



DATA **D** RIVEN

Navigating the Road Ahead



ALLIANCE
FOR AUTOMOTIVE
INNOVATION

Powered by CAR

2024 INDUSTRY REPORT

DATA DRIVEN

Navigating the Road Ahead (2024)

MESSAGE FROM THE PRESIDENT AND CEO

I'm pleased to share Alliance for Automotive Innovation's 2024 DATA DRIVEN: Navigating the Road Ahead.

Alliance for Automotive Innovation is the auto industry's leading trade association. In Washington, DC and across the country, we support the 10 million people who make their living in automaking and affiliated businesses.

(More on those jobs in our report, thanks to the Center for Automotive Research.)

Our organization includes the iconic companies producing most vehicles sold today in the United States, major auto suppliers, semiconductor pioneers, autonomous vehicle innovators and advanced battery producers.

The *entire* automotive industry.

These are the companies on the frontlines of the transformation of the modern – and the indispensable – automotive and mobility sector.

Why indispensable?

Automaking is America's largest manufacturing sector. We define what it means to build things... here at home. It also underpins our industrial base and ensures the country's economic and national security.

Our annual DATA DRIVEN report outlines those contributions to American competitiveness.

In addition to the 10 million jobs supported by automaking and affiliated businesses, in 2023 the auto industry:

- Pumped \$1.2 trillion into the U.S. economy;
- Provided more than \$730 billion in paychecks;
- Contributed nearly 5 percent to GDP.

FACT: Every dollar generated in vehicle manufacturing circulates and multiplies across the economy, creating value for communities coast-to-coast. For every \$1 added to the economy, an additional \$4.23 in economic value is created.

Across the board, automakers and technology companies are also investing in an increasingly connected, automated and electrified vehicle fleet, building state-of-the-art battery and assembly factories across the Midwest and Southeast.

Since 2019, automakers and battery producers have committed nearly \$125 billion (and counting) to build these U.S. based facilities, creating more than 113,000 jobs and increasing domestic battery production capacity more than 800 percent to meet the growing demand for electrified vehicles.

The report also examines some of the industry's near term challenges, including a continued reliance on China and non-allied governments for critical mineral and raw materials for EV battery components. Continuing to localize the domestic EV supply chain is a priority automakers share with policymakers.

Automakers – vehicle manufacturers, suppliers, battery producers, semiconductor makers and technology companies – are *foundational* to our industrial base and competitiveness.

I hope you'll give the report a read and consider it a resource on the industry's contribution to our global leadership... today and tomorrow.

Sincerely,



JOHN BOZZELLA

President & Chief Executive Officer
Alliance for Automotive Innovation

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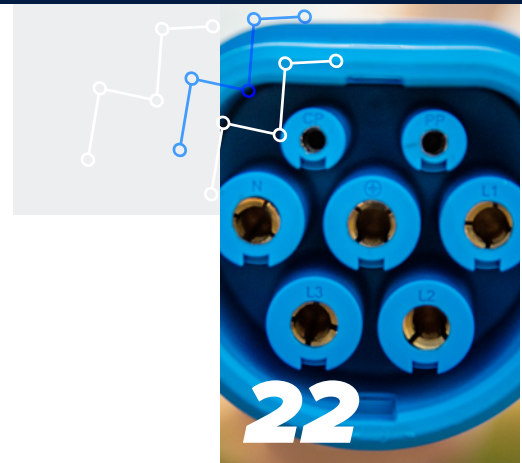
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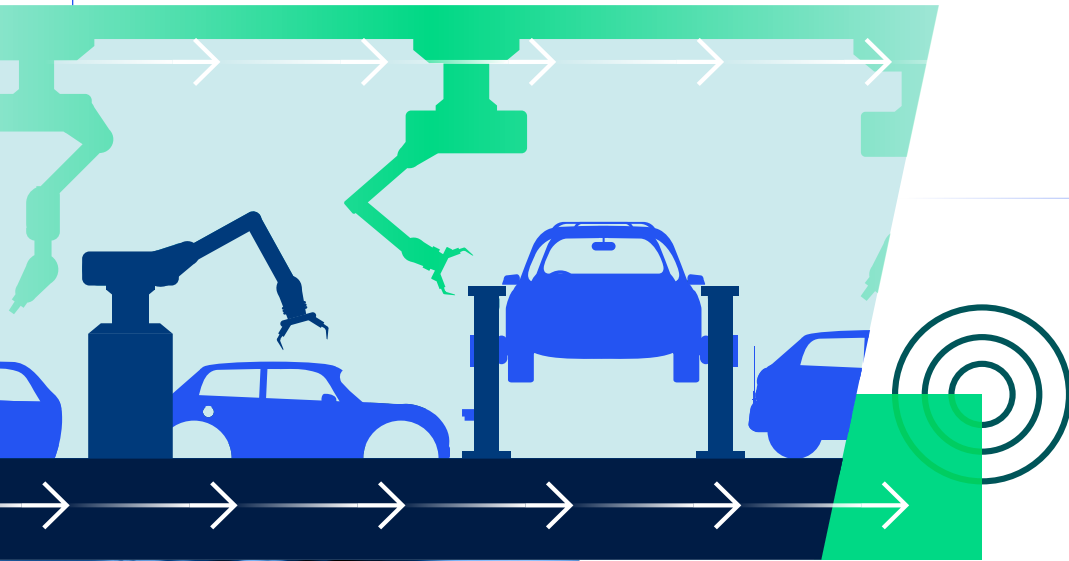
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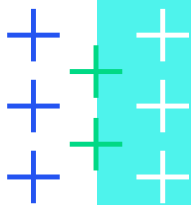
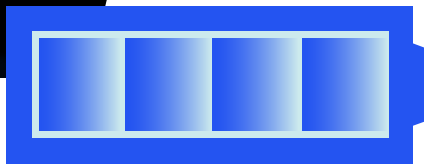
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Importance at Home



U.S. AUTO INDUSTRY A TRILLION DOLLAR ECONOMIC IMPACT

The automotive ecosystem (including direct, indirect and induced value added) drives more than \$1.2 trillion into the U.S. economy each year – 4.8 percent of GDP.

- 1 **15.2 million new vehicles sold in 2023**
- 2 **Total new vehicle sales 2023: \$643 billion**

If the U.S. Auto Industry were a country, its economic contribution would rank #17 on the list of largest countries by GDP.

Source: World Bank



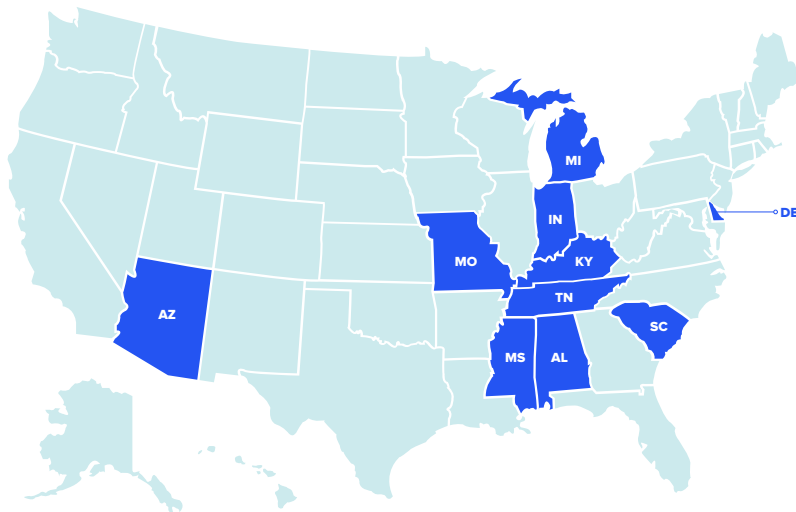
The manufacturing of automobiles alone contributes **\$360 billion** to the economy.



\$1 → \$4.23

For every \$1 added to the economy by motor vehicle manufacturing, an additional \$4.23 in economic value is created.

States where autos contribute the most to GDP



See appendix A for more state level data on the economic impact of the auto industry.

TOP 10 STATES

% STATE GDP

| | | |
|----|----------------|------|
| 1 | Michigan | 9.2% |
| 2 | Kentucky | 6.4% |
| 3 | Tennessee | 6.0% |
| 4 | Indiana | 5.7% |
| 5 | Alabama | 5.4% |
| 6 | South Carolina | 4.9% |
| 7 | Missouri | 4.9% |
| 8 | Delaware | 4.7% |
| 9 | Mississippi | 4.6% |
| 10 | Arizona | 4.1% |

Autos

10.1 MILLION JOBS COAST TO COAST



AUTO JOB

Across the United States, the auto industry is a major employer, supporting jobs not only in auto manufacturing, but also through an extensive network of parts, components and material suppliers, and a vast retail and maintenance network of dealers and aftermarket products and services.



AMERICAN JOBS

Every direct job in vehicle manufacturing supports another 9 American jobs.

NEARLY ONE IN 20 JOBS ACROSS THE COUNTRY IS SUPPORTED BY THE AUTO INDUSTRY.

The 10.1 million jobs (direct, indirect, and induced) supported by the automotive ecosystem represent 4.9 percent of total U.S. employment and more than \$732 billion in payroll compensation annually.

BY THE NUMBERS

How big is \$732 billion? It's more than the operating budgets of California, Texas, Pennsylvania and Illinois – combined.

In 25 states, more than 100,000 jobs are supported by the auto industry.

TOP 10 STATES

AUTO INDUSTRY EMPLOYMENT

| | | |
|----|--------------|---------|
| 1 | California | 841,986 |
| 2 | Texas | 726,196 |
| 3 | Florida | 513,287 |
| 4 | Michigan | 409,220 |
| 5 | Ohio | 309,910 |
| 6 | Illinois | 279,745 |
| 7 | Georgia | 260,883 |
| 8 | New York | 247,559 |
| 9 | Pennsylvania | 238,315 |
| 10 | Tennessee | 225,289 |

See appendix B for more state level data on industry employment



Auto manufacturing supports more than 2.4 million total jobs. Fourteen states have more than 10,000 jobs supported by auto manufacturing.

TOP 10 STATES

AUTO MANUFACTURING EMPLOYMENT

| | | |
|----|----------------|---------|
| 1 | Michigan | 206,178 |
| 2 | California | 121,981 |
| 3 | Ohio | 73,356 |
| 4 | Indiana | 72,559 |
| 5 | Tennessee | 72,140 |
| 6 | Kentucky | 70,934 |
| 7 | Texas | 66,560 |
| 8 | Alabama | 55,884 |
| 9 | Illinois | 51,877 |
| 10 | South Carolina | 40,080 |

See appendix C for more state level data on automotive manufacturing employment

Source: Center for Automotive Research, "Economic Contribution of the U.S. Automotive Industry," July 2024

Outsized Contribution to FEDERAL, STATE AND LOCAL TAX RECEIPTS

Auto industry activity – from parts suppliers, to worker paychecks, to vehicle sales, to income for small businesses – is a major driver of government tax receipts/revenue.

More than \$340 billion in federal, state, and local revenue is generated annually by the manufacture, sale and maintenance of autos.

In 2022, the auto industry generated at least \$181 billion in federal tax revenue.

In 2022, the auto industry generated nearly \$90 billion in state government revenue – 6 percent of all state tax revenue collected. In 22 states, more than 5 percent of state tax revenue is generated from auto industry activity.

State governments also receive revenue from taxes on the sale of vehicles. States took in almost \$36 billion in taxes on the sale of new vehicles in 2023 – and more than \$20 billion on the sale of used vehicles.

See appendix D for detailed information on taxes by states

Source: Center for Automotive Research, "Economic Contribution of the U.S. Automotive Industry," July 2024;

New and used vehicle sales tax revenue derived from NADA Data; vehicle license, taxes and fees from U.S. Census, "2023 State Government Tax Dataset."

BY THE NUMBERS

How much is \$90 billion? More than enough to fund the entire budget of the state of Michigan.



\$92 B

More than \$92 billion was paid to state governments in the form of motor vehicle license, fuels taxes and fees.

CONSUMER CHOICE IS ALIVE AND WELL

**New vehicle sales of internal combustion engines remain popular;
Electrification increasing across all segments; EV availability growing**

15.2 MILLION Vehicles Sold in 2023

Consumers have a lot of choices when purchasing a new vehicle, from body style, size, and color to conventional gasoline and diesel vehicles, hybrids, battery electric, and fuel cell options. Automobile manufacturers continue to give consumers options to fit a wide variety of needs and demand for new vehicles remains strong – nearly 15.2 million new vehicles were sold in 2023.

For more than a decade, the demand for light trucks – including utility vehicles and vans – has grown while demand for cars has shrunk in the United States. In 2013, the segments had roughly equal sales. By 2023, more than 80 percent of vehicles sold in the U.S. were light trucks.

Utility vehicles, including SUVs and Crossovers, accounted for more than half of all vehicle sales, far outweighing the next closest segments of cars and pickups, both at roughly 1/5 of the U.S. market in 2023.

Light trucks had at least a 70 percent market share in all 50 states and the District of Columbia.

State with the highest rate of:

UTILITY VEHICLES



VANS



PICKUP TRUCKS

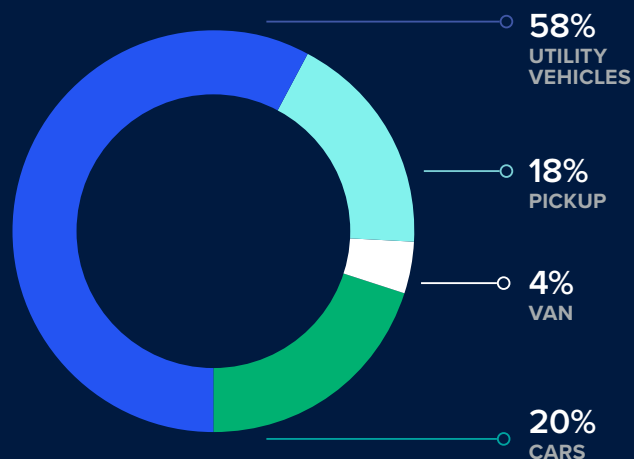


CARS



80%

**OF VEHICLES SOLD
IN THE U.S. IN 2023
WERE LIGHT TRUCKS.**



CONSUMERS HAVE CHOICES

when it comes to various propulsion systems

Since 2016, conventional internal combustion engine (ICE) vehicle market share has steadily declined among new vehicle purchases.

In 2016, conventional, non-hybrid, ICE vehicles comprised more than 97 percent of all vehicle sales. Through 2023, that share dropped to 80 percent for an overall decline of 16.8 percentage points (pp). However, 93 percent of vehicles sold in 2023 were still equipped with ICE engines. Hybrids, BEVs, and PHEVs have all garnered increased consumer interest over the past eight years. Hybrid market share increased by 8.1 pp followed by BEVs (+7.2 pp) and PHEVs (+1.5 pp).

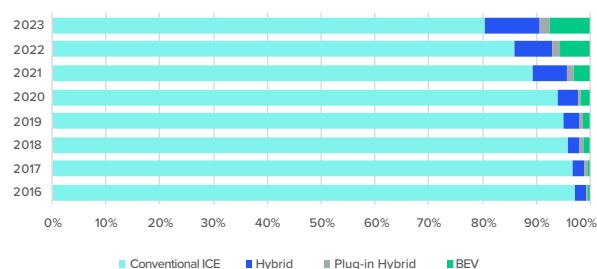


114 EV MODELS

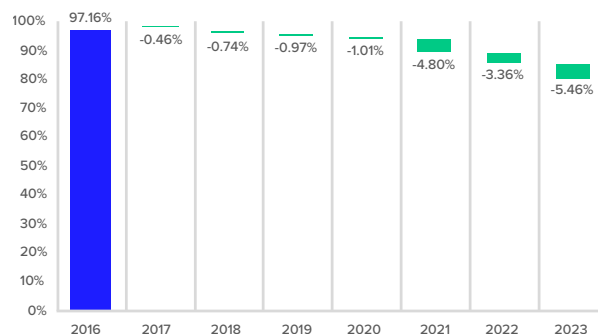
114 models of EVs (including battery electric, plug-in hybrid, and fuel cell vehicles) were available to consumers in 2023 – in all body styles: sedans, utility vehicles, pickups, and vans.

