



Motor Vehicles & Component Parts

Motor Vehicles & Component Parts

Though not considered a sector of the Traditional Energy industry, the Motor Vehicles and Component Parts sector,⁹⁰ which include cars, light-duty and heavy-duty trucks, trailers, and component parts of the foregoing, are included in this report, given both the high energy consumption of their manufacture and their contribution to end-use energy consumption.

TRENDS

- 2017 Job Growth.** The Motor Vehicles and Component Parts sector employed 2,536,382 Americans in 2018, adding 74,000 employees to the number employed in 2017. This figure excludes dealerships and retailers, which employed nearly two million additional workers.
- Alternative fuels vehicles and hybrids.** Within the overall total for the sector, alternative fuels vehicles and hybrids employed 253,598 workers in 2018, an increase of nearly 34,000 in 2018 after a significant decline in 2017.
- Fuel economy.** Over 486,000 employees in the component parts segment of the sector (or 43 percent of component parts employees) work with products that contribute to fuel economy.
- 2019 Expectations.** Motor Vehicles and Component Parts employers anticipate 2.2 percent growth in 2019.

3.0%

Motor Vehicle job growth in 2018.

2.2%

Employers predict 2.2% Motor Vehicles job growth in 2019.

⁹⁰ Motor Vehicle and Component Parts employers are defined as any firm that contributes to the manufacture, wholesale distribution, transport, and repair and maintenance of gasoline, diesel, hybrid, electric, natural gas, hydrogen and fuel cell, or other vehicle technologies.

SNAPSHOT OF EMPLOYMENT

Figure 93.
Motor Vehicle and Component Parts Sector – Employment by Industry, 2017-2018

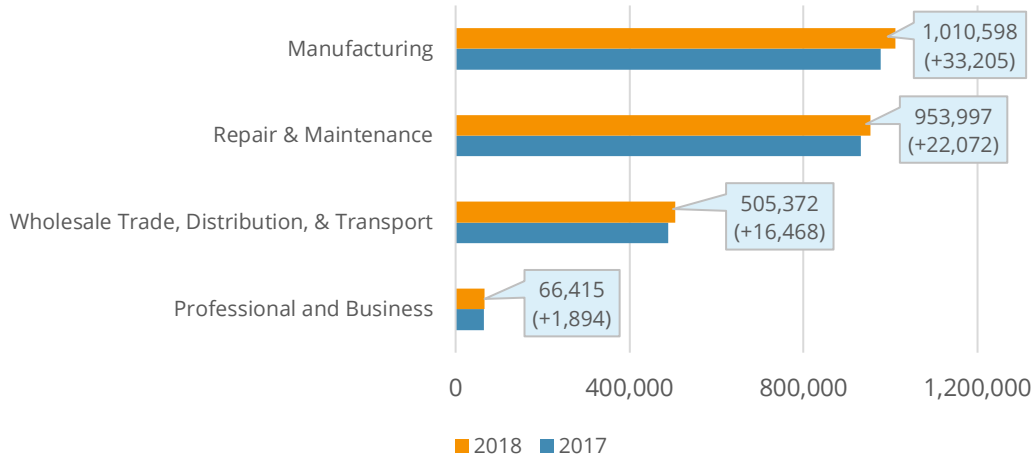
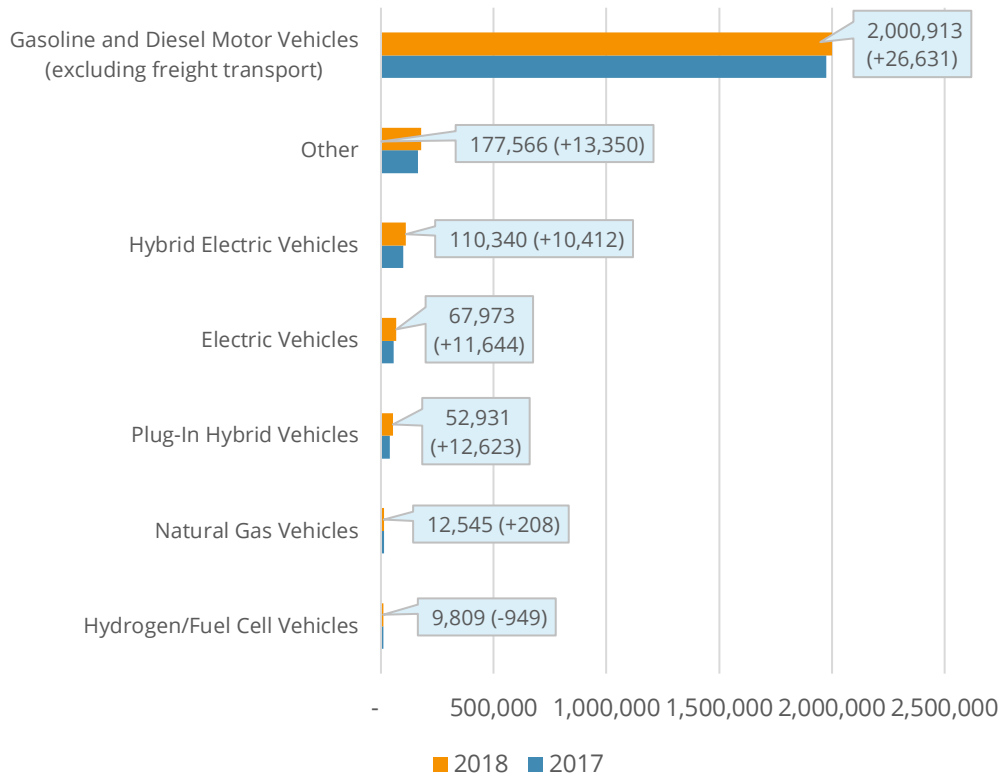


