



# Chatham-Kent's Green Economy



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# Introduction

In June 2024, the Chatham-Kent Workforce Planning Board began work to better understand the experiences of employers in the green economy in Chatham-Kent and to identify the labour force that may be required to support sector-based transitions. The goal of the project was to build an understanding of existing employer activity within the green economy and to identify key labour force needs now and into the future. Post-secondary education institutions were also engaged to identify opportunities for training to meet labour market needs, and to showcase existing or upcoming programs relevant to the green economy.

While there is no internationally agreed upon definition of the green economy, most definitions point to the same objectives: low carbon and resource efficient. In a green economy, growth in employment and income are driven by public and private investment into such

economic activities, infrastructure and assets that allow reduced carbon emissions and pollution, enhanced energy and resource efficiency, and prevention of the loss of biodiversity and ecosystem services.<sup>1</sup> This concept of a green economy has emerged as a strategic priority for many countries around the world, including Canada.

For the purposes of this report, we analyze industries that capture the majority of green economic activity, following the direction outlined in the Conference Board of Canada's *Green Occupation Pathways: From Vulnerable Jobs to Rapid Growth Careers Report* (Appendix A). It should be noted that while various environmental efforts occur across Chatham-Kent to support a greener community, the scope of this research is focused on workforce demand by employers locally.

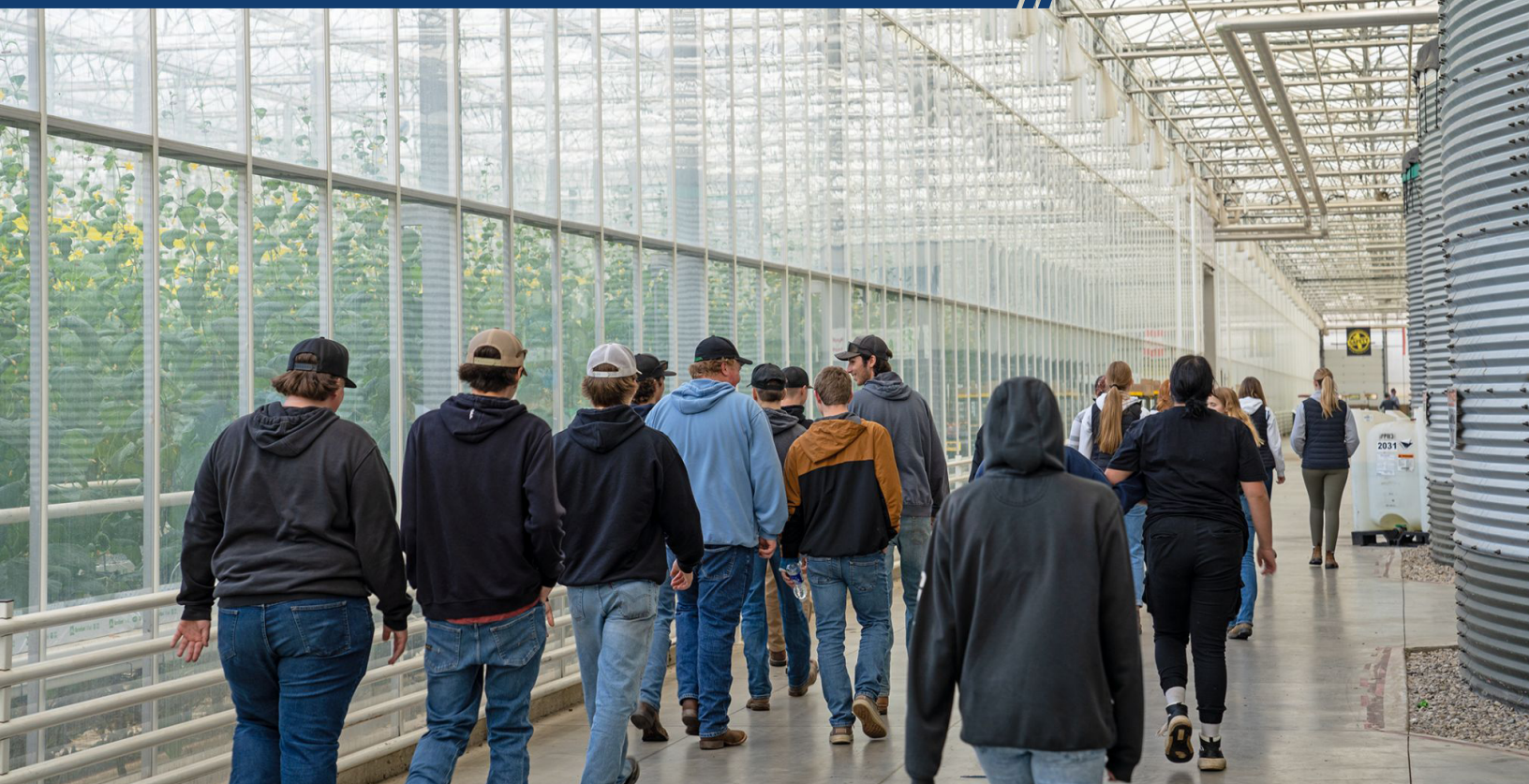
# Methodology

This report relies on data from a variety of sources. Data from Statistics Canada, ChathamKentJobs.com, and Lightcast were used to better understand employment trends in various sectors and occupations that play a role in Chatham-Kent's green economy. Consultations were conducted with 10 local employers from three sectors: manufacturing, waste management and remediation, and wind energy. An additional 148 employers provided input through the

2024 EmployerOne Survey. Chatham-Kent's two post-secondary institutions (St. Clair College – Chatham Campus and the University of Guelph – Ridgetown Campus) were also engaged to better understand training/education opportunities. Finally, the research examined secondary sources, such as online resources and articles, to gain a deeper understanding of developments in the green economy at the national, provincial, and local levels.



# The Move Towards a Green Economy



## National and Regional Context

The Government of Canada continues to take action in the fight against climate change, as the Country's policies and initiatives take bold and immediate actions to reduce greenhouse gas emissions, while strengthening the economy with sustainable jobs and clean industrial growth. The 2030 Emissions Reduction Plan: Canada's Next Steps for Clean Air and a

Strong Economy outlines a sector-by-sector path for Canada to reach its emissions reduction target of 40 percent below 2005 levels by 2030 and net-zero emissions by 2050.<sup>2</sup>

The economic sectors below highlight what Canada is doing to reduce emissions in each sector.<sup>3</sup>

<sup>1</sup> "Green Economy," United Nations Environment Programme, <https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-economy>

<sup>2</sup> Environment and Climate Change Canada, "2030 Emissions Reduction Plan: Canada Next Steps for Clean Air and a Strong Economy," 2022. [https://publications.gc.ca/collections/collection\\_2022/eccc/En4-460-2022-eng.pdf](https://publications.gc.ca/collections/collection_2022/eccc/En4-460-2022-eng.pdf)

<sup>3</sup> "2030 Emissions Reduction Plan – Sector-by-sector overview," Government of Canada, <https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/climate-plan-overview/emissions-reduction-2030/sector-overview.html#sector1>

## Economy Wide

Economy-wide strategies to reduce emissions, like carbon pricing, clean fuels, and reducing methane emissions, will enable Canada to reduce emissions in the most flexible and cost-effective way. They will also provide policy certainty to businesses and Canadians, allowing everyone to make more informed decisions as Canada's economy decarbonizes.

## Buildings

Transitioning Canada's building stock to net-zero over the long term creates new opportunities to promote a low-carbon supply chain, adopt net-zero ready building codes, transform space and water heating, improve affordability through energy efficiency, and accelerate private financing and workforce development to support the sector's transition.

## Electricity

Working towards net-zero electricity by 2035 will expand non-emitting energy across Canada, connect regions to clean power, and foster more clean, reliable, and affordable electricity supply. It will also help reduce emissions from other sectors, like industry, buildings, and transportation.

## Heavy Industry

Emissions reductions will come from efforts to decarbonize large emitters and strengthening Canada's mining sector. Enhancing clean growth in the sector will create new job opportunities, enhance Canada's industrial low-carbon advantage in global markets, and create investment opportunities in Canadian clean technology.

## Oil and Gas

There is an opportunity to transform the sector into the cleanest global oil and gas producer, while also moving to provide low-carbon and non-emitting energy products and services in a manner that will ensure economic competitiveness, prosperity and create good jobs for Canadians.

## Transportation

Actions to reduce emissions will enable cleaner public transit, more active transportation, make Zero Emission Vehicles (ZEVs) more affordable and accessible, and provide cleaner modes of air, marine, and rail travel. Efforts will also create new jobs in areas like ZEV manufacturing and public transit.

## Agriculture

Enhancing climate action will create opportunities to leverage agricultural lands to store carbon, stimulate the adoption of new, clean technologies on farms, and support farmers in adopting greener on-farm practices to reduce emissions.

## Waste

Cutting pollution from waste brings new opportunities for job creation and local economic transformation. Moving towards a circular economy can also increase the value of waste emissions through transforming raw material into fertilizers and renewable energy.

## Nature Based Solutions

Efforts to protect, manage, and restore Canada's lands and waters will reduce emissions while bringing co-benefits to society, like cleaner air, better climate resilience and protection for communities from climate risk, and more opportunity for Canadians to enjoy nature.