See more about alternative fuel vehicles on page 22.

U.S. LIGHT VEHICLE SALES BY POWERTRAIN 2016 - 2023



INTERNAL COMBUSTION ENGINE (ICE) VEHICLE MARKET SHARE CHANGE, YEAR-OVER-YEAR 2016 - 2023



See appendix E for a breakdown of sales by state.

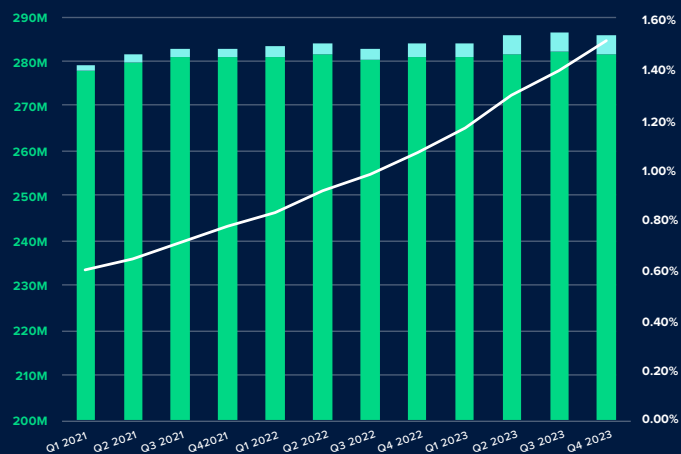
For the most up to date information on the electric vehicle market, visit

[Get Connected](#)

What's on U.S roads today?

While more than 98 percent of light-duty vehicles on U.S. roads are ICE vehicles, as sales of EVs increase, so does the total number of EVs in operation. As of the end of 2023, there were more than 4.3 million EVs in operation in the United States (1.5 percent of all light vehicles in operation, or VIO). The growing interest in EVs and number of EVs on the road require a rapid expansion of electric charging infrastructure – See more at page 28.

Registered Light Duty Vehicles in Operation



ELECTRIC VEHICLE SUPPLY CHAINS

The U.S. auto industry's leadership in global markets is increasingly dependent on its ability to transition to electric vehicles (EVs) and secure the supply chain for key components.

As global demand for EVs rises and regulations tighten, nations like China, which began investing in electrification 15 years ago, dominate crucial areas of the EV supply chain, such as the mining and processing of critical minerals like lithium and cobalt. The U.S. is currently far behind, and its reliance on foreign sources, particularly China, exposes it to geopolitical risks and market vulnerabilities. However, by localizing and diversifying the EV supply chain (including working with allies and partners), the U.S. can regain competitiveness, stimulate economic growth, and enhance energy security.

EV Battery Components Heavily Dependent On Foreign Sources

“China is a battery supply chain behemoth. Composing 85 percent of global lithium-ion battery cell production, 80 percent of cathode production, and 65 percent of lithium refining in 2024, China’s dominance is pervasive across the breadth of the value chain.”

– Benchmark Minerals



Building an EV Battery Cell

EV batteries consist of four main components: the cathode, anode, electrolyte, and separator. The cathode and anode, which are critical for battery performance, rely on key minerals. Currently, the U.S. has limited capacity to produce these materials domestically, with nearly all global production dominated by China. For example, 99 percent of cathode and 93 percent of anode production involve Chinese companies. While there are plans to expand U.S. production, these efforts are unlikely to dramatically reduce dependency on foreign sources in the near term.

U.S. Cathode and Anode Active Material Plants Outlook

There are 4 operating cathode active material (CAM) plants in the U.S., but they represent less than one-tenth of one percent of all CAM production. There are an additional nine “highly probable” CAM plants expected to come online before 2030, but the U.S. share of global capacity is expected to remain below 5 percent.

There are 7 operating anode active material (AAM) plants in the U.S., but they represent only 2-tenths of one percent of all AAM production globally. There are an additional 28 “highly probably” AAM plants expected to come online before 2030, but the U.S. share is expected to only grow to 8.5 percent of global capacity.

Investments in the Supply Chain



Automakers and battery manufacturers have invested heavily in EVs, with much of their \$125 billion commitment focused downstream – finished vehicles and battery cell production. Over 900 GWhs of battery cell production are expected to be added in the U.S. by 2030 (more than an 800 percent increase over current capacity).

See Production below for more information on new battery plants

Minerals, Materials, And Components

More than 150 projects have been announced amounting to nearly \$34.7 billion creating nearly 19,000 jobs.

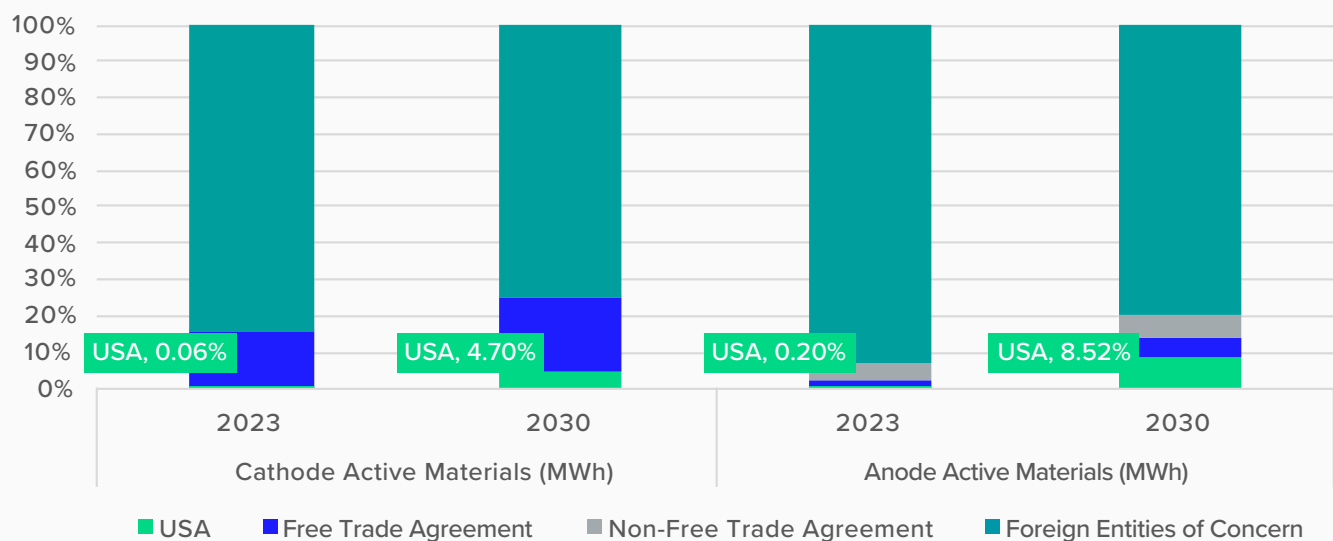
[Energy.gov](https://www.energy.gov)

Four U.S. Graphite Mines in the Works

“At present, the U.S. produces no natural graphite but has four mines in various stages of development, according to Benchmark’s Natural Graphite Forecast. The four assets are operated by Redbird Bluebird, Westwater Resources, Graphite One Resources, and South Star Battery Metals.”

– Benchmark Minerals

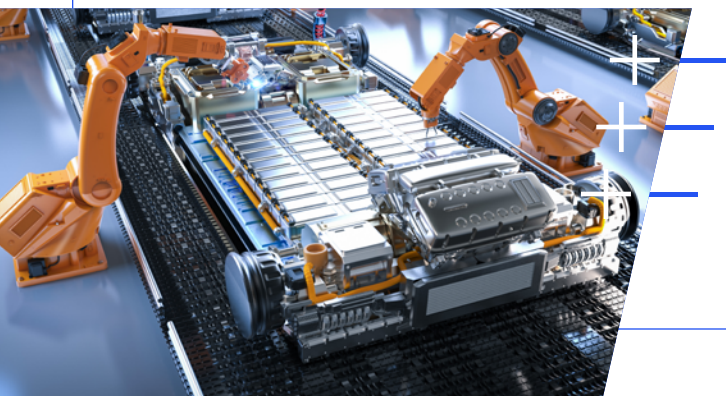
Global Battery Component Supply by Source



Economic Growth

Despite this challenge, there are significant economic opportunities in growing the U.S. EV industry.

The sector has already attracted over \$124 billion in investments between 2019 and September 2024, creating 113,000 jobs across the country, primarily in the South and Midwest. Automakers and battery manufacturers are investing heavily in building domestic battery production facilities and EV assembly plants. By expanding these efforts, the U.S. can bolster its industrial base, create new jobs, and strengthen its economic future.



Automakers and battery partners have outlaid more than \$124 billion for 80 projects and creating 113,000 jobs across 18 states:

BATTERY PRODUCTION

\$90B

More than \$90 billion has been outlaid for EV Battery Production facilities in the U.S.

ESTIMATED IMPACT:

65,000 jobs

EV ASSEMBLY

\$33B

An additional \$33 billion has been committed to EV assembly projects.

ESTIMATED IMPACT:

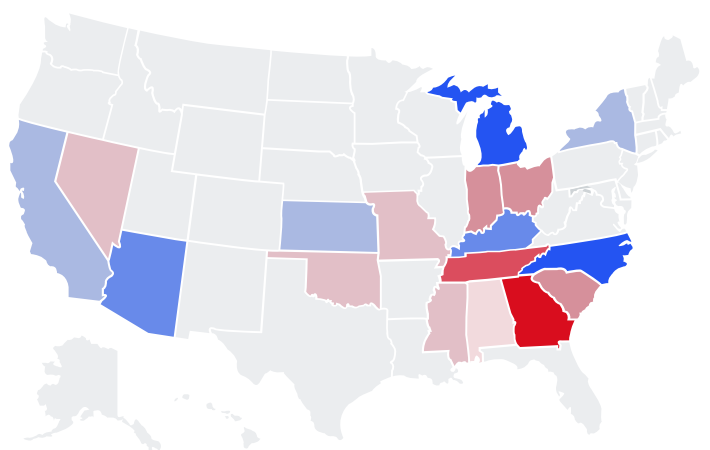
48,000 jobs

Where are the Investments?

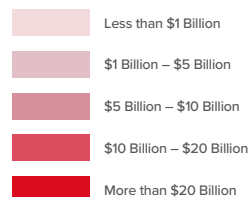
- \$68.3 billion in the South
- \$42.1 billion in the Midwest
- \$13.3 billion in the West
- \$0.3 billion in the Northeast

Stay up to date with the latest investments with the EV Investment Dashboard.

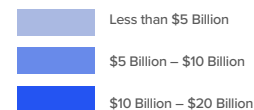
[View Dashboard](#)



Red States (Governor)



Blue States (Governor)



Global Competitiveness

The global EV market is highly competitive, with China and Europe making significant investments in EV production and exports.

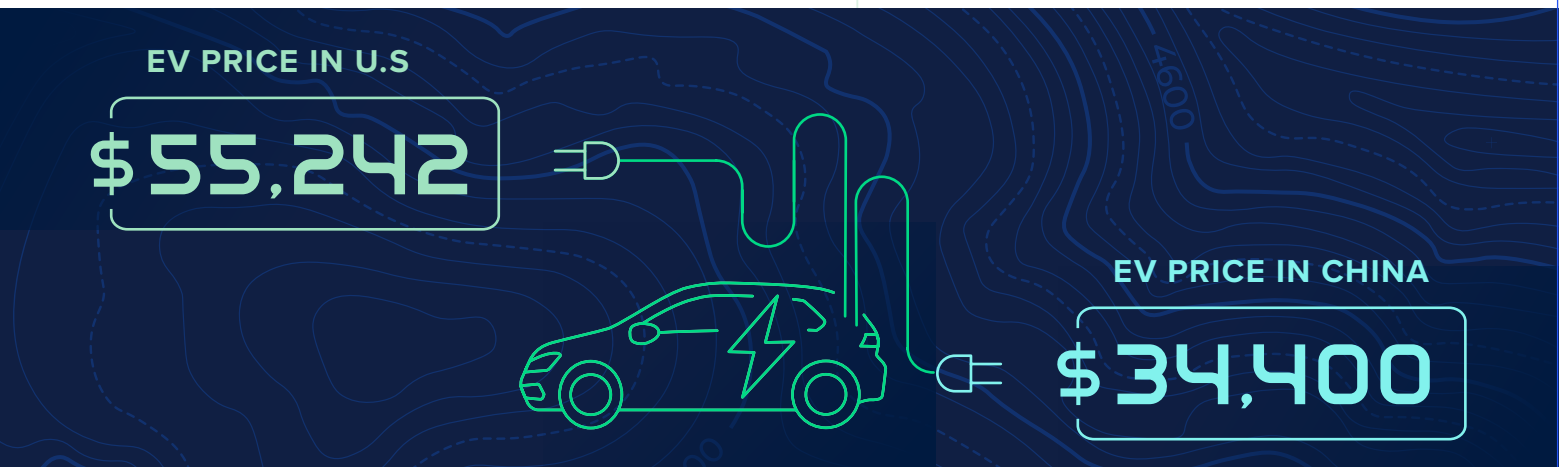
China, in particular, has leveraged its cost advantages—government subsidies, cheap labor, and integrated supply chains—to dominate the market, both domestically and in exports to Europe, as well as other markets. Chinese EVs are considerably cheaper than U.S. models, largely due to lower battery prices. To compete effectively, the U.S. must focus on reducing the cost of EV production, particularly through the localization and vertical integration of its supply chain.

The cost advantage provided by China's early entry into the EV space cannot be overstated: "EVs sell in China for the equivalent of \$34,400, considerably lower than the \$55,242 average selling price in the US."

World Economic Forum

While Chinese EV exports to the U.S. are minimal, Chinese EV exports to Europe have soared in recent years. More than 438,000 EVs were imported from China into the EU in 2023. And China's market share in EU battery-electric sales has climbed from around 3 percent to over 20 percent in the past three years.