Figure 92.
Motor Vehicles and Component Parts Sector – Employment by Detailed Technology, 2017-2018

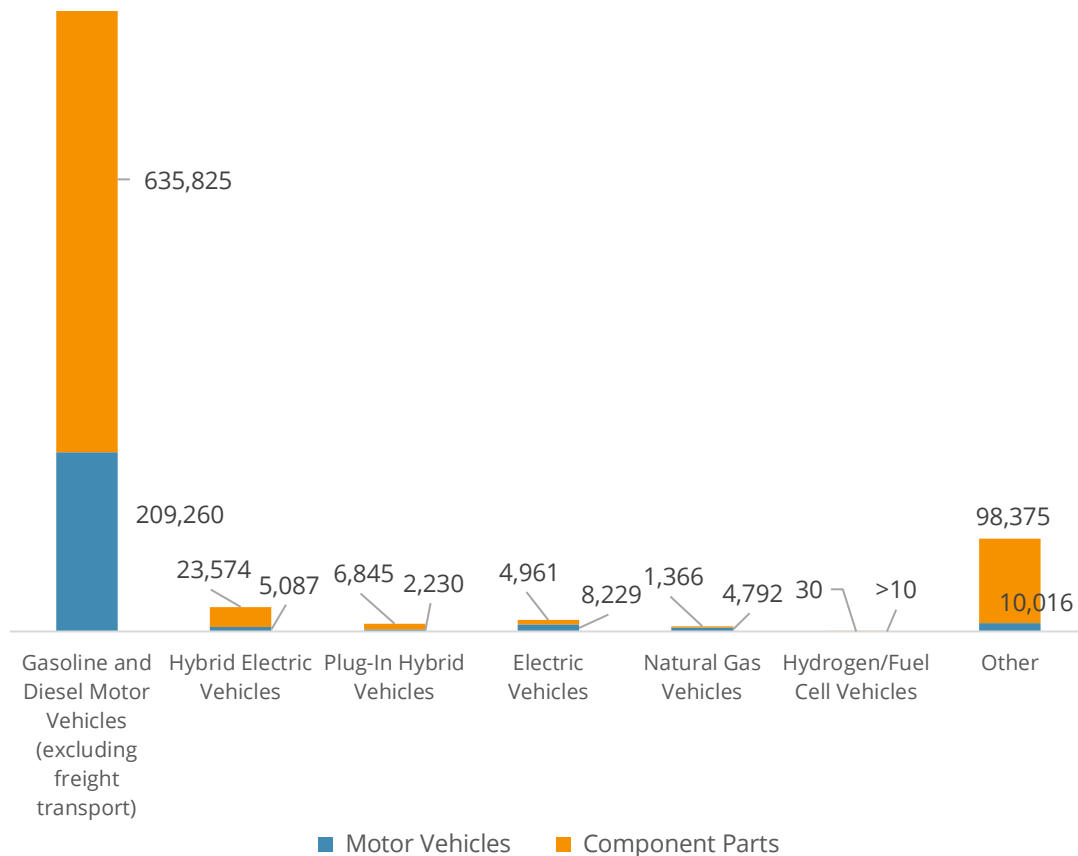


ALTERNATIVE FUELS VEHICLES AND HYBRIDS

- Alternative fuels vehicles and hybrids include hybrid electric, plug-in hybrid, electric, natural gas, and hydrogen and fuel cell vehicles.
- 10 percent of employees in the Motor Vehicles and Component Parts sector (or 253,599 employees) worked on alternative fuels vehicles.⁹¹
- 82 percent of employees in the sector worked with gasoline and diesel fueled motor vehicles.
- 4 percent worked in transport.
- 3 percent worked in professional services.

Figure 94.

Motor Vehicles and Component Parts Sector – Manufacturing Employment by Detailed Technology Application, Q2 2018



⁹¹ Percentage is taken from Motor Vehicle employment exclusive of commodity flow employment.

- The above chart shows the division of manufacturing employment in each technology between component parts and other occupations.⁹²
- The domestic manufacture of alternative fuels vehicles and hybrids grew between 2017 and 2018 in most technologies, with hybrids adding almost 8,000 manufacturing jobs and plug-in and all electric vehicles adding 3,100.
- However, domestic sales of electric and plug-in vehicles rose by over 81 percent in 2018, according to Inside EV.⁹³

HIRING DIFFICULTY

- **79 percent of other services employers** in motor vehicles reported that it was either somewhat or very difficult to hire new employees.
- **78 percent of manufacturing employers in motor vehicles** reported that it was somewhat difficult or very difficult to hire new employees. 36 percent reported it was very difficult.
- **77 percent of professional and business services employers in motor vehicles** reported it was somewhat difficult to hire new employees.

⁹² Of the 376 employees within hydrogen and fuel cell vehicles that worked on component parts, fewer than 10 employees were focused on motor vehicles manufacturing.

