workforce WindsorEssex

A GUIDE TO

TALENT DEVELOPMENT, ATTRACTION, AND RETENTION

FOR WINDSOR-ESSEX'S EV SECTOR

Canada EMPLOYMENT ONTARIO Ontario

This Employment Ontario project is funded in part by the Government of Canada and the Government of Ontario.

Workforce WindsorEssex is a workforce and community development board whose mission is to lead regional employment and community planning for the development of a strong and sustainable workforce.

Workforce WindsorEssex is an experienced leader in the development of regional labour market tools, research, guides, and events that create positive change in the local labour market while saving others time and effort. These resources, created in close coordination with employment, education, and industry partners, are designed to help jobseekers, employers, students, and educators, as well as the community, make more informed labour market decisions using locally-responsive, data-rich, and unbiased resources.

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About This Guide

The Windsor-Essex region is experiencing unprecedented growth in its Electric Vehicle (EV) sector and a skilled workforce is key to the success of companies involved in EV sector value chain. For the EV sector to continue to grow and thrive, the region needs to create new and support ongoing talent development, attraction, and retention strategies and innovations. Through the effective use of these identified talent development, attraction, and retention strategies and innovations, the region will be prepared for and become more attractive for current and future sector investments and growth. **Workforce WindsorEssex** has developed this report to investigate talent development, attraction, and retention needs for its EV sector and has provided recommendations for our region's businesses and decision-makers to ensure the region has a steady workforce to support the region's growing EV sector. This report will also share ongoing strategies that are currently, have been, or are in the stages of being developed that will help attract talent for our EV supply chain.

All cities in the world compete to attract and retain talent realizing that future development is based on the human capital they have, and individuals are now more likely to relocate for work than ever before. Building a talent base and the ability to attract talent also brings more investments from large corporations, high-tech industry, and other innovative businesses into the region.[1] Specialized EV sector talent will be a driver of productivity both at an organizational and regional level.

This report provides information about best practices for talent development, attraction, and retention, identifies the type of workers needed to support ongoing EV sector growth and their career and community preferences to inform their decisions to relocate to or stay in Windsor-Essex.

Leaders in government, educational institutions, or community can use this guide to help inform policy or advocacy decisions about what kind of programs, initiatives, and investments will have the greatest impact in improving Windsor-Essex's position as an ideal destination for EV workers.

Local companies can use this guide to improve existing, and adopt new, strategies to develop, attract, and retain skilled talent by appealing to their wants and needs. This guide identifies ongoing strategies in the Windsor-Essex region that are actively helping with talent development, attraction, and retention efforts. Businesses can support and leverage these ongoing strategies as part of larger overall marketing strategies to become more appealing to prospective employees.

[1] Nelli Minasyan, "Talent attraction and retention." 2020.

Methodology

This guide was written using data from a variety of sources. In June 2023 an EV Industry Support Committee was formed to better connect those in the community interested in, or already working towards, talent development, attraction, and retention efforts for the local EV workforce. The committee's membership is comprised of representatives from industry, economic development, government, education, employment service providers, and community leaders to address current and emerging EV workforce needs. This committee provided direction that served to inform recommendations included in this report. The committee also provided relative research and data to support the overall development of this report. Workforce WindsorEssex intends to keep this committee active beyond the release and dissemination of this guide. Ongoing collaboration among community partners will be key to ensuring continuous and successful growth of the EV sector in Windsor-Essex.

Consultations with representatives from industry, economic development, government, education, and service providers also took place to identify labour and skill needs for the EV sector workforce, as well as to identify ongoing or planned strategies and initiatives to improve the EV talent pool.

In November 2023, an EV Sector Talent Attraction and Retention Survey was created in partnership with **Invest WindsorEssex** and the **City of Windsor**. The survey was aimed at students and jobseekers who may have an interest in an EV sector career. Over 280 respondents were able to identify the importance of varied factors that may be attractive to them when choosing to stay in or relocate to the Windsor-Essex region for employment.

Secondary research from several data sources, reports, news stories, and more were analyzed by Workforce WindsorEssex to inform strategy recommendations.

Windsor–Essex's EV Sector Growth at a Glance

Windsor-Essex's EV sector has grown quickly in recent years. In 2022, the region announced and welcomed the largest investment in Canada's automotive industry through the form of the NextStar Energy battery plant, a joint venture between Stellantis and LG Energy Solution. This large-scale $5 billion investment has attracted other lucrative investments to the region, such as a $60 million investment from DongShin Motech Co., Ltd. to build electric battery casings and another $35 million investment from Bobaek America Inc. to produce insulation for EV batteries. NextStar Energy stated it expects 15 suppliers to follow the plant into Windsor to create a larger battery manufacturing hub.[2] The City of Windsor has engaged in talks with two other companies in the EV powertrain and electrolyte production spaces to potentially locate operations in the region. Most importantly, these recent investments into the region's EV sector and the continued shift toward electrification of the automotive industry have allowed many existing automotive production companies, including original equipment manufacturers (OEMs), Tier 1-3 automotive suppliers, and other companies along the EV value chain to capitalize and expand their own EV-related activities. The Conference Board of Canada expects Windsor's economy to grow by 2.4% this year and then grow at an average annual compound rate of 2.9% from 2024 to 2027, giving it the strongest growth outlook of Canada's 24 largest cities.[3]

With these large-scale investments and an overall transition to the electrification of the automotive industry, the labour landscape is expected to change. Fortunately, the Windsor-Essex region has a strong, existing automotive labour force that possesses qualifications and skills needed to transition into EV-related roles, and many more that easily transition with some form of upskilling. However, recent expansions in the EV sector and with expectations that investments into the region will continue, many positions that become available will need to be filled by talent outside of the region or by students in enrolled secondary school and relevant post-secondary programs. As a result, the Windsor-Essex region will need to create an effective talent attraction and retention campaign, as well as ensuring educational institutions are properly preparing students for careers in the EV sector.

[2] Jason Kirby, "Still bearing scars of recessions past, Windsor is on the verge of a billion-dollar revitalization." The Globe and Mail, December 9, 2023.
[3] Ibid.

Windsor-Essex's Manufacturing Sector – Past and Present

The Windsor-Essex region has a large automotive labour force, many of which are already prepared for the roles the EV sector has to offer. The automotive and larger manufacturing industry has been the lifeblood of the Windsor-Essex region for over 100 years. Windsor, Ontario is known as the "Automotive Capital of Canada" and its industrial and manufacturing history have been largely responsible for how the city and wider region have developed through the years. The region is home to more than 1,000 manufacturers, responsible for $4.5 billion in annual GDP.[4] The region also has more than 90 automotive and other parts manufacturers, including two OEMs, over 250 machine, tool, die, and mold manufacturers, and more than 450 automation related firms. Two national associations, the **Canadian Association of Mold Makers (CAMM)** and **Automate Canada**, were founded in Windsor-Essex.

Windsor's population grew from 21,000 in 1908 to 105,000 in 1928 almost entirely due to employment offered in the automotive industry.[5] Since then, the industry has been through some difficulties, but has always managed to evolve and reinvent itself to recover from hardships. During the Great Depression, 30% of Windsor's workforce became unemployed, but the demand for automobiles after the Second World War led to a recovery for the automotive industry. From 1953-1962, the number of auto workers dropped to half, then the Auto Pact was signed in 1965, leading to a substantial increase in employment. Today, manufacturing continues to dominate the local economy, employing over 20% of the entire labour force.

The automotive and larger manufacturing industry are now amid another transition. The automotive industry is becoming electrified, and the manufacturing industry is more advanced and technological than ever before. Windsor-Essex companies are national and global leaders when it comes to the electrification of automobiles and the advancement of the manufacturing industry. Windsor-Essex is now rebranding itself as the "Automobility Capital of Canada" due to the technological advancements being developed here. The fuel to this new, dynamic industry is a highly sophisticated and skilled workforce of 40,000 designers, engineers, production workers, and technicians assuring quality, productivity, innovation, and profitability.

[4] Invest WindsorEssex, "Advanced Manufacturing."
[5] The Canadian Encyclopedia, "Windsor (Ont)." August 10, 2020.

The region's experienced manufacturing labour force allows for an elevated level of automation and expertise in specialized manufacturing methods, keeping up with the high demands of the auto industry and bringing down the overall cost of manufacturing in the region.

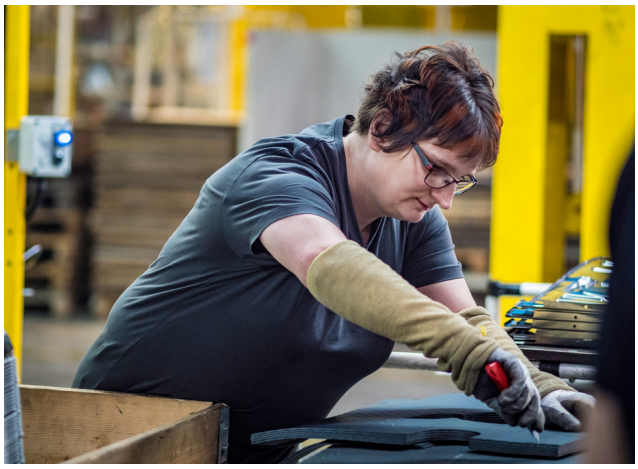
From the past to the present, Windsor-Essex has shown strength through its manufacturing and automotive industries. The region's labour force and companies have now pivoted themselves to become leaders in the future of automotive production and advanced manufacturing. With automobiles becoming computers on wheels, more value will come from digital technology design and software. Manufacturing is becoming more modular, with less in-house production and a greater focus on design and assembly. The electrification of the automotive industry and the shift to EVs are now causing automotive and manufacturing companies to rethink the way they work.[6] As the Windsor-Essex region manages these transitions, its focus now needs to become how to attract and develop the talent necessary to keep the region thriving and its companies supported by a highly skilled workforce.

[6] KPMG, "The future of automotive." September 2023.

Identifying the Right Talent

Using predictions of what occupations will be in demand in a growing EV sector and comparing them to labour market statistics can inform Windsor-Essex where its efforts should be focused when it comes to developing, attracting, and retaining the right type of talent. Windsor-Essex's automotive manufacturing (NAICS 3361, 3362, and 3363) labour force currently employs 18,010 and the wider manufacturing industry currently employs 41,785.[7]

Approximately 24% of Windsor-Essex's automotive manufacturing labour force is over the age of 55, and around 23% of Windsor-Essex's overall manufacturing labour force is over the age of 55.[8] This means that in the next 10-15 years, our region can expect up to one quarter of the talent base that possesses transferable skills for the EV sector to retire. These numbers paint a more urgent picture for talent development, attraction, and retention strategies to support the growth of the EV sector. The region's manufacturing labour force is comprised of many workers who have transferable skillsets that are desirable for the EV sector, but talent development, attraction, and retention efforts will need to be targeted on occupations that do not exist in large numbers in the region and are facing large upcoming retirements.



[7] Statistics Canada. Table 98-10-0531-01.
[8] Statistics Canada. Table 98-10-0448-01.

The first step is to identify occupations that will be needed in the Windsor-Essex region to support the ongoing growth of its EV sector and value chain activities. The following table shows occupations that are necessary for various stages of an EV value chain that are either currently taking place or will take place in the Windsor-Essex region:

PROJECTED IN-DEMAND EV SECTOR OCCUPATIONS

Stage of EV production	Description	Projected In-Demand Occupations
Battery Manufacturing	The process of manufacturing batteries for EVs, including materials manufacturing, cell manufacturing, and integration.	• Chemical Engineers • Chemists • Electrical Engineers • Electrical and Electronics Engineering Technologists and Technicians • Engineering Managers • Manufacturing Managers • Mechanical Engineers
EV Design and Assembly	The design and assembly of all component parts of EVs except batteries, including chassis, electronics, and drivetrain.	• Data Analysts • Electrical Engineers • Engineering Managers • Mechanical Engineers • Industrial Designers • Industrial Engineering and Manufacturing Technologists and Technicians • Industrial Engineers • Industrial Instrument Technicians and Mechanics • Software Engineers • Software Developers • Mechanical Engineering Technologists and Technicians • Machinists • Machine Operators • Mold Makers • Millwrights • Manufacturing Managers • Tool and Die Makers
EV Maintenance	The maintenance of EVs, including the regular upkeep and servicing tasks performed on EVs.	• Automotive Service Technicians and Mechanics
Infrastructure	The design and implementation of infrastructure required to support the growing network of EVs.	• Civil Engineers • Electrical Engineers • Electrical Power Line and Cable Workers • Electricians • Urban and Land Use Planners

[19, 10, 11, 12]

Table 1. Projected In-Demand EV Sector Occupations.

[9] Workforce WindsorEssex, "Electric Vehicle-Battery Value Chain Talent Requirements Report." 2021.
[10] Smart Prosperity Institute, "Skills needs for zero-emissions vehicle and battery manufacturing in Ontario." December 2023.
[11] U.S Bureau of Labour Statistics, "Careers in Electric Vehicles." https://www.bls.gov/green/electric_vehicles/
[12] Workforce Intelligence Network. EV Jobs Academy Presentation. September 14, 2023.

The next step is to identify the number of each of the above-listed occupations in the current Windsor-Essex labour force. Below is a table showing the number of individuals currently employed in each of the above-mentioned occupations, by regional employment concentration and percentage of workforce over the age of 55.

PROJECTED IN-DEMAND EV SECTOR OCCUPATIONS: LABOUR FORCE OVER 55 YEARS

Occupation	2021 NOC Code	# Employed (2022)	Employment Concentration (2022)	% of Workforce Age 55+
Automotive Service Technicians	72410	1,625	1.07	29.85
Chemical Engineers	21320	60	***	0
Chemists	21101	135	0.37	25.93
Civil Engineers	21300	630	0.79	25.40
Data Analysts	21223	150	0.55	13.33
Electrical and Electronics Engineering Technologists and Technicians	22310	430	1.01	26.74
Electrical and Electronics Engineers	21310	775	0.91	11.61
Electrical Power Line and Cable Workers	72203	120	1.11	12.50
Electricians	72200	1,000	0.94	18.50
Engineering Managers	20010	460	0.80	26.09
Industrial Designers	22211	120	1.48	29.17
Industrial Engineering and Manufacturing Technologists and Technicians	22302	550	2.19	12.73
Industrial and Manufacturing Engineers	21321	555	1.98	19.82
Industrial Instrument Technicians and Mechanics	22312	35	0.29	42.86
Machine Operators	94	13,365	7.18	22.37
Machinists	72100	1,560	5.01	14.74
Manufacturing Managers	90010	1,380	1.73	27.17
Mechanical Engineering Technologists and Technicians	22301	1,325	1.60	23.02
Mechanical Engineers	21301	1,840	3.53	18.21

PROJECTED IN-DEMAND EV SECTOR OCCUPATIONS: LABOUR FORCE OVER 55 YEARS
TABLE CONTINUED

Occupation	2021 NOC Code	# Employed (2022)	Employment Concentration (2022)	% of Workforce Age 55+
Millwrights	72400	975	1.76	35.90
Software Developers	21232	540	0.57	7.41
Software Engineers	21231	665	0.41	5.26
Tool and Die/Mold Makers	72101	1,725	12.62	28.70
Urban and Land Use Planners	21202	145	0.42	10.34

Table 2. Projected In-Demand EV Sector Occupations: Labour Force Over 55 Years.[13,14,15]

Employment concentration is a way of quantifying how many occupations exist in a specific region as compared to the nation. An employment concentration <1 means that an occupation exists in lower concentration than the national average and an employment concentration >1 means that an occupation exists in higher concentration than the national average.[16] Some of the occupations listed do not exist in larger numbers in the region's existing workforce, such as chemists, data analysts, and software engineers. Strategies will need to be developed to attract or develop talent in these roles.

Windsor-Essex already has a sturdy base for many of the occupations mentioned in the table above, such as tool and die makers, mold makers, machine operators, and mechanical engineers, but this does not mean that talent attraction and retention efforts do not need to be made for these occupations. Eight of the 13 occupations listed that have employment concentrations of over one for the region have 20% or greater of their workforce aged 55+. Six of these occupations have 25% or more of their workforce aged 55+. Talent development, attraction, and retention strategies will need to be developed for occupations that exist in higher numbers in the Windsor-Essex region to address worker losses from retirement, while also avoiding a potential talent vacuum that could harm existing companies that currently employ these occupations.

[13] Statistics Canada. Table 98-10-0593-01.
[14] Lightcast. 2023.3.
[15] Statistics Canada. Table 98-10-0593-01.
[16] Lightcast. Understanding Location Quotient. July 12, 2023.

Taking Advantage of Our Existing Labour Force

The local manufacturing workforce is highly sophisticated and skilled, made up of designers, engineers, production workers, technicians, and more.[17] Many of these workers that exist in large numbers in the region already have directly transferable skillsets for careers in the EV sector, which will make it easier for local companies to transition to EV-related activities and for new companies locating in the region to find the talent they need.

According to consultations with local employers, many have been able to venture into EV-related activities using their existing workforces. For operations involved in parts manufacturing and vehicle assembly for EVs, mold makers, machinists, machine operators, and other skilled trades workers are using the same skillsets they previously used to produce parts for and assemble ICE-Vs. For operations involved in creating technology to produce EVs and batteries, engineers, technologists, designers, and programmers have also been able to seamlessly transition to EV-related work, now designing and building technologies for companies involved in producing EV batteries and vehicles.

Windsor-Essex currently has a workforce with a suitable skillset to keep up with the electrification of the automotive industry. However, talent development, attraction, and retention strategies still need to be developed to prepare for future investments and sector growth. As this grows, jobs will be added to the sector that the Windsor-Essex region labour force does not have extensive experience in, such as the chemical processes involved in battery manufacturing. We need to be proactive to avoid the risk of developing a knowledge vacuum that will negatively affect local employers already located in the region potentially losing skilled talent to new companies opening operations in the region.

A knowledge vacuum is created as a byproduct of employee turnover. When employees leave an organization, companies often experience this vacuum effect and other employees are left to fill the gaps left by the departing employee. A risk of new investments and large-scale operations locating in Windsor-Essex is that they will attract talent that is currently employed at long-standing companies in the region. The costs associated with replacing an employee can be high, often reaching between 50-80% of the position's annual salary to replace an administrative employee and over 100% for a manager-level employee.[18] Although costs of replacing an employee can be high, the knowledge lost is invaluable. When an experienced employee leaves one organization for another, the company loses those years of knowledge, including any chance to further transfer the knowledge to other employees. Therefore, talent development and attraction strategies should be developed for occupations that exist in higher numbers to decrease the chances of a knowledge vacuum being created. Some of the recommendations proposed in this report provide strategies for employers that will minimize any potential negative effects of a knowledge vacuum being created because of new EV companies locating their operations in Windsor-Essex.

