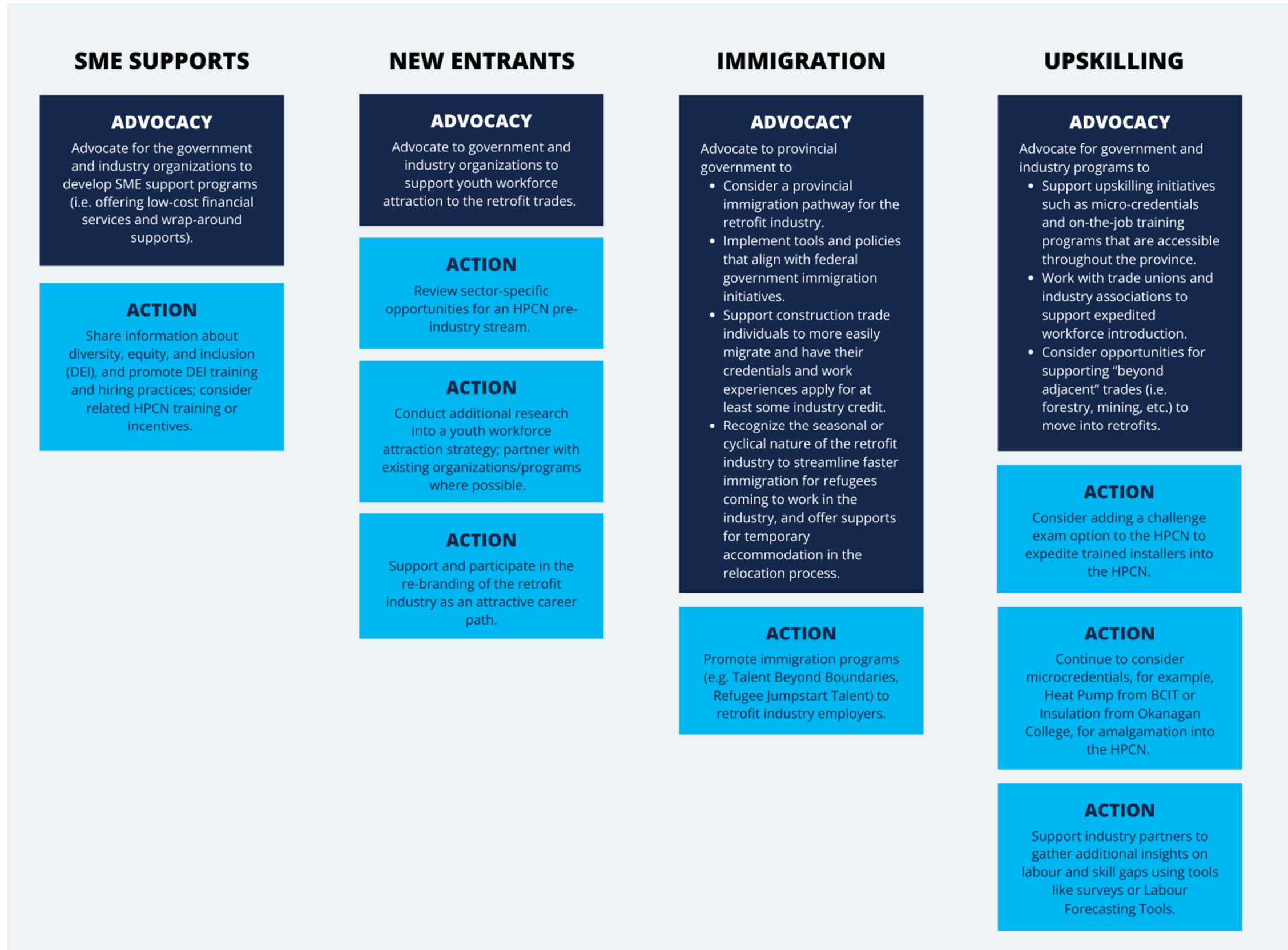
**NEXT STEPS FOR THE HPSC**

Based on the conclusions of the report, and through engagement with the HPSC’s Board of Directors and industry stakeholders, the HPSC has determined the following next steps for supporting workforce attraction (Figure no.2). These steps constitute additional avenues for exploration; the HPSC and its advisory groups will further consider the appropriate role of the HPSC and its allies in each area.

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<sup>35</sup> BC Government, ‘Micro-credentials’ (22 February 2024) <[www2.gov.bc.ca/gov/content/education-training/post-secondary-education/micro-credentials](http://www2.gov.bc.ca/gov/content/education-training/post-secondary-education/micro-credentials)> accessed 30 July 2024.

Figure no.2: Next Steps for Workforce Attraction



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