ACEA



Energy Independence

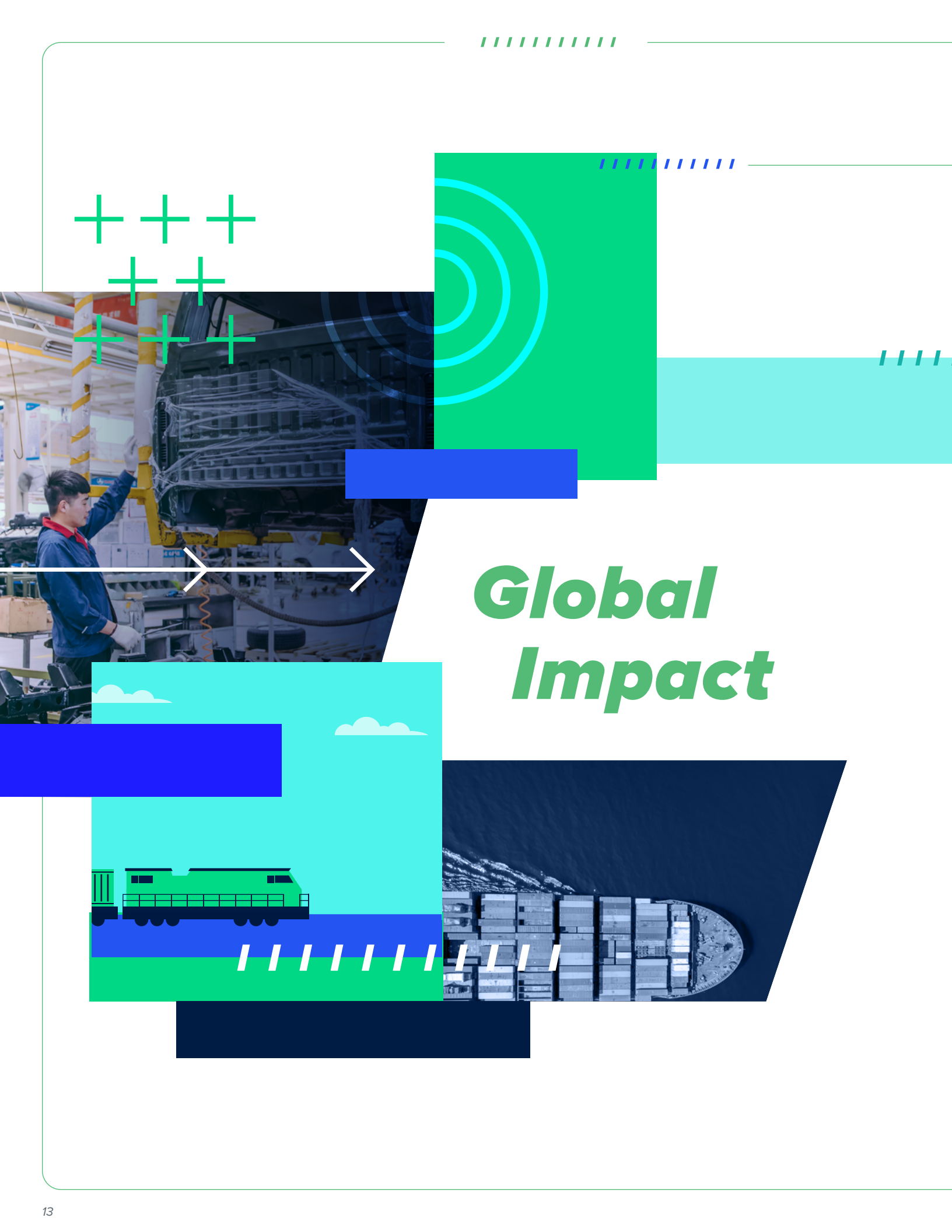
Beyond economic competitiveness, localizing and diversifying the EV supply chain aligns with the broader goal of the U.S. affirming its energy independence. As transportation accounts for 30 percent of U.S. energy use and 70 percent of petroleum consumption, shifting to expanded electrified vehicles can reduce reliance on foreign oil.

U.S. Department of Energy

Electric vehicles powered by diverse, domestically produced energy sources, such as renewable energy, offer a path toward a more secure and sustainable energy future.

For a more in depth look at EV supply chains, check out **Get Connected: Electric Vehicle Quarterly Report for 2024 Q2**

Get Connected



***Global
Impact***

WORLDWIDE INDUSTRY LEADERSHIP

A healthy and competitive auto industry is vital to U.S. economic and national security, serving as a cornerstone of innovation, manufacturing, and employment.

Beyond the economics discussed earlier, and the need to enhance EV competitiveness – the auto industry is tightly interwoven with national security. Domestic production capabilities ensure the U.S. can meet critical defense and infrastructure needs, reducing reliance on foreign manufacturing that could be disrupted in times of geopolitical tension. As vehicles evolve, their strategic importance grows, making the ability to lead in advanced automotive technologies essential to maintaining technological sovereignty and resilience against emerging threats.

Automation and Artificial Intelligence in the Auto Industry

As the global race to develop AV technology intensifies, leadership in this field ensures the U.S. remains at the forefront of technological advancement and job creation. AVs promise to revolutionize industries such as logistics, ride-sharing, and public transportation, improving efficiency and reducing operational costs across the economy. From a security perspective, domestically developed and manufactured AV systems mitigate the risks of relying on foreign technologies, which could pose vulnerabilities through supply chain interruptions or embedded cybersecurity threats. Advancements in AV technology have potential defense applications, such as autonomous military transport and reconnaissance, underscoring its strategic importance.

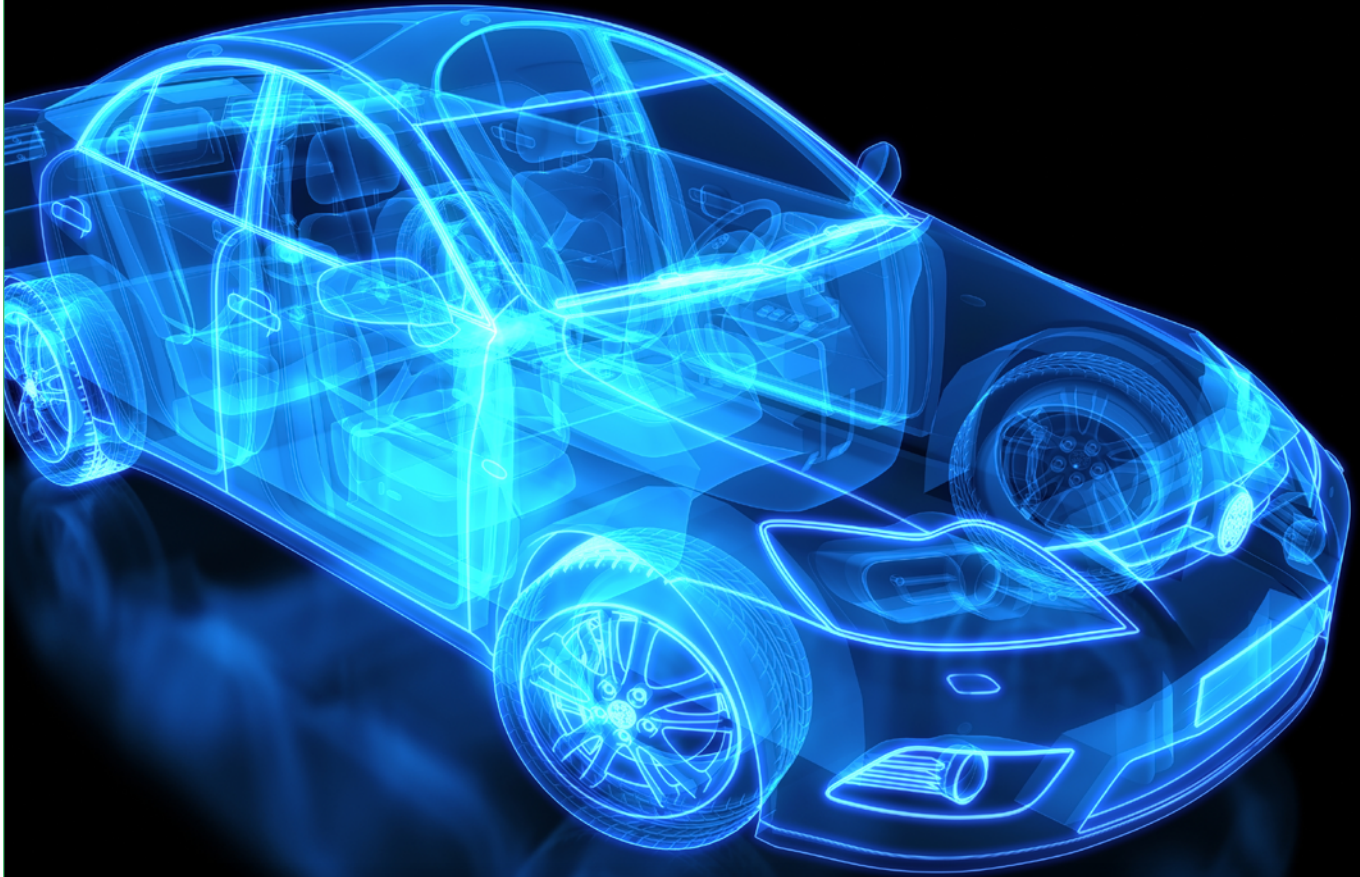
Artificial intelligence (AI) powered systems in factories ensure efficiency and flexibility in adapting to demand shifts or supply chain disruptions, minimizing vulnerabilities. From a national security perspective, maintaining leadership in AI-driven automotive technologies prevents dependency on foreign innovations and mitigates cybersecurity risks. Integrating AI in vehicles, such as driver assistance systems and autonomous driving capabilities, positions the U.S. as a global leader in automotive safety and innovation, strengthening its industrial and technological leadership.



"The United States is the global leader in developing AI, but it faces fierce and increasing competition from China. Focusing on stymying China's growth will not impede China's progress in the long run. Instead, the United States should be focusing on maintaining, if not expanding, its lead."

ARTIFICIAL INTELLIGENCE:

Fueling Next-Generation Vehicle Technologies



DESIGN ENGINEERING

AI can be used to accelerate and optimize the vehicle design process, reducing the amount of time it takes to finalize and validate a new design.



NAVIGATION

AI helps drivers find the optimal route to a destination and more safely and efficiently navigate complex traffic situations.



SUPPLY CHAIN MANAGEMENT

AI can help companies better manage inventory and forecast demand.



ELECTRIC VEHICLES

AI can help interpret capacity utilization and charging times data to direct drivers to the nearest available charging station.



AUTOMATED VEHICLES

Automated vehicles rely on sophisticated machine learning algorithms that draw meaningful conclusions from sensor data.



MANUFACTURING

AI can help detect potential anomalies, conduct root cause analysis, and support production scheduling



SMART VOICE ASSISTANTS

In-cabin voice assistants powered by AI can help facilitate drivers keeping their eyes on the road.



CRASH AVOIDANCE FEATURES

Next-generation Advanced Driver Assist Systems (ADAS) are increasingly integrating AI to help avoid crashes.



PERSONALIZATION OF SERVICES

With AI, the vehicle can learn to adjust music, lighting, and other conditions to meet the unique needs of drivers and passengers.



PREDICTIVE MAINTENANCE

AI helps monitor vehicle systems and alert drivers to correct potential problems before they occur.



OCCUPANT SAFETY FEATURES

In-vehicle features that help detect unattended children or help ensure that drivers remain engaged in the driving task may rely on AI.

CONNECTIVITY AND CYBERSECURITY in a Connected Auto Industry

As vehicles become more connected, integrating advanced communication technologies, the auto industry plays an increasingly critical role in safeguarding national security.

Connected vehicles rely on data exchange between infrastructure, other vehicles, and central systems, enabling innovations like real-time traffic management and predictive maintenance. However, this connectivity also introduces cybersecurity challenges. A competitive domestic industry ensures the

development of robust encryption and security protocols to protect against potential cyberattacks that could disrupt transportation networks or compromise sensitive data. Moreover, U.S. leadership in connected vehicle technologies fosters trust among consumers and allies, bolstering the nation's economic strength while reducing vulnerabilities to external threats.

What are automakers doing to address cybersecurity?

To help deepen our shared knowledge of cybersecurity technologies and best practices, automakers engage with the cybersecurity community, including, government, private-sector firms, standards organizations, academia, research and testing facilities, cyber challenges, and more.

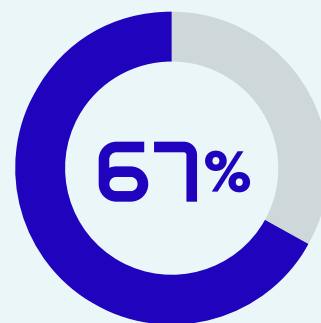
In 2015, automakers worked with government stakeholders to proactively launch the [Automotive Information Sharing and Analysis Center \(Auto-ISAC\)](#). The Auto-ISAC provides a forum to share information, as well as partner with vendors, associations, researchers, government and academia to build relationships beyond the membership. This broad reach and stakeholder community contributed to the development of the industry Best Practices and provides a diverse set of partners to drive continuous improvement across the sector.

[Learn More](#)



Americans agree: a strong American automotive industry is critical to national security.

BY THE NUMBERS



Poll: Two-thirds of Americans believe a strong auto industry in the United States is critical to national security. (67 percent)

Alliance for Automotive Innovation Poll, December 2024

ELEMENTS OF INTELLECTUAL PROPERTY IN A VEHICLE



Utility Patents protect automotive industry R&D investments in safety, automation, connectivity, and electrification technologies.



Trademark Enforcement protects consumers from counterfeit motor vehicle parts.



Trade Secrets protect technical information used in the manufacturing process to produce motor vehicles.



Design Patents protect unique ornamental aesthetics of a vehicle body or part, helping to ensure an automaker's distinctiveness in the market.



Standard Essential Patents enable automotive companies to incorporate standardized technologies (e.g., Wi-Fi, Bluetooth, 5G) into motor vehicles.

Auto manufacturing is the hallmark of **GLOBAL ECONOMIC LEADERSHIP**

Among G20 countries (comprising the major economies of the world), all but two produce automobiles. The G20 represents 85 percent of the world's gross domestic product (GDP), and those countries produce about 86 percent of the world's motor vehicles.

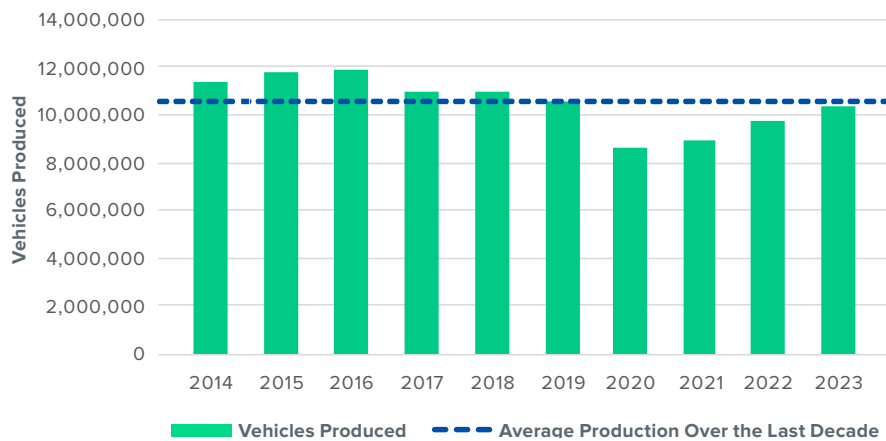
Only two decades ago, the U.S. was the largest producer of vehicles in the world, however, since 2005 the U.S. has lost its top position. The U.S. still accounts for about 12 percent of global vehicle production (down from nearly 19 percent in 2004), however, China (which has seen huge growth in domestic demand for vehicles over the period) now produces nearly 3 times as many vehicles as the U.S.

While the U.S. now ranks 2nd in production, it still produces nearly the same number of vehicles as all of Western Europe combined.