As the Government of Canada continues to prioritize growing Canada's green economy, positive outcomes are being observed nationwide, including in our region. According to the Government of Canada's 2023 Fall Economic Statement, over the previous three years, more than 90 clean growth projects totalling over \$40 billion in value, including private investment, are underway or will soon proceed to construction across Canada.<sup>4</sup>

Projects centering around the green economy are attracting investments into every region of the country and generating employment opportunities for the middle class. For example, at the regional level, two large-scale projects have been announced within 75 kilometres of Chatham-Kent. These two projects will provide Chatham-Kent residents an opportunity for employment and also attract external talent to the community.

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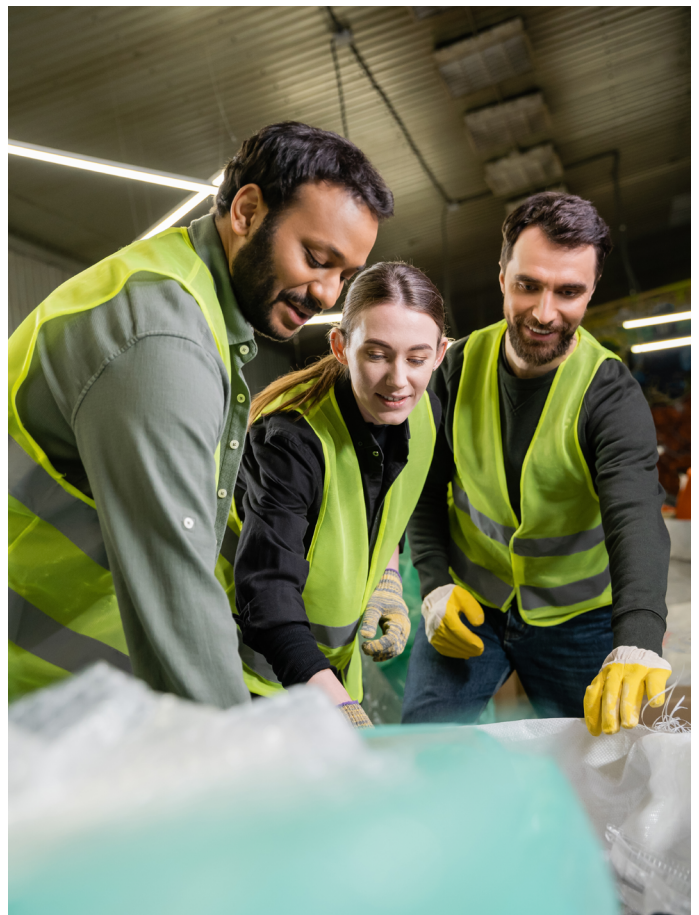
<sup>4</sup> "Building an Economy that Works for All Canadians," Government of Canada, <https://www.budget.canada.ca/fes-eea/2023/report-rapport/chap3-en.html>

<sup>5</sup> Chris Ensing, NextStar Energy Battery Plant on Track for Production Late 2025 While Competitors Delay Projects," CBC News, September 12, 2024, <https://www.cbc.ca/news/canada/windsor/windsor-nextstar-energy-plant-hiring-production-1.7321403>

<sup>6</sup> "Volkswagen's New Electric Vehicle Battery Plant Will Create Thousands of New Jobs," Government of Ontario, <https://news.ontario.ca/en/release/1002955/volkswagens-new-electric-vehicle-battery-plant-will-create-thousands-of-new-jobs>

<sup>7</sup> Paul Pedro, "Update: Tilbury Battery Storage Project to Create 150 Construction Jobs," CKNewsToday.ca, September 27, 2024, <https://cknewstoday.ca/chatham/news/2024/09/27/tilbury-battery-storage-project-to-create-150-jobs>

- The NextStar Energy electric vehicle battery plant in Windsor plans to employ 2,500 people by 2026. There will be a need for people with engineering and robotics degrees, human resources degrees, as well as for people without a post-secondary education.<sup>5</sup>
- Volkswagen's new electric vehicle battery plant in St. Thomas will create up to 3,000 direct jobs and thousands more indirect jobs. Aiming for a completion date of 2027, the plant will produce batteries for up to one million electric vehicles per year.<sup>6</sup>
- Boralex's Battery Storage Project (located just North of Tilbury) will create 150 jobs, with operations to begin in late 2025.<sup>7</sup>



## Chatham-Kent's Green Economy

Chatham-Kent has long been known as a leader in the renewable energy sector. Although the community is home to less than 1% of Ontario's population, it currently supplies over 20% of the province's wind power capacity and just under 10% of all of Canada's wind power capacity. Chatham-Kent is a net exporter of electricity due to the various renewable energy projects installed since 2008 and currently generates double the electricity that is actually consumed in the

municipality.<sup>8</sup> While the renewable energy sector offers employment opportunities locally, it is not Chatham-Kent's only green economic activity. Large scale investments into Chatham-Kent's green economy have been seen in recent years (seen in the table below). These investments highlight a commitment to the local green economy, while at the same time creating employment opportunities in various sectors.

### Project

### Highlights

#### **\$50M Project to Convert Decomposing Trash into Green Energy (April 2022)**

- Waste Connections of Canada announced plans to construct a new renewable natural gas (RNG) facility on the Ridge Landfill site, near Blenheim, that will include an upgrading and compression system to convert landfill gas into a high-quality renewable natural gas.
- The project is expected to reduce more than 110,000 tonnes of greenhouse gas emissions a year and generate enough green energy to heat over 18,000 homes, which is equal to about 40,000 homes in Chatham-Kent.
- The project is also estimated to create about 50 development and construction jobs as well as several highly-skilled permanent operational jobs.

#### **Hydro One breaks ground on Chatham to Lakeshore Transmission Line, Unlocking Ontario's Clean Energy Future (June 2023)**

- Hydro One's Chatham to Lakeshore Transmission Line, once built, will provide clean electricity to support growth in the agri-food and manufacturing industries.
- "The Chatham to Lakeshore Transmission Line is paving the way for Ontario's clean energy future and will support economic growth and local food suppliers in southwest Ontario," said David Lebeter, President and CEO, Hydro One. "With our strong history in building new transmission lines, we're focused on creating a new electricity network in the southwest that will bring a cascade of benefits **including more jobs and economic growth**, as well as equity investment opportunities for local First Nations that will generate revenues for generations to come."

#### **Council to Consider Next Steps on Proposed Waste-to-Energy Facility (February 2024)**

- A proposed waste-to-energy facility and partnership with Greenfield Global Inc.
- The project would involve the construction of an industrial anaerobic digester to process organic waste, which would otherwise be disposed of in a landfill, and convert it into renewable natural gas.
- "A plant in Chatham-Kent will provide significant environmental benefits and outcomes of this project fully align with council strategic direction related to climate" – Municipal Report.



# Trends in Chatham-Kent's Green Economy

## Industry Trends

To help pinpoint industries that are involved in the green economy, we have used the industries identified by the Conference Board of Canada in their Green Occupation Pathways: From Vulnerable Jobs to Rapid Growth Careers Report. The

Report highlights industries in the green economy under three categories: Clean Energy Production, Energy Efficiency, and Environmental Management.

### Industry

### Overview

#### Clean Energy Production

These are activities related to the production, transmission, and distribution of clean energy (i.e. a company that operates a wind farm). Eighteen industries comprise the energy production sector of the clean economy.

#### Energy Efficiency

These activities increase energy efficiency via the manufacturing of energy-saving products, the construction of energy-efficient buildings, and the provision of services that reduce end-use energy consumption. Forty-six industries comprise the energy efficiency sector of the clean economy.

#### Environmental Management

These activities focus on environmental management issues as well as the conservation and regulation of natural resources. Seventeen industries comprise the clean environmental management sector of the clean economy.

\*Refer to Appendix A for a full list of industries (at the six-digit NAICS level) for each of the three sectors above.

\*Refer to Appendix B for a description of industries (at the six-digit NAICS level) with businesses in Chatham-Kent, along with Business Counts Data

<sup>8</sup> "CK Plan 2035: Environmental Sustainability," the Municipality of Chatham-Kent, <https://www.chatham-kent.ca/ckplan2035/about/Pages/Environmental-Sustainability.aspx>

Using the identified sectors above and filtering data from the ChathamKentJobs.com Labour Market Insights Report, we can gain valuable insights into hiring activity in Chatham-Kent's green economy.

Highlighted in the table below is the number of jobs posts in Chatham-Kent's green economy over the course of the past three years (2022 - 2024).

## 249 Jobs in 2024

It is important to note that these industries could include jobs that are not considered green occupations. For example, there were a wide range of jobs in these job postings, including those that are clear green jobs (i.e. mechanical engineers and electrical and electronics engineers) to less obvious green jobs (i.e. other labourers in processing, manufacturing and utilities.).

Using data from Lightcast, a labour market analytics company, we're able to better understand anticipated job growth or decline over the next seven-year period. While the Conference Board of Canada's Green Occupation Pathways: From Vulnerable Jobs to Rapid-Growth Careers Report

identifies green industries at the 6-digit NAICS level, Lightcast only provides industry projection data at the 4-digit level. Therefore, the figures on the following page are not exclusive to just green industries, but rather the total job counts do include industries identified in the green sector.

The key takeaway from this data is that Chatham-Kent is projected to experience job loss in only two of the sixteen industries that are highlighted below. These two industries are only accounting for a loss of thirteen total jobs. The remaining 14 industries are anticipating job growth, adding a total of 299 new jobs from 2024 to 2031.