⁹³ Steven Loveday, "December 2018 U.S. Plug-In EV Sales Report Card," *InsideEVs*, January 5, 2019, <https://insideevs.com/december-2018-u-s-plug-in-ev-sales-report-card/>

HIGHEST-DEMAND OCCUPATIONS IN MOTOR VEHICLES

With 3 percent growth in 2018 and predicted growth of almost 54,000 new jobs in 2019, motor vehicle employers have identified below the occupations that each sector is having the greatest difficulty in filling.

Table 50.
Motor Vehicles and Component Parts – Reported Occupations with Hiring Difficulty by Industry, Q4 2018

Manufacturing	Wholesale Trade, Distribution, and Transport	Professional and Business Services	Other
Technician or mechanical support (52%)	Technician or mechanical support (46%)	Management (directors, supervisors, vice presidents) (30%)	Technician or mechanical support (80%)
Electrician/construction workers (28%)	Drivers/dispatchers (25%)	Other (50%)	Sales, marketing, or customer service representatives (32%)
Manufacturing or production positions (12%)	Sales, marketing, or customer service representatives (20%)	Electrician/construction workers (17%)	Management (directors, supervisors, vice presidents) (11%)

Spotlight: “Southwest Michigan is experiencing an extreme shortage of workers.”

Melinda Ellsworth, VP of Investor Relations and Corporate Communications, Kaiser Aluminum

Kaiser Aluminum is a leading producer of highly engineered aluminum products for aerospace, general engineering, and automotive applications. Aluminum is inherently sustainable, indefinitely recyclable and one of the most effective materials to achieve fuel efficiency standards.

In 2010, Kaiser opened a state-of-the-art rod and bar extrusion facility in Kalamazoo, Michigan, in the heart of its market with access to a good talent pool and educational resources. The business has continued to grow with the growth in automotive extrusion applications as vehicle light weighting for fuel efficiency drove greater conversion of components from steel to aluminum. The facility produces aluminum extrusions for anti-lock braking systems, control arm assemblies and drive-train applications.



The 2019 USEER reported that 78% of motor vehicles’ manufacturers found it was difficult to hire new employees. “Southwest Michigan is experiencing an extreme shortage of workers due to a historically low 3.4% unemployment rate,” said Melinda Ellsworth, VP of Investor Relations and Corporate Communications. “We are competing to attract talent with other manufacturers who are also hiring — many well-known and highly regarded employers. Although the shortage of workers poses a challenge, it has been especially challenging with the shortage of skilled trades workers.”

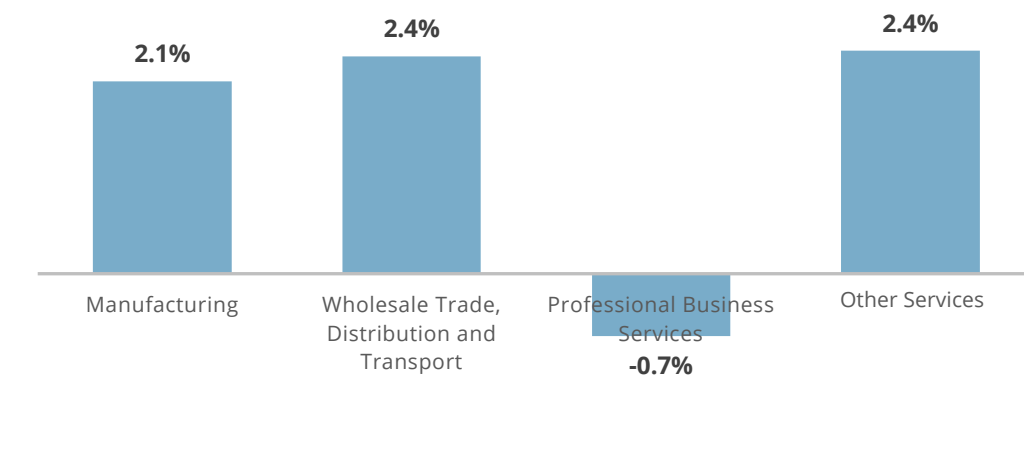
Several initiatives to entice applicants include employee referral programs. Other programs include sign-on bonuses for maintenance technicians; partnerships with community colleges/other organizations; expanding the recruiting efforts outside the local areas, offering in certain situations, full relocation; pursuing candidates outside the traditional manufacturing experience pool and continuing to focus on training and development employees.

INTRODUCTION

Three NAICS subsectors⁹⁴ capture Motor Vehicles finished product manufacturing, including automobiles, and light- and heavy-duty trucks, parts, body, and trailer manufacturing. Together these three detailed industry sectors employed 1,010,598 workers in 2018. Motor vehicle and parts wholesalers and air, rail, water, or truck motor vehicle transport represent detailed NAICS subsectors within Wholesale Trade and Distribution, and the QCEW reports the total number of workers who are employed by these firms in 2018 to be 505,372. Similarly, motor vehicle repair⁹⁵ and maintenance is captured by a single NAICS industry code within the overall repair and maintenance industry sector; motor vehicle repair and maintenance firms employed 953,997 workers in 2018. Professional and business services are not motor vehicle-specific, but the USEER survey identified 66,415 workers who spent at least some time supporting the Motor Vehicles sector in 2017. Nearly three in five (59 percent) of these professional and business services employees spent the majority of their time supporting the Motor Vehicle and Component Parts sector, with 55 percent spending all of their time on this work.