[17] Invest WindsorEssex, "Advanced Manufacturing." https://www.investwindsoressex.com/en/industries/advanced-manufacturing.aspx
[18] Denise Macik, "When long-time employees quit: How to avoid falling victim to the knowledge vacuum."

Windsor-Essex Regional Advantages

The Windsor-Essex region is doing well promoting itself as the automobility capital of Canada, which is good news when it comes to talent development, attraction, and retention for the EV sector. Not only is the region quickly becoming a leader in the development of EVs, but it is also situated at the heart of the richest consumer market in the world, with more than 200 million people located within a 13-hour drive and is linked to the busiest commercial border crossing between Canada and the U.S., handling approximately one third of all Canada-U.S. trade daily. The region is also home to some of the most progressive research and development for EV research, including the **Stellantis Automotive Research and Development Centre**, **Ford Centre for Excellence in Manufacturing**, and Ford Powertrain Engineering Research and Development Centre.[19]

Windsor-Essex is Canada's fastest growing EV supply chain. The region is leading the next-generation automotive industry as Canada's integrated supply chain for the development and production of EVs.[20] Ontario also has a unique position as it possesses all the key minerals for battery development for EVs.[21] Our region is a place for growth and opportunity when it comes to the EV sector and is likely on track to become the battery capital of Canada. The EV sector investments recently secured by the region are an indication that other EV-related businesses and talent should choose Windsor-Essex as a place to be.

Despite an increase in the cost of housing, Windsor-Essex is still one of the cheapest places in Ontario to purchase a home. Windsor is the third-most affordable city in terms of buying a home, only trailing Thunder Bay and Sudbury.[22] On average, residents of Windsor-Essex use 54% of their monthly income on mortgages – lower than residents in London, Kitchener-Waterloo, Hamilton, Barrie, and the Greater Toronto Area.

[19] Invest Ontario, "Spotlights: Meet the automobility capital of Canada – Windsor-Essex." September 9, 2021.
[20] Perspective, "Canada's Fastest Growing EV Supply Chain: Windsor-Essex, Ontario." May 16, 2023.
[21] OVIN, "Introduction to Critical Minerals: Ontario's Unique Position." 2022-2023.
[22] Taylor Campbell, "Windsor home prices third cheapest in province despite increase in 2022." The Windsor Star. July 21, 2022.

MEDIAN PRICE OF HOUSING IN SELECT ONTARIO REGIONS

City	Median resale detached home price, residential	Year over year % change
Thunder Bay	$350,500	+14%
Sudbury	$440,000	+4.8%
Windsor-Essex	$517,401	+5.6%
London	$665,000	+3.9%
Kitchener-Waterloo	$830,000	+5.7%
Hamilton	$880,000	+4.1%
Toronto	$1,250,000	+4.2%

Table 3. Median Price of Housing in Select Ontario Regions.[23]

As the southern-most region in Ontario, Windsor-Essex enjoys the warmest climate in all of Ontario. The region also boasts a variety of options in sports and recreation, entertainment and shopping, arts, culture, heritage, and dining.

[23] Invest WindsorEssex, "Quality of Life: Affordable housing rates across Ontario (Q3 2023)." 2023.

Case Studies

These case study examples are great models for best practices of collaboration between industry and government to support the growth of EV-related activities. Two of the examples use cases where talent development, attraction, and retention has been advanced through the opening of a battery plant. The example of Detroit shows how a region with a rich automotive history can rebrand itself as an automobility leader to develop, attract, and retain talent, similar to what Windsor-Essex is currently doing as the self-proclaimed Automobility Capital of Canada. All the case studies have one thing in common – it will take recognition and collaboration of industry leaders and government to facilitate growth that will lead to tangible talent development, attraction, and retention outcomes.

Reno, Nevada, U.S.

In 2014, the city of Reno was chosen as the location for a Tesla gigafactory to build EV batteries. Tesla's plans were to hire 6,500 employees over a 10-year period to build and operate the gigafactory.[24] In the beginning stages of hiring for the plant, the region had a challenging time attracting and retaining staff. Most of their workforce had experience in the hospitality industry from the casino-based economy, which was severely damaged during the 2008 recession, and not much had been done prior to the recession to diversify the economy. However, two years before the announcement of the Tesla gigafactory, Reno had begun to invest in diversifying its economy, which allowed the city to develop into one that attracts well-educated, sophisticated residents.[25]

In 2012, Governor Brian Sandoval of Nevada announced a new plan to diversify economic development in Nevada, called Diversify Nevada.

[24] Tesla, "Continuing our Investment in Nevada." January 24, 2023.
[25] Dennis Cuneo, "Location Notebook: Tesla's Gigafactory – Reno's Game Changer." Area Development, Q3 2014.

In Reno, the Economic Development Authority of Western Nevada (EDAWN), took a similar approach at the regional level. In 2013, a collection of start-up businesses had clustered and were collaborating and growing to create Reno's Startup Row. The state was offering business-friendly taxes and incentives, as well as an abundance of inexpensive office space. On top of this, the region's proximity to the West Coast and year-round warm weather attracted other startup businesses to the area. These efforts attracted a workforce with necessary skills to support industries like technology, manufacturing, and renewable energy.[26] [27]

To date, the region is thriving with a reported $1.4 billion in external funding from its startups. Making itself attractive to outside investors through economic diversification, including its advanced manufacturing industry, allowed the region to land large-scale investments from companies like Tesla and ensure that the region is also able to attract the right type of talent to fill the jobs becoming available Even with Reno's ability to attract top talent with its effective talent campaign, the Tesla gigafactory still had some problems attracting talent to fill all the roles it created. Tesla took it upon themselves to partner with local colleges to develop curriculum and provide free education and on-the-job training on their specific technology that was to be used in the battery plant. These efforts helped the plant fill jobs through the retention of the region's more traditional service-oriented industry by providing these workers with upskilling and retraining opportunities to effectively transition into roles at the battery plant.
The example of Reno shows how government can support an effective talent attraction campaign by offering specific incentives to businesses that attract the right type of talent. Even with the government creating these strategies, Tesla still needed to develop their own strategies on top of what was already being done in the region to attract the right amount of talent and develop skills of the available workforce to fill the numerous roles they created by opening the battery plant.

The case of Reno demonstrates what can be achieved by effectively diversifying an economy. By providing attractive incentives for businesses, the region was able to attract companies specializing in technology, manufacturing, and renewable energy, among others. These companies were then able to attract a skilled talent base to the region, helping to create a suitable employment landscape for large-scale investments like the Tesla gigafactory. Once Tesla had set up operations in Reno, they were able to collaborate with the region to upskill and retrain a lower skilled labour force to prepare them for jobs in the EV sector. Windsor-Essex has already secured a battery plant investment, but more work can be done locally to diversify the economy to attract a wider range of talent for future investments that are going to arrive in Windsor because of the battery plant and growing EV sector. NextStar Energy and other businesses in the EV value chain can then capitalize on the region's existing workforce by collaborating with local education to create upskilling and retraining opportunities for those who require an upgraded skillset to work in the region's new gigafactory.

[26] Jonelle Moore. "Reno, Nevada's Start-Up Scene is Smokin' Hot." Livability. November 3, 2022.
[27] "Building a New Frontier in Reno Nevada." Startup Reno.

Skellefteå, Sweden

Skellefteå is a remote community in the far north of Sweden where a Swedish startup, Northvolt Ett, chose to locate a battery plant. Northvolt's main goal of establishing a battery plant in the region was to create a supply chain in Europe and Skellefteå, a former mining town, is a much smaller and more isolated community compared to Windsor-Essex.[28] However, the region was still able to lure talent from around the globe to work at its Northvolt gigafactory.

Northvolt discovered that a growing number of people want to work at a company with a specific mission. According to a Deloitte survey, half of Gen Zs and 44% of Millennials intend to choose their work based on their personal ethics – with climate change being a high priority.[29] Northvolt positioned itself as a company that is attempting to build a completely green battery. The hiring began with individuals who were willing to take some form of pay cut to work for a company with such a unique mission. Building this early, specialized talent base allowed the company to attract individuals from a wider spectrum and from around the globe. The company has attracted and poached talent from well-known companies like Tesla, Amazon, Google, and Spotify. This has allowed the company to create a network that connects them to top talent around the globe.[30] This successful talent attraction campaign developed by Northvolt began with a strong mission statement that newer generations believed in and chose to take a risk by relocating to Skellefteå.

The Northvolt plant has brought 3,000 new residents to work in its battery plant and this has placed a strain on the small municipality of Skellefteå, which was not prepared for this rapid growth and lacked enough infrastructure to support the newcomers. The municipality, however, has taken action to address this issue as best as it can. In the previous 20 years before the announcement of the battery plant, 20-50 homes were built in the municipality. That number has now increased to 800 per year.[31]

Young people began to move away from Skellefteå due to the lack of opportunity, but this all changed when Northvolt located in the region and gained support from the municipality in the form of drastically increasing the number of houses being built. Individuals who previously left the region are now returning. Northvolt plans to employ 4,000 people at its plant when construction is finished in 2027. Skellefteå is another example of a region that is thriving after securing a battery plant investment.

[28] NPR, "Sweden's Northvolt wants to rival China's battery dominance to power electric cars." July 1, 2023.
[29] Deloitte, "A call for accountability and action." 2021.
[30] Mimi Billing, "How Northvolt lures talent from Musk and Bezos to Sweden's frozen north." Sifted. February 18, 2022.
[31] NPR, "Sweden's Northvolt wants to rival China's battery dominance to power electric cars." July 1, 2023.

This example shows that if you build it, they will come. The anticipation of talent flocking to the Windsor-Essex region because of the current investments being made in its EV sector is crucial to prepare the region to be able to accommodate these new workers. Of the first 140 jobs that were posted by NextStar Energy, the company received approximately 5,000 applications.[32] Skellefteå is now building housing at a record pace to keep up with the influx of foreign talent to their region. In Skellefteå, Northvolt was also able to establish a strong vision of becoming a manufacturer of a completely green battery. This strategy allowed them to attract newer generations of skilled talent, who are more concerned with working for companies with unique and defined purposes than traditional motivators like salaries and benefits. The continued influx of international students to the Windsor-Essex region will continue to provide a skilled available workforce for the EV sector in need of computer science and engineering graduates with flexibility in their living arrangements and an eagerness to work in the growing sector.

[32] CTV Windsor, “NextStar begins hiring for production jobs.” November 10, 2023.

Detroit, Michigan, U.S.

Windsor is located right across the Detroit River from a prime example of how a region that has a rich automotive background can position itself to be a notable example for talent attraction and retention. Detroit's population in 2018 was 672,622, a steep decline from its height in 1950 of over 1.8 million. The region's industry and government leaders have developed strategies in recent years to attempt to revitalize the economy and, more specifically, the automotive industry in Detroit.

In 2022, President Joe Biden visited the North American International Auto Show, hosted annually in Detroit, reaffirming his stance on the EV market, and stating that the American automotive industry was well on its way to becoming fully electrified. Detroit hopes to become a leader in the shift to EVs, and recently, General Motors opened a new EV factory in Detroit called Factory Zero.[33] In March 2023, Mayor Mike Duggan delivered a speech that promised community improvements and continued economic revival. He stated that "Detroit will pass Silicon Valley" in the future of the auto industry.[34]

A key development that will help Detroit reposition itself as a leader in the automotive industry and help attract and retain talent in the region is the renovation of its 112-year-old Michigan Central Station, which will turn the historic transportation relic into a hub for futuristic mobility innovation. This project is being led by Ford and will be the centrepiece of a 30-acre mobility innovation district. Other collaborators in the mobility innovation district include Google, a handful of other tech startups, and the state's Office of Future Mobility and Electrification. The site will also be one of the first wireless inductive charging systems for EVs in the U.S.[35]

[33] Industry Leaders, "The Expected Revival of the Detroit Car Industry." October 15, 2023.
[34] Sarah Rahal, "Detroit Vies with Silicon Valley for Auto Industry's Future." The Detroit News, March 8, 2023.
[35] Emell D. Adolphus, "112-year-old Train Depot Finds New Glory in Renovation." Engineering News Record, March 13, 2023.

The creation of this innovation hub will help attract and retain the right type of talent to revitalize the automotive industry in Detroit. The city has also received support from the Michigan Economic Development Corporation (MEDC) through its newly developed "You Can in Michigan" talent attraction marketing campaign and the State of Michigan. This campaign is currently the largest talent attraction campaign effort in the U.S. according to the MEDC and will run in California, Georgia, Illinois, Massachusetts, New York, North Carolina, Ohio, Pennsylvania, Texas, Washington, D.C., and Washington State.[36]

The State of Michigan's commitments to industry innovation and community vitality are led through the renovation of the above-mentioned Michigan Central Station.[37] Other commitments include:

- The MEDC's Office of Future Mobility Electrification support programs that create high-skill jobs, support startups and bring innovations to the market.
- The Department of Labor and Economic Opportunity promotes world-class education in the district to prepare local workers for high-tech jobs in mobility.
- The Michigan State Housing and Development Authority works to tie industry growth to housing and community development.
- The Michigan Department of Transportation makes roadways in the area more accessible and usable by all modes of transportation that fall under the mobility umbrella.

The case of Detroit bears many similarities to Windsor-Essex. A strong and rich history of automotive and manufacturing industries that are consistently going through phases of modernization and revival to keep up with a changing world. Detroit has been able to focus a lot of its efforts on the revitalization and modernization of its downtown core to attract skilled talent and businesses. The revitalization of downtown to help with talent attraction, and retention is a direct lesson Windsor can learn from when looking to attract and retain its own talent base for its expanding EV sector.

[36] Executive Office of the Governor, "Gov. Whitmer Launches You Can in Michigan National Marketing Campaign to Grow Economy, Attract, and Retain Talent." October 10, 2023.
[37] Michigan Economic Development Corporation, "Detroit's Revitalization Sparks Praise as a Must-See for Travelers." November 28, 2023.

Talent Attraction and Retention Survey Findings

A public survey was conducted for Windsor-Essex residents with the goal of collecting responses from individuals from a wide demographic background. Among respondents, 45.1% (123 responses) identify as newcomers (an immigrant or refugee who has lived in the region for less than five years). The survey allowed for identification of Windsor-Essex residents who grew up in and never moved out of the region, residents who moved here from another location, and residents who returned to our region after living in another location.

Our survey sample does not represent the entire Windsor-Essex population, but it is a statistical representation of preferences of a skilled and educated workforce that can address future employment needs for the EV sector. The analysis of the survey below specifically focuses on those interested in working in the EV sector, newcomers, and those with a post-secondary education (apprenticeship, college diploma, or university degree).

More detailed survey results are available in the Appendix on page 73.

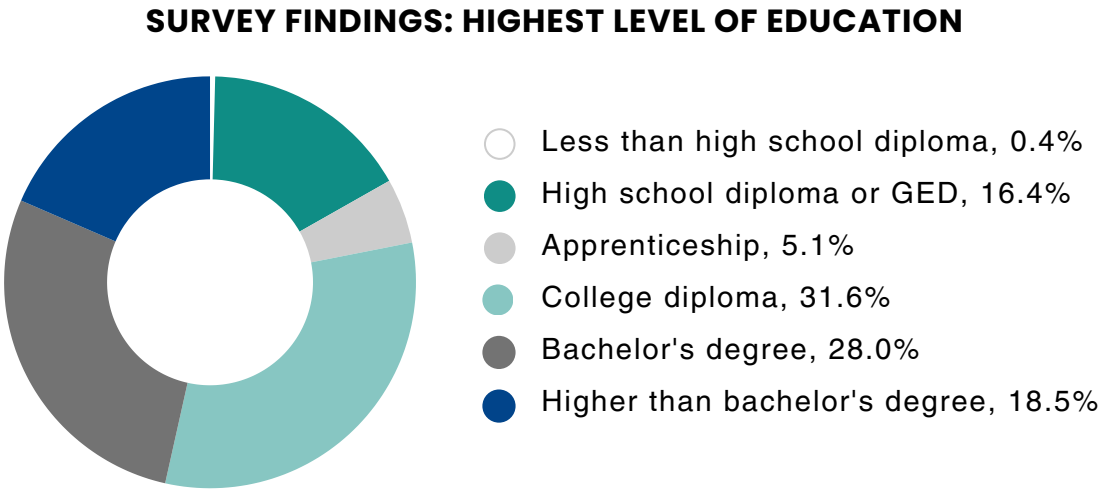


Figure 1. Survey Findings: Highest Level of Education.

The percentage of respondents with a postsecondary degree or diploma was much higher than the regional average, which currently sits at 49.5%.[38] Most survey respondents were under the age of 45 (84.1%) and 61.5% were under the age of 35. This may have led to results being skewed to reflect values and beliefs of younger generations.

[38] Statistics Canada. Table 98-10-0385-01.

EV Sector-Specific Questions

There was a large interest in the EV sector as a potential career field for survey respondents, as 50.5% indicated they were very interested and 28.6% indicated they were somewhat interested. This is a positive indication for the region that employment in the EV sector is sought after by residents. The region is also doing a good job of educating residents on future opportunities, as 75.3% of respondents indicated they are familiar with the EV sector in Windsor-Essex.

To further improve promotion of the sector, survey respondents indicated they would like to receive:

- general news updates from Windsor-Essex's EV sector (73.5%),
- EV sector company profiles (60.1%),
- tours of local EV sector employer facilities (57.6%), and
- webinars highlighting Windsor-Essex's EV sector (53.4%).

When looking for and applying to jobs in the EV sector, respondents indicated the most important information they would like to be provided are:

- detailed job descriptions and responsibilities for EV sector job postings (76.7%),
- required skills and experience for EV sector jobs (71%),
- expected wages/salaries (70.3%), and
- a list of current and projected in-demand jobs in the EV sector (69.6%).

Respondents identified the top three most important strategies for employee retention as competitive compensation (83.4%), employee development opportunities (72.1%), and promotion and support of work-life balance (56.9%).

General Talent Attraction and Retention

The below section reviews general talent attraction and retention of the Windsor-Essex region to better understand general factors and reasoning of why people choose to relocate or live in our region.
All the following analysis is based on weighted scales from 1 to 5, 1 being not at all important and 5 being very important.