**Highlighted below is the number of job posts in Chatham-Kent's green economy over the course of 2024. The table below provides annual job posting data for 2022, 2023, 2024 for green industries in Chatham-Kent (via ChathamKentJobs.com).**

Industry (6-digit NAICS)	2022	2023	2024	2023 to 2024 Difference
221119 - Other electric power generation	23	6	11	5
221122 - Electric power distribution	10	14	15	1
237130 - Power and communication line and related structures construction	15	3	0	-3
237990 - Other heavy and civil engineering construction	66	29	17	-12
238210 - Electrical contractors and other wiring installation contractors	13	15	21	6
541620 - Environmental consulting services	22	28	53	25
332321 - Metal window and door manufacturing	3	1	4	3
336350 - Motor vehicle transmission and power train parts manufacturing	16	29	11	-18
336360 - Motor vehicle seating and interior trim manufacturing	38	30	14	-16
336390 - Other motor vehicle parts manufacturing	146	60	22	-38
236210 - Industrial building construction	17	21	5	-16
236220 - Commercial and institutional building construction	34	4	13	9
238350 - Finish carpentry contractors	10	4	3	-1
238220 - Plumbing, heating, and air-conditioning contractors	70	12	32	20
238160 - Roofing contractors	16	12	7	-5
238990 - All other specialty trade contractors	22	9	4	-5
541310 - Architectural services	0	1	0	-1
541320 - Landscape architectural services	7	0	0	0
541350 - Building inspection services	2	3	17	14
	530	281	249	

Industry (4-Digit NAICS)	2024 Jobs	2031 Jobs	# Change	% Change
<b>2211</b> - Electric power generation, transmission and distribution	241	261	20	8%
<b>2213</b> - Water, sewage and other systems	58	60	2	3%
<b>3324</b> - Boiler, tank and shipping container manufacturing	19	15	-4	-21%
<b>3336</b> - Engine, turbine and power transmission equipment manufacturing	48	54	6	13%
<b>2371</b> - Utility system construction	225	257	32	14%
<b>3359</b> - Other electrical equipment and component manufacturing	23	28	5	22%
<b>2379</b> - Other heavy and civil engineering construction	99	112	13	13%
<b>2382</b> - Building equipment contractors	1,011	1,087	76	8%
<b>3323</b> - Architectural and structural metals manufacturing	190	210	20	11%
<b>2361</b> - Residential building construction	667	681	14	2%
<b>2362</b> - Non-residential building construction	256	277	21	8%
<b>3361</b> - Motor vehicle manufacturing	89	80	-9	-10%
<b>3362</b> - Motor vehicle body and trailer manufacturing	142	176	34	24%
<b>3363</b> - Motor vehicle parts manufacturing	1,153	1,209	56	5%
<b>2381</b> - Foundation, structure, and building exterior contractors	582	658	76	13%
<b>2382</b> - Building equipment contractors	1,011	1,087	76	8%
<b>2383</b> - Building finishing contractors	438	442	4	1%
<b>2389</b> - Other specialty trade contractors	402	426	24	6%
<b>5413</b> - Architectural, engineering and related services	198	199	1	1%
<b>5621</b> - Waste collection	72	84	12	17%
<b>5622</b> - Waste treatment and disposal	17	18	1	6%
<b>5629</b> - Remediation and other waste management services	132	164	32	24%

Source: Lightcast

## Occupation Trends

A recurring challenge in the green economy is the broad definition of green occupations, which complicates the identification of roles relevant to this sector.

- The Government of Canada's Job Bank defines green jobs as jobs that contribute to environmental preservation, conservation, and restoration. Their impact on the environment varies depending on the specific requirements of the job: it may be direct (such as a solar panel installer) or indirect (such as a financial advisor who recommends eco-friendly investment options).<sup>9</sup>
- ECO Canada defines a green job as one that works directly with information, technologies, or materials that minimize

environmental impact, and also requires specialized skills, knowledge, training, or experience related to these areas.<sup>10</sup>

The following section contains a list of jobs (at the 5-digit NOC level) that can currently be pursued in Chatham-Kent that contributes to the green economy. It also highlights job posting trends, wage data, and employment trends, including 2031 projections. It is important to note that not every occupation available is shown, but rather occupations where there is demand and impact on the green economy.

For a full description of the job role and employment requirements for each occupation, refer to Appendix C.

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<sup>9</sup> "What is a Green Job on Job Bank?" Government of Canada, <https://www.jobbank.gc.ca/support/question?qaid=219&tid=7>

<sup>10</sup> ECO Canada, "Defining the Green Economy," 2010, <https://eco.ca/new-reports/defining-the-green-economy/>



## Annual Job Postings (2022-2024)

Occupation (5-digit NOC)	2022	2023	2024
Nursery and Greenhouse Labourer (NOC 85103)	67	28	22
Industrial and Manufacturing Engineer (NOC 21321)	15	18	14
Landscape and Horticulture Technicians and Specialists (NOC 22114)	36	26	17
Mechanical Engineering Technologists and Technicians (NOC 22301)	9	14	19
Water and Waste Treatment Plant Operator (NOC 92101)	1	6	5
Mechanical Engineer (NOC 21301)	26	20	28
Power Engineers and Power Systems Operators (NOC 92100)	10	8	13
Electricians (except industrial and power system) (NOC 72200)	56	47	24
Industrial Electricians (NOC 72201)	26	11	19
Electrical and Electronics Engineer (NOC 21310)	N/A	14	14
Electrical Power Line and Cable Workers (NOC 72203)	2	8	5
Residential and Commercial Installers (NOC 73200)	67	19	16

Source: ChathamKentJobs.com Labour Market Insights Report

- In 2024, there were 196 job postings under these 12 occupations.
  - This is a decrease from 2023, where there were 219 job postings.



## Income Characteristics (2021), Chatham-Kent

Occupation (5-digit NOC)	Number of People with Employment Income (2021)	Median Income (2021)
Nursery and Greenhouse Labourer (NOC 85103)	210	\$22,000
Industrial and Manufacturing Engineer (NOC 21321)	45	\$97,000
Landscape and Horticulture Technicians and Specialists (NOC 22114)	90	\$33,200
Mechanical Engineering Technologists and Technicians (NOC 22301)	190	\$85,000
Water and Waste Treatment Plant Operator (NOC 92101)	80	\$66,000
Mechanical Engineer (NOC 21301)	100	\$94,000
Power Engineers and Power Systems Operators (NOC 92100)	40	\$81,000
Electricians (except industrial and power system) (NOC 72200)	265	\$65,000
Industrial Electricians (NOC 72201)	85	\$79,000
Electrical and Electronics Engineer (NOC 21310)	45	\$78,500
Electrical Power Line and Cable Workers (NOC 72203)	40	\$117,000
Residential and Commercial Installers (NOC 73200)	165	\$28,200

Source: Statistics Canada, 2021 Census

- At the time of the 2021 Census, there were 1,355 people with employment income under these 12 occupations
- 9 of 12 occupations had a median salary of over \$65,000/year, with 5 of 12 occupations having a salary of over \$80,000

## Employment Trends

Number of Jobs in 2010, 2017, 2024, and 2031 (Projection)

Occupation (5-digit NOC)	2010 Jobs	2017 Jobs	2024 Jobs	2031 Jobs	2024 – 2031 # Change	2024 – 2031 % Change
Nursery and Greenhouse Labourer (NOC 85103)	265	238	360	382	22	6%
Industrial and Manufacturing Engineer (NOC 21321)	98	50	120	145	25	21%
Landscape and Horticulture Technicians and Specialists (NOC 22114)	28	31	33	37	4	12%
Mechanical Engineering Technologists and Technicians (NOC 22301)	41	52	58	66	8	14%
Water and Waste Treatment Plant Operator (NOC 92101)	32	54	55	59	4	7%
Mechanical Engineer (NOC 21301)	220	208	274	297	23	8%
Power Engineers and Power Systems Operators (NOC 92100)	66	78	68	66	-2	-3%
Electricians (except industrial and power system) (NOC 72200)	210	190	256	288	32	13%
Industrial Electricians (NOC 72201)	71	49	81	90	9	11%
Electrical and Electronics Engineer (NOC 21310)	63	66	73	74	1	1%
Electrical Power Line and Cable Workers (NOC 72203)	24	45	74	86	12	16%
Residential and Commercial Installers (NOC 73200)	82	109	174	197	23	13%

Source: Lightcast

- From 2010 to 2024, all 12 occupations saw an increase in jobs in Chatham-Kent.
- Only one occupation, Power Engineers and Power Systems Operators, is anticipating a loss of jobs between 2024 and 2031, with an anticipated loss of only 2 jobs.
- In total, these 12 occupations are expected to add 161 new jobs between 2024 and 2031.

# Post-Secondary Opportunities in Chatham-Kent's Green Economy

Chatham-Kent is home to two post-secondary institutions: St. Clair College – Chatham Campus and the University of Guelph – Ridgetown Campus. Both institutions provide programs that can lead to employment opportunities in green careers. Chatham-Kent is also within a 90-minute driving proximity of nearby Colleges and Universities, including the University of Windsor, Lambton College (Sarnia), Fanshawe College (London),

and Western University (London), offering residents the opportunity to access a range of degrees and diplomas to support career development that can lead to employment in a green job.

The below section highlights programs and courses that are available at Chatham-Kent's post-secondary institutions that can help lead to a career in a green job.







The St. Clair College – Chatham Campus is home to 25 programs and 1,300 students. The campus has programming that specializes in health sciences, community studies, business and technology. These technology programs can help lead students into future green jobs.

## Electrical Engineering Technician

### Program Overview<sup>11</sup>

The Electrical Engineering Technician program prepares graduates to apply electrical theory and related knowledge to design, test, troubleshoot and modify electrical machinery and electrical control equipment and circuitry in industrial or commercial plants and laboratories. The current program has enrollment up to 50 students.