Employers in the Motor Vehicles and Component Parts sector report projected growth of 2.2 percent through the end of 2019. Manufacturing, the largest industry in the Motor Vehicle and Component Parts sector, predicted 2.1% growth in 2019 or over 20,000 jobs. Professional and business services employers expect their workforce to decline by one percent.

Figure 95.
Motor Vehicles and Component Parts Sector – Expected Employment Growth by Industry (Q4 2018 – Q4 2019)



⁹⁴ NAICS 3361, 3362, and 3363.

⁹⁵ The official term for the NAICS category is Automotive Repair and Maintenance, which includes repair and maintenance for light-duty and heavy-duty trucks. This is inconsistent with Manufacturing NAICS, which includes delineations for light-duty and heavy-duty truck manufacturing.

ALTERNATIVE FUEL VEHICLES AND HYBRIDS

While the repair and maintenance industry sector actively works with alternative fuel vehicles and hybrids, there is difficulty delineating primary employment by fuel type for these firms, so it should be noted that employment totals included for repair are based on best efforts by respondents to allocate their workforce by fuel type.⁹⁶

Of the 2,432,078 Motor Vehicles and Component Parts jobs in 2018 (exclusive of the 104,304 employees that were involved in the transport of motor vehicles),⁹⁷ 10 percent, or 253,598, focused on alternative fuel vehicles and hybrids, while 82 percent worked with traditional gasoline- and diesel-fueled motor vehicles.

In addition, USEER data identified 43 percent of component parts manufacturing in 2018, or more than 486,000 jobs, that produce parts that increase fuel economy in the United States. Note that there is some overlap between those who work with alternative fuel vehicles and those that produce parts that increase fuel economy.

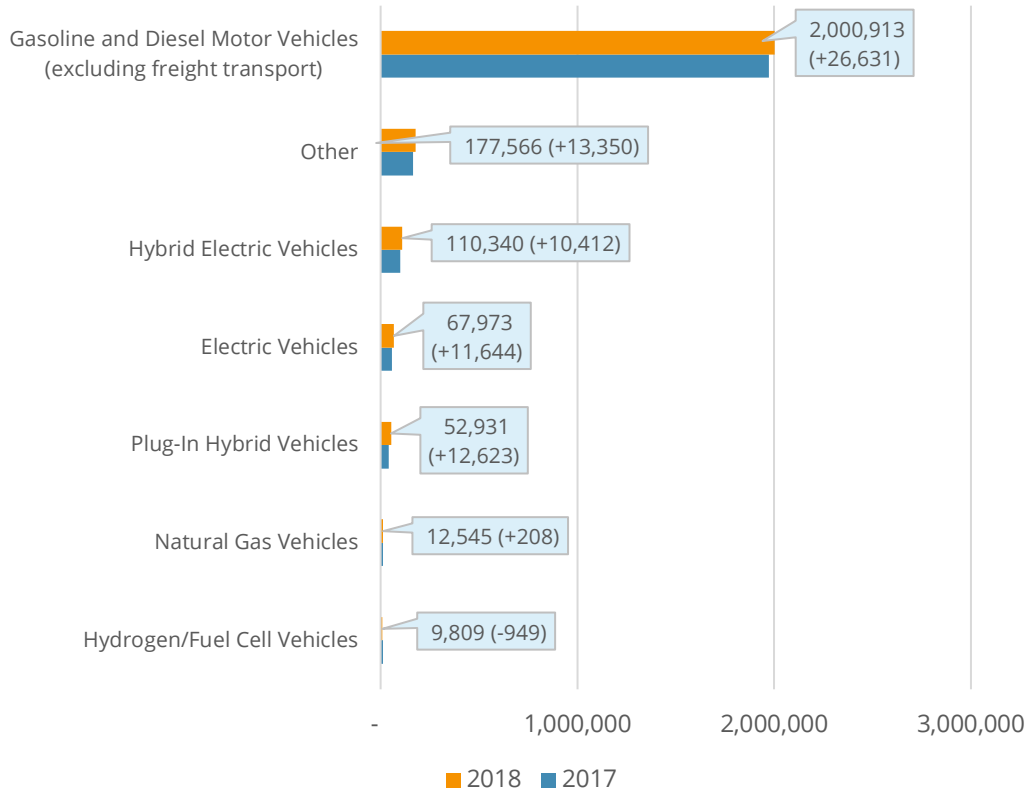
In addition to the Motor Vehicles and Component Parts industries included in this 2019 USEER, several other transportation industries use alternative fuel technologies, focus on fuel economy, or both. These include aerospace product and parts manufacturing; railroad and rolling stock manufacturing; ship and boat building; industrial truck, trailer, and stacker manufacturing; and other transportation equipment manufacturing.

These manufacturing industries employed a total of more than 699,400 workers nationwide in 2018. They encompass a wide range of detailed industries ranging from boat building to guided missile manufacturing. Approximately 486,000 of these jobs (72 percent) are found in aviation and aerospace industries.

⁹⁶ This analysis was conducted for the chapter; however, it is recognized that Motor Vehicle repair and maintenance establishments may have difficulty assigning primary employment to a worker who is involved in vehicles regardless of fuel type. More research is required into the Motor Vehicle repair and maintenance industry sector in order to understand employment intensity for alternative fuel vehicles.