Employment

When choosing a location to stay in or move to for employment the following factors were indicated by all survey respondents as the most important:

1. **Availability of job opportunities – 4.43**
2. **Cost of housing – 4.39**
3. **Cost of living – 4.37**
4. **Safety of the community – 4.35**

For those interested in working in the EV, the following factors ranked the most important:

1. **Availability of job opportunities – 4.45**
2. **Cost of housing – 4.39**
3. **Safety of the community – 4.39**
4. **Cost of living – 4.37**

For newcomers, the following factors ranked the most important:

1. **Availability of job opportunities – 4.43**
2. **Safety of the community – 4.37**
3. **Family-friendliness – 4.28**
4. **Cost of housing – 4.24**
5. **Cost of living – 4.24**

For those with a post-secondary education, the following factors ranked the most important:

1. **Cost of housing – 4.43**
2. **Cost of living – 4.42**
3. **Availability of job opportunities – 4.40**
4. **Safety of the community – 4.39**

Survey respondents were also asked to indicate what factors are most effective for retention after they have become employed. The top weighted factors were as follows:

1. **Job security and stability – 4.50**
2. **Compensation (salary) – 4.43**
3. **Career growth and development opportunities – 4.41**
4. **Benefits and wellness – 4.37**

For those interested in working in the EV sector, the following factors ranked the most important:

1. **Job security and stability – 4.55**
2. **Career growth and development opportunities – 4.46**
3. **Compensation – 4.41**
4. **Benefits and wellness – 4.40**

For newcomers, the following factors ranked the most important:

1. **Job security and stability – 4.42**
2. **Career growth and development opportunities – 4.42**
3. **Meaningful work – 4.35**
4. **Compensation – 4.29**

For those with a post-secondary education, the following factors ranked the most important:

1. **Job security and stability – 4.47**
2. **Compensation – 4.41**
3. **Career growth and development – 4.40**
4. **Meaningful work – 4.29**

In terms of professional development opportunities in a career, 80.6% of survey respondents indicated that having access to leadership opportunities is either important or very important to them.

The Windsor-Essex Region

Five categories in the survey were included that rank the Windsor-Essex region's attractiveness that would influence people to move to or stay in the region. A summary is provided below for each of these categories, including the top three most important factors based on weighted scales from 1 to 5 for each category according to survey respondents.

Lifestyle

Lifestyle refers to the way a person lives, including their interests, opinions, behaviours, and behavioural orientations.

The top three lifestyle factors that were indicated as important or very important to survey respondents are as follows:

1. **Having an affordable cost of living – 4.56**
2. **Health and wellness – 4.48**
3. **Owning a house – 4.40**

For those interested in working in the EV sector, the top three factors were the same as for all survey respondents.

For newcomers, the following factors ranked as the most important in terms of lifestyle:

1. **Health and wellness – 4.51**
2. **Affordable cost of living – 4.40**
3. **Being close to family – 4.27**

For those with a post-secondary education, the following factors ranked as the most important in terms of lifestyle:

1. **Affordable cost of living – 4.54**
2. **Health and wellness – 4.53**
3. **Owning a house – 4.41**

Community Values

Community values refer to the shared beliefs held by individuals in a social group or specified geographic area. For this survey, respondents were asked which values mattered most to them when choosing a place to live.

The top three community values indicated as important or very important to survey respondents are as follows:

1. **Living in a safe community – 4.36**
2. **Living in a family friendly community – 4.30**
3. **Living in a community where it is easy to meet new friends – 4.01**

Those interested in working in the EV sector had the same top three community value factors as all survey respondents, as well as newcomers and those with a post-secondary education.

Community Amenities

Community amenities are typically defined as public and outdoor spaces, which can include places, infrastructure, and cultural assets. Survey respondents were asked to indicate what amenities were most important to them when deciding to live in the Windsor-Essex region.

The top three community amenities indicated as important or very important to survey respondents are as follows:

1. **Living in a community with a diversity of food options – 4.18**
2. **Living in a community with public spaces – 4.05**
3. **Living in a walkable community – 4.03**

Those interested in working in the EV sector had the same top three community amenity factors as all survey respondents. Newcomers had the same top two factors, but their third most influential factor was living in a community with a reliable public transportation network. Those with a post-secondary education indicated the same top three, only switching the order of living in a community with public spaces and living in a walkable community.

Environment

Respondents were asked to indicate which environmental qualities are most important to them when deciding to live in the Windsor-Essex region.

The top three environmental factors indicated as important or very important to survey respondents are as follows:

1. **Living in a community with a clean environment – 4.38**
2. **Living in a community with outdoor recreational activities – 4.04**
3. **Living in a community that is close to nature – 3.98**

Those interested in working in the EV sector had the same top three environmental factors as all survey respondents. Newcomers agreed that living in a community with a clean environment was their most influential environmental factor (4.33), followed by living in a community that is taking action to address climate change (4.11), and living in a community that is close to nature (4.08). Those with a post-secondary education indicated the same top three environmental factors as all survey respondents.

Changes to the Region

To increase the attractiveness of the Windsor-Essex region to jobseekers, some changes may need to be made.

According to survey respondents, the top three changes most likely to positively impact the attractiveness of the region are as follows:

1. **More job opportunities in own field – 4.41**
2. **More recreational/fun things to do – 4.17**
3. **Improvements to downtown Windsor – 4.17**

The top three preferences for changes in the region to increase its attractiveness for those interested in working in the EV sector were more job opportunities in their field (4.52), improvements to Downtown Windsor (4.21), and more networking events and opportunities (4.20). Newcomers indicated they would like to be presented with more networking events and opportunities (4.44), followed by more job opportunities in their field (4.41), and improvements to public transportation (4.25). Those with a post-secondary education indicated they would like to see more job opportunities in their own field (4.40), followed by improvements to Downtown Windsor (4.18) and more recreational activities/fun things to do (4.18).

What can we Learn From the Survey?

One key takeaway from the results of this survey is the number of educated and skilled newcomers that currently live in the Windsor-Essex region. As stated earlier, of Windsor-Essex respondents, 54.9% identify as newcomers to the region and 83% of respondents have indicated they have a post-secondary education in the form of a degree or diploma. Therefore, it can be assumed that the region is effectively attracting international talent. This educated talent likely possesses a suitable skillset for careers in the EV sector and therefore represents an ideal demographic to help support the development of a stable workforce to supply our EV sector moving forward.

Offering a wide variety of engagement activities for individuals interested in the EV sector is key to attracting and retaining the right type of talent. First, individuals want to learn as much as they can about the sector through the form of general news updates, company profiles, webinars, and experiential learning opportunities. It is vital for the region to effectively market the sector, especially to jobseekers who may not be completely informed of what is currently going on in Windsor-Essex. Effective marketing and information-sharing about the EV sector in Windsor-Essex will help further talent attraction and retention efforts. If jobseekers are more well-informed about what is currently going on in the sector and what they should expect in the future, they are more likely to apply to a job in our region in the EV sector.

A general talent attraction and retention strategy can be used by community partners not only to promote growth of the EV sector, but other sectors in the region as well. This is a strategy aimed at attracting talent to all industries in Windsor-Essex, not just the EV sector.

A more in-depth analysis of survey responses can be provided to community partners interested in learning more about general talent attraction and retention.

What is Happening in Windsor-Essex?

The main goal of this report is to provide recommendations for the creation of talent development, attraction, and retention campaigns that will help expand a skilled labour force to support the Windsor-Essex region's EV sector. However, there are already some positive strategies, collaborations, and innovations for talent development, attraction, and retention that are ongoing in the region. These strategies, collaborations, and innovations are listed below and were identified through consultations with representatives from the organizations who are leading these efforts.

Post-Secondary Education

To retain talent for the growing EV sector, it is crucial for post-secondary institutions to develop programming and curriculum to prepare its graduates for the specific roles that are being created in the sector. The **University of Windsor** and **St. Clair College** are leading the charge to ensure graduates of their institutions are ready to work in Windsor-Essex's EV sector.

University of Windsor

Tucked into a corner of the University of Windsor's engineering building is a lab that contains advanced equipment and technology, where the future of the EV sector and a new segment of Ontario's economy is being explored.[39] This lab is called the **Centre for Hybrid Automotive Research and Green Energy (CHARGE)**. The lab is led by UWindsor engineering professor Narayan Kar. Taking advantage of the shift to electrification, CHARGE lab has received millions of dollars in investments from industry partners to research areas for EVs and train students for careers in the EV sector. The CHARGE lab is a notable example of innovation and research being facilitated by the University of Windsor.

To support electrification of the automotive sector, the lab:

- Focuses on five major research areas for EVs including: electric machine design, electric machine testing, machine drives and control, inductive and conductive charging, and EV simulation and testing.
- Conducts battery-to-powertrain-to-wheel research to promote creativity, collaboration, and practical knowledge to enhance EV research landscape.
- Facilitates interdisciplinary collaboration and fosters world-class transformative and innovative research through government and industry partners including CanmetMATERIALS, Ford Motor Company, and D&V electronics.
- Possesses one of the best EV powertrain components and system test infrastructure in North America, capable of testing diverse types of electric machines and drives up to 150 kW and six phases at 14,000 rpm.
- Is equipped with Opal-RT hardware-in-loop testing capability, thermal imagers for electric machines and power electronics, custom designed permanent magnet, switched reluctance, brushless DC, aluminum- and copper rotor induction, and wound field synchronous machines.

[39] Dave Waddell, "Auto industry investing millions in electrification research at University of Windsor." Windsor Star, May 24, 2019.

- Has many custom designed power electronics converters up to 80 kVA to conduct research on control of machines and conductive and inductive battery charging, as well as high-end power quality analyzers, energy analyzers, oscilloscopes, and numerous current, voltage, and speed measuring units.[40]

Working in direct collaboration with industry leaders to develop curriculum for students to work on the latest advancements in EV-related technology at the CHARGE lab will make the University of Windsor more appealing to prospective students, both locally and outside of the region. Graduates of engineering programs that can work in the CHARGE lab will be better prepared and connected to industry because of the work they have been able to do while in school.

Recently, the University developed a course through its **Continuing Education** department that teaches foundational knowledge in EV powertrain systems. The course, **EV Powertrain Systems**, teaches students to understand the power electronic architecture and control of state-of-the-art motor drives, as well as explore the design variations in commercially available EV motor drives. Other topics include the fundamentals of energy storage, management, charging, and finally, the testing and validation of the EV powertrain. The instructor of the course is Lakshmi Varaha Iyer, Senior Manager, Advanced Powertrain, and Chassis, with Magna International's corporate research and development division.[41] The school of Continuing Education also offers a certificate program in collaboration with Siemens. The course, **Siemens Mechatronic Systems Certification Program (SMSCP)**, helps students transition into a variety of production, technician, and engineering jobs in high-tech and advanced manufacturing industries around the world, including the production of EVs. The certification offered through this course is internationally recognized as a world-class qualification.[42] Lastly, the University plans to offer a new mechatronics engineering program that would focus on manufacturing and producing EVs. Once approved, the school hopes to offer the program in the fall of 2024 or 2025.[43]

The University of Windsor's **Career Development & Experiential Learning** department has also been engaged with the EV sector, including navigating a relationship with NextStar Energy. The department was recently able to secure six co-op positions for university students. The department also organizes an annual engineering job fair for students, which is attended by some employers involved in EV activities.

[40] University of Windsor, "Centre for Hybrid Automotive Research and Green Energy (CHARGE) Lab."
[41] University of Windsor, "Course promises foundational knowledge in electric vehicle powertrain systems." September 26, 2023.
[42] University of Windsor, "Siemens Mechatronic Systems Certification Program."
[43] Katerina Georgieva, "Electrification of Windsor's auto industry promises new jobs – but what happens to blue-collar workers?" CBC Windsor, February 2, 2023.

St. Clair College

St. Clair College has been working on its EV-related courses for years, before the announcement of the NextStar Energy battery plant, when the electrification of the automotive industry was just beginning to take off. To date, the college offers two courses specifically designed to train graduates for EV careers. Its **Electric Drive Vehicle Technician** course prepares students for careers in the maintenance, service, and repair of EVs. The college's **Electric Drive Vehicle Fundamentals** course allows students to study electric/electronic fundamentals, electrified vehicle systems and components, high voltage safety, and EV maintenance.

Any program that has been developed or is in development at the college is done in collaboration with industry. During the initial concept phase of course development, the materials go through a consultation with industry leaders to ensure lessons are aligned with what is taking place in industry today. If the course receives buy-in from industry after these consultations, it will be brought to a board of governors for further approval and then it is brought into program development. In its Electric Drive Vehicle Technician program, Ford and other automotive industry representatives run the training to build electric cars from a kit. The program is also endorsed and supported by companies that do high voltage training and companies involved in automotive repair.

St. Clair College was one of the first institutions in Canada to enter the space of developing programs specifically for EV careers. In addition, the institution already has many programs that allow graduates to develop skillsets that are directly relevant to the EV sector, specifically its engineering technologist and technician programs. Many of the consultations conducted in the research phase of this report noted that industry involved in EV-related activities are hiring graduates out of St. Clair College's existing two- and three-year diploma programs.

The college's Career Services department has also been engaged in activities to retain talent for the region's EV sector. The department acts as a touch point for employers and matches students with required work placements. Beginning in 2024, students in EV-related programming will begin to be placed with local industry. These placements will allow students to gain experience in the EV sector and gain invaluable connections with employers before graduation. The Career Services department is also responsible for organizing an engineering and skilled trades job fair for its students, and is currently in discussions to organize a NextStar Energy specific job fair.

Elementary and Secondary Education

Our future workforce currently exists in our region's elementary and secondary schools. To expose these students to the EV sector and begin training them for EV careers, our local school boards have been engaging in talent development strategies.

Greater Essex County District School Board (GECDSB)

GECDSB has developed a Transportation sector program through its **Specialist High School Major (SHSM)** program. This program currently runs at seven secondary schools in the board and has 115 grade 11 and 12 students enrolled in the program. Students from this program participated in an industry-partnered experience in May 2023 at the **VR Cave** with Invest WindsorEssex where they explored the automobility sector (including coding a microbit driven vehicle, electrification, cybersecurity, etc.). Of these students, 26 are participating in an enhanced **Ontario Youth Apprenticeship Program (OYAP)** program in Automotive.

The board's Manufacturing SHSM program currently runs at five secondary schools. The 124 grade 11 and 12 students enrolled participated in industry-led experience days in April 2023 with AV Gauge and in November 2023 with Cavalier Tool to explore math in the Auto and Parts Manufacturing and Tool, Die, and Mold industries. The programs at Belle River District High School and Sandwich Secondary School are both tied directly to a **FIRST robotics** competition team. Of these students, 58 are participating in an enhanced OYAP program in Precision Metal.

The Information and Communications Technology SHSM program runs at three secondary schools. There are currently 60 grade 11 and 12 students enrolled in the program. These students have participated in industry-partnered experiences. The program at Vincent Massey Secondary School is tied to a FIRST Robotics competition team.

These SHSM programs are developing students with skillsets that are directly transferable to the EV sector in Windsor-Essex. It is important for outreach of these programs to be effective, and GECDSB has taken steps to ensuring this process. In 2022-23, grade 7 students were targeted with outreach activities allowing them to explore different sectors. The outreach allowed the board to engage with over 550 grade 7 students and 45 elementary staff from 16 elementary schools. During the spring GECDSB Track and Field District meets, outreach involved students from grades 3-8 in an outdoor setting. To date, portable outreach continues with the implementation of a newly acquired SHSM and OYAP Tech Trailer. This allows the school board to bring tools, projects, and materials to community events and elementary schools for outreach and promotion. This fall, GECDSB participated in a pilot program **(Ontario Vehicle Innovation Network (OVIN)/Ontario Council for Technology Education (OCTE)** Future Forward Program) that allowed students from grades 6-12 the opportunity to explore projects and careers in the automotive and automobility industries. There were eight secondary and 32 elementary teachers who also participated in the program where approximately 500 students were able to explore hands-on projects and visit the OVIN navigator tool to explore opportunities in the automotive and automobility sectors.

Windsor-Essex Catholic District School Board (WECDSB)

WECDSB's approach to developing EV sector talent involves a multi-pronged approach. This effort began with a revitalization of its tech programs – beginning with its Construction Academy. The Construction Academy is directly feeding talent into the manufacturing, construction, and skilled trades workforce, of which many students will have skillsets desirable for the EV sector in Windsor-Essex. There has been an increased effort in the school board to run STEM programs from junior kindergarten to grade 6 with an emphasis on science, technology, engineering, and math. There are strong elements of robotics built into this programming, which directly feeds a robotics program in the board's secondary schools. There are currently three secondary schools with STEM programs established and one more will be added in the fall. The focus in these programs is for students to develop specialized skills in tech and robotics that will help support the EV sector moving forward.

On December 14, 2023, the board announced the purchase of an EV kit. The EV kit was provided by Switch Vehicles Inc. and gives students hands-on experience through building their own EV. St. Anne's is the first high school in Canada to obtain a Switch Vehicle kit. This new EV program involves cross-promotion of scientific and manufacturing careers specifically aimed at preparing students for EV careers. This is a pilot program and depending on its success it could be replicated in a year or two at another secondary school location.

WECDSB is presenting various pathways to meet the needs of students and provide them with opportunities to obtain viable careers and career paths. The board is focusing on exposing children early to coding, robotics, and other skills that are desirable in the EV sector. The board works in close partnership with post-secondary institutions and industry when developing its programs and curriculum for students. Industry partners have been able to subsidize some of the programming and donate materials directly to the program and into classrooms.

In terms of outreach, communications have been sent out to all families of children from grades 7-12 to announce an official launch of a skilled trades centre still in development. It is crucial for parents to be involved in the career selection process of their children, and through efforts in recent years, WECDSB has seen parents become much more accepting of careers in skilled trades. Skilled trades positions will be needed to fill EV sector roles in the future.

Extensive work has also been done to train guidance counsellors to better inform them of viable career paths for students. These counsellors will be followed up with on a regular basis to introduce them to more career path options for students. The board has been marketing that giving the opportunity for a student to find something they enjoy doing is extremely important to retaining their talent in the region. If entering a career they enjoy, they will be more engaged, more productive, and succeed more in their careers. All these efforts will help retain talent for the future growth of Windsor-Essex's EV sector.

Windsor Regional Employment Network

To support the employment services transformation in the Windsor-Sarnia economic region, the **Windsor Regional Employment Network (WREN)** has been named the Service System Manager. The WREN is led by the City of Windsor with support from their partner Workforce WindsorEssex. Under the new model, they established a network of **Employment Ontario** service providers who became available to jobseekers, employers, and community partners on January 2, 2024.

This network of service providers offers a holistic understanding of, and direct support to, much of the region's available talent, including persons in receipt of social assistance (e.g. Ontario Works, Ontario Disability Support Program, Employment Insurance, etc). The network works in real time to offer pre-employment and retention supports that ensure jobseekers find and maintain meaningful employment, which will play a key role in talent retention. Supports include a robust suite of digital tools and resources, alongside in-person events, workshops, and job-fairs, that employers may also frequent.

For employers, this network signifies the opportunity to tap into the available talent pool. Service providers can connect employers and clients through job matching, placement incentives, and job-fairs, and can offer some financial supports to reduce additional barriers to employment (e.g. purchasing clothing or personal protective equipment). Employers, industry associations and economic development corporations should seek to further develop relationships with the WREN and the employment services network to ensure that opportunities exist to support those most in need of connections to meaningful employment, whether through proactive upskilling and training or job placements and direct employment.