### Career Opportunities

Graduates will find they are highly employable and will have opportunities with electrical utilities, communications companies, manufacturers of electrical and electronic equipment, consulting firms, and in governments and a wide range of manufacturing, processing and transportation industries. Graduates may find employment utilizing testing and troubleshooting skills in areas such as motor winding and repair, quality control, and as electrical construction/maintenance apprentices. As well, opportunities are available as utility power station technicians or service technicians troubleshooting electrical systems and performing engineering tests on heavy electrical equipment and controls.

<sup>11</sup> The program overview and career opportunities information highlighted in the following section comes from the St. Clair College – Chatham Campus website.

# Powerline Technician

## Program Overview

The Powerline Technician program prepares students for a career in power distribution. It will provide in-depth knowledge and skills that will allow students to understand the installation, operation, and maintenance of the distribution system. Some of the principles taught will be electricity fundamentals and transformer theory, with reference to the distribution standards. This program started with 24 students in 2011. With the current state of the art training centre, this program now offers 96 seats at intake, with 170 students currently enrolled (Fall 2024).

## Career Opportunities

Graduates of the Powerline Technician Program find employment with electric power companies, public municipal utility companies, electrical construction firms and contractors, equipment suppliers, and heavy engineering and construction firms.



# Electrical Techniques

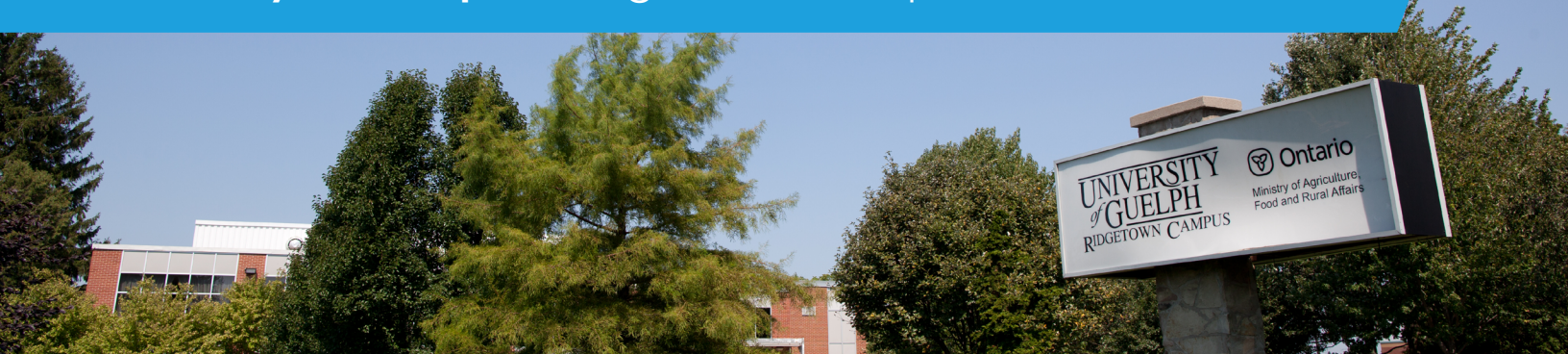
## Program Overview

Electrical Techniques is designed to provide the student with an understanding of the basic theoretical and practical aspects of the electrical trade and to familiarize them with the associated tools and materials. This is a great starting place for students who might want to pursue an electrician apprenticeship such as electrician construction and maintenance apprentice (309A) or industrial electrician apprenticeship (442A). This one-year program has enrollment of up to 40 students.

## Career Opportunities

Graduates are excellent candidates for job opportunities as Electrical Apprentices or entry-level positions in Electrical wholesale and/or distribution.





Offering focused, hands-on diploma programs, the University of Guelph - Ridgetown Campus is home to 550 full-time students. The Ridgetown Campus is committed to ensuring that its students are ready to contribute to the growing green economy, particularly in agriculture, horticulture, environmental management, and sustainable technologies.

## Agriculture

### Program Overview<sup>12</sup>

The Agriculture Associate Diploma Programs emphasize sustainable farming best practices, teaching students how to minimize the environmental impact of food production. These programs highlight the importance of agro-ecosystem health, reducing chemical inputs and promoting biodiversity, preparing students to contribute to environmentally responsible food systems. Courses cover areas like cultivation methods, soil health, sustainable livestock production, water conservation, integrated pest management, and the use of renewable resources. Two specific courses to note, specifically designed to address environmental issues are Agriculture and Environmental Stewardship and Renewable Energy and Agriculture.

<sup>12</sup> The program overview and career opportunities information highlighted in the following section comes from the University of Guelph – Ridgetown Campus website and from interviews conducted with faculty.

### Career Opportunities

All agriculture, veterinary and equine programs integrate animal welfare, emphasizing the balance between ethical animal care and minimizing environmental footprints. Graduates are prepared to work in sectors where both animal health and environmental sustainability are priorities.



# Horticulture

## Program Overview

Courses in the Horticulture Associate Diploma Program emphasize climate-resistant landscaping and urban greening, soil and water conservation, sustainable plant production and low-input agricultural food production, in fields, greenhouses, controlled environment agriculture and vertical farming systems. Students gain practical hands-on experience in greenhouse climate and energy management, irrigation and fertility management, integrated pest management in both indoor and outdoor production settings, and sustainable landscape design and maintenance practices. Field trips and partnerships with local agricultural and environmental organizations allow students to understand and participate in real-world projects that support sustainable practices, providing students practical applications for solving environmental challenges. The students are involved in development of an Environmental Farm plan and Nutrient Management plans for practical application in business. The program currently has 60 students, with 20 students entering at intake. The goal is to increase enrollment target to 25 to 30 students per year.

## Career Opportunities

Graduates are equipped to work in the greenhouse industry, including the research and production side. Opportunities also exist in landscaping and garden centres.



## Environmental Technician

### Program Overview

The Environmental Technician Associate Diploma program directly trains students in areas such as water and wastewater management, environmental assessment and site remediation, water resource management, and pollution control. This program has 15 to 20 students annually, with plans to grow capacity to 30 to 40.

### Career Opportunities

Graduates are well-prepared to work in industries and organizations focused on environmental protection, conservation, and restoration.

## Technology and Innovation at the University of Guelph Ridgetown Campus

Students at the University of Guelph – Ridgetown Campus are provided training various areas to ensure they can adopt and promote cleaner technologies and processes in their future careers. For example:

- The Agriculture and Horticulture programs incorporate the latest innovations in agricultural and environmental technologies, such as precision farming and data driven growing, which reduces resource waste, and renewable energy solutions for agricultural operations.
- Students in all programs are familiarized with renewable energy technologies and discuss their role in current and future energy economies and identify the main steps involved in producing energy from a variety of renewable sources, including waste streams to create circular economies
- Students build understanding in basic operation of laboratory equipment used in renewable energy research, including gas chromatographs, biological methane potential analyzers, and other standard laboratory equipment.
- The Ridgetown Campus is the home of the CARES Centre for Agricultural Renewable Energy and Sustainability, which conducts research, development, and demonstration of agriculturally based renewable energy as well as measures to lessen the impact of renewable energy production. It is also involved in outreach, training, and delivery of courses.

## Future Programming at the University of Guelph Ridgetown Campus

In the summer of 2025, the Ridgetown Campus will offer the University of Guelph's Master's in Sustainable Agriculture program. The program is designed for forward-thinkers ready to cultivate change in the global food and agriculture landscape. Offered by the Ontario Agricultural College

(OAC), the inter-disciplinary course-based master's program equips students with the latest advancements in sustainable plant and livestock agricultural practices, while empowering them with skills in data analysis, agricultural economics, communication, and leadership.



# Employer Perspectives

## 2024 EmployerOne Survey

In November 2024, the Chatham-Kent Workforce Planning Board released the annual EmployerOne Survey. The EmployerOne Survey provides employers the opportunity to share their input about workforce challenges and successes experienced in the previous calendar year

(November 1, 2023 to October 31, 2024), as well as projections that may affect their workforce in the following year (November 1, 2024 to October 31, 2025). In total 148 employers in Chatham-Kent completed the 2024 Survey. Those employers represented a workforce of 15,386 people.

**This year, two questions pertaining to the green economy were incorporated into the survey, with insights gathered from 136 employers:**

# 31.6%

of employers said that their business and workforce has had to adapt towards the green economy.

23% of employers were in the manufacturing sector.

Employers noted that battery operated vehicles are changing the market (i.e. don't require oil changes and manufacturers are changing line-up to meet green objectives).

# 33.1%

of employers said they foresee their business activities and/or workforce changing to support the green economy in the next five years.

20% of employers were in the manufacturing sector, with an additional 13% in the construction sector.

Employers noted that government legislation and the need to follow government environmental standards will likely impact business activities.

Employers noted that seeing a continued push on products like electric heat/heat pumps, and more fuel-efficient vehicles and machinery will also create impacts on business activities and the workforce.

## Targeted Employer Engagement

In the Fall of 2024, 10 employers that play a role in Chatham-Kent's green economy were interviewed. These employers were from three broad sectors: manufacturing, waste management and remediation, and

wind energy. Employers were engaged to better understand their current experiences and future talent needs. These 10 employers represented a workforce of over 1,200 employees in Chatham-Kent.