⁹⁷ Extrapolated employment from commodity flow data for motor vehicles.

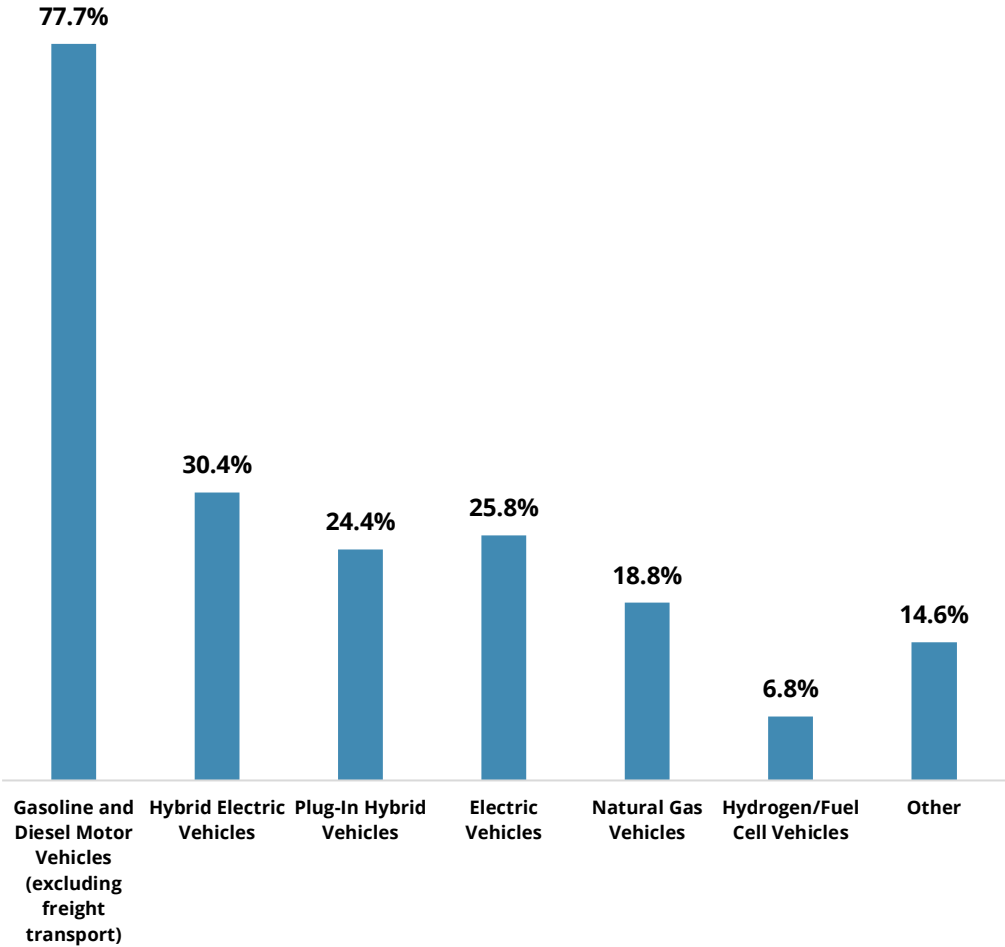
Figure 96.
Motor Vehicles and Component Parts Sector – Employment by Detailed Technology, Q2 2018



As shown in Figure 97, approximately eight out of ten (78 percent) Motor Vehicle parts firms offered parts in 2017 for gasoline and diesel motor vehicles, while more than 30 percent offered component parts for hybrid electric vehicles.⁹⁸

⁹⁸ Firms were permitted to offer multiple responses, percentages sum to over 100 percent.