G20 Countries Vehicle Production: 20 Year Comparison

| | 2004 Production | 2023 Production | 2004 % World Total | 2023 % World Total | 20 Year % Change of World Total |
|------------------|--------------------|--------------------|-----------------------|-----------------------|------------------------------------|
| China | 5,234,496 | 30,160,966 | 8.12% | 32.24% | 32.24% |
| USA | 11,989,387 | 10,611,555 | 18.59% | 11.34% | -39% |
| Japan | 10,511,518 | 8,997,440 | 16.30% | 9.62% | -41% |
| India | 1,511,157 | 5,851,507 | 2.34% | 6.26% | 167% |
| South Korea | 3,469,464 | 4,243,597 | 5.38% | 4.54% | -16% |
| Germany | 5,569,954 | 4,109,371 | 8.64% | 4.39% | -49% |
| Mexico | 1,577,159 | 4,002,047 | 2.45% | 4.28% | 75% |
| Brazil | 2,317,227 | 2,324,838 | 3.59% | 2.49% | -31% |
| Canada | 2,711,536 | 1,553,026 | 4.20% | 1.66% | -61% |
| France | 3,665,990 | 1,505,076 | 5.68% | 1.61% | -72% |
| Turkey | 823,408 | 1,468,393 | 1.28% | 1.57% | 23% |
| Indonesia | 408,311 | 1,395,717 | 0.63% | 1.49% | 136% |
| UK | 1,856,539 | 1,025,474 | 2.88% | 1.10% | -62% |
| Italy | 1,142,105 | 880,085 | 1.77% | 0.94% | -47% |
| Russia | 1,386,127 | 729,864 | 2.15% | 0.78% | -64% |
| South Africa | 455,702 | 633,337 | 0.71% | 0.68% | -4% |
| Argentina | 260,402 | 610,725 | 0.40% | 0.65% | 62% |
| Australia | 411,406 | - | 0.64% | - | - |
| Saudi Arabia | - | - | - | - | - |
| G20 Total | 55,301,888 | 80,103,018 | 85.7% | 86% | |
| World Total | 64,496,220 | 93,546,599 | | | |

U.S. Light Vehicle Production: 2014-2023



Covid Recovery

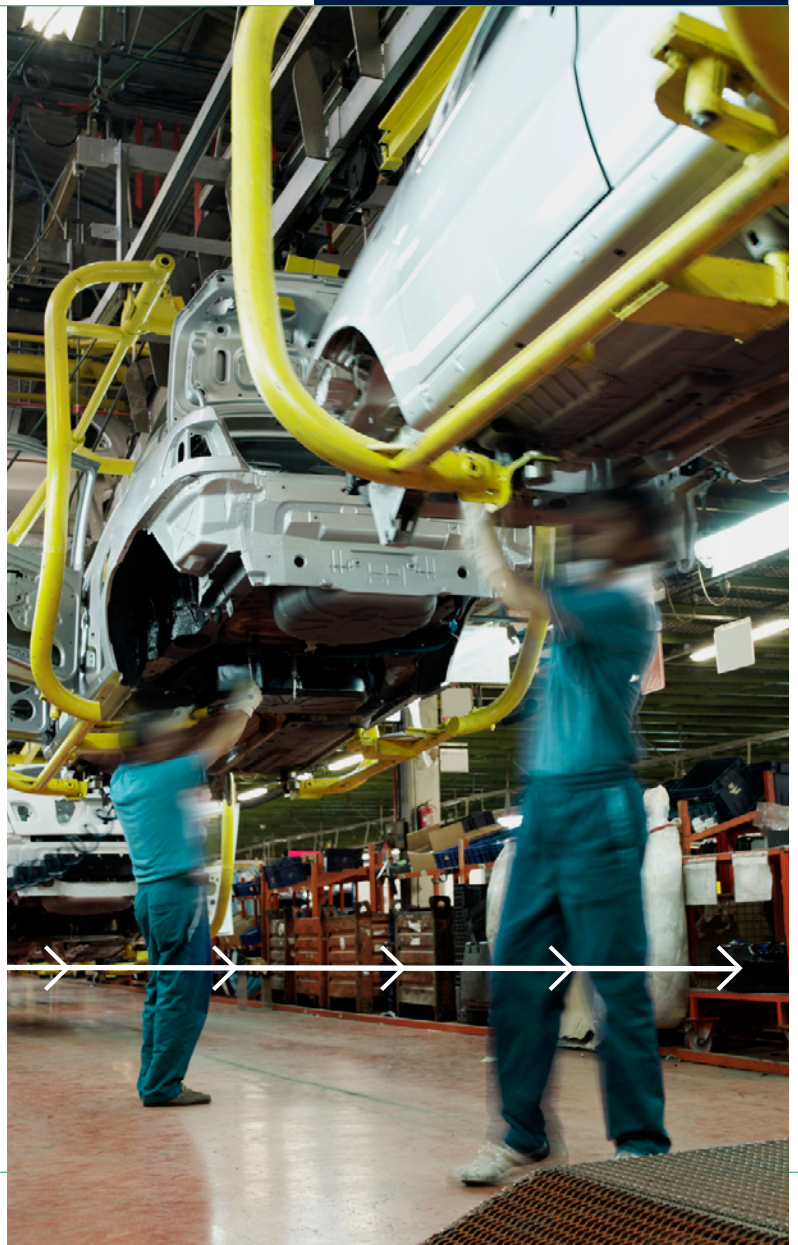
After U.S. light vehicle production decreased by about 2 million vehicles (or nearly 20 percent) due to the pandemic and subsequent supply chain disruptions, 2023 saw production nearly back to pre-pandemic levels –down only about 2 percent from 2019. Overall sales of light-duty vehicles in the U.S. are still down roughly 1.5 million units (2023 vs 2019).

Americans can take great pride in their country's leadership in producing vehicles in the U.S.

Across 15 states, 50 vehicle assembly plants are producing cleaner, safer, and smarter vehicles while providing tens of thousands of direct jobs and boosting local economies.

Nearly 250,000 workers are employed at assembly plants producing more than 10.3 million vehicles across the U.S. – and there's more on the way.

Four additional assembly facilities have been announced – all building new electric vehicles – joining the 25 existing facilities that have been (or will be) retooled for electric production.



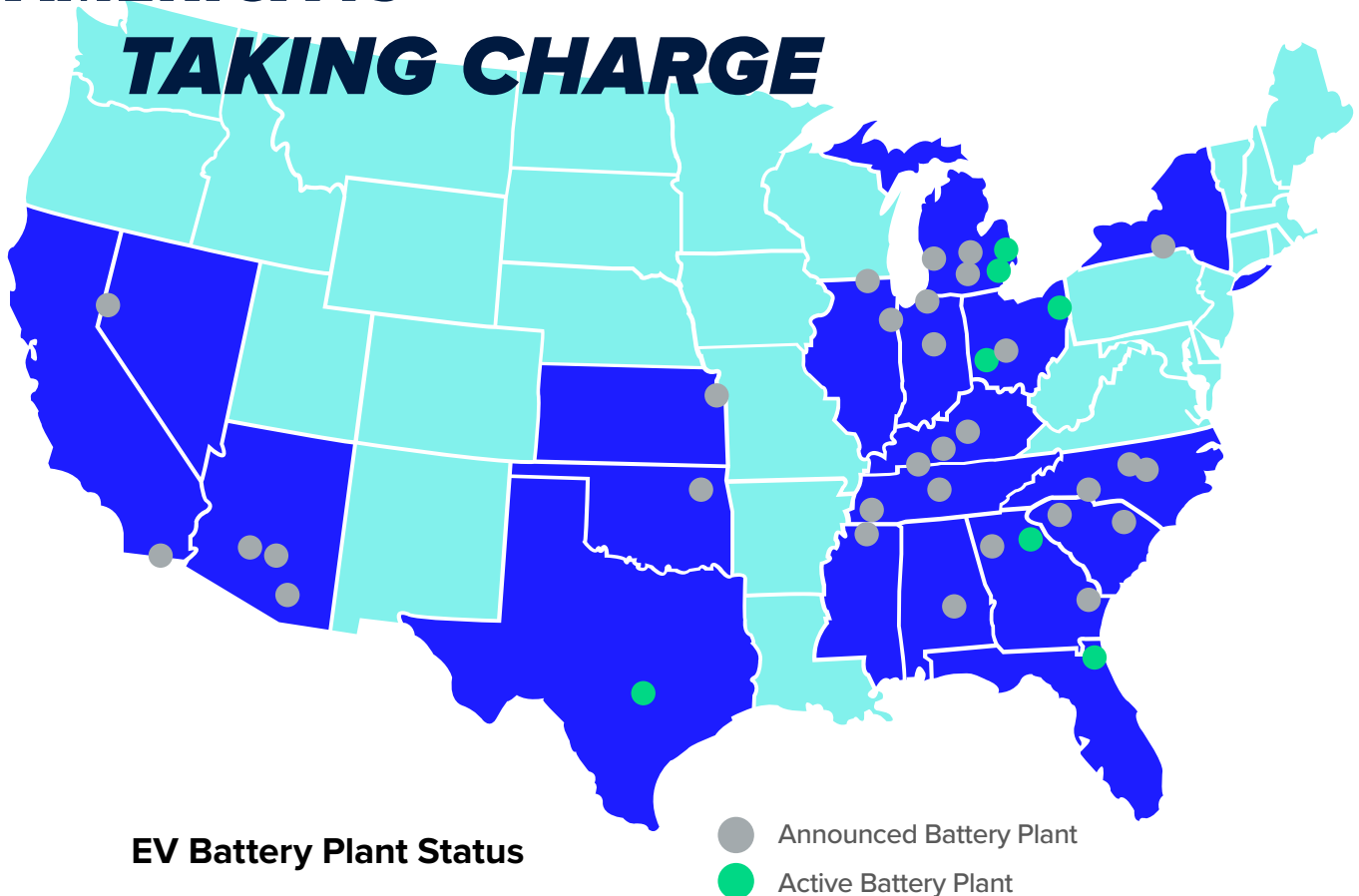
\$90B

More than \$90 billion committed to EV battery production and creating more than 65,000 new jobs (from 2019 -September 2024).

Electric vehicle production is creating a new landscape for battery manufacturing as automakers look to keep their supplies local. At least 33 new battery plants have been announced – nearly five times the existing battery plant footprint that exists today. Together, these new plants will add more than 900 GWh of capacity to the nearly 100 GWh of capacity in the U.S. today.



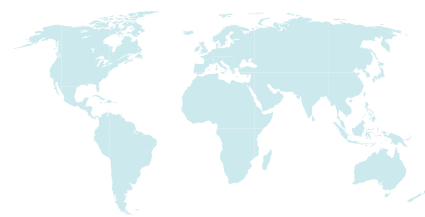
AMERICA IS TAKING CHARGE



EV Battery Plant Status

- Announced Battery Plant
- Active Battery Plant

GROWING AUTO ACTIVITY AT AMERICAN PORTS



Motor Vehicles & Parts Were the second largest U.S. Export in 2023 - More than \$143 billion in goods.

Since 2008, exports of motor vehicles and parts from U.S. ports to destinations around the globe increased 33 percent. Two-thirds of the world imported more from the U.S. than it did 15 years ago – some regions increased by nearly 50 percent or more.

Auto Exports Across the Globe

| REGION | MOTOR VEHICLE & PARTS EXPORTS** | 15-YEAR CHANGE |
|-----------------------|---------------------------------|----------------|
| Africa | \$1.7B | -38% |
| Asia | \$23.0 B | 49% |
| Australia and Oceania | \$3.6 B | 119% |
| Europe | \$19.7B | -2% |
| North America | \$89.9 B | 43% |
| South/Central America | \$5.3B | 16% |
| Grand Total | \$143.2 B | 33% |

Most Active States for Light Vehicle Related Trade 2023 (Exports & Imports)

| STATE | MOTOR VEHICLE & PARTS TRADE** | MOTOR VEHICLES & PARTS AS A % OF TOTAL STATE TRADE |
|---------------------|-------------------------------|--|
| Michigan | \$135.2 B | 58% |
| Texas | \$80.7 B | 10% |
| California | \$52.9 B | 9% |
| Tennessee | \$23.6 B | 16% |
| Alabama | \$22.7 B | 35% |
| Georgia | \$21.1 B | 11% |
| South Carolina | \$21.0 B | 24% |
| Ohio | \$19.0 B | 15% |
| Maryland | \$16.8 B | 26% |
| Indiana | \$15.4 B | 12% |
| Top 10 Total | \$408.4 B | |

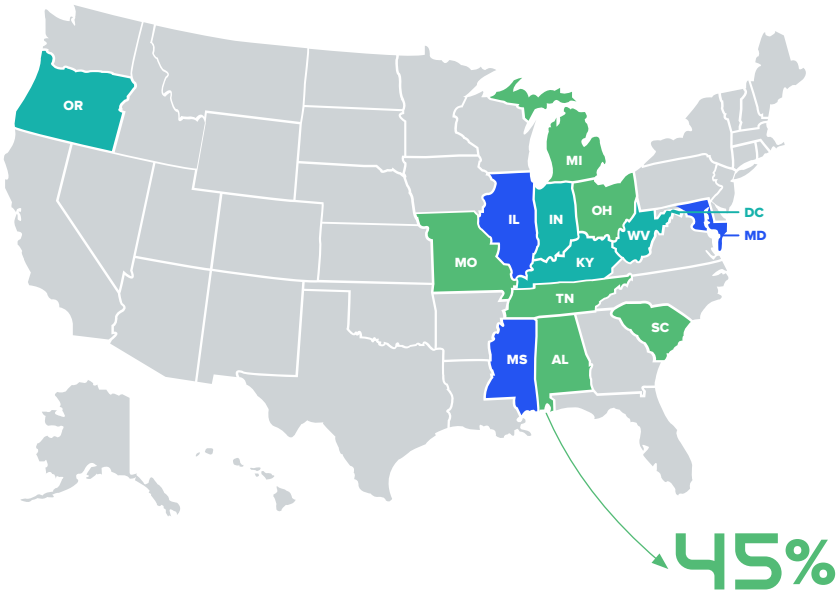
In 2023, U.S. Ports Handled More Than \$557 Billion In Motor Vehicles and Parts Trade.

BY THE NUMBERS

The U.S. shipped nearly \$42 billion more in vehicles and parts in 2023 than it did in 2008.

Of that, three-quarters came from increased exports to our North American partners while 20 percent was from an increase to Asia (\$8.3 billion).

Motor vehicles and parts were one of the top 3 exports in 14 states.



States with the Largest Percentage of Exports from Motor Vehicle & Parts (2023)

| STATE | VALUE OF EXPORTED MOTOR VEHICLES & PARTS | MOTOR VEHICLES & PARTS AS A % OF TOTAL STATE EXPORTS |
|----------------|--|--|
| Alabama | \$12.2 B | 45% |
| Michigan | \$27.6 B | 42% |
| South Carolina | \$11.6 B | 31% |
| Oregon | \$6.2 B | 22% |
| West Virginia | \$1.2 B | 21% |
| Missouri | \$3.8 B | 21% |
| Ohio | \$10.0 B | 18% |
| Indiana | \$8.9 B | 16% |
| Kentucky | \$5.7 B | 14% |
| Tennessee | \$4.8 B | 13% |
| Top 10 Total | \$91.9 B | |

NO. 1 EXPORT IN THESE STATES

| | | |
|----|-----------------|--------------|
| AL | \$12.24 B value | 45% of total |
| MI | \$27.58 B value | 42% of total |
| MO | \$3.76 B value | 21% of total |
| OH | \$9.98 B value | 18% of total |
| SC | \$11.63 B value | 31% of total |
| TN | \$4.78 B value | 13% of total |

NO. 2 EXPORT IN THESE STATES

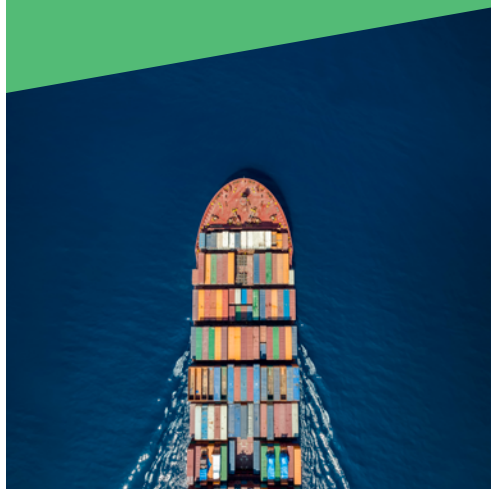
| | | |
|----|----------------|--------------|
| DC | \$217 M value | 12% of total |
| IN | \$8.86 B value | 16% of total |
| KY | \$5.72 B value | 14% of total |
| OR | \$6.17 B value | 22% of total |
| WV | \$6.17 M value | 21% of total |

NO. 3 EXPORT IN THESE STATES

| | | |
|----|----------------|-------------|
| IL | \$5.52 B value | 7% of total |
| MD | \$1.39 B value | 8% of total |
| MS | \$894 M value | 6% of total |

See appendix F for more state trade data.