## Recruitment and Retention

Employers were asked to share insights around their recruitment and retention efforts, and whether they struggle to find local talent. While all employers experience staff turnover, three employers indicated they do not struggle to recruit talent, while

seven reported only minor challenges in recruitment efforts. The key takeaways shared by employers regarding their challenges and successes in attracting talent to meet their workforce demands in the recent years are highlighted below:

- Three employers noted that they have strong networks that enable them to fill positions by word-of-mouth referrals.
- Some challenges related to retaining and recruiting talent were attributed to the physical demands of some occupations, especially within the wind energy sector. Employers in this sector indicated that older equipment in CK wind farms made daily climbing more difficult, leading to increased staff turnover.
- Three employers noted that most turnover they experience is among new employees.
- One employer noted that attracting junior staff is relatively easy, but it is more difficult to recruit senior staff (i.e. an experienced senior engineer who may be reluctant to relocate to a new city).
- Four employers (two in the manufacturing sector and two in the renewable energy sector) reported difficulties in recruiting for skilled trades positions.
- Employers emphasized their ability to adapt and implement new initiatives to address staffing shortages. For example:
  - One employer started offering financial support to drivers to help them obtain their licensing credentials.
  - One employer recently hired international employees, reporting that this strategy has been extremely successful.
- One employer noted, “finding local people with a good attitude outshines any other experience they have.” The concept of having ‘talent that has the right attitude’ was reiterated by the majority of employers.

## Employer Support Requests

Employers discussed the supports that they require to sustain and grow their business and workforce both now and into the future. Two key themes emerged: the necessity for access to information and the importance of prioritizing talent attraction initiatives.

### Access to Information

- Awareness of the programs available from all three levels of government (i.e. workforce/hiring programs, grants, regulations, etc.) would greatly benefit employers in their operations.
- Increasing familiarity to the various industries and jobs within the green economy (i.e. making sure residents and job seekers are aware of local employment opportunities), would assist employers in their attraction and retention efforts.
- Two employers expressed interest in the development of an expert roundtable consisting of local employers to share best practices.



### Talent Attraction Initiatives

The feedback that employers provided aligns with broader workforce needs that we observed in the community, extending beyond those that play a role in the green economy.

- With a noticeable increase in immigration to the community, providing increased access to supports for hiring and retaining immigrant talent (i.e. language supports, safety training, etc.) was identified as a key opportunity for developing a potential future workforce.
- Gaining a better understanding of summer student and co-op opportunities would help with addressing current and future staffing shortages by creating a platform for talent development.
- Expanding local housing and transportation options would make recruitment efforts easier.
- Increased awareness of and access to training subsidies would help alleviate costs on employers, especially those experiencing high turnover.

## Looking Ahead

The majority of employers interviewed anticipated that their business and workforce would either remain status quo or see limited growth over the next five years. Two key points of interest emerged regarding future growth:

- Potential changes to the wind energy sector are anticipated during this time. Within the next five years, the original wind farms in Chatham-Kent will reach their operational lifespan. This situation may lead to discussions about future management and operations of these sites.
- Manufacturers involved in the automotive industry highlighted that fluctuating demand makes it hard to project future growth and staffing requirements.



# Conclusion

Based on insight gathered from employers through direct interviews and the 2024 EmployerOne Survey, as well as analysing employment trends, Chatham-Kent is projected to see some employment growth in the green sector. However, employers noted that accurately predicting what future demand and work will look like is

challenging in the sector.

Jobseekers will play a crucial role in Chatham-Kent's green economy, as they will be presented with opportunities to work in the sector. It is important that jobseekers stay informed on future green initiatives and projects in Chatham-Kent, as they will create future employment



opportunities. Chatham-Kent's current and future jobseekers also have access to local educational programs through St. Clair College – Chatham Campus and the University of Guelph - Ridgetown Campus which can lead to careers in green jobs. As employers and governments continue to invest in green energy transitions and

enhanced environmental investments, the green economy in Chatham-Kent is expected to grow. The Chatham-Kent Workforce Planning Board is encouraged to maintain engagement with employers and stakeholders in the sector to monitor growth and emerging workforce demand trends.



# Appendix

## Appendix A

### Industries in the Clean Energy Production Sector

221111 Hydroelectric power generation

221113 Nuclear electric power generation

221114 Solar electric power generation

221115 Wind electric power generation

221116 Geothermal electric power generation

221117 Biomass electric power generation

221118 Other electric power generation

221121 Electric bulk power transmission and control

221122 Electric power distribution

221330 Steam and air-conditioning supply

332410 Power boiler and heat exchanger manufacturing

333611 Turbine and turbine generator set units manufacturing

335311 Power, distribution, and specialty transformer manufacturing

335911 Storage battery manufacturing

335931 Current-carrying wiring device manufacturing

237130 Power and communication line and related structures construction

237990 Other heavy and civil engineering construction

238210 Electrical contractors and other wiring installation contractors

## Industries in the Energy Efficiency Sector

327993 Mineral wool manufacturing

332321 Metal window and door manufacturing

332322 Sheet metal work manufacturing

333415 Air-conditioning and warm air heating equipment, and commercial and industrial refrigeration equipment manufacturing

336111 Automobile manufacturing

336112 Light truck and utility vehicle manufacturing

336120 Heavy-duty truck manufacturing

336211 Motor vehicle body manufacturing

336310 Motor vehicle gasoline engine and engine parts manufacturing

336320 Motor vehicle electrical and electronic equipment manufacturing

336330 Motor vehicle steering and suspension components (except spring) manufacturing

336340 Motor vehicle brake system manufacturing

336350 Motor vehicle transmission and power train parts manufacturing

336360 Motor vehicle seating and interior trim manufacturing

336370 Motor vehicle metal stamping

336390 Other motor vehicle parts manufacturing

334512 Automatic environmental control manufacturing for residential, commercial, and appliance use

334513 Instruments and related products manufacturing for measuring, displaying, and controlling industrial process variables

334515 Instrument manufacturing for measuring and testing electricity and electrical signals

336510 Railroad rolling stock manufacturing

335110 Electric lamp bulb and part manufacturing

335121 Residential electric lighting fixture manufacturing

335122 Commercial, industrial, and institutional electric lighting fixture manufacturing

335210 Small electrical appliance manufacturing

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335221 Household cooking appliance manufacturing

---

335222 Household refrigerator and home freezer manufacturing

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333413 Industrial and commercial fan and blower and air purification equipment manufacturing

---

333414 Heating equipment (except warm air furnaces) manufacturing

---

334413 Semiconductor and related device manufacturing

---

335312 Motor and generator manufacturing

---

335999 All other miscellaneous electrical equipment and component manufacturing

---

236115 New single-family housing construction (except for-sale builders)

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236116 New multi-family housing construction (except for-sale builders)

---

236117 New housing for-sale builders

---

236118 Residential remodelers

---

236210 Industrial building construction

---

236220 Commercial and institutional building construction

---

237210 Land subdivision

---

238350 Finish carpentry contractors

---

238220 Plumbing, heating, and air-conditioning contractors

---

238160 Roofing contractors

---

238990 All other specialty trade contractors

---

541310 Architectural services

---

541340 Drafting services

---

541320 Landscape architectural services

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541350 Building inspection services

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## Industries in the Environment Management Sector

541620 Environmental consulting services

562111 Solid waste collection

562112 Hazardous waste collection

562119 Other waste collection

562211 Hazardous waste treatment and disposal

562212 Solid waste landfill

562213 Solid waste combustors and incinerators

562219 Other nonhazardous waste treatment and disposal

562910 Remediation services

562920 Materials recovery facilities

562998 All other miscellaneous waste management services

813312 Environment, conservation, and wildlife organizations

924110 Administration of air and water resource and solid waste management programs

924120 Administration of conservation programs

925120 Administration of urban planning and community and rural development

926120 Regulation and administration of transportation programs

926130 Regulation and administration of communications, electric, gas, and other utilities

## Appendix B

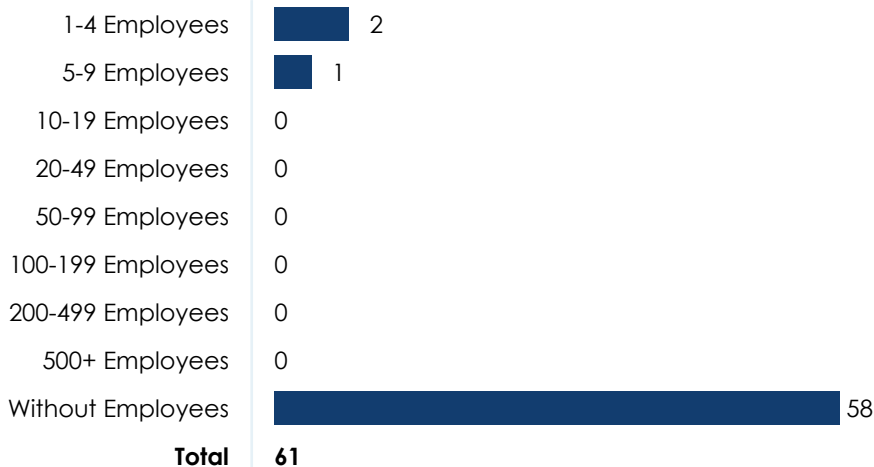
Using the industries outlined in the Conference Board of Canada's Green Occupation Pathways: From Vulnerable Jobs to Rapid Growth Careers Report (and as shown in Appendix A), below is information for green industries that are

present in Chatham-Kent based on Business Counts data. Included is a description of the industries from Statistics Canada's North American Industry Classification System,<sup>13</sup> as well as data on the number of businesses by employee size in June of 2024.<sup>14</sup>

### Clean Energy Production

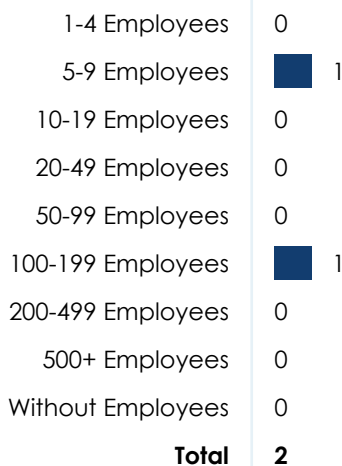
#### 221119 - Other electric power generation

This industry comprises establishments, not classified to any other Canadian industry, primarily engaged in the generation of electricity, using sources such as wind, solar or tidal energy.