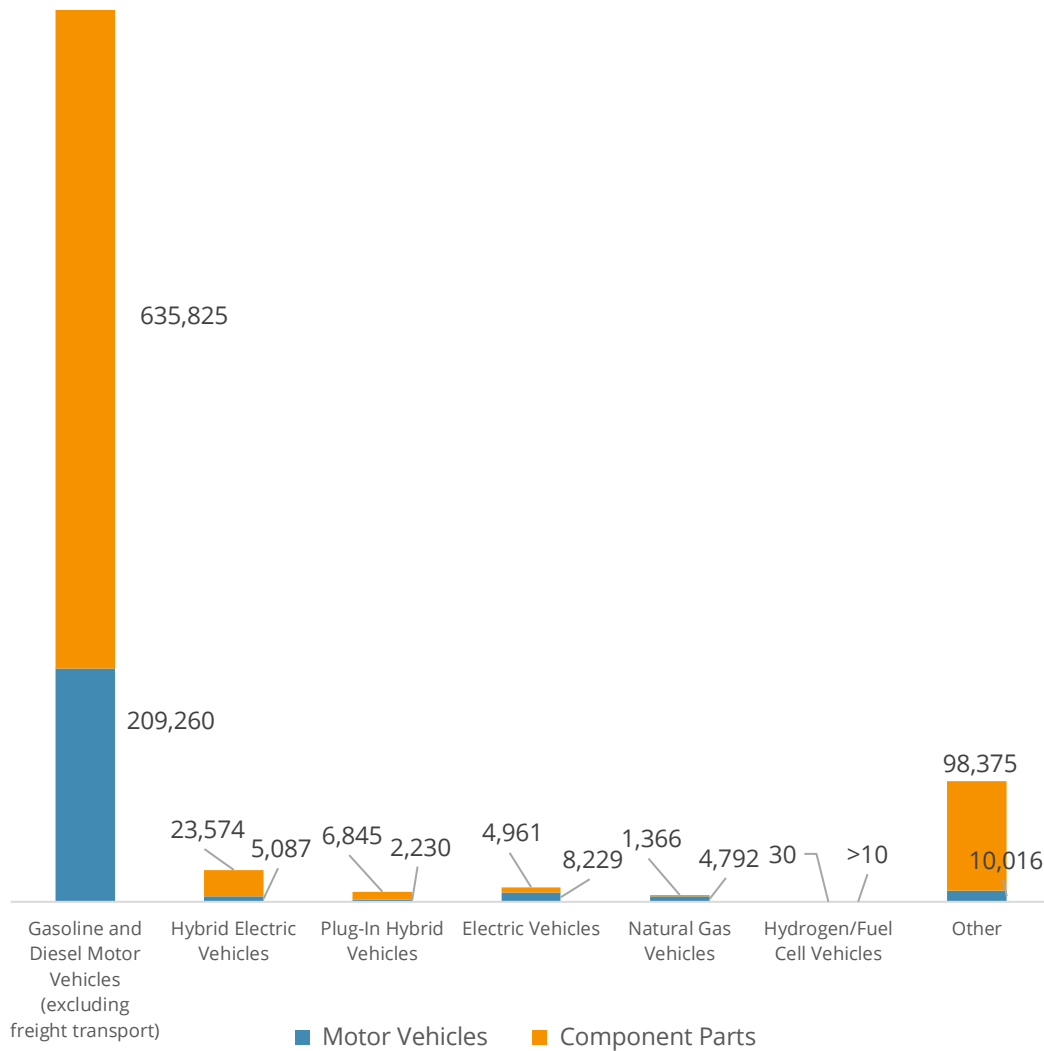
Figure 97.
Parts Offered by Type of Fuel Used, Component Parts



MANUFACTURING

In 2018, gasoline and diesel motor vehicles represented nearly 84 percent of all manufacturing employment in Motor Vehicles and Component Parts (down slightly from 85 percent in 2017). Six percent of manufacturing employment, or 57,116 jobs was focused on alternative fuel vehicles and hybrids, while 11 percent was categorized within “other/multiple.” Of the 376 employees within hydrogen and fuel cell vehicles that worked on component parts, fewer than 10 employees were focused on motor vehicles manufacturing.

Figure 98.
Motor Vehicles and Component Parts Sector – Manufacturing
Employment by Detailed Technology Application, Q2 2018

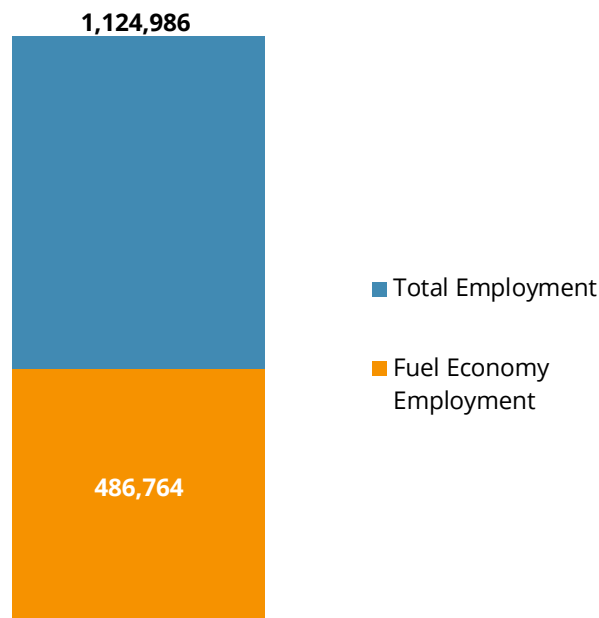


COMPONENT PARTS AND FUEL ECONOMY

In 2018, over 486,000 Component Parts employees worked with parts that increase fuel economy for vehicles. This represents 43 percent of the 1,124,986 workers employed in the Component Parts segment of the sector in that year. The Component Parts segment includes firms focused on vehicle engine and drive parts, exhaust system parts, vehicle body parts, and other vehicle parts (including some battery production). This does not include mining and extraction for minerals used in vehicle parts production; high-strength, lightweight steel or rolled aluminum manufacturing; or production equipment manufacturing.

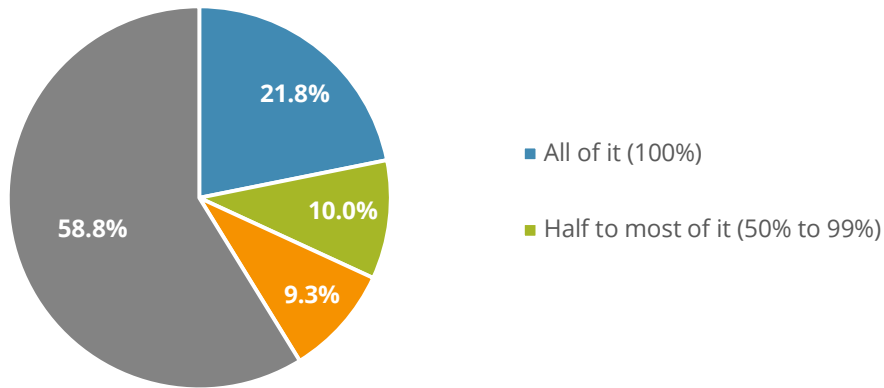
Figure 99.