Far away from traditional auto hubs like Detroit, ports from coast to coast are buzzing with automotive trade activity.



MOST ACTIVE LIGHT VEHICLE-RELATED PORTS

| PORT | 2023 VALUE OF GOODS | % OF PORTS TOTAL |
|------------------|---------------------|------------------|
| Laredo, TX | \$ 59.0 B | 18.4% |
| Detroit, MI | \$ 43.9 B | 25.3% |
| Brunswick, GA | \$ 28.2 B | 87.0% |
| Baltimore, MD | \$ 26.9 B | 33.4% |
| Port Huron, MI | \$ 19.9 B | 15.7% |
| Newark, NJ | \$ 17.3 B | 7.2% |
| Los Angeles, CA | \$ 16.9 B | 5.8% |
| Charleston, SC | \$ 14.8 B | 14.6% |
| Jacksonville, FL | \$ 13.5 B | 47.2% |
| Port Hueneme, CA | \$ 12.6 B | 78.0% |

The Auto Industry Is A Big Customer of Rail Freight

“Each year, freight rail moves nearly 75 percent of the new cars and light trucks purchased in the U.S. In a typical year, railroads carry 1.8 million carloads of motor vehicles and parts. Long before a finished car hits the road, it begins as raw materials — plastic, metals and sheets of glass — which railroads move to manufacturers to be turned into the roughly 30,000 individual parts of a car, from bolts to dashboards. Railroads then move these auto parts to vehicle assembly plants before finally transporting the finished vehicles across North America.” — Association of American Railroads



RESEARCH & DEVELOPMENT HIGHLIGHTS

Staying competitive in a global marketplace requires investing in future innovations.

The new and exciting technology that exists in today's vehicles started as an investment many years before it was ever put into an automobile.

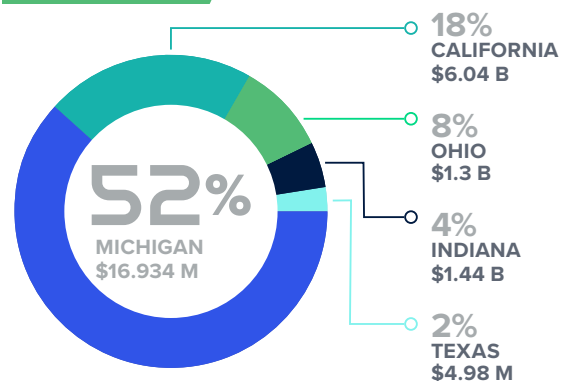
From the earliest planning stages, manufacturers work to bring the most innovative technologies to consumers. The auto industry understands that technology holds the promise to make vehicles cleaner, safer, and smarter, which is why they devote considerable resources to research and development.

More than \$690 billion was spent on research and development activities by businesses in the United States in 2022. More than \$32.8 billion (4.8 percent) was invested by the auto industry – the fourth highest for any manufacturing industry group.

About 93 percent, or nearly \$31 billion of U.S. R&D investment in autos, comes from the industry (including suppliers). For comparison, the aerospace industry spent \$35.4 billion on R&D in 2022 – more than half of which was paid for with federal funds.

Automakers made significant capital investments in 2022, allocating \$2.2 billion to R&D facilities and equipment.

INVESTMENT



MORE THAN HALF OF ALL MOTOR VEHICLE & PARTS R&D OCCURS IN MICHIGAN

SMARTER R&D

13% SPENT ON SOFTWARE

Thirteen percent of motor vehicle R&D spending is spent on software products (\$3.5B, 11%) and artificial intelligence (\$769M, 2%).

CLEAN VEHICLE R&D

\$128M COMMITTED

E2 estimates an additional \$128 million committed to clean vehicle R&D in the past two years, with more than 1,200 jobs associated with those announcements.

1 IN 10 JOBS

More than one in 10 auto jobs are R&D focused. 12 percent of all motor vehicles & parts employment is in the research and development space.

DID YOU KNOW?

4 percent (or about 4,000) of all patents in the U.S. in 2022 were granted to the auto industry? The auto industry consistently receives about 3 – 5 percent of all patents annually and ranks in the top ten in patent awards among manufacturing industries.

Source: National Science Foundation, Business Enterprise Research and Development (BERD) Survey2021

**Cleaner.
Safer.
Smarter.**



AN ELECTRIFIED FUTURE



The future is electric. However, slowing sales growth signals potential challenges ahead, including affordability concerns, charging infrastructure gaps, and shifting consumer preferences. Looking forward, the success of EVs will hinge on automakers' ability to balance innovation with price competitiveness, alongside policy support and infrastructure expansion to drive widespread adoption.

Automakers are committed. And they're showing their commitment to electrification through massive investments in production capacity, battery technology, and new EV models.

On a global scale, automakers are planning to spend an estimated \$1.2 trillion through 2030 to develop and build new battery-powered vehicles. From new assembly plants and battery factories to retooling and upgrading existing facilities, the automotive industry is investing in vehicle electrification.

Stay up to date with the latest investments with the EV Investment Dashboard.

[View Dashboard](#)

The EV Market

MIDYEAR - 2024 UPDATE

Almost 14 million new electric cars were registered globally in 2023, accounting for around 18 percent of all vehicles sold, an increase from 14 percent in 2022 and only 2 percent in 2018. Nearly 95 percent of all global EV sales were in China (60 percent), Europe (25 percent) and the United States (10 percent).

In the U.S., more than 730,000 EVs were sold in the first half of 2024, 9.7 percent of all light vehicle sales and an increased market share of nearly one percentage point over the first half of 2023.

Automakers are committed to providing consumers choices, which is why manufacturers continue to introduce new models to satisfy a variety of consumer needs. Utility vehicle (UV) offerings in the EV segment continue to grow and now dominate the market once entirely occupied by sedans. While electric pickup trucks are a relatively new entry to the market, there are 5 models available now, with more expected soon.

Stay up to date with the latest EV trends with the Quarterly Get Connected Report.

[Get Connected](#)

CHOICE MATTERS

Automakers Continue to Produce New Offerings and There Were 117 Vehicle Models Sold in Q2 2024

68 Battery Electric Vehicles

- 20 Cars
- 38 Utility Vehicles
- 5 Pickups
- 5 Vans

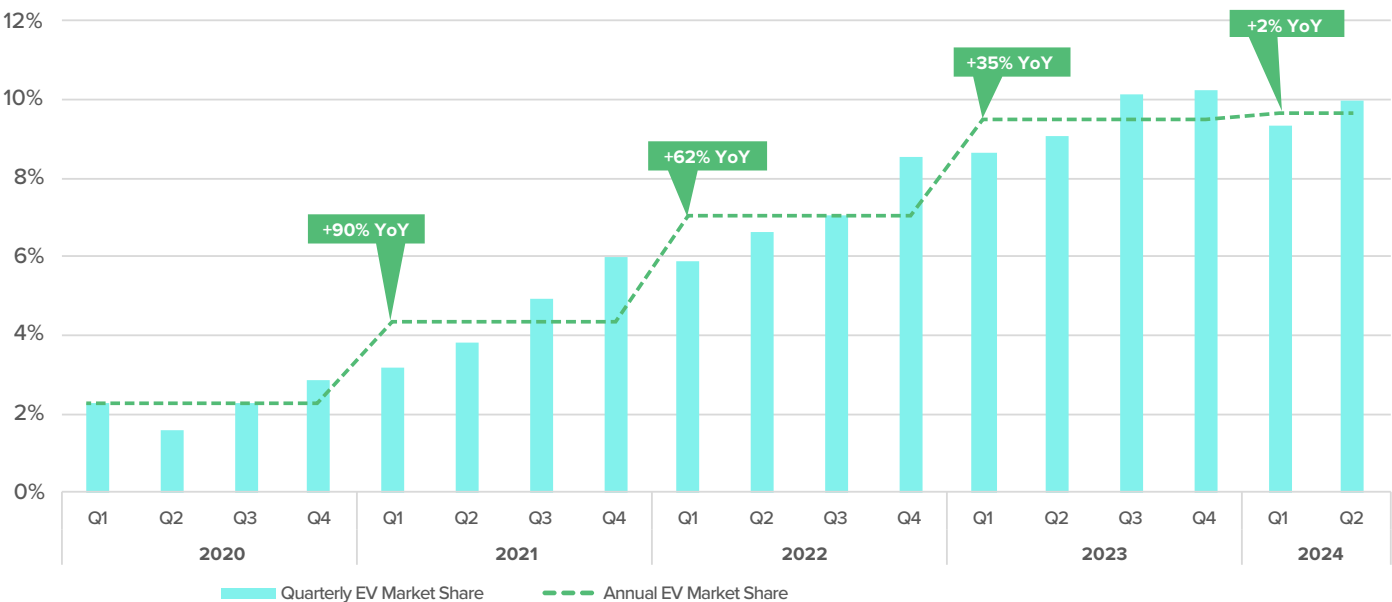
47 Plug-in Hybrid Vehicles

- 17 Cars
- 29 Utility Vehicles
- 1 Van

2 Fuel Cell Electric Vehicles

- 1 Car
- 1 Utility Vehicle

EV Market Share, Quarterly 2020 – 2024 (H1)



Bringing Down the Price on EVs

The auto industry has made significant progress bringing down battery costs and fuel cell costs, however, more work needs to be done to reach cost parity between EVs and ICE vehicles.

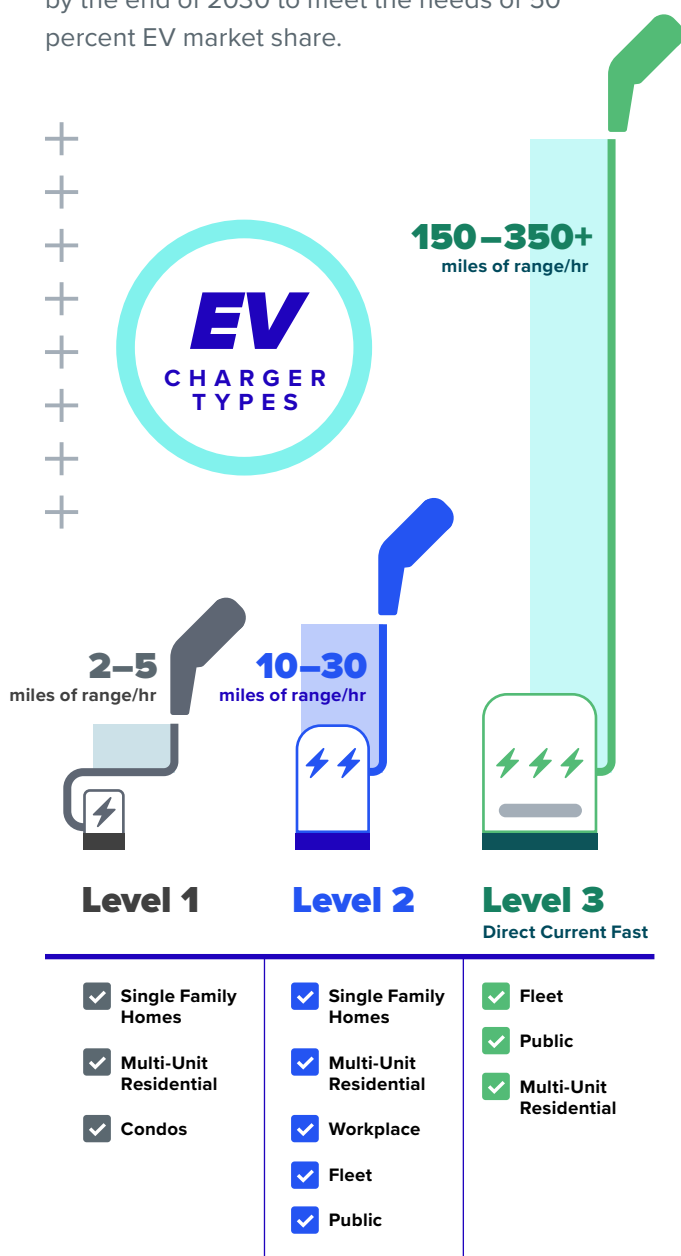
While increased competition has played a part in lowering prices, so too have higher inventory levels and increased incentives in response to slower growth in EV sales.



According to Cox Automotive, EV transaction prices were 21.1 percent higher than the overall average light-duty vehicle transaction price in January 2024 and 15.9 percent higher in June 2024.

Growing Need for Public Charging

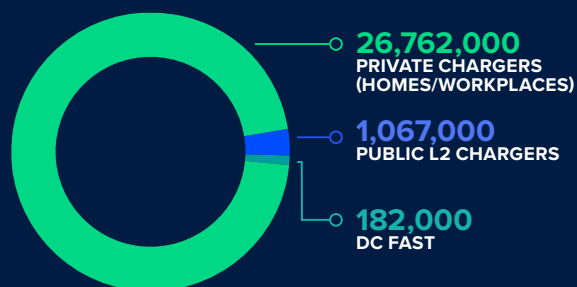
For the electric vehicle transition to succeed, drivers need access to convenient, accessible, affordable and reliable charging wherever they live or work. Publicly available charging infrastructure not only eases “range anxiety” but substantially increases consumer awareness of the technology. While home charging will remain critically important – with an estimated need for 26.7 million private home and workplace chargers – more than 1.2 million additional public chargers are needed by the end of 2030 to meet the needs of 50 percent EV market share.



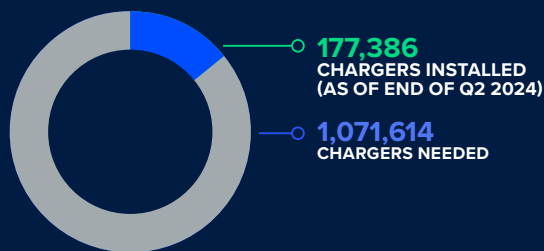
ASSESSMENT OF EV CHARGING PORTS

An assessment by the U.S. National Renewable Energy Laboratory (NREL) released in June 2023 estimated that a network of 28 million charging ports would be necessary to support 50 percent EV sales by 2030 (and 33 million EVs on the road). NREL estimates that 96 percent of those charging ports would be privately accessible L1 and L2 chargers located at single-family homes, multifamily properties, and workplaces. The remaining 4 percent (1,249,000 ports) would be split between public L2 and high-speed DC Fast charging ports, with L2 making up 85 percent of those public chargers.

Private, L2, and DC Fast Chargers Needed for 50% EV Sales by 2030 / 33 Million Evs



1,249,000 Public Chargers Needed to Support 50% EV sales by 2030 / 33 Million EVs



The bipartisan Infrastructure Investment and Jobs Act (IIJA) that was signed November 2021 includes \$5 billion in funding for states to establish a nationwide EV charging network (NEVI) along highway corridors and \$2.5 billion in competitive grants to deploy publicly available EV charging and other alternative fuel stations through 2026. NEVI provides funding to states to strategically deploy charging infrastructure and to establish an interconnected network of publicly available charging

How Available is National Electric Vehicle Infrastructure (NEVI) Funding?