#### 221122 - Electric power distribution

This industry comprises establishments primarily engaged in the distribution of electric power to the individual user or consumer.

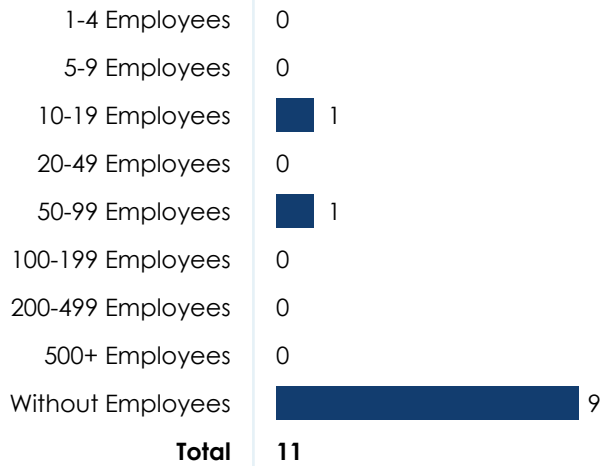


<sup>13</sup> "North American Industry Classification System (NAICS) Canada 2022 Version 1.0," Statistics Canada, <https://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=1369825>

<sup>14</sup> Statistics Canada. Canadian Business Counts, with employees, June 2024.

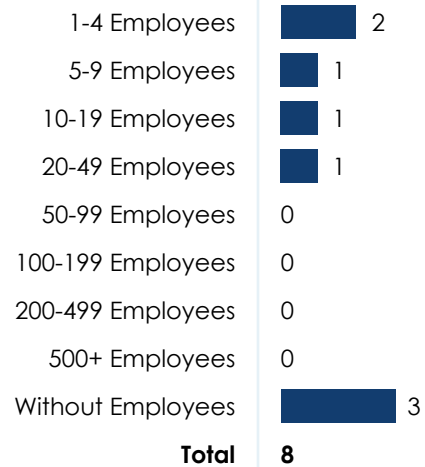
### 237130 - Power and communication line and related structures construction

This industry comprises establishments primarily engaged in the construction of power lines and towers, power plants (except hydroelectric generating facilities), and radio, television, and telecommunications transmitting and receiving towers.



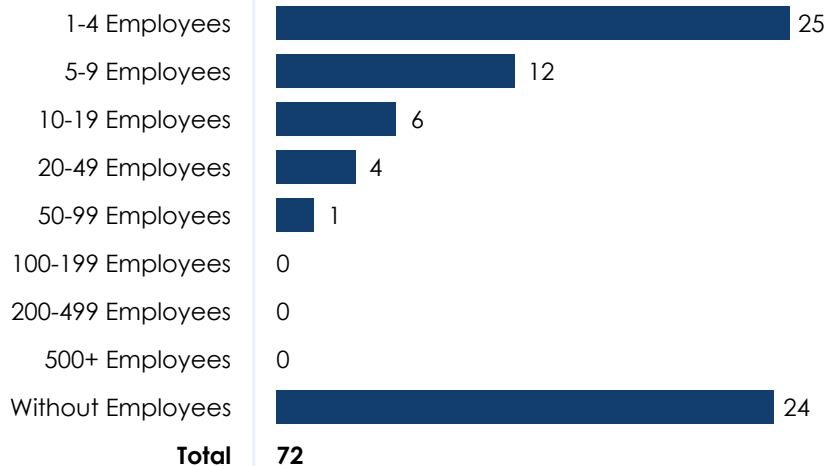
### 237990 - Other heavy and civil engineering construction

This industry comprises establishments, not classified to any other Canadian industry, primarily engaged in constructing heavy and civil engineering works. The work performed may include new work, reconstruction, rehabilitation, and repairs. Specialized trade activities related to these civil engineering construction projects (such as marine pile driving) are included. Construction projects involving water resources (e.g., dredging and land drainage), development of marine facilities, and open space recreational construction projects (e.g., parks and trails) are included in this industry.



### 238210 - Electrical contractors and other wiring installation contractors

This industry comprises establishments primarily engaged in installing or servicing electrical wiring and equipment. Electrical contractors included in this industry may include both the parts and labour when performing work. Electrical contractors may perform new work, additions, alterations, maintenance, and repairs.



# Energy Efficiency

## 332321 Metal window and door manufacturing

This industry comprises establishments primarily engaged in manufacturing metal (typically steel or aluminum) doors and windows, sash, door and window frames, and screens, moulding and trim.

1-4 Employees	0
5-9 Employees	0
10-19 Employees	0
20-49 Employees	1
50-99 Employees	0
100-199 Employees	0
200-499 Employees	0
500+ Employees	0
Without Employees	1
<b>Total</b>	<b>2</b>

## 336350 Motor vehicle transmission and power train parts manufacturing

This industry comprises establishments primarily engaged in manufacturing and rebuilding motor vehicle transmission and power train parts.

1-4 Employees	0
5-9 Employees	0
10-19 Employees	0
20-49 Employees	1
50-99 Employees	0
100-199 Employees	0
200-499 Employees	1
500+ Employees	0
Without Employees	0
<b>Total</b>	<b>2</b>

## 336360 Motor vehicle seating and interior trim manufacturing

This industry comprises establishments primarily engaged in manufacturing motor vehicle fabric accessories and trimmings, seat belts and safety straps, and seats for transportation equipment of all kinds.

1-4 Employees	0
5-9 Employees	0
10-19 Employees	0
20-49 Employees	0
50-99 Employees	0
100-199 Employees	1
200-499 Employees	0
500+ Employees	0
Without Employees	2
<b>Total</b>	<b>3</b>

### 336370 Motor vehicle metal stamping

This industry comprises establishments primarily engaged in manufacturing motor vehicle metal stampings. Establishments in this industry perform the stamping operation, and incidental operations such as removing burrs and other stamping defects, but do not further work the stamping into a final product.

1-4 Employees	0
5-9 Employees	0
10-19 Employees	0
20-49 Employees	0
50-99 Employees	0
100-199 Employees	1
200-499 Employees	0
500+ Employees	0
Without Employees	0
<b>Total</b>	<b>1</b>

### 336390 Other motor vehicle parts manufacturing

This industry comprises establishments, not classified to any other Canadian industry, primarily engaged in manufacturing motor vehicle parts and accessories.

1-4 Employees	0
5-9 Employees	0
10-19 Employees	0
20-49 Employees	0
50-99 Employees	0
100-199 Employees	0
200-499 Employees	1
500+ Employees	0
Without Employees	1
<b>Total</b>	<b>2</b>

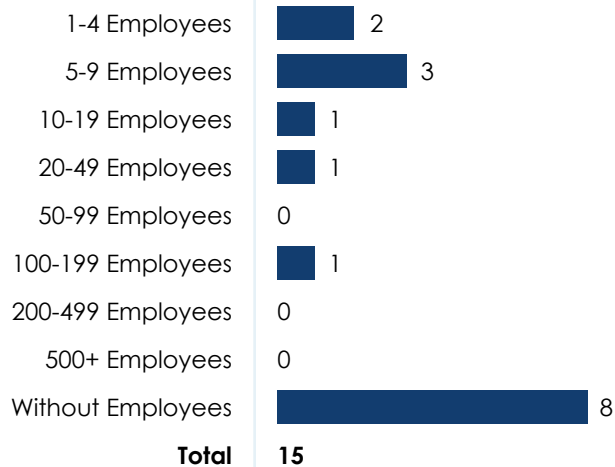
### 335990 All other electrical equipment and component manufacturing

This Canadian industry comprises establishments, not classified to any other Canadian industry, primarily engaged in manufacturing electrical equipment and components.

1-4 Employees	3
5-9 Employees	1
10-19 Employees	0
20-49 Employees	0
50-99 Employees	0
100-199 Employees	0
200-499 Employees	0
500+ Employees	0
Without Employees	1
<b>Total</b>	<b>5</b>

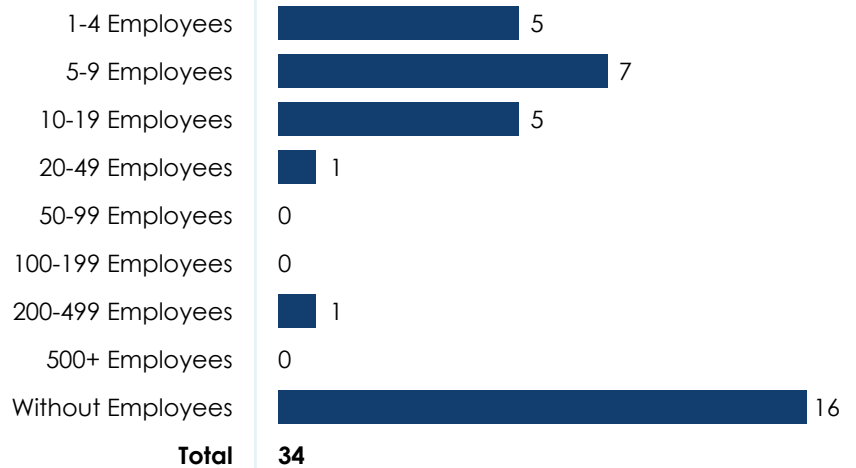
### 236210 Industrial building construction

This industry comprises establishments primarily engaged in the construction (also new work, additions and major alterations) of industrial buildings (except warehouses).