Fuel Economy Employment in Component Parts, Q2 2018



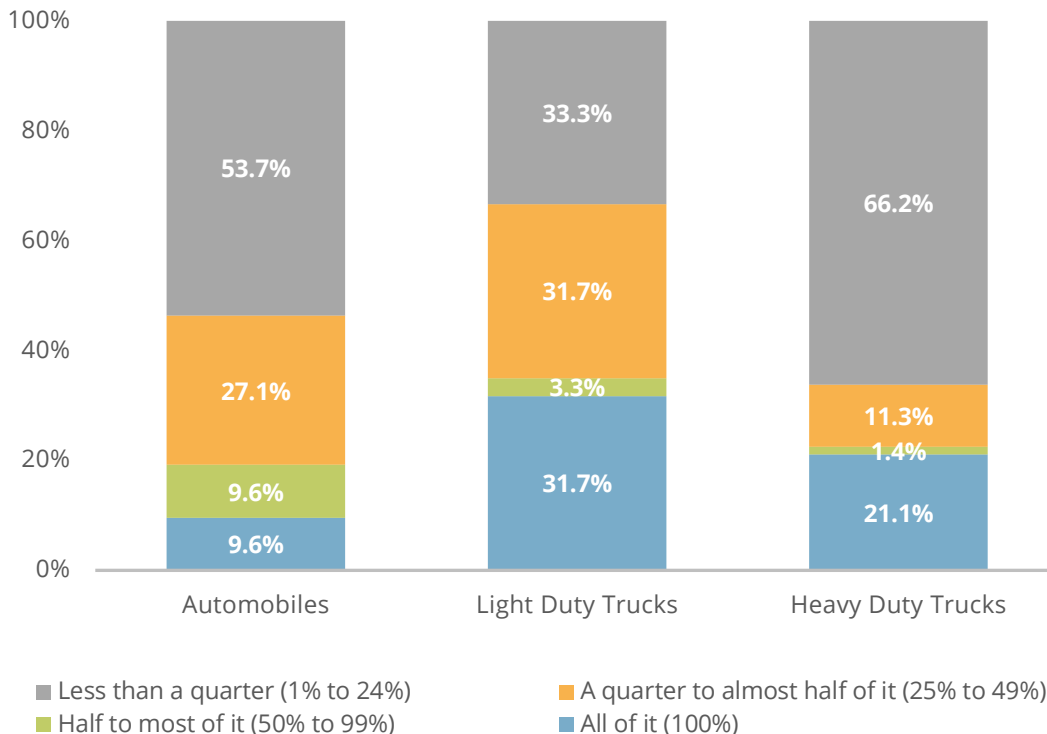
More than one-fifth (22 percent) of firms that were involved in the Component Parts segment in 2018 indicated that they derived all of their revenue from products that increase fuel economy for these vehicles. This was a slight decrease over the proportion of firms attributing all of their revenue to products that increase fuel economy in 2017 (23 percent).

Figure 100.
Revenue Attributable to Products that Increase Fuel Economy



A larger proportion of surveyed firms that primarily provide parts for light-duty trucks received all of their revenue in 2018 from products that increase fuel economy (32 percent), in comparison to firms that are mainly focused on heavy-duty trucks (21 percent) or automobiles (10 percent).

Figure 101.
Revenue Attributable to Products that Increase Fuel Economy by Primary Vehicle Type

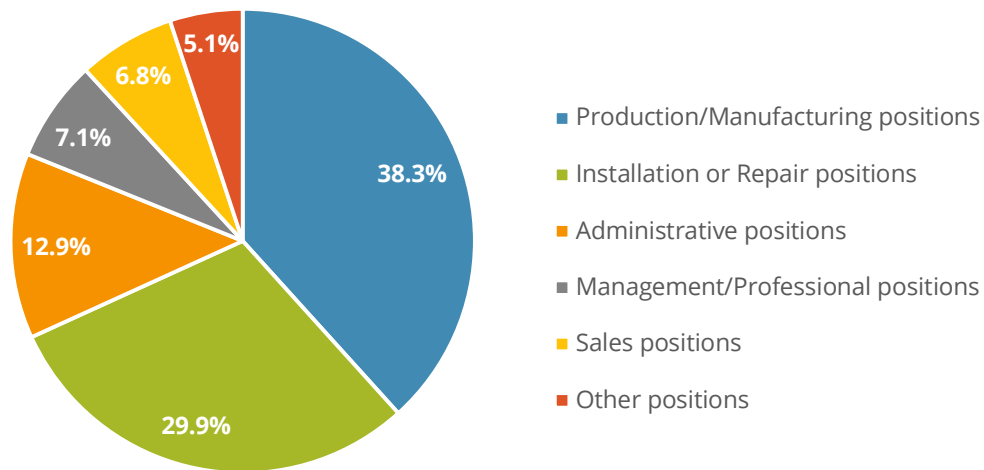


MOTOR VEHICLES AND COMPONENT PARTS – WORKFORCE CHARACTERISTICS

In 2018, over two-thirds of employees in Motor Vehicles and Component Parts were classified as workers in production/manufacturing positions (38 percent) or installation or repair positions (30 percent).