THROUGH Q2 OF 2024

8 STATES

Eight states have Installed Charging Ports.

FAST CHARGING

64 Fast Charging Ports Installed at 15 Locations

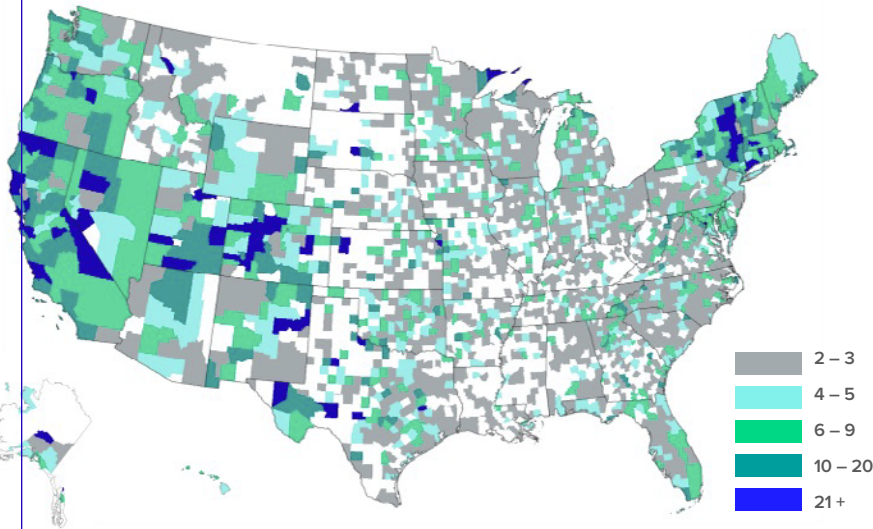
NEVI FUNDED CHARGING PORTS (Q2 2024)

| | |
|--------------|----|
| Hawaii | 4 |
| Maine | 8 |
| New York | 12 |
| Ohio | 12 |
| Pennsylvania | 8 |
| Rhode Island | 8 |
| Utah | 8 |
| Vermont | 4 |

EV Charging Ports Per 10,000 Vehicles in Operation, by County

There are 3,145 counties and independent districts in the United States with more than 287 million light-duty vehicles – 5.1 million of which are electric.

The current map of publicly available charging shows an urgent need to focus on charging infrastructure.



Source: Figures compiled by Alliance for Automotive Innovation with vehicle in operation data provided by S&P Global Mobility through June 30, 2024, Housing and Urban Development, Office of Policy Development and Research Crosswalk data, and U.S. Department of Energy, Alternative Fuels Data Center charging station data.

BY THE NUMBERS

Publicly Available Charging Ports

| | | | |
|--------------------|---|---|---|
| Level 2 | + | + | + |
| 133,939 EVSE Ports | + | + | |
| DC Fast | + | + | + |
| 43,391 EVSE Ports | + | + | + |

50 percent (1574 counties) had five or fewer publicly available charging ports installed as of June 2024;

29 percent (906 counties) had zero public ports;

Nearly half the country (48 percent of counties) lacked access to a public DC Fast charger;

More than one-quarter of all DC Fast charging ports are located in California.

Where are the EVs?



BY THE NUMBERS

30 percent of all EVs are located in just 10 counties – 8 of which are in California.

Only 5 counties have an E-VIO greater than 10 percent.

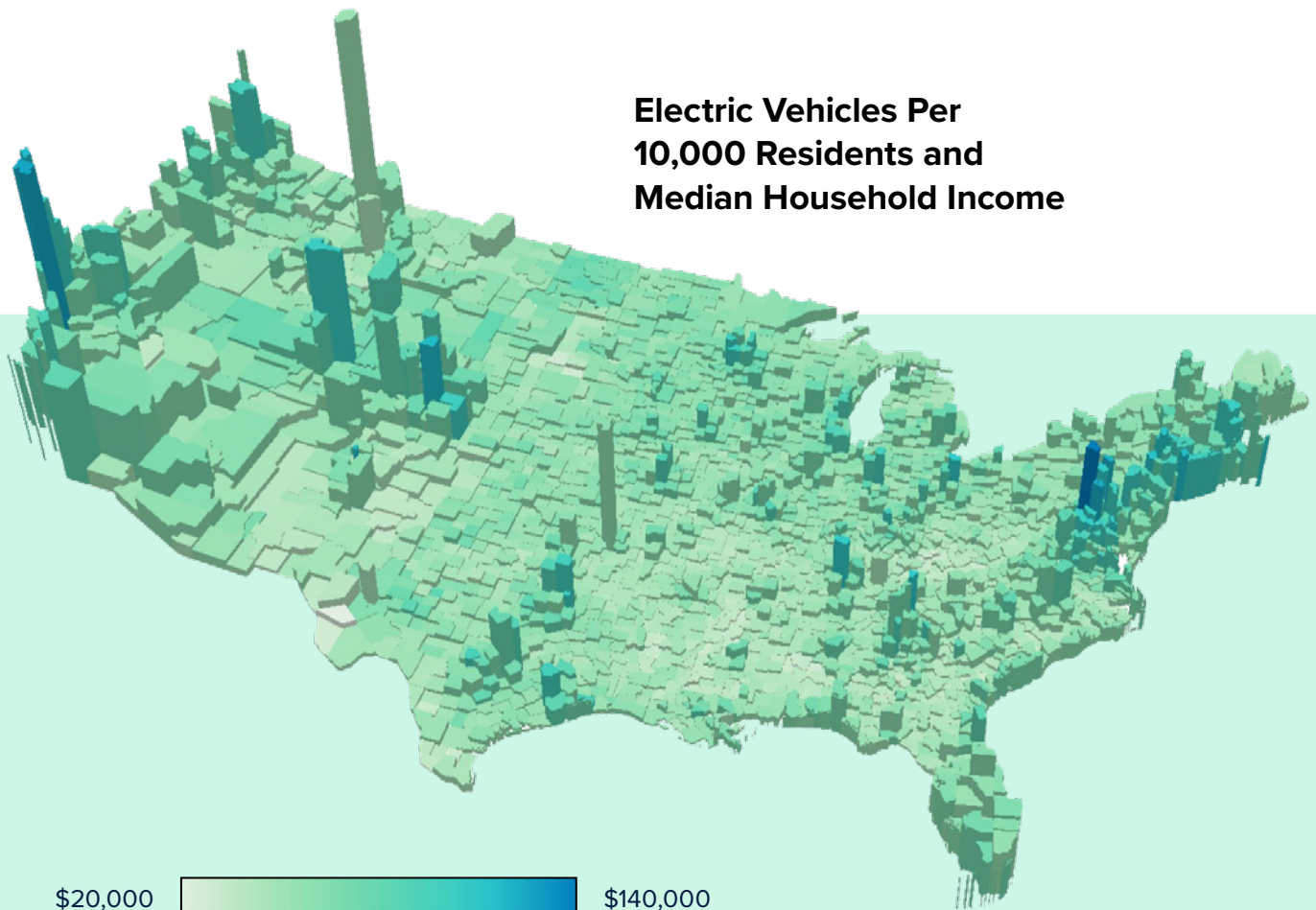
17 percent of counties have 10 or fewer EVs.

Half of all EVs are located in just 1 percent of counties (32).

EVs represent less than 1 percent of registered vehicles in 87 percent of counties.

Source: Figures compiled by Alliance for Automotive Innovation with vehicle in operation data provided by S&P Global Mobility through June 30, 2024

Electric Vehicles Per 10,000 Residents and Median Household Income



Height = EVs Per10K Residents | Color = Household Median Income

U.S. Fleet Continues to Make Fuel Efficiency Gains

EPA Praises Innovation and Fuel Economy Improvement from Auto Manufacturers for 2022 Model Year:

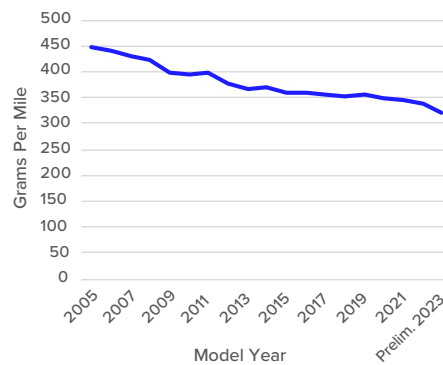
“The automobile industry continues to innovate, improve, and meet the GHG standards.”

“New vehicle CO₂ emissions and fuel economy had the biggest annual improvement of the last 9 years, reaching record low CO₂ emissions and record high fuel economy”

Source: 2023 EPA Trends Report

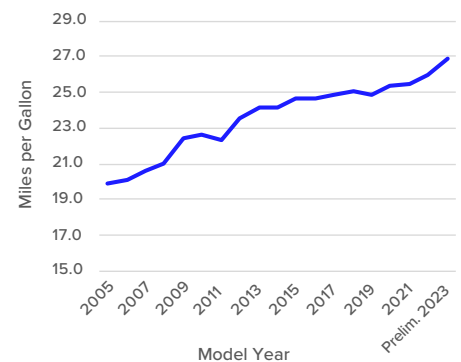
Automakers have reduced CO₂ emissions rates for new vehicles by almost 30 percent (28.4 percent) since 2005 – about two years ahead of the U.S. Paris Agreement (which seeks to achieve a 26-28 percent overall reduction in GHG emissions by 2025). And real-world fuel economy has increased 30 percent over the same period.

New Light-Duty Vehicle Real-World CO₂ Emission Rate



— Emissions down 28%

New Light-Duty Vehicle Real-World Fuel Economy



+ Fuel Economy up 30%

Building a Safer Future

Shared Responsibility for Vehicle and Road Safety

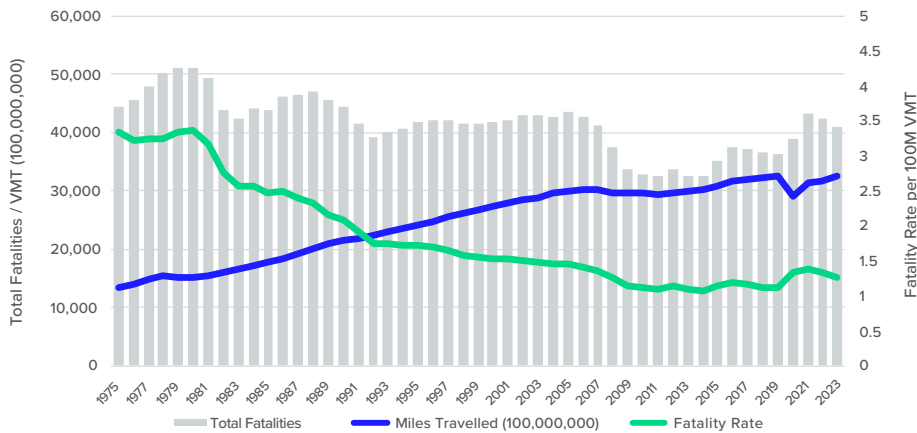
The road ahead is safer, thanks to a wide range of state-of-the-art technologies developed by automakers and suppliers. From designs and innovations that can help protect occupants in the event of a crash, to on-board technologies that can help drivers avoid a crash in the first place, the auto industry is constantly striving to improve motor vehicle and traffic safety on our roadways.

But safety goes beyond the vehicle – it’s a joint responsibility for all road users to practice safe habits.

Improvements in safety go beyond the vehicle, and collaboration is key for reaching our shared goals. Safer road designs and improved lighting can help address some of the contributing factors that lead to vehicle and pedestrian crashes. Policies to address unsafe driving practices can help reduce excessive speeding and impaired driving. And most importantly, a back-to-basics approach of practicing safe driving behaviors can benefit all road users as we look to reduce the number of fatalities, injuries, and crashes in the United States.

PROGRESS... BUT WORK REMAINS

Motor Vehicle Crash Deaths Per 100 Million Miles Traveled, 1975-2023



An estimated 40,990 people died in motor vehicle traffic crashes in 2023, a decrease of about 3.6 percent as compared to 42,514 fatalities reported during the previous year.

The estimated fatality rate for 2023 is 1.26 fatalities per 100 million VMT, down from the reported rate of 1.33 fatalities per 100 million VMT in 2022.

Ending Unsafe Driving Behavior Could Lower Fatalities

BY THE NUMBERS

8%

Eight percent of fatal crashes (3,308 fatalities) in 2022 were reported as distraction-affected traffic crashes.

32%

32 percent of fatal crashes (13,524 fatalities) in 2022 were reported as alcohol-impaired-driving-crashes.

29%

29 percent of fatal crashes (12,151 fatalities) in 2022 were in speeding-related crashes.

Learn More

Working to Prevent Impaired Driving

→ autosinnovate.org/initiatives/safety/impaired-driving

Alcohol-Impaired Driving

→ ghsa.org/issues/alcohol-impaired-driving

Safe System Approach

→ transportation.gov/safe-system-approach

Cambridge News & Insights

→ cmtelematics.com/news-and-insights



Buckle up! Half of all occupant fatalities in 2022 were NOT wearing a seatbelt.

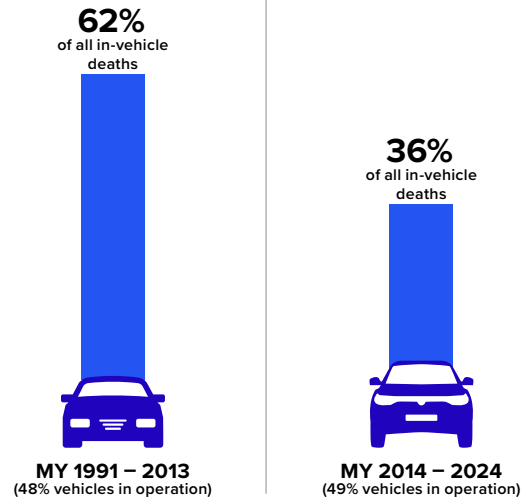
Does Vehicle Age Matter?

New vehicles being produced are undeniably safer than ever – a review of in-vehicle fatalities in 2022 show that the number of fatalities in newer vehicles is disproportionately lower than the number of those vehicles on the road.

Splitting the fleet in half by model year to obtain an even percent of vehicles in operation in both groups found*:

- ▶ Vehicles with a model year between 1991 and 2013 represented 48 percent of all vehicles on the road, but 62 percent of all in-vehicle fatalities.
- ▶ Vehicles with a model year of 2014 – 2024 represented 49 percent of all vehicles on the road but accounted for 36 percent of all in-vehicle fatalities.

In-Vehicle Deaths (2022) and Vehicles in Operation, by Vehicle Model Year



* Vehicles before model year 1991 were excluded from the chart but accounted for 3 percent of all vehicles in operation and 1.5 percent of all in-vehicle fatalities.

