

# Sector Definition

The manufacturing sector includes companies that use tools, machinery and workers to produce goods. Advanced manufacturing goes one step further, digitizing the process of manufacturing. Advanced manufacturing is innovative, using computer-controlled equipment like robots, 3D printers, and machines that can learn and improve their own performance.

# Sector Overview



## Canada

Manufacturing in Canada struggled as a result of the 2008 to 2009 recession. Many plants closed and production was moved to countries such as China to take advantage of cheaper labour costs.

Canada’s manufacturing industry has been steadily increasing since then, but continues to face a labour shortage. With unfilled positions and an aging workforce nearing retirement, many more workers are needed in this important sector.

The majority of manufacturers in Canada work in metal fabrication, which is cutting, bending and assembling metal to make parts for machines. This is a sector ideal for a transition to advanced manufacturing. It will, however, require money for technological upgrades and additional workers with strong digital and technical literacy skills.

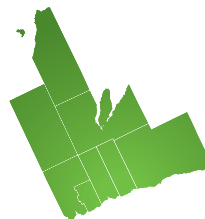


## Ontario

Manufacturing is important to Ontario’s economy. 80% of the province’s exports are a result of the Ontario manufacturing sector, and the industry is worth 12% of what the province earns. Food, beverage and tobacco manufacturing companies have remained strong, and are growing.

Most of the manufacturers in Ontario have less than 50 employees, and many are hiring. While there are many Ontarians with the right skills for the manufacturing sector, they are often drawn to jobs in other fields believing the pay and work environments are better. As a result, the sector is particularly in need of:

- Industrial electricians
- Machinists
- Tooling inspectors
- Die makers
- Welders
- Mechanical trades supervisors
- Millwright mechanics
- Industrial mechanics
- Computer network technicians



## Durham Region

Durham Region is well suited to support the development and expansion of advanced manufacturing. The system of buildings, roads, and power supplies required have been developed, and the region is home to an educated workforce.

Durham Region's location is ideal, located on major trade routes with easy access to the Port of Oshawa, rail lines and the 400-series highways. There are many warehousing and transportation companies in the region ready to support manufacturers with the shipping of goods and supplies.

Notable manufacturers in Durham Region include General Motors, which at its peak in the 1990's employed over 20,000 workers at its Oshawa plant. After a gradual decline in production and workforce, the plant was closed in 2019. General Motors recently returned to the area however, hiring between 1,400 and 1,700 workers to build pickup trucks at the Oshawa plant. Agile Manufacturing Inc. in Uxbridge is the largest 3D printing service in Canada. They create prototypes of new products from 3D printed plastics, nylons, metals, urethanes and more. Agile also offers laser scanning, allowing them to re-create exact replicas of objects and machine parts that are no longer available. As a 3D printing specialist, they both use and sell 3D printers, supplies and equipment across North America.

A wide variety of jobs are available at manufacturers such as these in the region, with roughly a quarter of manufacturing employees working as:

- **Motor vehicle assemblers, inspectors and testers**
- **Manufacturing managers**
- **Material handlers**
- **Other labourers in processing, manufacturing and utilities**
- **Mechanical engineers**

Education is important to employers in Durham Region's manufacturing sector. Almost 90% of manufacturing employees in the Region have at least a high school diploma, and 46% of those have a college diploma or university-level Bachelors or Master's degree. To support the need for manufacturing-specific education, Ontario Tech University and Durham College offer post-secondary training in both engineering and technical trades. Ontario Tech University's Manufacturing Engineering program is the only program of its kind in Canada. It focuses on high-tech manufacturing systems including robotics, automation, new materials and intelligent controls. The Continuous Studies office at Ontario Tech University also offers short programs for people who want to work in manufacturing.

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