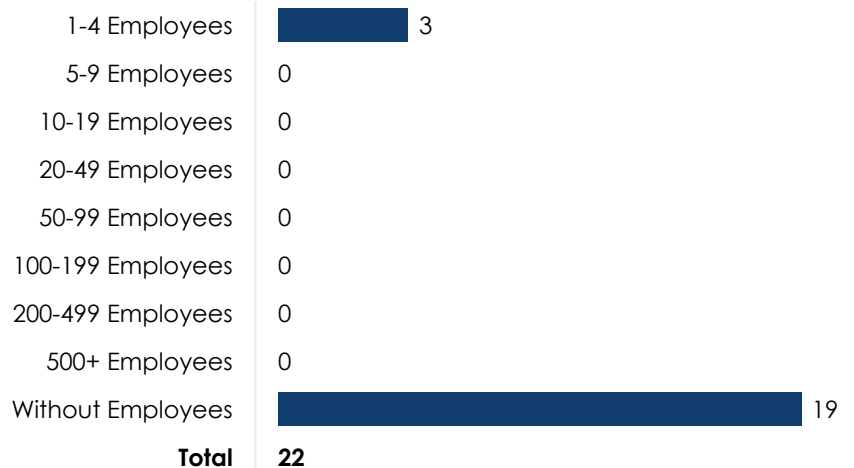
### 236220 Commercial and institutional building construction

This industry comprises establishments primarily engaged in the construction (also new work, additions and major alterations) of commercial and institutional buildings and related structures, such as stadiums, grain elevators, and indoor swimming pools.



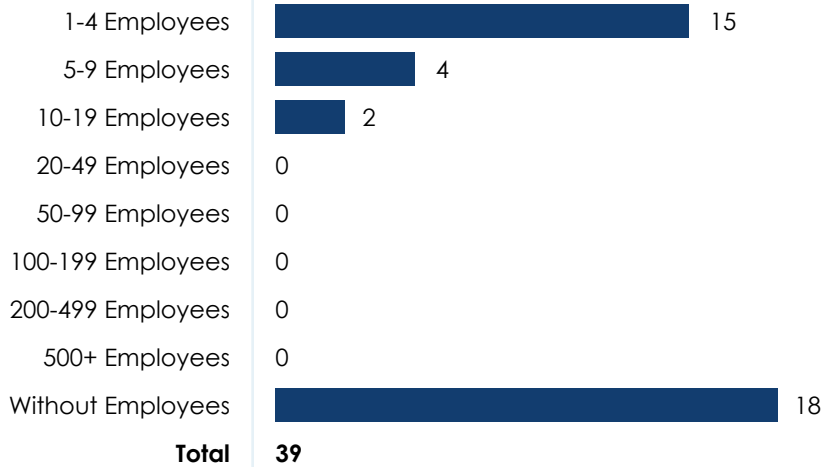
### 237210 Land subdivision

This industry comprises establishments primarily engaged in servicing land and subdividing real property into lots, for subsequent sale to builders. Land subdivision precedes any building activity and may create residential lots, commercial tracts or industrial parks. Servicing of land may include land clearing and excavation work for the installation of roads and utility lines.



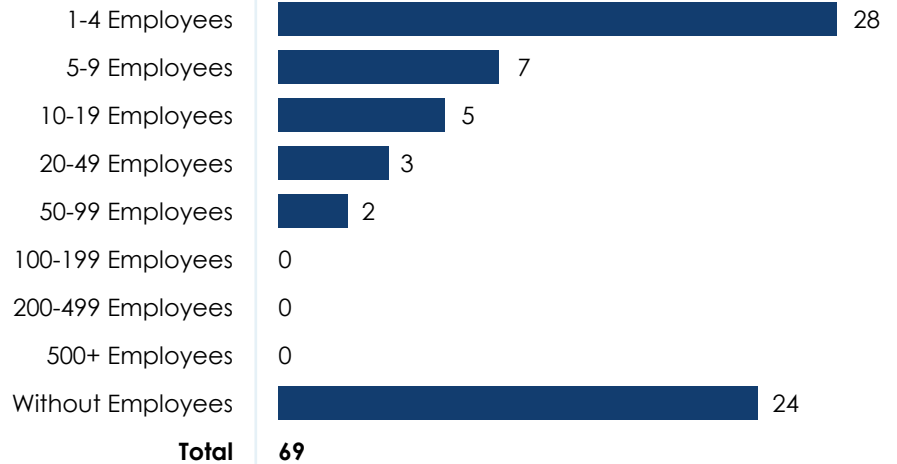
### 238350 Finish carpentry contractors

This industry comprises establishments primarily engaged in finish carpentry work. The work performed may include new work, additions, alterations, maintenance, and repairs.



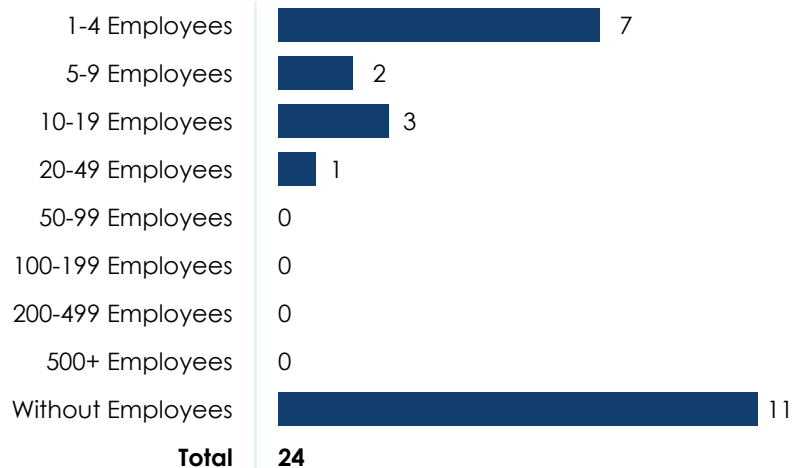
### 238220 Plumbing, heating, and air-conditioning contractors

This Canadian industry comprises establishments primarily engaged in installing or servicing plumbing, heating, and air-conditioning equipment. Contractors in this industry may provide both parts and labour when performing work. The work performed may include new work, additions, alterations, maintenance, and repairs.



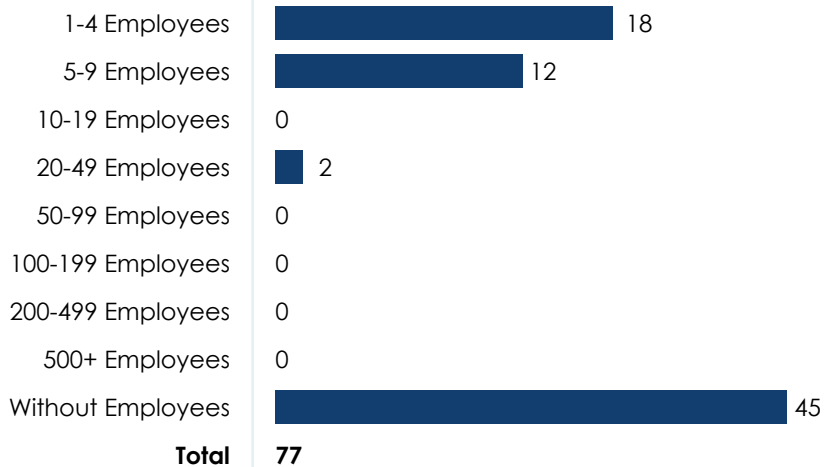
### 238160 Roofing contractors

This industry comprises establishments primarily engaged in roofing. This industry also includes establishments treating roofs (i.e., spraying, painting, or coating) and installing skylights. The work performed may include new work, additions, alterations, maintenance, and repairs.



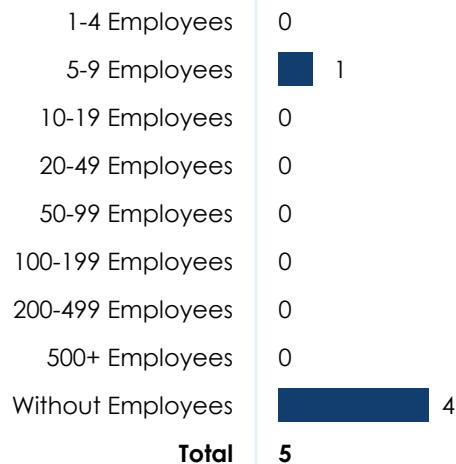
### 238990 All other specialty trade contractors

This industry comprises establishments, not classified to any other industry, primarily engaged in specialized construction trades. The work performed may include new work, additions, alterations, maintenance, and repairs.



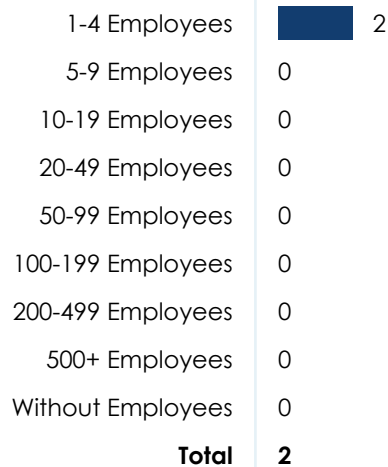
### 541310 Architectural services

This industry comprises establishments primarily engaged in planning and designing the construction of residential, institutional, leisure, commercial and industrial buildings and other structures by applying knowledge of design, construction procedures, zoning regulations, building codes and building materials.