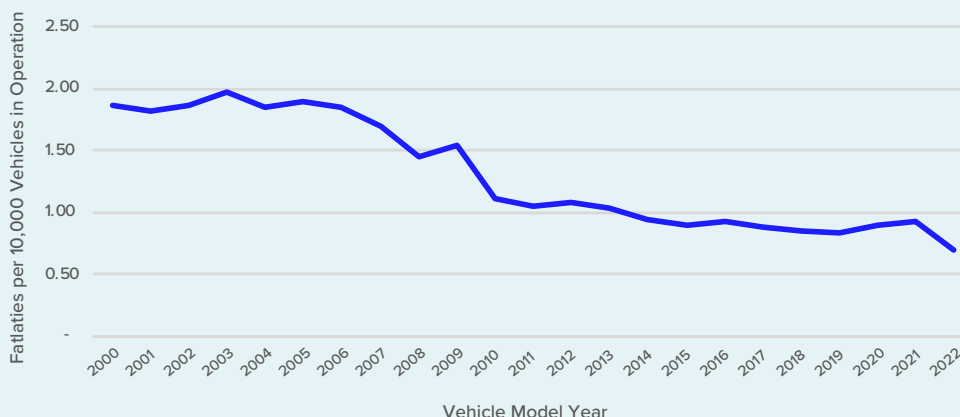
AVERAGE VEHICLE AGE

12.7 YRS+

The average age of vehicles on the road is over 12.7 years – and growing!

Source: National Highway Traffic Safety Administration, Fatality and Injury Reporting System, 2022 data; vehicles in operation data figures compiled by Alliance for Automotive Innovation with registered vehicle data provided by S&P Global Mobility, 2022 data

In-Vehicle Fatalities (2022) Per 10K Vehicles in Operation by Model Year



In 2022, more than 90 percent of the vehicles on the road were model year 2000 or newer. The rate of fatalities per 10,000 vehicles in operation continues to steadily decline, decreasing to a rate of 0.69 for Model Year 2022.

Source: National Highway Traffic Safety Administration, Fatality and Injury Reporting System, 2022 data; vehicles in operation data figures compiled by Alliance for Automotive Innovation with registered vehicle data provided by S&P Global Mobility, 2022 data

Smarter Mobility

ENHANCING TRANSPORTATION WITH ADVANCED TECHNOLOGY



Advanced Driver Assistance Systems (ADAS)

Over 90 percent of new cars today are equipped with ADAS features such as pedestrian detection, blindspot alerts, lane departure warnings, collision warnings and collision mitigation (automatic emergency braking). These safety features can greatly enhance safety. Studies have shown that automatic emergency braking, for example, reduces front-to-rear crashes by 50 percent.

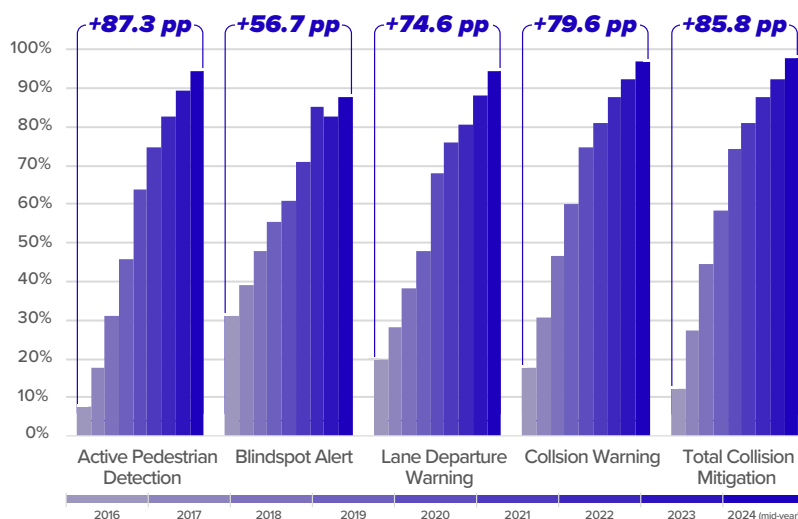
Rapid Growth in Installation Rates of ADAS Technology

In less than 10 years, ADAS systems have grown from fledgling technologies to widespread deployment in new vehicles – including Automatic Emergency Braking being offered in nearly all new vehicles. See more about automakers commitment to AEB [here](#).



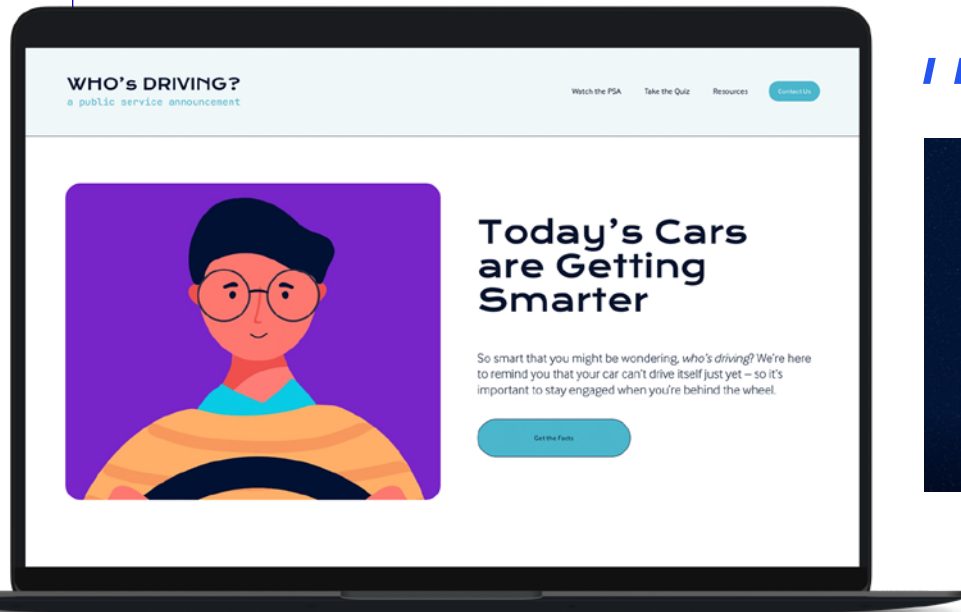
Working to Keep Pedestrians Safe

ADAS Installations: 2018 – 2024 (Mid-Year)



Active Pedestrian Detection was installed in only 7 percent of new vehicles in 2016 – by mid-2024, 95 percent of new vehicles have the technology installed – an increase of 87 percent in just 7.5 years.

27% An IIHS study showed that automatic braking systems that recognize pedestrians cut pedestrian crashes by 27%.



Who's Driving? **YOU!**

Even as ADAS and automated driving technologies are present in nearly all vehicles sold today, driver education on their functions is limited, and studies have shown that drivers using ADAS systems can become complacent, fail to monitor the system, and even sleep while the system is engaged. Whoisdriving.org is intended to clarify the need for active driver engagement while using ADAS systems. When asked “who’s driving?” the PSA’s answer is clear: you.

WhoisDriving.org



ADVANCED DRIVER ASSISTANCE SYSTEMS

How do they work?



LANE DEPARTURE WARNING

When sensors detect the vehicle is drifting from its designated lane without the use of a turn signal, (1) an audible alert will chime or (2) the steering wheel or driver seat will vibrate.



BLINDSPOT ALERT

When a car enters a vehicle's blind spot, (1) an image in the side mirror will illuminate, (2) an audible alert will chime, and/or (3) the steering wheel or driver seat will vibrate.



COLLISION WARNING

When sensors and/or cameras detect a forward, imminent crash, (1) an audible alert will chime or (2) the steering wheel will vibrate, or (3) the seat will vibrate.



COLLISION MITIGATION

In a situation where sensors and/or cameras detect a forward collision will occur at any speed, the vehicle applies the brakes.



ACTIVE PEDESTRIAN DETECTION

In a situation where sensors and/or cameras detect a collision will occur with a nearby pedestrian, the vehicle applies the brakes.

While it takes many years for the vehicle fleet to turn over (there are more than 286 million vehicles on the road with an average age of over 12.7 years) and for new technologies to be prevalent on the road, ADAS technologies are expected to widely penetrate the fleet by 2027.

LOOKING AHEAD

Three features (rear cameras, rear parking sensors, and front crash prevention) are predicted to be on more than half of the registered vehicle population by 2027.

Rear cameras and rear parking sensors are predicted to be on 73 and 63 percent of the registered vehicle fleet by 2027, respectively.

Front automatic emergency braking (AEB) is predicted to increase from 23 percent of the registered vehicle population in 2022 to 47 percent in 2027.

The background is a dark navy blue. In the upper left, there is a teal rectangle with a series of parallel diagonal lines above it. To the right of the teal rectangle is a green horizontal bar. Further right, there are three blue plus signs arranged vertically, with a white plus sign to their left. On the left side, there is a blue wavy grid pattern. Below this, there is a light blue horizontal bar with a series of blue arrows pointing to the right. In the center, there is a dark blue parallelogram. Below the parallelogram, there is a blue square. At the bottom right, there is a series of parallel diagonal lines. In the bottom left, there are concentric circles.

Appendix

ECONOMIC IMPACT OF THE AUTO INDUSTRY

| STATE | VALUE ADDED* FROM AUTO INDUSTRY | OUTPUT** FROM AUTO INDUSTRY | TOTAL STATE GDP | AUTO INDUSTRY % OF STATE GDP |
|----------------------|------------------------------------|--------------------------------|---------------------|---------------------------------|
| Alabama | \$16,062,020,000 | \$48,561,055,623 | \$298,373,616,000 | 5.4% |
| Alaska | \$1,411,086,000 | \$2,094,019,123 | \$66,790,459,000 | 2.1% |
| Arizona | \$19,984,012,000 | \$35,256,070,466 | \$481,721,945,000 | 4.1% |
| Arkansas | \$5,227,627,000 | \$8,241,574,039 | \$167,984,057,000 | 3.1% |
| California | \$108,756,026,000 | \$198,379,540,948 | \$3,638,478,990,000 | 3.0% |
| Colorado | \$12,773,930,000 | \$19,739,794,756 | \$493,534,075,000 | 2.6% |
| Connecticut | \$8,659,845,000 | \$12,748,889,679 | \$326,857,737,000 | 2.6% |
| Delaware | \$4,204,048,000 | \$5,184,825,411 | \$90,372,082,000 | 4.7% |
| District of Columbia | \$184,053,000 | \$259,438,908 | \$172,185,804,000 | 0.1% |
| Florida | \$53,360,728,000 | \$83,483,769,117 | \$1,433,038,655,000 | 3.7% |
| Georgia | \$28,993,367,000 | \$48,448,613,865 | \$763,292,091,000 | 3.8% |
| Hawaii | \$3,751,435,000 | \$5,119,557,787 | \$101,944,895,000 | 3.7% |
| Idaho | \$3,768,643,000 | \$6,189,315,102 | \$112,889,962,000 | 3.3% |
| Illinois | \$33,665,092,000 | \$68,457,639,982 | \$1,023,387,866,000 | 3.3% |
| Indiana | \$27,215,052,000 | \$67,041,080,537 | \$480,320,012,000 | 5.7% |
| Iowa | \$5,820,513,000 | \$9,254,802,674 | \$242,158,130,000 | 2.4% |
| Kansas | \$8,184,160,000 | \$14,848,949,282 | \$211,085,846,000 | 3.9% |
| Kentucky | \$16,976,780,000 | \$55,372,745,031 | \$264,866,590,000 | 6.4% |
| Louisiana | \$7,943,876,000 | \$12,439,650,677 | \$299,597,797,000 | 2.7% |
| Maine | \$3,048,225,000 | \$4,707,000,865 | \$88,158,782,000 | 3.5% |
| Maryland | \$12,805,113,000 | \$18,457,845,388 | \$498,482,316,000 | 2.6% |
| Massachusetts | \$12,853,553,000 | \$19,501,869,247 | \$713,972,387,000 | 1.8% |
| Michigan | \$59,216,643,000 | \$148,550,994,919 | \$640,457,896,000 | 9.2% |
| Minnesota | \$11,043,928,000 | \$17,306,482,534 | \$455,581,509,000 | 2.4% |
| Mississippi | \$6,465,650,000 | \$17,517,560,992 | \$142,035,221,000 | 4.6% |
| Missouri | \$19,626,661,000 | \$43,655,698,238 | \$399,656,430,000 | 4.9% |
| Montana | \$2,129,037,000 | \$3,658,667,883 | \$68,250,404,000 | 3.1% |
| Nebraska | \$4,108,918,000 | \$7,419,187,488 | \$165,041,693,000 | 2.5% |
| Nevada | \$7,128,119,000 | \$10,735,448,158 | \$221,504,558,000 | 3.2% |

ECONOMIC IMPACT OF THE AUTO INDUSTRY CONT.

| STATE | VALUE ADDED* FROM AUTO INDUSTRY | OUTPUT** FROM AUTO INDUSTRY | TOTAL STATE GDP | AUTO INDUSTRY % OF STATE GDP |
|-------------------|------------------------------------|--------------------------------|-----------------------------|---------------------------------|
| New Hampshire | \$4,559,864,000 | \$6,515,244,851 | \$112,352,786,000 | 4.1% |
| New Jersey | \$19,035,998,000 | \$28,115,013,020 | \$757,069,632,000 | 2.5% |
| New Mexico | \$3,068,026,000 | \$4,786,712,535 | \$138,351,054,000 | 2.2% |
| New York | \$29,608,243,000 | \$42,771,006,934 | \$1,990,745,568,000 | 1.5% |
| North Carolina | \$21,131,418,000 | \$33,552,572,712 | \$717,917,673,000 | 2.9% |
| North Dakota | \$1,686,934,000 | \$3,270,661,570 | \$72,318,719,000 | 2.3% |
| Ohio | \$34,018,427,000 | \$75,753,909,449 | \$835,670,545,000 | 4.1% |
| Oklahoma | \$7,538,448,000 | \$12,235,497,804 | \$248,486,244,000 | 3.0% |
| Oregon | \$8,011,035,000 | \$12,463,361,751 | \$300,997,364,000 | 2.7% |
| Pennsylvania | \$24,099,791,000 | \$37,403,921,337 | \$927,438,869,000 | 2.6% |
| Rhode Island | \$1,736,527,000 | \$2,695,932,591 | \$74,679,799,000 | 2.3% |
| South Carolina | \$14,935,991,000 | \$39,480,915,950 | \$302,176,135,000 | 4.9% |
| South Dakota | \$2,044,506,000 | \$3,234,999,883 | \$69,924,779,000 | 2.9% |
| Tennessee | \$29,469,856,000 | \$68,240,547,738 | \$494,757,141,000 | 6.0% |
| Texas | \$87,523,648,000 | \$151,971,447,342 | \$2,392,637,913,000 | 3.7% |
| Utah | \$7,819,376,000 | \$12,202,217,213 | \$257,555,333,000 | 3.0% |
| Vermont | \$1,339,683,000 | \$2,121,626,503 | \$42,618,263,000 | 3.1% |
| Virginia | \$16,962,034,000 | \$26,564,920,940 | \$658,741,464,000 | 2.6% |
| Washington | \$17,685,145,000 | \$24,463,655,894 | \$738,665,160,000 | 2.4% |
| West Virginia | \$2,380,525,000 | \$3,745,859,625 | \$98,336,926,000 | 2.4% |
| Wisconsin | \$12,123,272,000 | \$21,333,441,240 | \$401,804,018,000 | 3.0% |
| Wyoming | \$976,424,000 | \$1,605,363,509 | \$48,841,809,000 | 2.0% |
| U.S. Total | \$1,232,819,187,000 | \$2,435,109,333,000 | \$25,440,000,000,000 | 4.8% |

*Value added consists of labor income, other property income, and taxes on production and imports (TOPI) net of subsidies. Value added is analogous to gross domestic product (GDP). Value added is a component of output.

**Total output is the sum of labor income (which includes employee compensation and proprietor income), other property income, taxes, and intermediate expenditures.