Economic Development

The region's economic development corporation, Invest WindsorEssex, has been busy developing their own talent attraction campaign, part of which will focus directly on the EV sector. The objective for this campaign is to create a talent attraction campaign for the EV sector, while also promoting the Windsor-Essex region. There are currently three planned phases for their overall talent attraction campaign.

Phase one involves the creation of a media schedule to promote general awareness and to promote Windsor-Essex as a region on the rise. The focus of this phase will be on the growth of the EV sector but will also promote quality of life and other ongoing infrastructure projects. Phase two of the campaign focuses on technical prospects – the actual targeting of individuals who have the training and skills to transition to the EV sector. Phase three of the campaign focuses on student/education institutions and will target students with specific majors and universities/colleges who have educational programs tailored to the EV sector.

Branding and outreach are currently in development to support all three phases of the organization's talent attraction campaign. Invest WindsorEssex will be creating a new webpage to promote the region and its advantages, such as the growing EV sector, framing of Windsor-Essex as a region on the rise, and affordable living. The campaign will include video and carousel ads on Meta and LinkedIn, as well as paid search promotions on Google. Geographic locations have also begun to be mapped on where targeted talent attraction campaigns will be used inside and outside of Ontario, including but not limited to Toronto, Ottawa, and Montreal.

In November 2023, Invest WindsorEssex launched EVcareers.ca, in partnership with Workforce WindsorEssex, **WEtech Alliance**, the University of Windsor, and St. Clair College. The goal of the website is to be the go-to platform for jobseekers pursuing careers in Windsor-Essex's EV sector. The website acts as a comprehensive resource offering job seekers access to a database of job listings, a library of resources and information to help them build their skills, and a platform to connect with employers. Users of the website can create user profiles to highlight their professional experience, education, and skills. Aggregated data will be collected on registrants to the website to be used in the development of further talent attraction campaigns.

In 2021, Invest WindsorEssex authored a report in partnership with Workforce WindsorEssex to identify talent requirements for an EV and battery production supply chain. The report accompanied a larger campaign to help transition Windsor-Essex to the automobility capital of Canada. It identified specific occupations required for EV and battery production, as well as provided an understanding of where these occupations are located domestically and internationally. The report outlined the required post-secondary curriculum needed to train individuals for careers in the EV sector and where these types of programs exist domestically and internationally, as well as providing an understanding of best practices globally and a jurisdictional scan for international programs and professors. Lastly, the report identified talent attraction and retention strategies to bring talent to the Windsor-Essex region looking for employment in the EV-battery production space.

Invest WindsorEssex continues to be a leader in collaboration with community partners to expose Windsor-Essex to the growing EV sector and the world of automobility. The organization often hosts classes from the region's school boards to show them the growing amount of opportunities in the region's EV and automobility sectors. Invest WindsorEssex is also funded by government and organizations like OVIN to engage in work and innovations that will directly support the region's growing EV sector.

WEtech Alliance

WEtech Alliance has served the Windsor-Essex region primarily as a catalyst for technology and innovation since 2011. They provide entrepreneurs and companies with business services, training, I.P. and commercialization support, mentorship, and strategic connections to help bring new ideas to market, scale to the next level, and build a dynamic culture and a community of innovation.[44] The organization plays a lead role in developing a sustainable and diverse economy that attracts and retains top talent, business, and investment, which will help with the growth of the EV sector in Windsor-Essex. Many of their program offerings and services help to attract and retain talent in the Windsor-Essex region, including their **Tech Connect** program, which offers events and other initiatives like Tech Connect Thursday, Tech Connect Careers, Tech Connect Community Hub, Tech Connect Community Presentations, Tech Connect Meetups, and their **Tech Connect Job Board.**

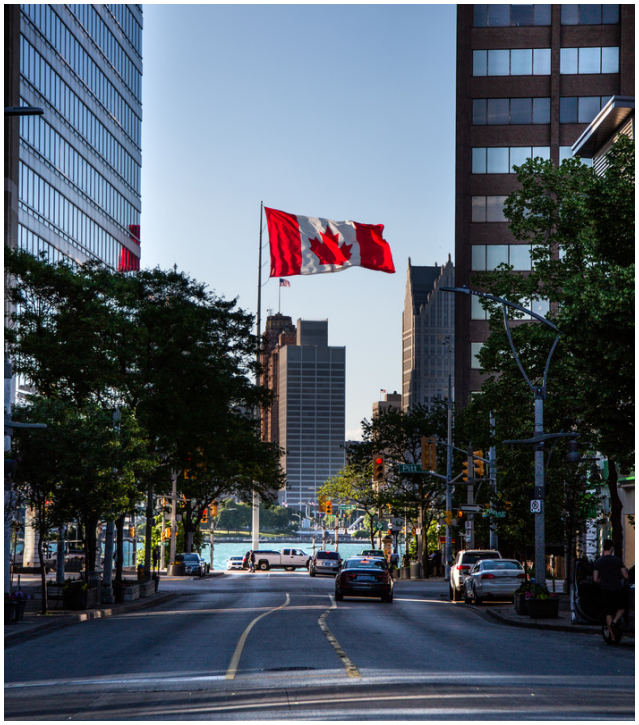
[44] WEtech Alliance. "Who We Are."

City of Windsor

The City of Windsor's role in talent development, attraction, and retention has always been to collaborate with and support community partners to help move their initiatives forward. They are consistently reaching out to the region's ecosystem of talent (school boards, business improvement areas, educational institutions, industry, etc.) to find out what everyone is doing and bring them all together for conversations on how they can support their work. Learning what community partners are doing and where gaps exist is important so the City can attempt to address these gaps and help strengthen future campaigns.

There are currently plans for the City to collaborate with other community members, such as Workforce WindsorEssex and Invest WindsorEssex, to create a talent attraction website. The City also continuously participates and chairs binational meetings with Canadian and U.S. consulates to find common marketing messages to attract different talent to the region. An example of an outcome from these binational meetings was the creation of an infographic with common themes and messaging for post-secondary students, outlining the advantages of moving to or staying in the region, such as quality of life, diversity, and the talent pipeline being developed in the region's educational institutions.
The City of Windsor knows that a big advantage for our region is the cost of living and believes this should be highlighted as a reason for talent to move here. They are looking at ways to collaborate with community partners and effectively market a message about the region's affordable living to attract the right type of talent moving forward.

In 2021, the City of Windsor published its **Windsor Works** report, which contains a strategy for the City's future growth. The report contains key recommendations for the development of four pillars distinct to Windsor's geography, culture, and history. The first pillar is location, which focuses on Windsor taking advantage of its geographic position and to work closely with Detroit and Michigan. The second pillar is to invest in its infrastructure to meet the needs of a growing city, including its downtown district, riverfront, and improved mobility options. The third pillar is to focus on building the strength of its manufacturing sector to become a hub for the auto sector of the future, including the development of its EV sector. The fourth pillar is to work closely with community partners to attract, train, and retain the top talent needed by local employers.



This can be achieved by directly engaging the region's post-secondary institutions and by developing new partnerships to attract new skilled residents, focus on research and development, and implement projects and programs that will support local entrepreneurs and businesses in sectors primed for future growth.[45]

The City has also planned to enhance the intersection of Banwell Road and E.C. Row Expressway, which will directly support the establishment of the NextStar Energy battery plant and help workers who need to commute to the site for work. This plan for infrastructure improvement was planned in 2016, before the announcement of the battery plant. The plan includes widening of the Banwell Road corridor to a six-lane configuration from E.C. Row to Intersection Road, which will eventually taper to four lanes and the construction of an overpass interchange at Banwell Road and E.C. Row Expressway. This is a notable example of an infrastructure investment that will help the development of the region's EV sector by increasing the efficiency of the roadways located directly near the NextStar Energy battery plant.[46]

Further supporting the development of its EV sector, the City of Windsor invested in the expansion of charging infrastructure for EVs. In 2021, the City announced an investment of $525,000 to install 11 new EV charging stations capable of charging 22 EVs throughout the City.[47] To date the City is still investigating the installation of more charging infrastructure. City staff are currently exploring ways to allow people that only have access to on-street parking a way to charge their EVs, which is a priority in the overall transition to EVs.[48]

[45] City of Windsor, "Windsor Works: Report back on implementation planning." October 18, 2021.
[46] City of Windsor, "Banwell Road/EC Row Expressway Interchange and Corridor Improvement."
[47] Lindsay Charlton, "City of Windsor to add 22 electric vehicle charging stations." CTV Windsor, August 17, 2021.
[48] CBC Windsor, "City considering on-street parking options for electric vehicles." December 6, 2023.

Ontario Ministry of Labour, Immigration, Training and Skills Development

Currently, there are two programs that are available for employers from the **Ministry of Labour, Immigration, Training and Skills Development (MLITSD)**. The **Canada-Ontario Job Grant (COJG)** provides opportunities for employers to invest in their workforce, with help from the government. Employers can get up to $10,000 in government support per person for training costs. This presents an amazing opportunity for employers looking to upskill their current workforces for EV sector roles. Ontario also offers the **Skills Development Fund (SDF) Training Stream**. This stream offers funding to organizations for innovative projects that address challenges to hiring, training, or retraining workers, including apprentices, to drive Ontario's economic growth.

The SDF Training Stream supports:

- projects that address the labour shortage and stimulate growth in key sectors of Ontario's economy;
- projects that will increase Ontario's long-term economic competitive advantage by creating a sustainable and resilient workforce; and
- projects helping people with prior involvement in the criminal justice system, at-risk youth, those with disabilities, Ukrainian newcomers, and others facing barriers to employment.

MLITSD provides supports for apprentices, which helps with talent attraction for the EV sector. The Ministry offers a wide range of supports, including grants for tools (up to $1,000 for motive power trades), an apprentice development benefit, support for apprentices with disabilities, and other supports for apprentices in both Red Seal and non-Red Seal trades such as interest-free loans and cash grants.

MLITSD has also recently developed its own Automotive Response Team. This team was formed as a cross-functional team consisting of five members who are currently focused on leading efforts related to workforce development in the EV sector. The team is focusing on developing a workforce for the green economy, which includes EVs. They are currently working directly with the Volkswagen plant in St. Thomas, Ontario to discover the range of positions and skills required for their battery plant jobs in the future.

Ontario Vehicle Innovation Network

OVIN is supported by the Government of Ontario to help drive prosperity and competitiveness to position Ontario as a leader in the development and building of vehicles through emerging technologies and advanced manufacturing processes, which includes the manufacturing of EVs. To date, the Government of Ontario has committed $141 million of total investments to support research and development funding, talent development, technology acceleration, business and technical supports, and testing and demonstration. The OVIN Central Hub is the driving force behind the programming, province-wide coordination of activities and resources. The Central Hub increases awareness of EV-related activities and technology, as well as leading skills, talent, and workforce initiatives, with a focus on supporting the automotive sector to develop a highly skilled, adaptable, and diverse workforce prepared to meet the needs of the future.[49]

[49] Ontario Vehicle Innovation Network, "About." March 2023.

Workforce WindsorEssex

As a workforce and community development-based organization, **Workforce WindsorEssex** is always looking for the next innovative approach to supporting the region's labour force. In recent years, the organization has taken an interest in and developed specific resources to support the region's growing EV sector. In December 2023, Workforce WindsorEssex released an **EV Career Pathways** guide, promoting career path options for those with traditional automotive experience who may be interested in transitioning to EV sector careers.

In June 2023, the organization created the EV Industry Support Committee, made up of key EV sector community partners and decision-makers. This group continues to meet on a bimonthly basis to discuss ongoing EV sector opportunities, issues, and other developments. It is this committee that informed most of the information used in this report.

The organization also partners with **Invest WindsorEssex** to lead the planning and facilitation of **Manufacturing Day**. This day occurs annually on the first Friday of October and provides an opportunity for manufacturing employers to open their doors to students to highlight the potential of modern manufacturing and foster interest in manufacturing careers. More than 1,000 local students toured over 15 employer locations in 2023 to learn more about manufacturing careers in Windsor-Essex, including careers in the EV sector. This is a great experiential learning initiative that supports talent retention in the region.

Workforce WindsorEssex has also created resources to help promote skilled trades careers in Windsor-Essex. The first resource is **Skilled Trades for Newcomers** to address and present opportunities to overcome challenges faced by employers, newcomers with skilled trades experience and interest in the skilled trades, and the service providers who serve as intermediaries to facilitate these connections. Another resource, **Skilled Trades Career Guide**, explores the top reasons for choosing to learn an apprenticeship and profiles that top 26 in-demand skilled trade occupations in Windsor-Essex. The organization has also provided custom research to community partners to support the attraction and retention of talent in the region for various sectors.

Workforce WindsorEssex has dedicated itself to staying up to date with EV sector developments in the region and engaging itself in ongoing EV sector workforce development. The organization partnered with Invest WindsorEssex on two of the previously mentioned EV-related projects, **EVcareers.ca** and the talent requirements report for an EV-battery value chain. Moving forward, Workforce WindsorEssex will continue to monitor the growth of the region's EV sector and create more resources to support a workforce able to sustain this growth.

Recommendations

The Windsor-Essex region is poised to take advantage of its rich automotive industry and experienced workforce to capitalize on EV sector investments and growth. However, action still must be taken to sustain a steady supply of talented workers, especially if the EV sector continues to grow at its current pace. The recommendations provided below have been developed in accordance with direction provided by the EV Industry Support Committee and the Talent Attraction and Retention Survey. They represent generalized strategies that different community partners can use to help develop, attract, and retain the right type of talent to support the growing EV sector in Windsor-Essex.

General Recommendations

Micro-skilling and training options

References to a skilled and available workforce from Windsor-Essex's existing automotive and manufacturing sectors is a running theme in this report. These are experienced individuals currently participating in our labour force that would be a great fit for current and projected EV sector roles with some form of upskilling and/or training. The University of Windsor and St. Clair College have made great progress creating programming to prepare individuals for roles in the EV sector, but these programs are likely not suitable for a large percentage of individuals with automotive and manufacturing experience. Many of these workers simply do not have the time or financial means to enter post-secondary programs that would take over one year to complete. These individuals require access to timely and affordable training that is customized to address in-demand EV sector skill development.

The first step to addressing this issue is increased collaboration between industry and service provider organizations. For meaningful micro-skilling and other training programs to be developed, companies operating along the EV supply chain need to share vital information about EV sector roles with service providers. This shared information should include detailed occupational profiles with in-demand skills and qualifications necessary for EV sector roles. It would also be helpful for EV sector companies to provide lists of current and projected in-demand and entry-level roles they will be hiring for and anticipated hiring numbers for these roles. Equipped with this knowledge, service providers would be better suited to begin developing affordable micro-skilling and training programs with quicker turnarounds for those interested in transitioning to roles in the EV sector. These programs should be developed in partnership with industry, ensuring that companies operating in the EV supply chain will recognize the credentials being earned by participants.

Providing more Job Opportunities in the EV Sector

Job opportunities in the EV sector are highly sought after by individuals from various educational backgrounds and skills levels. This was made extremely evident when NextStar Energy received over 5,000 applications to its first 130 job postings in a single week.[50] This should not be viewed as an issue that will simply resolve itself as the sector continues to grow and investments into the region become fully operational, increasing the number of jobs available. Further marketing of the region and capitalization on recent investments made into the growing sector should continue at a consistent pace. Other regions in Canada and internationally continue to make strong efforts to attract businesses operating in the EV sector through strong marketing efforts and business incentives. The Windsor-Essex region needs to ensure it builds on its recent investment success by securing more investments in the EV value chain, which will exponentially increase the number of jobs available in the sector and make the region more attractive to those interested in relocating here for work.

Revitalization of Downtown Windsor

Workforce WindsorEssex's 2020 Talent Attraction and Retention report makes a great case for the revitalization of downtown Windsor as a key tool for talent attraction and retention in the region. Downtown Windsor is the heart of Windsor-Essex and is extremely valued by residents in the entire region. This year, the City of Windsor launched a survey to help address the current issues facing downtown. The Downtown Windsor Revitalization Survey gave a chance for residents, business owners, visitors, and others to participate and provide insights on how the downtown core can be revitalized.[51] The City has also planned to address the issue of revitalizing downtown by releasing a **Windsor Civic Esplanade Concept Master Plan**, which provides different concepts for how a specific area of downtown could be reimagined to revitalize the overall area. Other regions, including Detroit, often focus on revitalizing their downtown cores as priorities to increase the effectiveness of their own talent attraction and retention campaigns. The revitalization of downtown Windsor can lead to a more attractive destination for talent and business, create a hub for innovation, and generate a diversity of jobs, all while achieving a greater goal of attracting the right type of talent to the region to support growth of the EV sector.

[50] Windsor Star, "Windsor battery plant draws flood of applicants as hiring begins." November 9, 2023.
[51] CBC Windsor, "Windsor launches survey as part of downtown revitalization effort." September 27, 2023.

Leveraging the Newcomer and Immigrant Population

Leveraging international migration and taking advantage of skilled immigrants and newcomers will help enable growth in the EV sector. One in four Windsor-Essex residents is an immigrant and 15,380 newcomers settled in the region between 2016 and 2021. In Windsor-Essex, 24,995 immigrants and 4,305 newcomers have a university degree and 14,010 immigrants and 1,020 newcomers have a college degree.[52] Over 45% of responses collected in the talent attraction and retention survey also came from newcomers to the Windsor-Essex region and their responses further proves that this population is interested in EV sector jobs.

A sizable percentage of this potential labour force has a degree or diploma in a field that is directly transferable to careers in the EV sector. Many of this potential labour force has a degree or diploma from a local institution, such as the University of Windsor or St. Clair College, and these individuals should always be considered by employers looking to expand their operations. Others that are foreign trained, often have high-level education qualifications but still do not end up working in their field of study. Devaluation of newcomer and immigrant foreign credentials in the Canadian labour market continues to be a significant barrier to their successful integration into our labour force, including at a regional level.[53] The Canadian system for regulated professions and foreign credential assessment will need to be reviewed if regions like Windsor-Essex experiencing large-scale economic growth are not able to fully tap into this skilled labour force. The province of British Columbia recently introduced legislation that aims to reduce barriers for internationally trained professionals, which received royal assent on November 8, 2023, and will come into effect in the summer of 2024. The Act will help regulatory bodies improve the credential recognition process and make it fairer, faster, and easier for people to use their skills to work in BC – no matter where they were trained.[54] The Ontario Government has made progress in respect to the inclusion of newcomers and immigrants as it will introduce legislation that, if passed, would make it the first province in Canada to help more internationally-trained immigrants work in their fields of study and gain employment in the Canadian labour force by banning the use of Canadian work experience as a requirement in job postings or application forms. **Professional Engineers Ontario** moved first to eliminate Canadian experience as a requirement in its job postings and were the first regulated profession to do so since **Professional Geoscientists Ontario.** Ontario is also investing $100 million in 2023-2024 services that will help newcomers learn English or French, settle, access training, and find jobs.