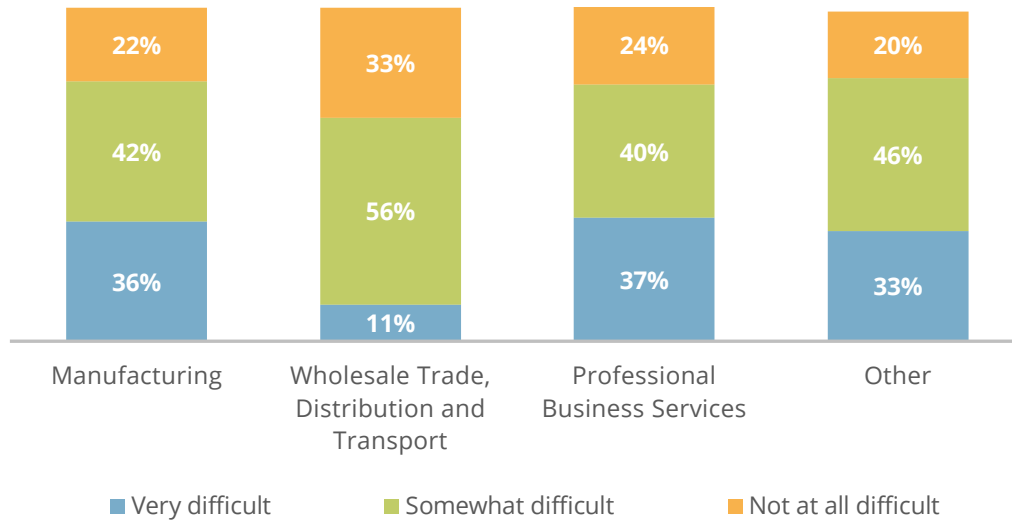
Figure 102.

Motor Vehicles and Component Parts Sector – Occupational Distribution, Q4 2018



Other services firms reported the highest levels of overall hiring difficulty (79 percent) in 2018. More than one-third of employers in professional and business services and manufacturing indicated that it was “very difficult” finding qualified applicants for positions at their firm.

Figure 103.
Motor Vehicles and Component Parts Sector – Hiring Difficulty by Industry, Q4 2018



Lack of experience, training, or technical skills was the number one reason for hiring difficulty as reported by manufacturing, wholesale trade, distribution, and transport, and other services firms in Motor Vehicles and Component Parts. Two-thirds of professional and business services employers that experienced hiring difficult cited difficulty finding industry-specific knowledge, skills, and interest as the primary reason.

Table 51.
Motor Vehicles and Component Parts Sector – Reasons for Hiring Difficulty by Industry, Q4 2018

Manufacturing	Wholesale Trade, Distribution, and Transport	Professional and Business Services	Other
Lack of experience, training, or technical skills (43%)	Lack of experience, training, or technical skills (38%)	Difficulty finding industry-specific knowledge, skills, and interest (67%)	Lack of experience, training, or technical skills (54%)
Insufficient non-technical skills (33%)	Insufficient non-technical skills (37%)	Lack of experience, training, or technical skills (43%)	Insufficient non-technical skills (28%)
Competition/small applicant pool (16%)	Competition/small applicant pool (16%)	Cannot pass employment screening (33%)	Competition/small applicant pool (16%)

The following table lists the occupations that contribute to the most hiring difficulty for employers within Motor Vehicles and Component Parts, by industry.

Table 52.

Motor Vehicles and Component Parts Sector – Reported Occupations with Hiring Difficulty by Industry, Q4 2018

Manufacturing	Wholesale Trade, Distribution, and Transport	Professional and Business Services	Other
Technician or mechanical support (52%)	Technician or mechanical support (46%)	Management (directors, supervisors, vice presidents) (30%)	Technician or mechanical support (80%)
Electrician/construction workers (28%)	Drivers/dispatchers (25%)	Other (50%)	Sales, marketing, or customer service representatives (32%)
Manufacturing or production positions (12%)	Sales, marketing, or customer service representatives (20%)	Electrician/construction workers (17%)	Management (directors, supervisors, vice presidents) (11%)

Over one-fifth of all workers in Motor Vehicles in 2018 were women (23 percent). Workers 55 years of age or older represented 20 percent of the workforce, a decline from 2017 (22 percent reported in 2017). The Motor Vehicles industry is more unionized than the workforce generally.

Table 53.
Motor Vehicles and Component Parts Sector – Demographics, Q4 2018

	Employees	Percent of Sector	National Workforce Averages
Male	1,882,023	77%	53%
Female	550,055	23%	47%
Hispanic or Latino	414,757	17%	17%
Not Hispanic or Latino	2,017,321	83%	83%
American Indian or Alaska Native	37,996	2%	1%
Asian	118,012	5%	6%
Black or African American	190,867	8%	12%
Native Hawaiian or other Pacific Islander	13,017	1%	>1%
White	1,895,483	78%	78%
Two or more races	176,702	7%	2%
Veterans	219,560	9%	6%
55 and over	481,518	20%	23%
Union	321,717	13%	11%