### 541340 Drafting services

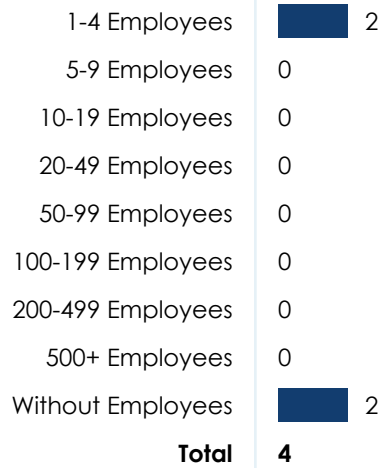
This industry comprises establishments primarily engaged in drawing detailed layouts, plans and illustrations of buildings, structures, systems or components from engineering and architectural specifications.





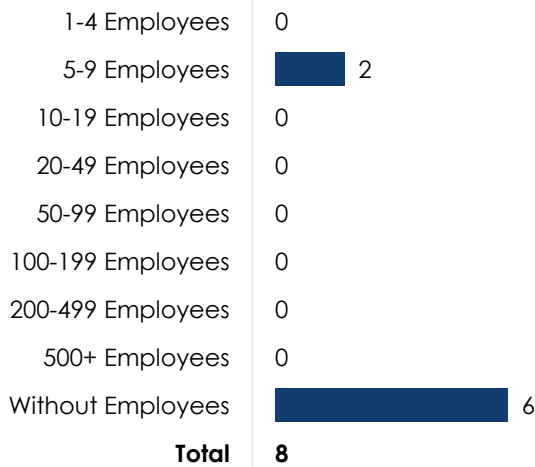
### 541320 Landscape architectural services

This industry comprises establishments primarily engaged in planning, designing and administering the development of land areas for projects such as parks and other recreational areas, airports, highways, hospitals, schools, land subdivisions, and commercial, industrial and residential areas by applying knowledge of land characteristics, location of buildings and structures, use of land areas, and design of landscape projects.



### 541350 Building inspection services

This industry comprises establishments primarily engaged in providing building inspection services. These establishments typically evaluate all aspects of the building structure and component systems and prepare a report on the physical condition of the property, generally for buyers or others involved in real estate transactions.



## Energy Efficiency

### 541620 Environmental consulting services

This industry comprises establishments primarily engaged in providing advice and assistance to other organizations on environmental issues, such as the control of environmental contamination from pollutants, toxic substances and hazardous materials. These establishments identify problems, measure and evaluate risks, and recommend solutions. They employ a multi-disciplined staff of scientists, engineers and other technicians, with expertise in areas such as air and water quality, asbestos contamination, remediation and environmental law.



### 562920 Materials recovery facilities

This industry comprises establishments primarily engaged in operating facilities in which recyclable materials are removed from waste, or mixed recyclable materials are sorted into distinct categories and prepared for shipment.

1-4 Employees	0
5-9 Employees	0
10-19 Employees	1
20-49 Employees	0
50-99 Employees	0
100-199 Employees	0
200-499 Employees	0
500+ Employees	0
Without Employees	0
<b>Total</b>	<b>1</b>

## Appendix C

### Nursery and Greenhouse Labourer (NOC 85103)

- **Description:**<sup>15</sup> Nursery and greenhouse labourers plant, cultivate and harvest trees, shrubs, flowers and plants, and assist nursery and greenhouse customers. The job may require workers to monitor plants for healthy growth and potential issues in greenhouse crops.
- **Employment Requirements:** Completion of secondary school may be required. Completion of college courses in horticulture or a related field may also be required.

### Industrial and Manufacturing Engineer (NOC 21321)

- **Description:** Industrial and manufacturing engineers conduct studies and develop and supervise programs to achieve the best use of equipment, human resources, technology, materials and procedures to enhance efficiency and productivity. Industrial and manufacturing engineers continue to play a key role in the green economy by working to find ways to reduce pollution, promoting sustainability, and minimizing risk to humans and the environment without sacrificing economic viability and efficiency.
- **Employment Requirements:** A bachelor's degree in industrial engineering or in a related engineering discipline is required. A master's degree or doctorate in a related engineering discipline may be required.

<sup>15</sup> Occupation Description and Employment Requirements come from "National Occupational Classification," Government of Canada, <https://noc.esdc.gc.ca/>

### Landscape and Horticulture Technicians and Specialists (NOC 22114)

- **Description:** Landscape and horticulture technicians and specialists survey and assess landscapes; draw sketches and build models of landscape designs; construct and maintain gardens, parks, golf courses and other landscaped environments; advise clients on issues related to horticulture such as irrigation; breed, cultivate and study plants; and treat injured and diseased trees and plants.
- **Employment Requirements:** Completion of a two-to-three-year college program in agronomy, arboriculture, horticulture, landscaping, landscape design or landscape technology is usually required. Horticultural Technician Apprenticeship is also available.

### Mechanical Engineering Technologists and Technicians (NOC 22301)

- **Description:** Mechanical engineering technologists and technicians provide technical support and services or may work independently in mechanical engineering fields such as the design, development, maintenance and testing of machines, components, tools, heating and ventilating systems, geothermal power plants, power generation and power conversion plants, manufacturing plants and equipment.
- **Employment Requirements:** Completion of a two or three-year college program in mechanical engineering technology is usually required for mechanical engineering technologists; Completion of a one or two-year college program in mechanical engineering technology is usually required for mechanical engineering technicians.

### Water and Waste Treatment Plant Operator (NOC 92101)

- **Description:** Water treatment plant operators monitor and operate computerized control systems and related equipment in water filtration and treatment plants to regulate the treatment and distribution of water. Liquid waste plant operators monitor and operate computerized control systems and related equipment in wastewater, sewage treatment and liquid waste plants to regulate the treatment and disposal of sewage and wastes.
- **Employment Requirements:** Completion of secondary school is required; College or industry training courses in chemistry, pollution control or related subjects are usually required.

### Mechanical Engineer (NOC 21301)

- **Description:** Mechanical engineers research, design and develop machinery and systems for heating, ventilating and air conditioning, power generation, transportation, processing and manufacturing. They also perform duties related to the evaluation, installation, operation and maintenance of mechanical systems.
- **Employment Requirements:** A bachelor's degree in mechanical engineering or in a related engineering discipline is required. A master's degree or doctorate in a related engineering discipline may be required.

### Power Engineers and Power Systems Operators (NOC 92100)

- **Description:** Power engineers operate and maintain reactors, turbines, boilers, generators, stationary engines and auxiliary equipment to generate electrical power and to provide heat, light, refrigeration and other utility services for commercial, institutional and industrial buildings and other work sites. Power systems operators monitor and operate switchboards and related equipment in electrical control centres to control the distribution of electrical power in transmission networks.
- **Employment Requirements:** Completion of secondary school is usually required. Power systems operators require completion of a three- to five-year power system operator apprenticeship program or over three years of work experience in the trade and some college or industry courses in electrical and electronic technology.

### Electricians (except industrial and power system) (NOC 72200)

- **Description:** Electricians (except industrial and power system) lay out, assemble, install, test, troubleshoot and repair electrical wiring, fixtures, control devices and related equipment in buildings and other structures.
- **Employment Requirements:** Completion of secondary school is usually required. Completion of a four- to five-year apprenticeship program is usually required. Trade certification for construction electricians is compulsory in Ontario.

### Industrial Electricians; NOC 72201

- **Description:** Industrial electricians install, maintain, test, troubleshoot and repair industrial electrical equipment and associated electrical and electronic controls.
- **Employment Requirements:** Completion of secondary school is usually required. Completion of a four- or five-year industrial electrician apprenticeship program or a combination of over five years of work experience in the trade and some high school, college or industry courses in industrial electrical equipment is usually required to be eligible for trade certification.

### Electrical and Electronics Engineer (NOC 21310)

- **Description:** Electrical and electronics engineers design, plan, research, evaluate and test electrical and electronic equipment and systems.
- **Employment Requirements:** A bachelor's degree in electrical or electronics engineering or in an appropriate related engineering discipline is required. A master's or doctoral degree in a related engineering discipline may be required.

### Electrical Power Line and Cable Workers (NOC 72203)

- **Description:** Electrical power line and cable workers construct, maintain and repair overhead and underground electrical power transmission and distribution systems. They

are employed by electric power generation, transmission and distribution companies, electrical contractors and public utility commissions.

- **Employment Requirements:** Completion of secondary school is usually required. Completion of a provincial three- or four-year lineman/woman apprenticeship program or a combination of over four years of work experience in the trade and some high school, college or industry courses in electrical technology is usually required for electrical power line and cable workers.

### Residential and Commercial Installers (NOC 73200)

- **Description:** Residential and commercial installers and servicers install and service a wide variety of interior and exterior prefabricated products such as windows, doors, electrical appliances, water heaters, fences, play structures and septic and irrigation systems at residential, commercial or institutional properties. They are employed by companies specializing in specific product installation and service.
- **Employment Requirements:** Some secondary school education is usually required.

## Sources

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"Building an Economy that Works for All Canadians," Government of Canada, <https://www.budget.canada.ca/fes-eea/2023/report-rapport/chap3-en.html>

"Chatham Campus," St. Clair College, <https://www.stclaircollege.ca/programs/locations/chatham-campus>

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**CK Workforce Planning Board**

P: 519.436.3299

E: [ckworkforce@chatham-kent.ca](mailto:ckworkforce@chatham-kent.ca)

W: [www.ckworkforcedev.com](http://www.ckworkforcedev.com)