Another barrier experienced by newcomers and immigrants when attempting to enter our region's workforce is language. There is often a disconnect between an employer's desired English language skill level for candidates and what newcomers and immigrants possess. There may be an opportunity to connect employers with English classes offered by service providers in the Windsor-Essex region to address the language gap. Many service providers are willing and able to offer occupation-specific language training to help integrate newcomers and immigrants effectively into

[52] City of Windsor, "Diversity." 2021.
[53] Abdul-Bari Abdul-Karim, "Barriers to Foreign Credential Recognition, Access to Regulated Professions and Successful Integration into the Canadian Labour Market." 2018.
[54] British Columbia, "International professional credential recognition." November 9, 2023.

our region's EV sector. More details can be found on this suggestion in the "How to Effectively Recruit and Support Immigrants and Newcomers in the Workplace" resource in the supplementary Talent Development, Attraction, and Retention toolkit.

In 2023, Future Skills Centre published a report titled, "**Leveraging the Skills of Newcomers**". The report addresses the need for Canada to access its newcomer population as a vital source of talent to fill ongoing labour shortages. The report also addresses how existing efforts can be improved and become more responsive to achieve greater integration and co-ordination across a range of supports for newcomers.[55]

[55] Future Skills Centre, "Leveraging the Skills of Newcomers." June 2023.

Promoting Women in Automotive

Currently in the Windsor-Sarnia region, women only represent 25% of employment in motor vehicle manufacturing and 33% of employment in motor vehicle parts manufacturing. Below is a chart with the list of occupations expected to be in-demand in Windsor-Essex's EV sector, with the percentage of women employed in each occupation:

CURRENT WOMEN'S EMPLOYMENT IN PROJECTED IN-DEMAND EV SECTOR OCCUPATION

Occupation	# Employed (2022)	# of Women Employed	% of Women Employed
Automotive Service Technicians	1,625	40	2.46%
Chemical Engineers	60	15	25%
Chemists	135	85	62.96%
Civil Engineers	630	120	19.05%
Data Analysts	150	60	40%
Electrical and Electronics Engineering Technologists and Technicians	430	55	12.79%
Electrical and Electronics Engineers	775	95	12.26%
Electrical Power Line and Cable Workers	120	0	0%
Electricians	1,000	25	2.5%
Engineering Managers	460	45	9.78%
Industrial Designers	120	15	12.5%
Industrial Engineering and Manufacturing Technologists and Technicians	550	55	10%
Industrial and Manufacturing Engineers	555	90	16.22%
Industrial Instrument Technicians and Mechanics	35	0	0%
Machine Operators	13,365	4,435	33.18%

CURRENT WOMEN'S EMPLOYMENT IN PROJECTED IN-DEMAND EV SECTOR OCCUPATION
TABLE CONTINUED

Occupation	# Employed (2022)	# of Women Employed	% of Women Employed
Machinists	1,560	60	3.85%
Manufacturing Managers	1,380	310	22.46%
Mechanical Engineering Technologists and Technicians	1,325	85	6.42%
Mechanical Engineers	1,840	195	10.60%
Millwrights	975	35	3.59%
Tool and Die/Mold Makers	1,725	40	2.32%
Software Developers	540	125	23.15%
Software Engineers	665	110	16.54%
Urban and Land Use Planners	145	60	41.38%
Total:	30,165	6,155	20.40%

Table 4. Current Women's Employment in Projected In-Demand EV Sector Occupation.[56]

There may be opportunities for employers to solve employment issues by hiring and training more women in the automotive industry, as well as widening overall labour market participation from women.[57] In 2021, a report was published by the Automotive Retailers Association, titled "**Women in the Automotive Industry: Increasing Female Representation within B.C.'s Automotive Workforce to Combat the Growing Labour Shortage**". The report outlines how appealing to women is a way for the automotive industry to recruit available talent. Recommendations are made that can help industry and other community partners when attempting to attract women into automotive positions.

These recommendations include:[58]

- Build role models for men and women in the automotive industry that serve different needs for different genders.
- Innovate existing tools and resources to help employers become more inclusive of women and incentivize employers to take on apprentices from minority groups.

[56] Statistics Canada. Table 98-10-0593-01.
[57] FOCAL Initiative, "Women's Participation in Canada's Automotive Industry." April 2020.
[58] Automotive Retailers Association. "Women in the Automotive Industry: Increasing Female Representation within B.C.'s Automotive Workforce to Combat the Growing Labour Shortage." 2021.

- Campaign to change public perception of female automotive industry workers and build the trust of the public in their work.

- Create a continuing forum for women in the automotive industry where people can share stories, collaborate, and connect with male allies.

Some organizations in Windsor-Essex are taking on this task to promote the training and hiring of women in EV-sector related roles, including but not limited to **Build-a-Dream**, **WEST of Windsor**, and WEtech Alliance. Overall, women in automotive are not well-represented in the current automotive and manufacturing sectors, and more work needs to be done to help expose them to opportunities in the EV sector and ensure they are able to equally access these employment opportunities.

Reaching Students and Parents

If the EV sector in Windsor-Essex wants to ensure it has access to a strong talent base in the future, it is imperative for organizations to be connecting with students and their parents to promote EV sector careers. This involves teaching youth about EV sector careers and promoting them as viable career path options at younger ages. There are currently excellent efforts being made at the high school level to promote EV-related career paths, and efforts are now emerging to reach students at younger ages. It is also crucial for the same messages to be shared with the parents of these students. More informed parents will be better able to support their children when making career path choices. This can potentially be achieved by hosting more information sessions for parents after school hours or circulating materials to students' homes for parents to read. The Government of Ontario has created a resource for increasing engagement of parents in schools for the use of school councils who wish to get parents more involved. This includes tips for school councils, such as conducting parent surveys, developing parent engagement action plans, creating inclusive welcomes, breaking down barriers to participation, organizing school events, and effective marketing.[59]

School boards in the Windsor-Essex region are currently expanding OYAP and STEM programming in high schools and marketing these programs to elementary level students, as well. FIRST Robotics is also a notable example of an initiative that is teaching our younger generations skills needed to enter EV sector roles in the future, with program offerings for children as young as four years old.

Communicating labour market information to students and parents has been proven to be key for assisting with career path planning. Labour market information has the potential to inform key decisions affecting students' future career pathways. **A 2019 report from the Labour Market Information Council** provides an overview of the importance and role of labour market information for students and parents.[60] This report can be used by community partners in education to learn what labour market information students and parents are looking for when making career choices. For example, the most sought-after types of information by students before enrolling in their post-graduate programs included salaries and wages, skill requirements, and current job openings. After graduating, students also consider information on benefits and workplace environment as they go searching for their first career-oriented jobs.[61]

[59] Government of Ontario. "Involving parents in the school: tips for school councils." March 2, 2022.
[60] Labour Market Information Council. "Educational and Career Choices for Students and Parents: The role of labour market information. March 2019.
[61] Ibid.

Housing

To attract the necessary talent for the growing EV sector, they need a place to live once they arrive here. According to a report from the Canada Mortgage and Housing Corporation, the city's rental vacancy rate is at a record-low 1.8% and is expected to fall to 1% this year. Affordability is also becoming an issue for those looking to relocate, as the average home price for Windsor-Essex is listed at $512,000 in 2023 but is expected to climb to $611,000 by 2025.[62] The change in home prices has also risen in the region by 186% from 2014 to 2023, a larger increase than other municipalities like London, Kitchener-Waterloo, and Toronto.[63]

There has been an increase in demand for rental units, but supply has also become a large issue. A higher cost of home ownership has led to an increase in demand for rental housing and has put more pressure on the supply side in Windsor-Essex. Major projects in the EV sector, like the development of the NextStar battery plant, will only increase demand and put more pressure on the already slimming supply of rental units.[64]

As mentioned earlier in the report, the average cost of housing in Windsor-Essex is lower than compared to other regions in Ontario. However, many families in Windsor also have lower incomes than compared to other regions in Ontario. From 2020-201, the Windsor region experienced the largest regional decrease for census metropolitan areas (CMAs) (-5.7%) in median family after-tax income in the nation. Windsor (19.3%) also had the highest rate of low income out of all CMAs in Canada in 2021.[65] More affordable housing needs to be developed in the region for existing residents and can also be used as a tool for both attraction and retention.

[62] Melanie Kentner, "Renting or buying? Here's the housing market outlook for Windsor-Essex." April 28, 2023.
[63] Jason Kirby, "Still bearing scars of recessions past, Windsor is on the verge of a billion-dollar revitalization." The Globe and Mail, December 9, 2023.
[64] CBC Windsor, "Windsor rental unit availability hits record low, prices up, new report shows." January 27, 2023.
[65] Statistics Canada, "Main highlights on Income of families and individuals: Subprovincial data from the T1 Family File, 2021." August 9, 2023.

Transportation in Windsor

Windsor-Essex has been a historically car-centric region, but this may need to be reconsidered with the current electrification shift of the automotive industry and with increasing awareness around climate change and sustainability. Transit Windsor performed an overhaul of the public transit system in 2019, but there is still room for improvement in the region. For example, for talent that currently resides outside of Windsor in the surrounding county, public transportation options are limited for those who wish to work in the city but do not have access to a personal vehicle. Improvement of transportation does not lie solely with public transportation, but also with the type of infrastructure that is built to accommodate diverse types of transportation in Windsor-Essex. For example, many cyclists in Windsor have voiced their concerns that not enough is being done to address accessibility and quality of cycling routes in the city. They have mentioned issues such as the poor conditions of bike lanes and roads shared by cyclists with motorists. Also, as mentioned earlier, the City of Windsor has invested in the creation of EV-charging infrastructure to allow for the adoption of more EVs on the region's roads. Although some advancements have been made, more investments need to be made to keep up with the increasing demands of consumers for EVs and to further promote the region as one that is fully EV-inclusive.

Access to childcare

As talent attraction campaigns pick up speed, more families will ultimately locate in the Windsor-Essex region. A key for families and the ability for parents to work full-time jobs is availability of childcare. Currently, many families in Windsor have to sign up their children on waiting lists, some with wait times as long as two years.[66] This shortage of childcare openings does not create an environment where parents are able to hold full-time jobs and can make the region look less attractive to potential EV sector talent. This is not an experience that is unique to Windsor-Essex, as 62% of childcare operators in Canada had to recruit staff in the last two years and 82% had difficulty hiring staff with the necessary qualifications.[67]

To address this ongoing issue, the City of Windsor has created its **W.E.R.E.C.E. initiative**, which aims to encourage the recruitment and retention of Early Childhood Educators (ECEs) locally. Ultimately, better access to childcare for families will be required if the region wants to fully capitalize on its talent attraction efforts for the EV sector. An **Atkinson Centre report on the ECE workforce** from April 2022 identifies recommendations for community partners to follow in order to help stabilize the childcare sector and help with the development, attraction, and retention of ECE workers nation-wide, which can also be adopted at a regional level in Windsor-Essex.

Recommendations provided in the report include:

- Setting wages in regulated childcare to mirror those of comparable positions in the public sector would validate the work, bring an immediate increase in earnings, and would also address differences in the regional cost of living and extend incentives for those working in remote or underserved communities.
- Increased opportunities for ECE workers to receive health benefits, paid leave, overtime pay, and pensions, all of which are often rare for ECE workers but are noted as key incentives for retaining staff.
- Improved working conditions for ECE staff, including sufficient staffing, such as providing staff to cover paid non-child contact time for the completion of professional responsibilities, reflection with colleagues, professional learning, and opportunities to provide input into decisions that affect classroom practices.
- Providing professional development in the areas of mental health, health and safety, 2SLGBTQ+ inclusion, Indigenous ways of learning and knowing, and anti-racism.

[66] Sanjay Maru, “Some parents face childcare waitlists of two years and city pushes for more ECEs.” CTV Windsor, March 16, 2023.
[67] Atkinson Centre. “Canada’s Children Need a Professional Early Childhood Education Workforce.” April 2022.

Health and wellness

Health and wellness was indicated as one of the top two factors to consider relocating to or staying in a region according to the Talent Attraction and Retention survey. Ensuring residents have access to healthcare and options to sustain overall wellness must be focused on when considering talent development, attraction, and retention campaigns.

In terms of access to healthcare, it has been reported that the number of people in Windsor-Essex who do not have a family doctor sits at 44,000, which is an increase of 22% from 2020. To address this, efforts are being made to try to increase the amount of team-based care and decrease administrative burden. Unlike traditional family medicine, which relies on a single physician to manage a patient's health, team-based healthcare involves a team of healthcare professionals who work together to provide comprehensive care to patients.[68] The Canadian Mental Association makes a case for **Why Canada needs (a lot more) team-based care**. This article includes the benefits of primary care teams and can be used as a model for adoption of more team-based care in Windsor-Essex.

When it comes to wellness, there is more that employers in the EV sector can do to support the workforce. The University of Windsor Department of Human Resources' **Promoting a Culture of Wellness** toolkit provides simple strategies and procedures for employers to implement in their workplaces to help with employee well-being. These proposed strategies are by no means difficult to implement for employers and can be very easy ways to increase the attractiveness of working for companies in Windsor-Essex's EV sector. These strategies aimed at employers to support their employees include staying connected and making time for regular check-ins, communicating regularly, encouraging self-care, addressing ongoing work pressures, showing gratitude, encouraging healthy and supportive relationships with colleagues, promoting well-being, and encouraging participation in wellness activities.[69] If an employer chooses to implement some of these strategies in their workplace, they can also advertise them on a job posting to increase the chances that top talent will apply for the position.

[68] Sanjay Maru, "Surge in Windsor-Essex residents without family doctor reinforces calls for health teams." March 2, 2023.
[69] University of Windsor Department of Human Resources. "Promoting a Culture of Wellness." April 2021.

Community Recreation

When asked about environmental factors for considering relocation and desired changes to the Windsor-Essex region, respondents to the Talent Attraction and Retention survey indicated strongly that they want to live in a region that offers a variety of recreational opportunities and activities. Community recreation encompasses a wide range of amenities and experiences and provides people with the opportunity to improve physical and mental health and well-being, and to become more connected to each other and their community. In February 2020, the City of North Vancouver published a report titled, "**A Healthy City for All: The Role of Community Recreation**". The report offers benefits of community recreation and a strategy for implementation of community recreation amenities and experiences.

The strategy for implementation includes:

- Promotion of the wide-ranging benefits of community recreation.
- Establishing a vision and philosophical foundation for community recreation in the region.
- Mapping the current inventory of spaces and assets.
- Creating a four-step process to help prioritize significant community recreation projects in the region.[70]

This strategy offers a template that can be used by decision-makers in Windsor-Essex to develop more community recreation opportunities for residents and help to make the region more attractive to potential talent.

[70] City of North Vancouver. "A Healthy City for All: The Role of Community Recreation." February 2020.

Recommendations for Employers

Information Sharing

A common message was shared repeatedly in consultations and meetings with community partners around the EV sector in Windsor-Essex. These are jobs that the region needs to prepare its workforce for, but there is still a lack of clarity in regard to the skills and knowledge that will be required for many to work in the EV sector. A lot of progressive research has been done by community organizations to predict what jobs, skills, and knowledge will be in-demand in the future of the EV sector. However, it is up to employers to provide as much information as possible to help the region prepare its workforce for EV sector growth and job creation. Educational institutions are creating new programs to fill some of the skills and knowledge gaps that currently exist, but more precise information from employers in the sector may be required so that additional short-term training and upskilling opportunities can be developed with a quicker turnaround time to properly prepare our existing workforce. Many existing automotive and manufacturing workers who wish to transition into EV sector careers are already well-along in their careers and cannot afford to take two-, three-, or four-year programs at the University of Windsor or St. Clair College. Providing a detailed roadmap of the upskilling and training required for specific jobs that will be created will help facilitate a more effective network of service providers who are able to train quickly and get our workforce prepared as soon as possible for the jobs that are coming.

It was also discovered in the talent attraction and retention survey that effective information sharing and marketing of the region's EV sector is important to respondents who are interested in gaining employment in the sector, as well as to inform individuals who may not be interested because they have a lack of understanding of what is currently going on. Information sharing is not the sole responsibility of employers but should also be supported by other organizations in economic development, government, and workforce development.

Succession Planning

It is no secret that Windsor-Essex has an aging workforce, facing many retirements in the coming years. This could hamper the region's opportunity to sustain a workforce able to support its growing EV sector. Addressing looming retirements and creating effective succession planning strategies is critical for employers in the region's industry. Succession planning is the process of identifying the critical positions within an organization and developing action plans for individuals to assume these positions, especially when anticipating upcoming retirements. To create effective succession planning strategies, employers must assess challenges they will anticipate in the coming years, identify critical occupations and positions that will be needed to support business continuity, and identify competencies, skills, and institutional knowledge that are critical success factors. The employer can then evaluate and determine high potential employees, categorize skill or competency gaps, and predict the likelihood for attracting a robust and qualified candidate pool. Finally, the employer can develop a strategy to capture key knowledge and skills before workers leave the organization and develop a pool of talent with the key knowledge and skills to take over.[71]

[71] University of Washington, "Succession Planning Toolkit." June 29, 2016.

Multi-Generational Workforces

Managing a multi-generational workforce can be difficult for employers, but it is especially important to ensure effective employee retention. Different generations of employees have different working styles and different motivations for employment. As of 2023, up to five generations are active in the workplace. Each generation possesses unique characteristics, values, and outlooks that all must be considered and addressed by employers. This will help ensure all generations are pleased and can assist in the creation of a collaborative and productive workplace. Employers must be flexible when managing a multi-generational workforce and provide many opportunities for employees to learn from one another.[72]

For newer generations, the creation of a defined career path is important for employers to provide. Investing time and energy in developing tools like career paths that encourage internal growth is one way to retain and support talented employees. Managers can also use defined career paths to discuss performance, development, and opportunities for promotion with employees. Buy-in and approval from leadership are both key factors to success of career path planning. Well-developed career paths are more likely to be approved by leadership as it makes their jobs easier by increasing employee retention and engagement. Collaboration with leadership when defining career paths allows for the inclusion of the level of complexity and decision-making defined in each job level and what technical skills are required to advance from one level to the next.[73]

Some organizations in Windsor-Essex are taking on this task to promote the training and hiring of women in EV-sector related roles, including but not limited to Build-a-Dream, WEST of Windsor, and WEtech Alliance. Overall, women in automotive are not well-represented in the current automotive and manufacturing sectors, and more work needs to be done to help expose them to opportunities in the EV sector and ensure they are able to equally access these employment opportunities. The Government of Ontario has created a resource for increasing engagement of parents in schools for the use of school councils who wish to get parents more involved. This includes tips for school councils, such as conducting parent surveys, developing parent engagement action plans, creating inclusive welcomes, breaking down barriers to participation, organizing school events, and effective marketing.[74] OYAP and STEM programming in high schools and marketing these programs to elementary level students, as well. FIRST Robotics is also a notable example of an initiative that is teaching our younger generations skills needed to enter EV sector roles in the future, with program offerings for children as young as four years old. WindsorEssex's 2020 Talent Attraction and Retention report makes a great case for the revitalization of downtown Windsor as a key tool for talent attraction and retention in the region. Downtown Windsor is the heart of Windsor-Essex and is extremely valued by residents in the entire region. This year, the City of Windsor launched a survey to help address the current issues facing downtown. The Downtown Windsor Revitalization Survey gave a chance for residents, business owners, visitors, and others to participate and provide

[72] Kiely Kuligowski, "Managing Tips for a Multigenerational Workforce: From Baby Boomers to Gen Z." Business.com, June 23, 2023.
[73] Mikaela Kiner, "How to Create Career Paths and Retain Top Talent." Forbes, March 3, 2022.
[74] Government of Ontario. "Involving parents in the school: tips for school councils." March 2, 2022.

insights on how the downtown core can be revitalized.[75] Many other regions, including Detroit, have focused on revitalizing their downtown cores as priorities to increase the effectiveness of their own talent attraction campaigns. The revitalization of downtown Windsor can lead to a more attractive destination for talent and business, create a hub for innovation, and generate a diversity of jobs, all while achieving a greater goal of attracting the right type of talent to the region to support growth of the EV sector. The City has also seeked to address the issue of revitalizing downtown by releasing a Windsor Civic Esplanade Concept Master Plan, which provides different concepts for how a specific area of downtown could be reimagined to revitalize the overall area.[76] [77] More affordable housing needs to be developed in the region for existing residents and can also de used as a tool for talent attraction and retention.

[75] CBC Windsor, “Windsor launches survey as part of downtown revitalization effort.” September 27, 2023.
[76] CBC Windsor, “Windsor rental unit availability hits record low, prices up, new report shows.” January 27, 2023.
[77] Statistics Canada, “Main highlights on Income of families and individuals: Subprovincial data from the T1 Family File, 2021.” August 9, 2023.

Resources

Build a Dream

Build a Dream offers special services and professional development workshops to increase awareness, expand talent pools, and improve employee retention.

Canada Ontario Job Grant

COJG provides opportunities for employers to invest in their workforce, with help from the government.

EVcareers.ca

EV Careers is your one source for all EV related careers in Windsor-Essex. Users who are looking for a new opportunity, students, or recent grads can view relevant job postings that match their skill set, new training programs, news in the sector, and more.

FIRST Robotics

FIRST inspires young people to be science and technology leaders and innovators by engaging them in exciting mentor-based programs that build science, engineering, and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership.

Ontario Council for Technology Education (OCTE)

OCTE is a Provincial organization that represents, supports, and advocates for Technological Education, Teachers, and Students to ensure that the needs of the local, national, and global communities are reflected.

Ontario Vehicle Innovation Network (OVIN)

As Ontario's flagship initiative for the automotive and mobility sector, OVIN is driving economic development and catalyzing a future that builds safer, cleaner, and more efficient transportation.

Ontario Youth Apprenticeship Program (OYAP)

OYAP is a specialized program in high school that allows you to explore apprenticeship and consider careers in the skilled trades, generally starting in Grade 11 or Grade 12 through the cooperative education program.

United Way – Women United

Women United is an inclusive, vibrant community of change-makers bound together by a sense of belonging – to one another, to the community, and to the United Way's mission.

WEtech Alliance

WEtech Alliance is a non-profit organization that provides entrepreneurs and companies with business services, training, I.P. and commercialization support, mentorship and strategic connections to help bring new ideas to market, scale to the next level and build a dynamic culture and a community of innovation.

Windsor-Essex Local Immigration Partnership (WE LIP)

The WE LIP is an initiative to encourage communities across Ontario to develop a comprehensive plan for the delivery of newcomer services. The WE LIP initiative represents a process to examine the whole system of services currently available and considers how the system could be enhanced to facilitate access to service and to promote the long-term settlement and integration of immigrant newcomers into Windsor and Essex County.

Windsor Regional Employment Network

Locally-focused employment services for job seekers, employers, and community partners in the Windsor-Sarnia region.

Workforce WindsorEssex – 2020 Talent Attraction and Retention Report

This guide can be used by employers, employment agencies, government, and community organizations who want to optimize their organization's or community's talent attractiveness.

Conclusion

This guide is a resource that provides recommendations for effective talent development, attraction, and retention strategies for the region's EV sector, including successful initiatives already taking place locally. To fully realize Windsor-Essex's potential of its growing EV sector and capitalize on this growth in the near future, certain talent development, attraction, and retention strategies must be continued and built upon, and new strategies must be developed to ensure the region has access to a skilled labour force to fill available jobs in the EV sector. The growing EV sector must be continuously marketed in combination with the development of effective talent development, attraction, and retention strategies and policies.

Appendix: Survey Results Infographics

Employment in Windsor-Essex's EV Sector

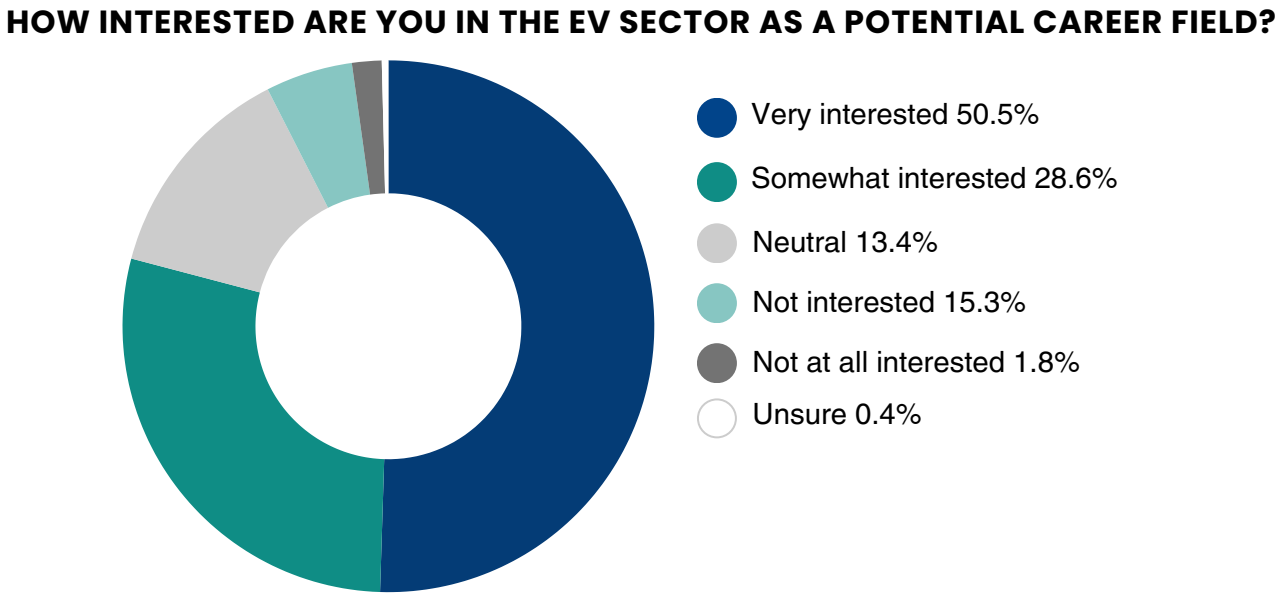


Figure 2. Employment in Windsor-Essex's EV Sector.

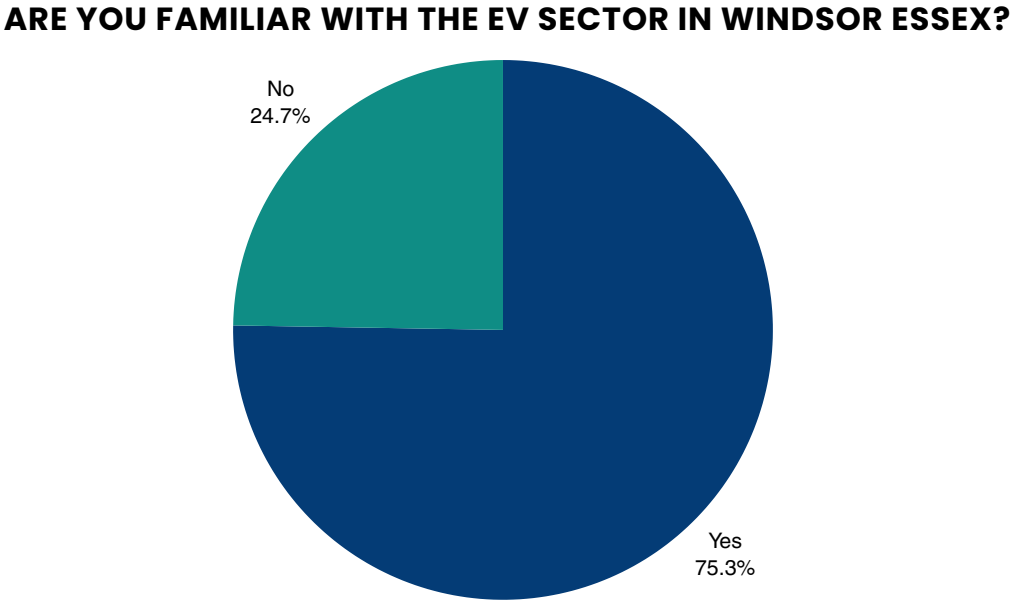


Figure 3. Are you familiar with the EV sector in Windsor-Essex?

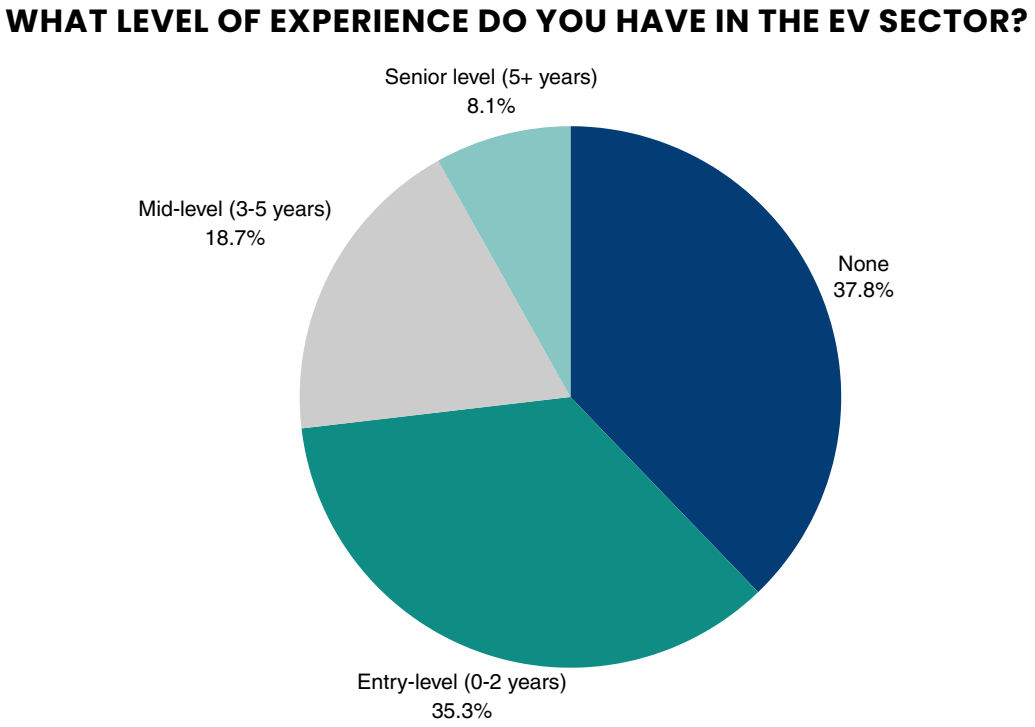


Figure 4. What level of experience do you have in the EV sector?

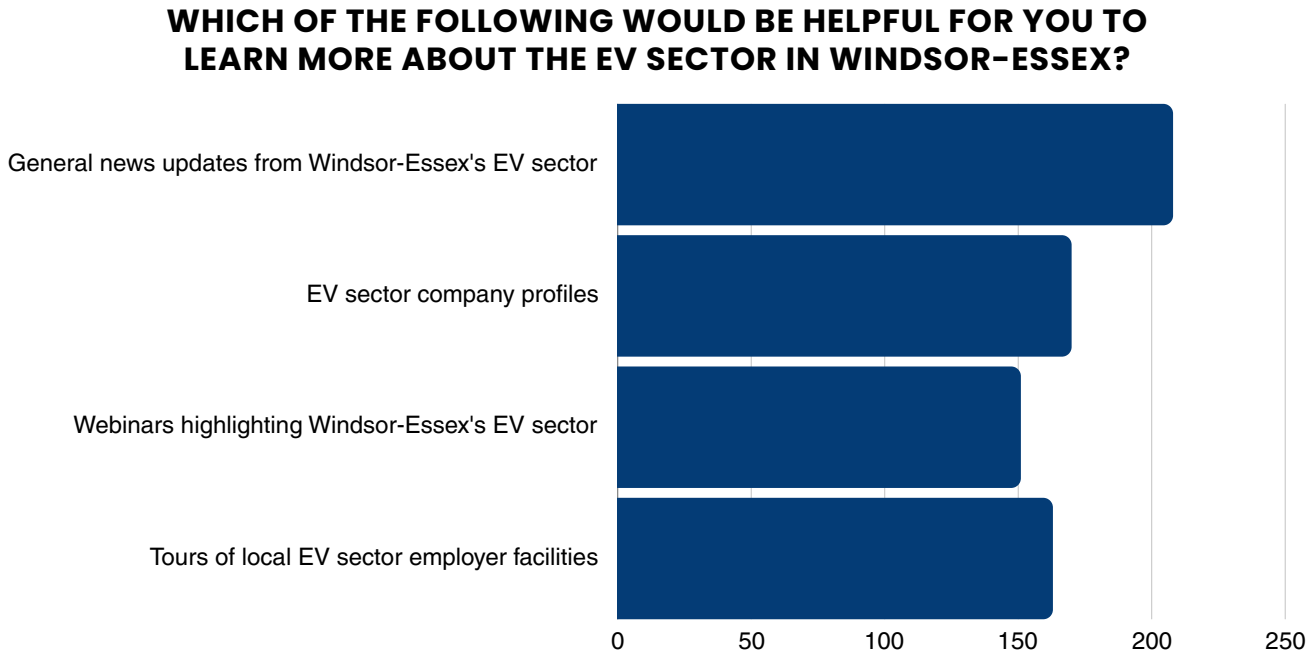


Figure 5. Which of the following would be helpful for you to learn more about the EV sector in Windsor-Essex?

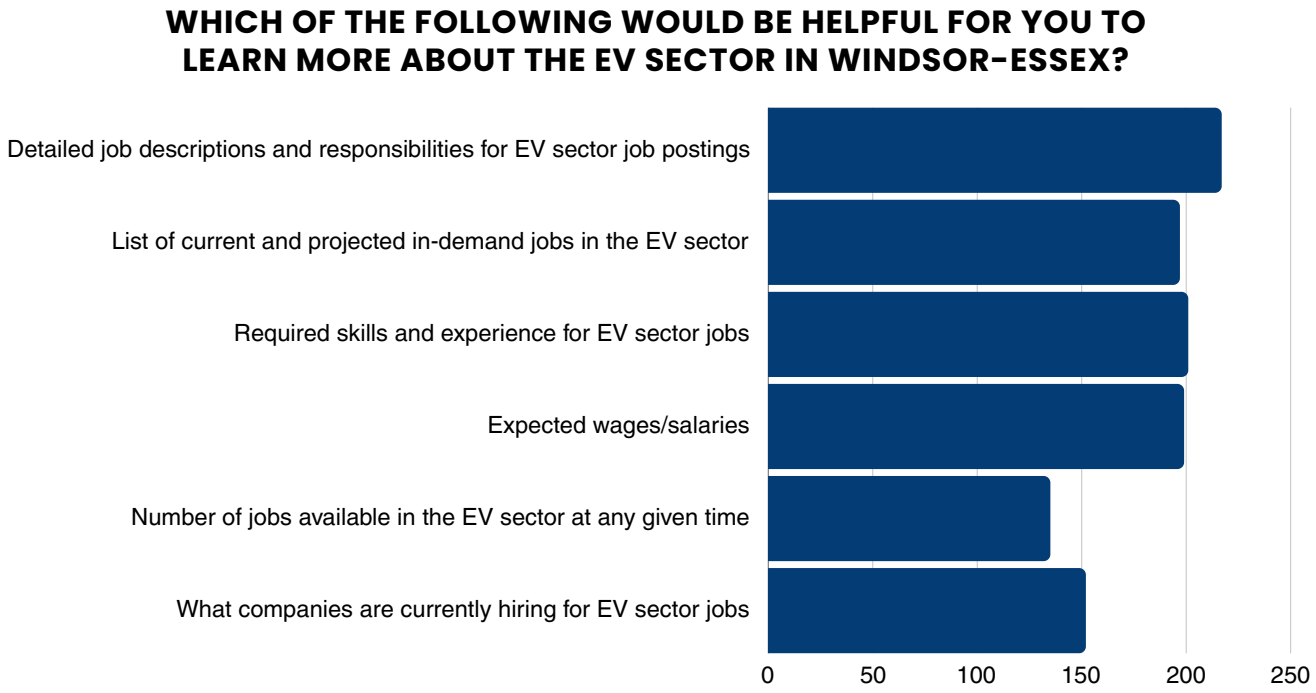


Figure 6. Which of the following would be helpful for you to learn more about the EV sector in Windsor-Essex?

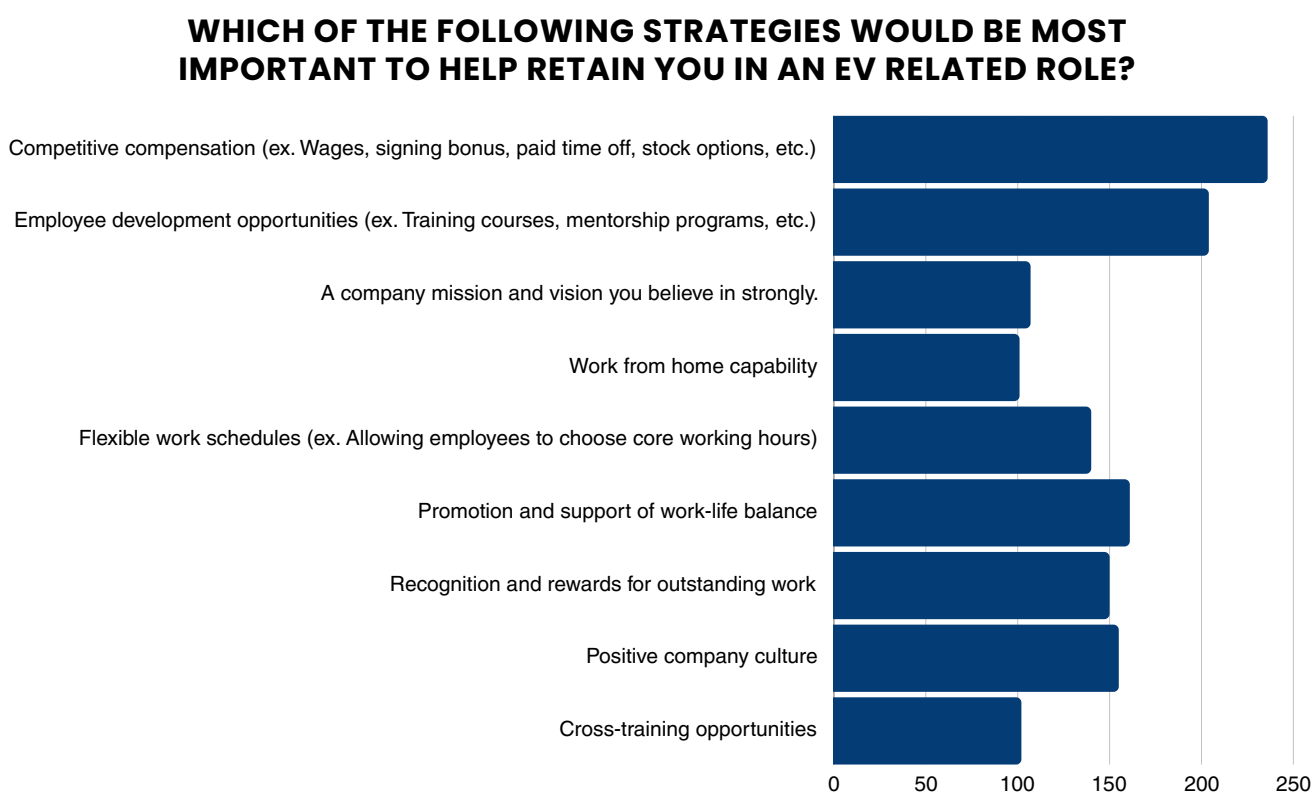


Figure 7. Which of the following strategies would be most important to help retain you in an EV related role?

Windsor-Essex General Talent Attraction and Retention

Please rank each of the following factors on a scale of 1-5 (1 = not at all important, 5 = very important), when choosing a location for employment.

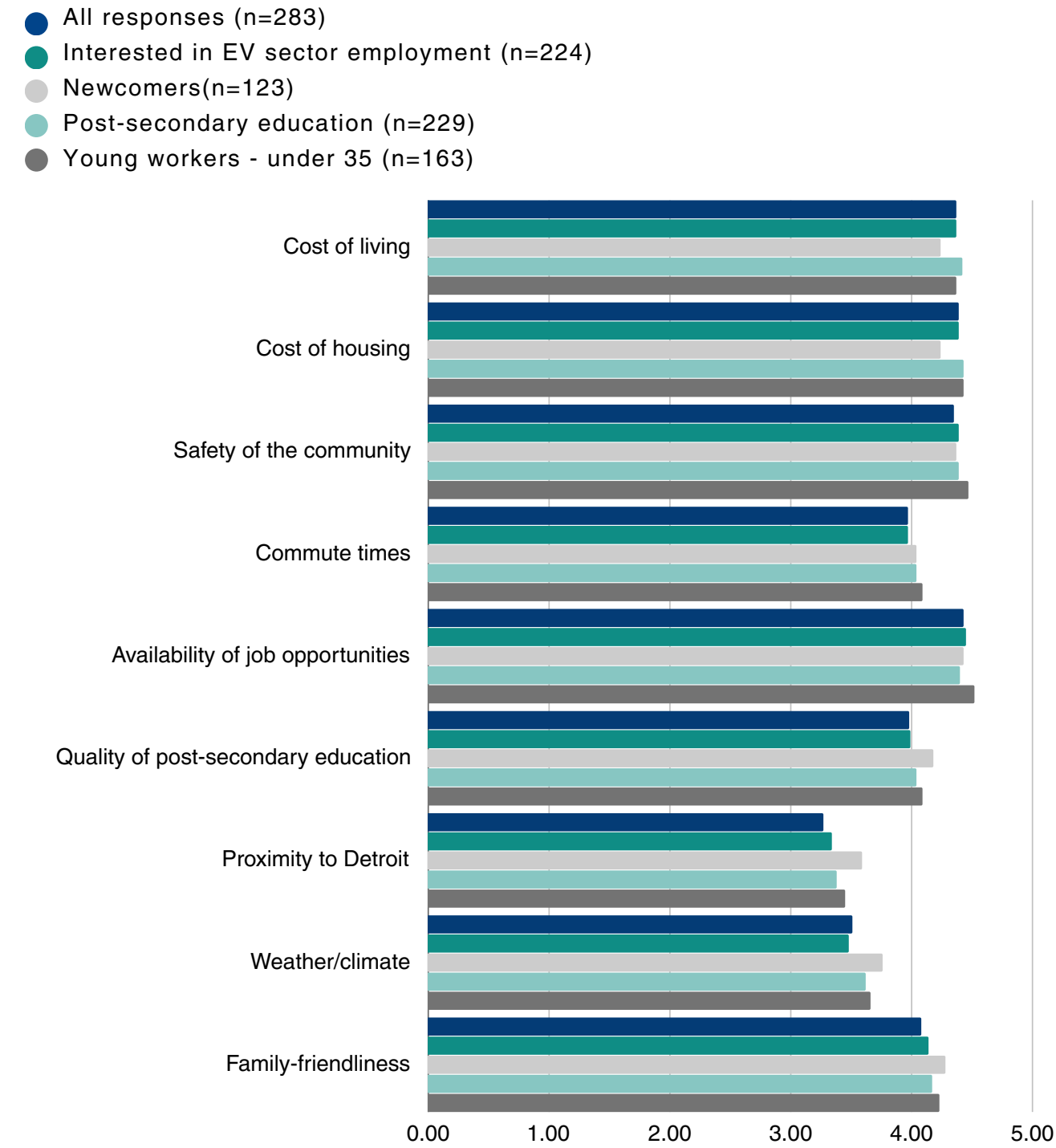


Figure 8. Factors when choosing a location for employment.

How would you rank the following motivating factors when deciding to join, stay with, or leave a job or company? (1 = not at all important, 5 = very important)

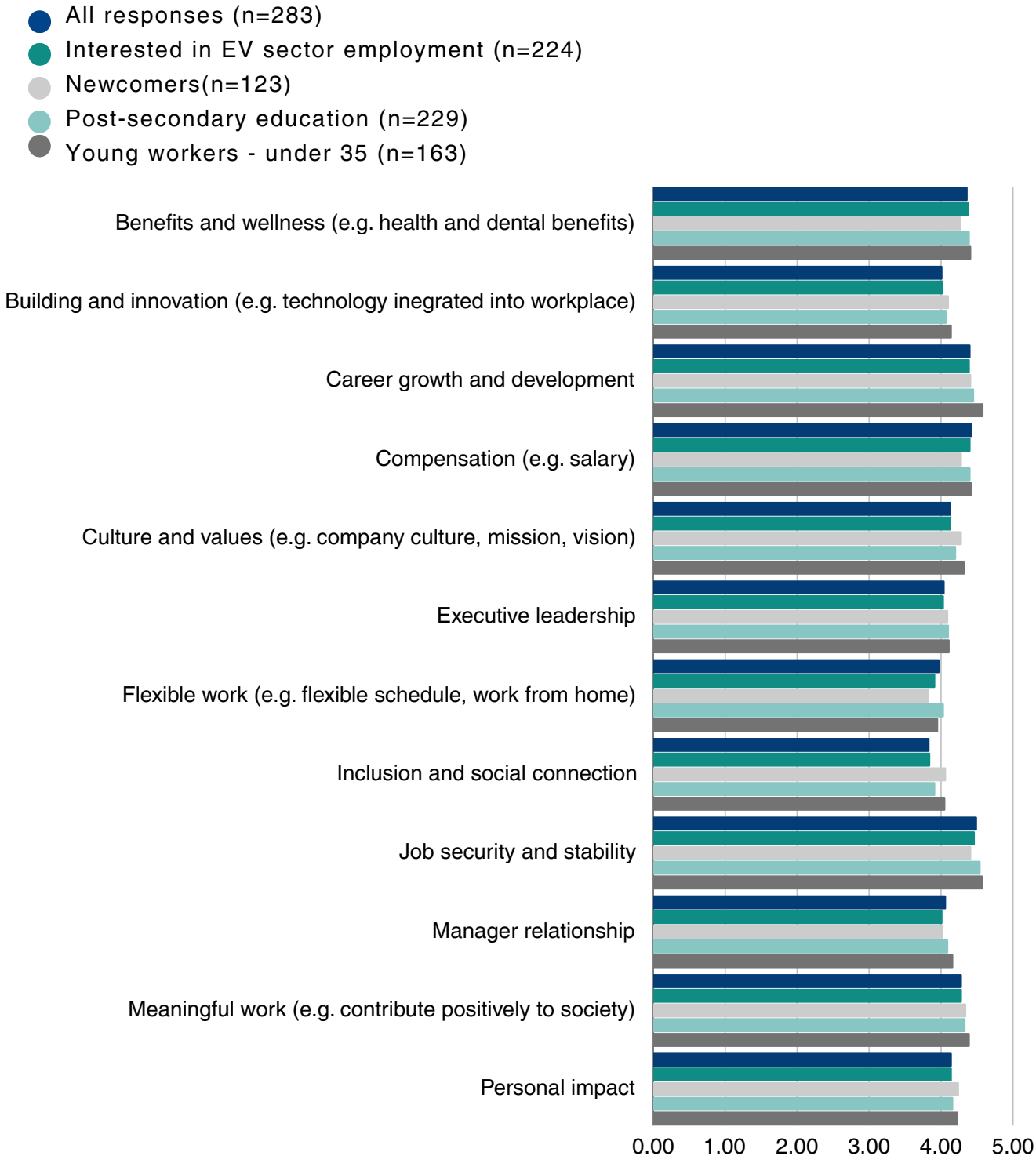


Figure 9. Factors when deciding to join, stay with, or leave a job or company.

On the topic of professional development, please rank the following items based on how important they are to you. (1 = not at all important, 5 = very important)

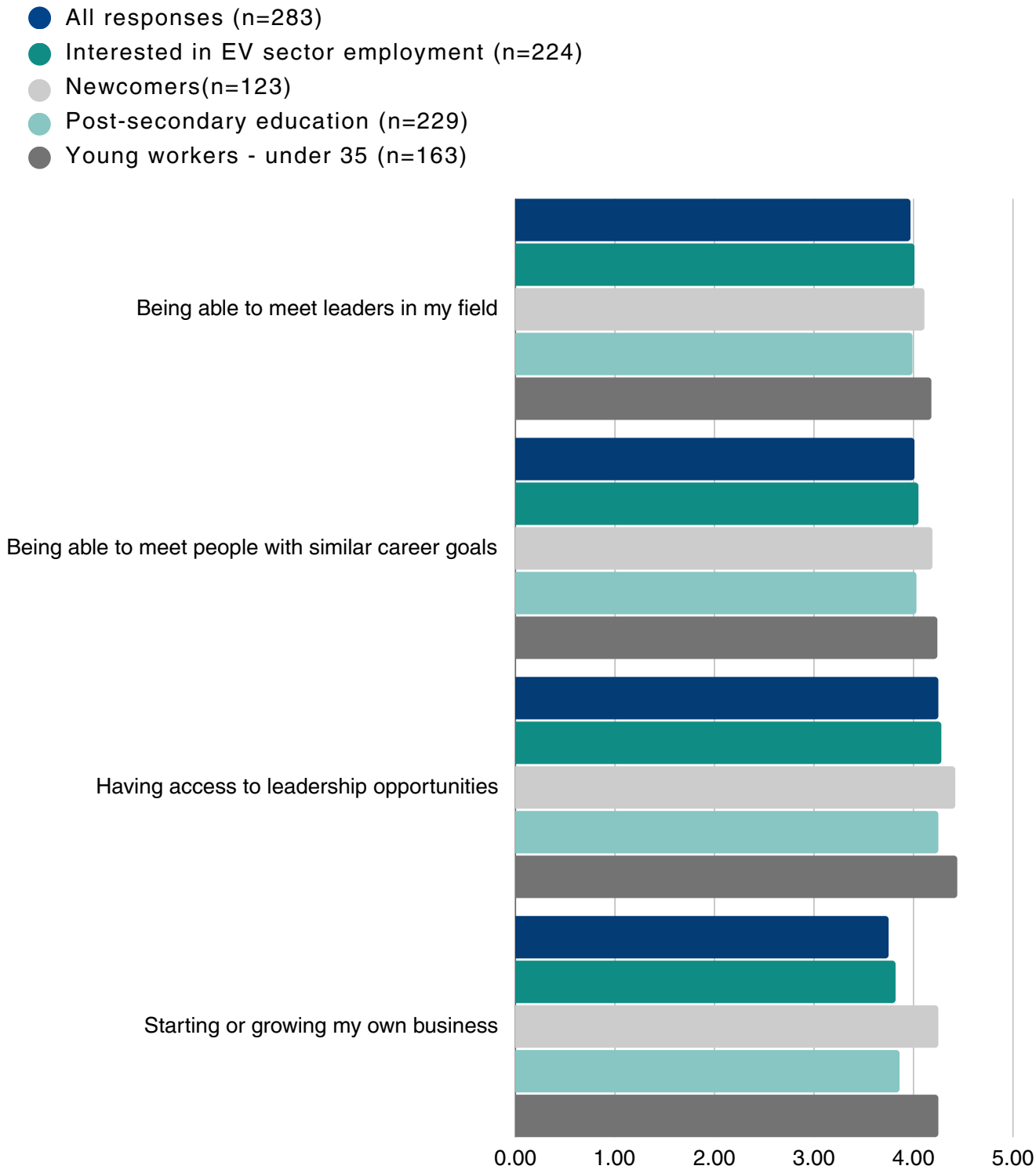


Figure 10. Professional development.

On the topic of lifestyle, please rank how important the following items are to you. (1 = not at all important, 5 = very important)

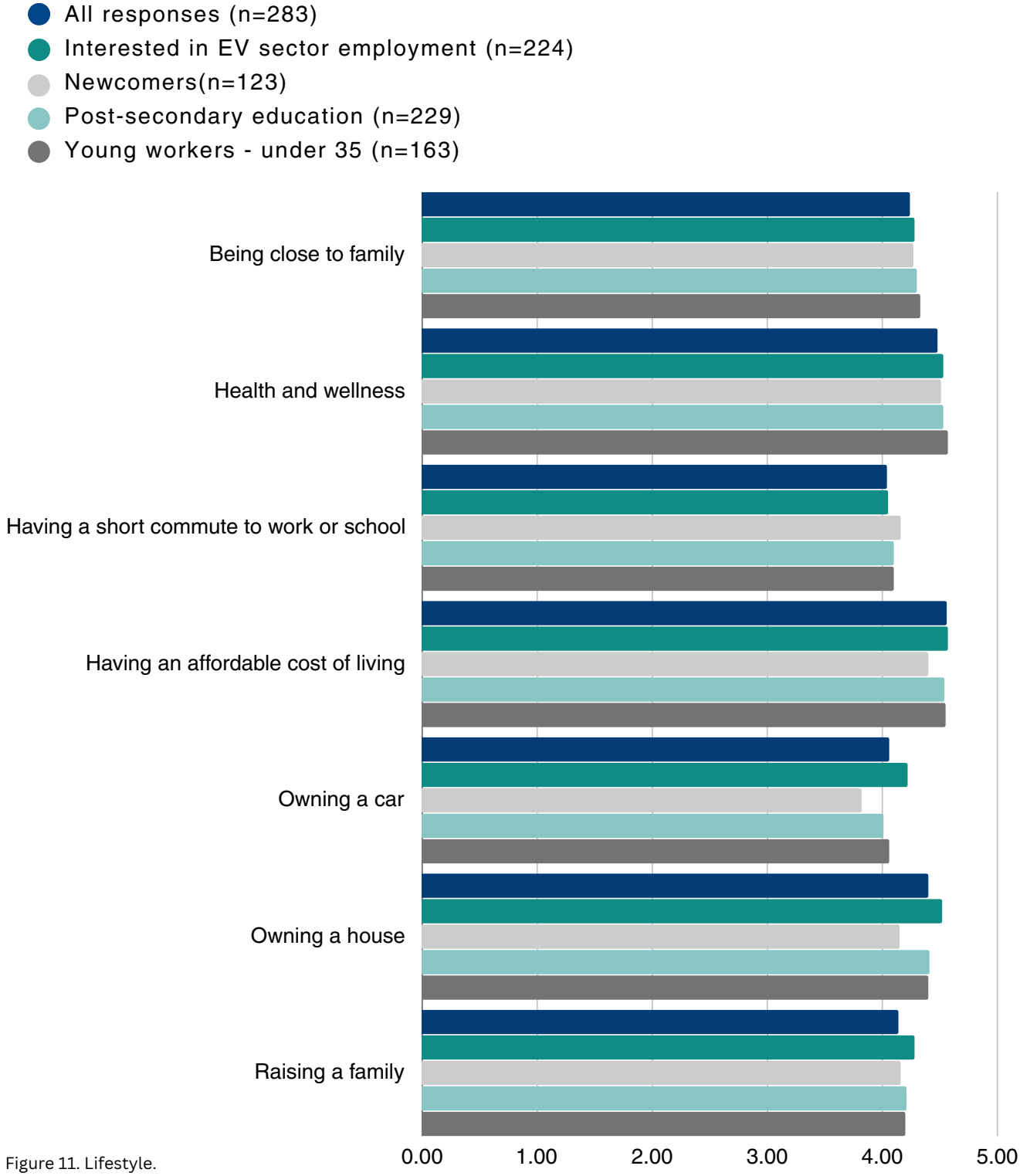


Figure 11. Lifestyle.

On the topic of community values, please rank how important the following items are to you. (1 = not at all important, 5 = very important)

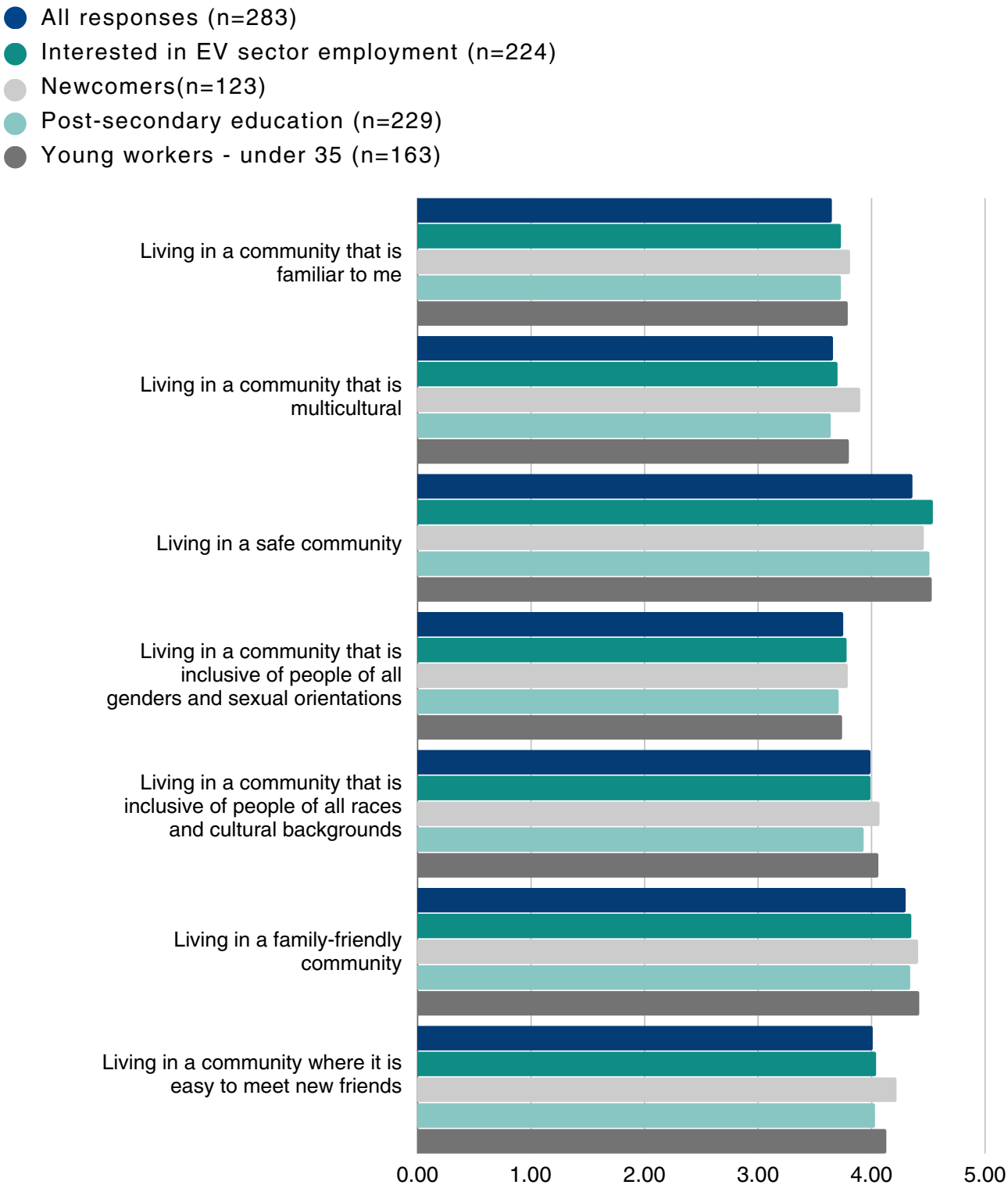


Figure 12. Community Values.

On the topic of community amenities, please rank how important the following items are to you. (1 = not at all important, 5 = very important)

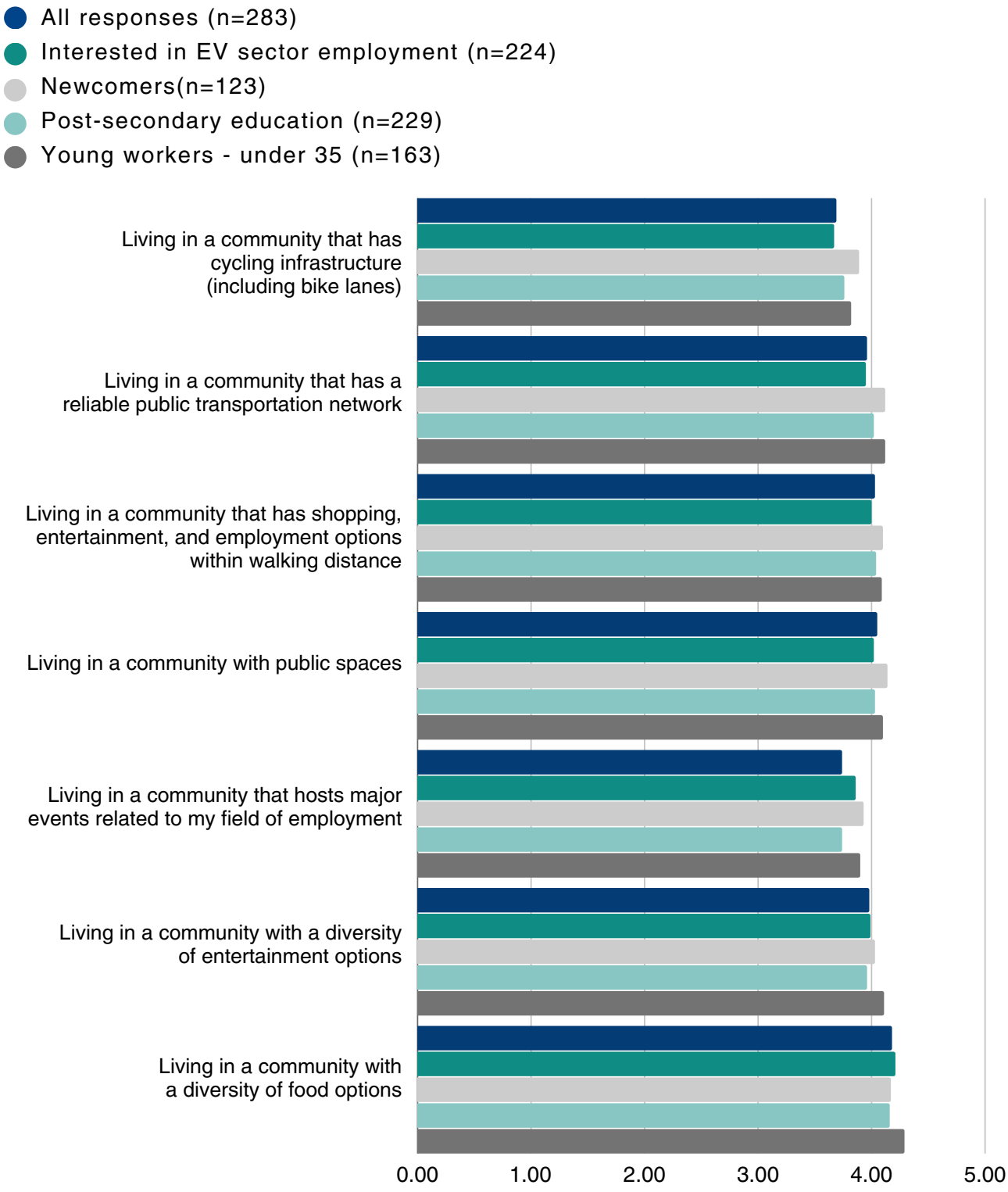


Figure 13. Community Amenities.

On the topic of the environment, please rank how important the following items are to you. (1 = not at all important, 5 = very important)

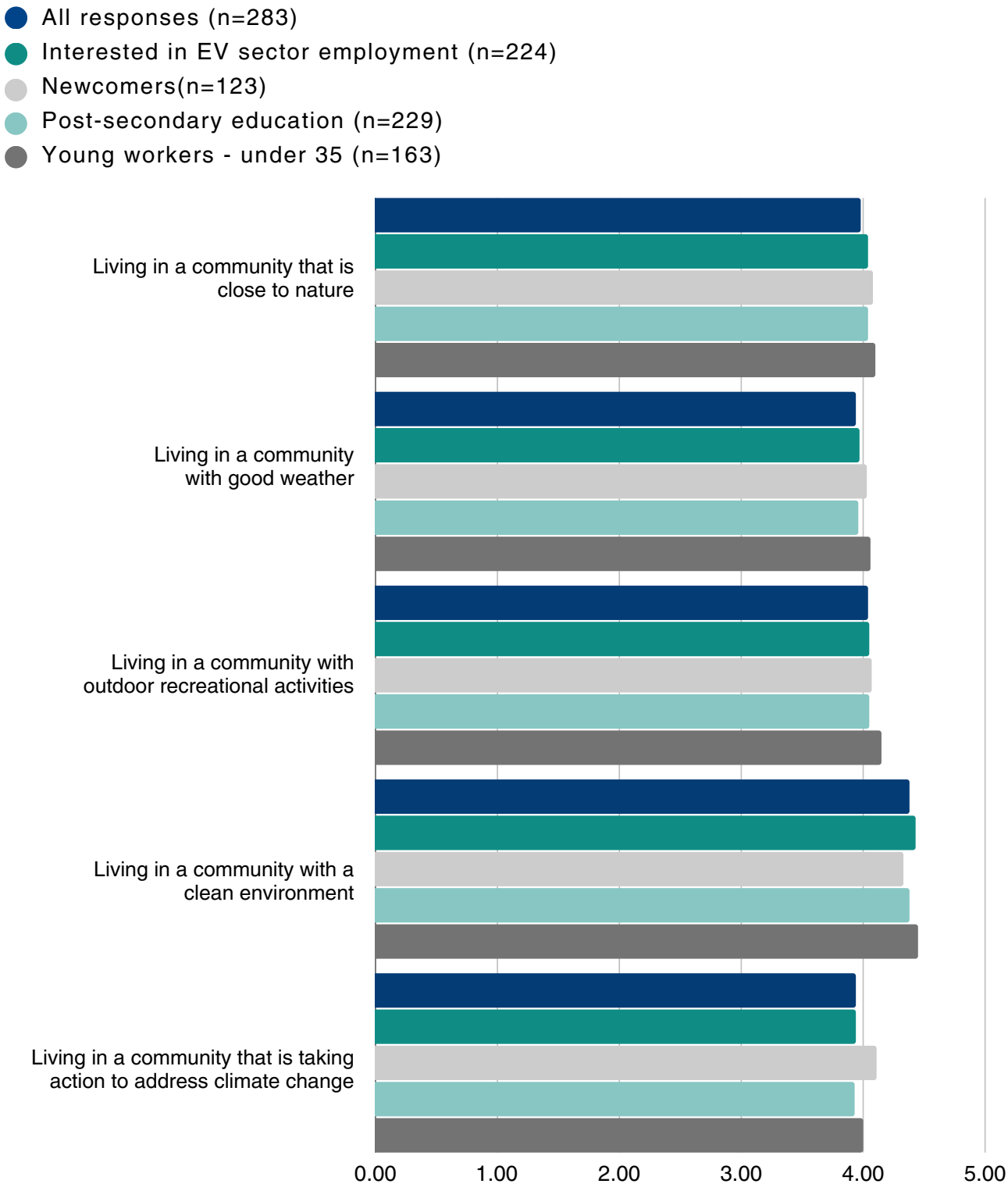


Figure 14. Environment.

Please rank how important the following potential changes would affect your willingness to stay in (or move to) Windsor-Essex. (1 = not at all important, 5 = very important)

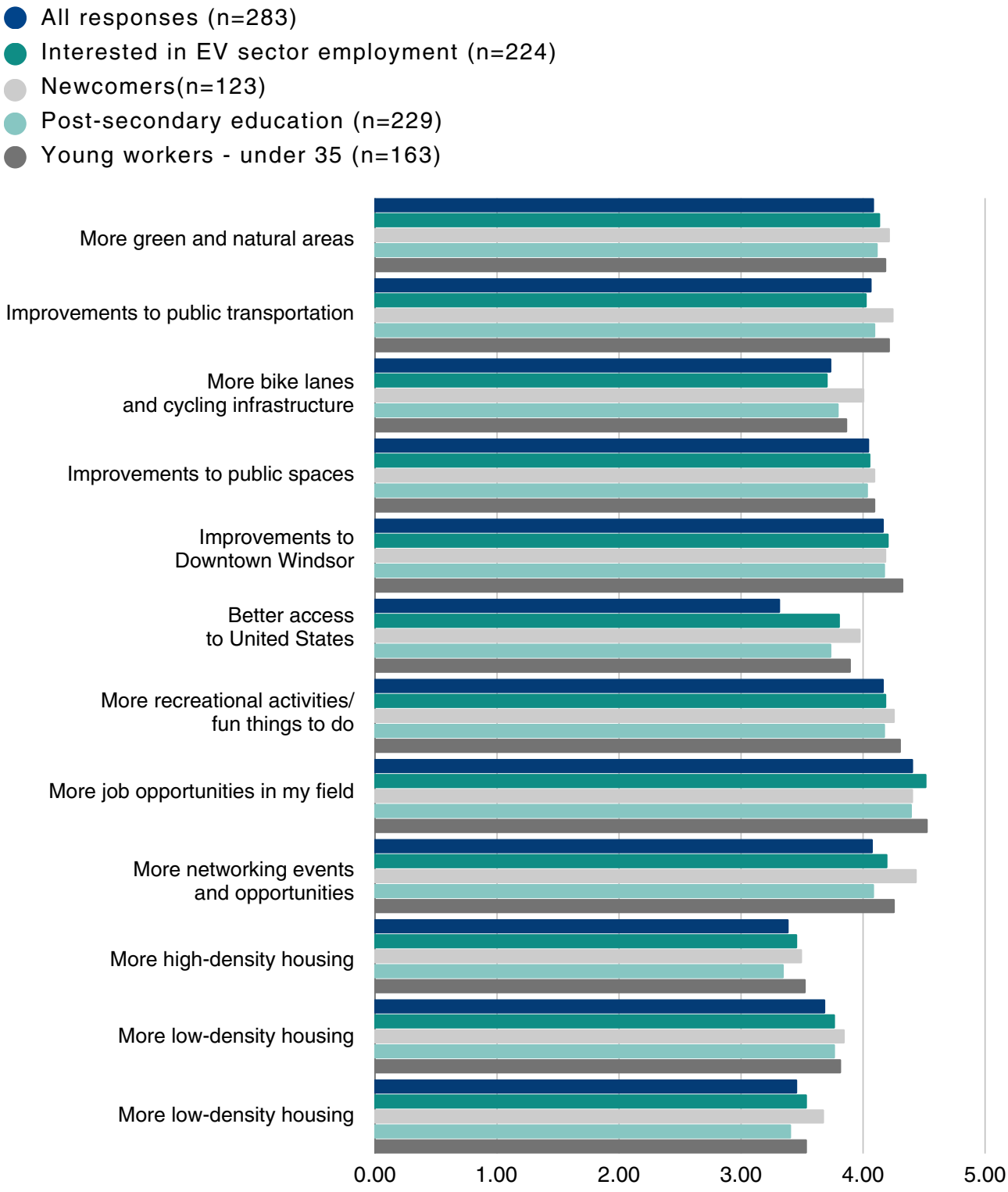


Figure 15. Potential Changes to Windsor-Essex.

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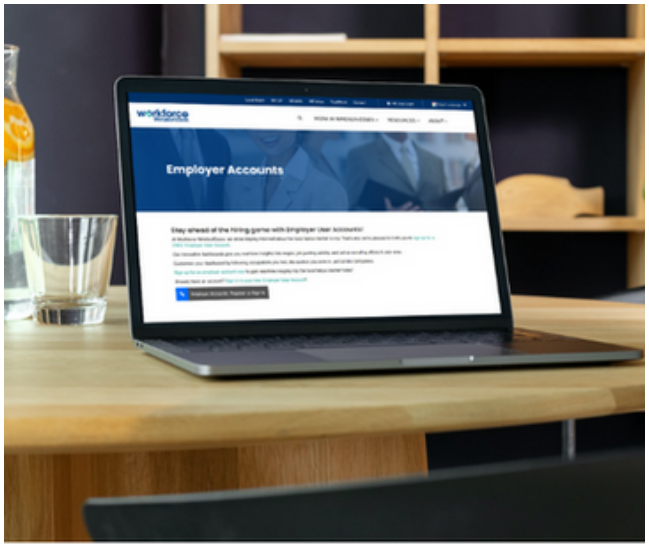
Workforce WindsorEssex Tools and Resources

EV Career Pathways Guide

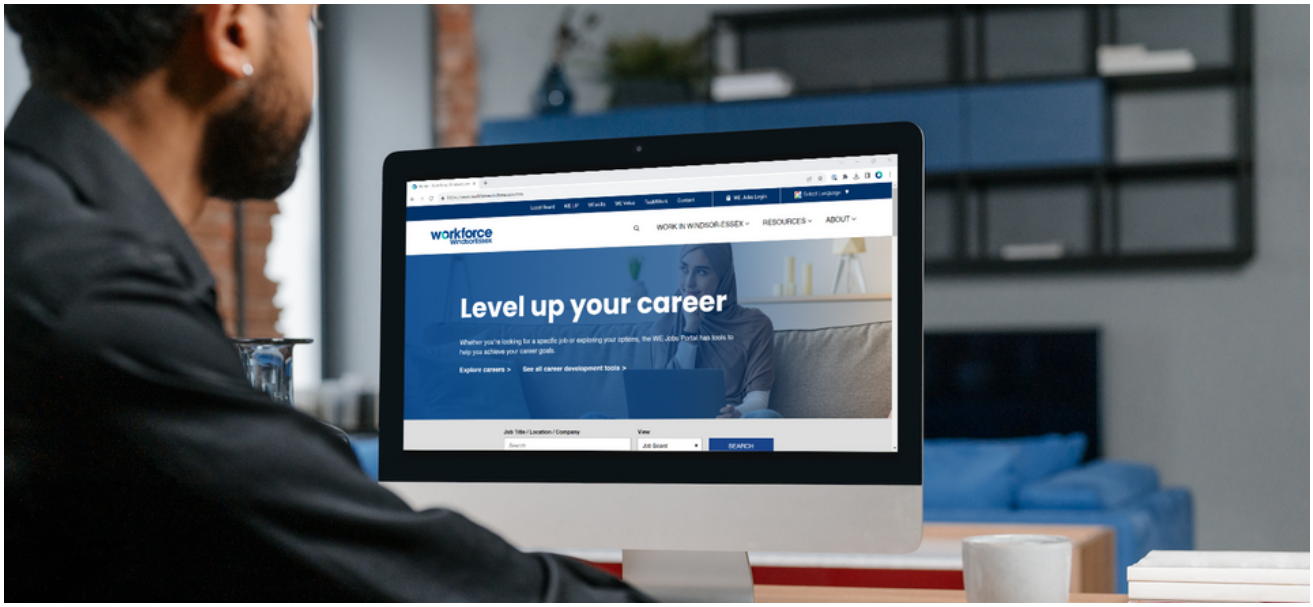
Talent Map

Census Map



Employer Accounts

WWW.WORKFORCEWINDSORESSEX.COM



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