Source: Multi-industry contribution analysis of the economic impact of automotive manufacturing, selling, repairing, renting, and additional maintenance modeled using IMPLAN economic analysis data software, 2022 data year; Bureau of Economic Analysis, current-dollar GDP, 2020

AUTO INDUSTRY EMPLOYMENT

| STATE | AUTO INDUSTRY EMPLOYMENT | AUTO INDUSTRY LABOR INCOME | TOTAL STATE WORKFORCE | AUTO INDUSTRY AS % OF STATE WORKFORCE |
|----------------------|-----------------------------|-------------------------------|--------------------------|--|
| Alabama | 147,000 | \$9,396,152,000 | 2,771,000 | 5.3% |
| Alaska | 13,000 | \$810,359,000 | 453,000 | 2.8% |
| Arizona | 180,000 | \$11,621,090,000 | 4,187,000 | 4.3% |
| Arkansas | 55,000 | \$3,157,920,000 | 1,712,000 | 3.2% |
| California | 842,000 | \$67,839,647,000 | 25,054,000 | 3.4% |
| Colorado | 121,000 | \$8,415,181,000 | 4,080,000 | 3.0% |
| Connecticut | 67,000 | \$6,049,585,000 | 2,341,000 | 2.9% |
| Delaware | 18,000 | \$1,665,587,000 | 625,000 | 2.9% |
| District of Columbia | 1,000 | \$86,200,000 | 911,000 | 0.2% |
| Florida | 513,000 | \$32,596,449,000 | 13,726,000 | 3.7% |
| Georgia | 261,000 | \$18,114,013,000 | 6,759,000 | 3.9% |
| Hawaii | 24,000 | \$1,690,144,000 | 884,000 | 2.7% |
| Idaho | 42,000 | \$2,570,660,000 | 1,160,000 | 3.6% |
| Illinois | 280,000 | \$20,624,199,000 | 7,961,000 | 3.5% |
| Indiana | 205,000 | \$13,974,820,000 | 4,055,000 | 5.1% |
| Iowa | 64,000 | \$3,818,055,000 | 2,080,000 | 3.1% |
| Kansas | 62,000 | \$4,300,096,000 | 1,942,000 | 3.2% |
| Kentucky | 150,000 | \$10,295,287,000 | 2,609,000 | 5.8% |
| Louisiana | 81,000 | \$4,613,065,000 | 2,667,000 | 3.0% |
| Maine | 31,000 | \$1,878,840,000 | 853,000 | 3.6% |
| Maryland | 105,000 | \$7,439,893,000 | 3,805,000 | 2.8% |
| Massachusetts | 112,000 | \$9,356,148,000 | 4,905,000 | 2.3% |
| Michigan | 409,000 | \$30,183,539,000 | 5,760,000 | 7.1% |
| Minnesota | 108,000 | \$7,409,537,000 | 3,808,000 | 2.8% |
| Mississippi | 70,000 | \$3,801,190,000 | 1,623,000 | 4.3% |
| Missouri | 173,000 | \$11,106,609,000 | 3,833,000 | 4.5% |
| Montana | 27,000 | \$1,594,179,000 | 727,000 | 3.8% |

AUTO INDUSTRY EMPLOYMENT CONT.

| STATE | AUTO INDUSTRY EMPLOYMENT | AUTO INDUSTRY LABOR INCOME | TOTAL STATE WORKFORCE | AUTO INDUSTRY AS % OF STATE WORKFORCE |
|-------------------|-----------------------------|-------------------------------|--------------------------|--|
| Nebraska | 45,000 | \$2,629,208,000 | 1,345,000 | 3.3% |
| Nevada | 62,000 | \$4,318,348,000 | 1,948,000 | 3.2% |
| New Hampshire | 36,000 | \$3,093,973,000 | 907,000 | 3.9% |
| New Jersey | 156,000 | \$12,450,324,000 | 5,743,000 | 2.7% |
| New Mexico | 33,000 | \$1,901,555,000 | 1,125,000 | 2.9% |
| New York | 248,000 | \$19,169,391,000 | 12,635,000 | 2.0% |
| North Carolina | 219,000 | \$14,391,304,000 | 6,481,000 | 3.4% |
| North Dakota | 19,000 | \$1,192,283,000 | 579,000 | 3.3% |
| Ohio | 310,000 | \$20,812,313,000 | 7,205,000 | 4.3% |
| Oklahoma | 79,000 | \$4,530,213,000 | 2,339,000 | 3.4% |
| Oregon | 80,000 | \$5,848,963,000 | 2,634,000 | 3.0% |
| Pennsylvania | 238,000 | \$16,263,358,000 | 7,890,000 | 3.0% |
| Rhode Island | 18,000 | \$1,217,801,000 | 660,000 | 2.7% |
| South Carolina | 138,000 | \$8,655,348,000 | 2,974,000 | 4.7% |
| South Dakota | 22,000 | \$1,338,639,000 | 634,000 | 3.5% |
| Tennessee | 225,000 | \$16,888,625,000 | 4,374,000 | 5.2% |
| Texas | 726,000 | \$50,175,601,000 | 18,997,000 | 3.8% |
| Utah | 74,000 | \$4,793,849,000 | 2,286,000 | 3.2% |
| Vermont | 15,000 | \$937,239,000 | 429,000 | 3.4% |
| Virginia | 158,000 | \$10,289,445,000 | 5,477,000 | 2.9% |
| Washington | 117,000 | \$9,222,613,000 | 4,721,000 | 2.5% |
| West Virginia | 26,000 | \$1,507,968,000 | 874,000 | 3.0% |
| Wisconsin | 121,000 | \$7,572,526,000 | 3,706,000 | 3.3% |
| Wyoming | 12,000 | \$666,622,000 | 413,000 | 2.8% |
| U.S. Total | 10,110,000 | \$732,851,989,000 | 207,667,600 | 4.9% |

Source: Multi-industry contribution analysis of the economic impact of automotive manufacturing, selling, repairing, renting, and additional maintenance modeled using IMPLAN economic analysis data software, 2020 data year

AUTO MANUFACTURING EMPLOYMENT

| STATE | DIRECT AUTO MFG. EMPLOYMENT | INDIRECT AUTO MFG. EMPLOYMENT | INDUCED AUTO MFG. EMPLOYMENT | TOTAL AUTO MFG. EMPLOYMENT |
|----------------------|-----------------------------|-------------------------------|------------------------------|----------------------------|
| Alabama | 18,200 | 23,700 | 14,000 | 55,900 |
| Alaska | - | - | - | - |
| Arizona | 3,600 | 5,900 | 3,700 | 13,100 |
| Arkansas | - | - | - | - |
| California | 29,600 | 52,500 | 39,900 | 122,000 |
| Colorado | - | - | - | - |
| Connecticut | 300 | 400 | 300 | 900 |
| Delaware | - | - | - | - |
| District of Columbia | - | - | - | - |
| Florida | 100 | 300 | 200 | 600 |
| Georgia | 3,200 | 6,100 | 4,000 | 13,300 |
| Hawaii | - | - | - | - |
| Idaho | 100 | 100 | 100 | 300 |
| Illinois | 13,800 | 22,100 | 16,100 | 51,900 |
| Indiana | 20,500 | 32,700 | 19,400 | 72,600 |
| Iowa | - | 100 | - | 100 |
| Kansas | 2,600 | 3,300 | 2,000 | 7,900 |
| Kentucky | 22,200 | 30,000 | 18,700 | 70,900 |
| Louisiana | 100 | 100 | 100 | 400 |
| Maine | - | - | - | - |
| Maryland | - | - | - | - |
| Massachusetts | 400 | 400 | 300 | 1,100 |
| Michigan | 43,100 | 99,900 | 63,200 | 206,200 |
| Minnesota | - | - | - | 100 |
| Mississippi | 5,600 | 6,900 | 4,000 | 16,500 |
| Missouri | 10,500 | 17,500 | 11,400 | 39,400 |
| Montana | - | - | - | - |

AUTO MANUFACTURING EMPLOYMENT CONT.

| STATE | DIRECT AUTO MFG. EMPLOYMENT | INDIRECT AUTO MFG. EMPLOYMENT | INDUCED AUTO MFG. EMPLOYMENT | TOTAL AUTO MFG. EMPLOYMENT |
|-------------------|-----------------------------|-------------------------------|------------------------------|----------------------------|
| Nebraska | 800 | 1,000 | 600 | 2,400 |
| Nevada | 100 | 200 | 100 | 400 |
| New Hampshire | - | - | - | - |
| New Jersey | 200 | 300 | 200 | 800 |
| New Mexico | - | - | - | - |
| New York | - | - | - | - |
| North Carolina | 100 | 100 | 100 | 300 |
| North Dakota | 400 | 500 | 300 | 1,200 |
| Ohio | 16,400 | 35,200 | 21,700 | 73,400 |
| Oklahoma | 100 | 100 | 100 | 200 |
| Oregon | - | - | - | - |
| Pennsylvania | - | - | - | - |
| Rhode Island | - | - | - | - |
| South Carolina | 12,600 | 17,600 | 9,900 | 40,100 |
| South Dakota | - | - | - | - |
| Tennessee | 18,600 | 32,500 | 21,100 | 72,100 |
| Texas | 14,400 | 31,200 | 21,000 | 66,600 |
| Utah | - | - | - | - |
| Vermont | - | - | - | - |
| Virginia | 800 | 1,200 | 700 | 2,600 |
| Washington | 100 | 100 | 100 | 300 |
| West Virginia | - | - | - | - |
| Wisconsin | 1,700 | 3,100 | 1,900 | 6,700 |
| Wyoming | - | - | - | 100 |
| U.S. Total | 240,100 | 1,276,400 | 909,900 | 2,426,400 |

*Rounded to the nearest 100th; totals may not equal the sum of the parts

Source: Multi-industry contribution analysis of the economic impact of automotive manufacturing modeled using IMPLAN economic analysis data software, 2022 data year

ESTIMATED TAXES AND FEES GENERATED BY AUTOS BY STATE

| STATE | SALES TAX REVENUE (\$ MILLIONS)* | | | USE TAX REVENUE (\$ MILLIONS) | | | STATE CORPORATE PROFITS (\$ MILLIONS) | STATE & LOCAL PERSONAL INCOME TAX (\$ MILLIONS) | TOTAL STATE TAXES (\$ MILLIONS) | TOTAL FEDERAL TAXES (\$ MILLIONS) | AUTO GENERATED TAXES AS % ALL STATE TAX |
|-------|----------------------------------|---------------|----------------|-------------------------------|--------------|---------|---------------------------------------|---|---------------------------------|-----------------------------------|---|
| | NEW VEHICLES | USED VEHICLES | PARTS/SERVICES | FUEL | REGISTRATION | LICENSE | | | | | |
| AL | \$172 | \$109 | \$80 | \$965 | \$244 | \$47 | \$69 | \$211 | \$1335 | \$2226 | 8.0% |
| AK | - | - | - | \$47 | \$32 | \$ | \$8 | \$ | \$58 | \$179 | 1.8% |
| AZ | \$764 | \$484 | \$177 | \$872 | \$341 | \$38 | \$40 | \$191 | \$1827 | \$2882 | 7.8% |
| AR | \$329 | \$209 | \$76 | \$606 | \$189 | \$22 | \$17 | \$72 | \$783 | \$730 | 6.1% |
| CA | \$5901 | \$3743 | \$1365 | \$8653 | \$8123 | \$353 | \$1043 | \$2905 | \$10887 | \$16703 | 4.9% |
| CO | \$311 | \$197 | \$72 | \$708 | \$385 | \$48 | \$26 | \$200 | \$829 | \$1995 | 4.6% |
| CT | \$450 | \$286 | \$104 | \$390 | \$224 | \$53 | \$50 | \$174 | \$722 | \$1527 | 3.3% |
| DE | \$97 | \$62 | \$ | \$134 | \$64 | \$6 | \$31 | \$54 | \$188 | \$413 | 2.9% |
| DC | - | - | - | \$22 | \$40 | \$5 | - | - | - | \$17 | 0.0% |
| FL | \$3435 | \$2179 | \$795 | \$3094 | \$1536 | \$182 | \$84 | - | \$4338 | \$8742 | 7.0% |
| GA | \$749 | \$475 | \$173 | \$1120 | \$433 | \$126 | \$77 | \$488 | \$1795 | \$4166 | 5.3% |
| HI | \$103 | \$66 | \$23 | \$82 | \$242 | \$ | \$12 | \$62 | \$688 | \$415 | 6.8% |
| ID | \$184 | \$117 | \$43 | \$405 | \$239 | \$11 | \$17 | \$57 | \$444 | \$606 | 6.0% |
| IL | \$1377 | \$874 | \$319 | \$2603 | \$2254 | \$180 | \$265 | \$474 | \$2717 | \$4868 | 4.3% |
| IN | \$704 | \$446 | \$163 | \$1652 | \$368 | \$277 | \$104 | \$385 | \$1936 | \$3386 | 6.4% |
| IA | \$332 | \$211 | \$77 | \$685 | \$775 | \$18 | \$12 | \$92 | \$477 | \$854 | 3.7% |
| KS | \$263 | \$167 | \$61 | \$466 | \$252 | \$32 | \$35 | \$104 | \$730 | \$1018 | 5.6% |
| KY | \$378 | \$240 | \$87 | \$745 | \$259 | \$30 | \$80 | \$241 | \$1310 | \$2295 | 7.6% |
| LA | \$405 | \$257 | \$83 | \$628 | \$84 | \$12 | \$17 | \$81 | \$849 | \$1009 | 5.5% |
| ME | \$169 | \$107 | \$39 | \$247 | \$126 | \$14 | \$10 | \$52 | \$313 | \$438 | 4.9% |
| MD | \$687 | \$436 | \$159 | \$1301 | \$518 | \$27 | \$46 | \$174 | \$1197 | \$1813 | 4.0% |
| MA | \$896 | \$568 | \$207 | \$702 | \$455 | \$93 | \$56 | \$329 | \$753 | \$2259 | 1.8% |
| MI | \$1407 | \$892 | \$325 | \$1479 | \$1542 | \$65 | \$234 | \$616 | \$3568 | \$7685 | 9.6% |
| MN | \$637 | \$404 | \$156 | \$884 | \$934 | \$50 | \$75 | \$255 | \$1181 | \$1692 | 3.4% |

ESTIMATED TAXES AND FEES GENERATED BY AUTOS BY STATE CONT.

| STATE | SALES TAX REVENUE (\$ MILLIONS)* | | | USE TAX REVENUE (\$ MILLIONS) | | | STATE CORPORATE PROFITS (\$ MILLIONS) | STATE & LOCAL PERSONAL INCOME TAX (\$ MILLIONS) | TOTAL STATE TAXES (\$ MILLIONS) | TOTAL FEDERAL TAXES (\$ MILLIONS) | AUTO GENERATED TAXES AS % ALL STATE TAX |
|-------|----------------------------------|---------------|----------------|-------------------------------|--------------|---------|---------------------------------------|---|---------------------------------|-----------------------------------|---|
| | NEW VEHICLES | USED VEHICLES | PARTS/SERVICES | FUEL | REGISTRATION | LICENSE | | | | | |
| MS | \$226 | \$143 | \$73 | \$459 | \$206 | \$5 | \$26 | \$69 | \$789 | \$869 | 7.6% |
| MO | \$405 | \$257 | \$94 | \$896 | \$335 | \$15 | \$42 | \$244 | \$884 | \$2593 | 5.1% |
| MT | - | - | - | \$289 | \$199 | \$10 | \$5 | \$50 | \$121 | \$364 | 2.6% |
| NE | \$194 | \$123 | \$45 | \$374 | \$127 | \$12 | \$12 | \$60 | \$247 | \$592 | 3.4% |
| NV | \$401 | \$254 | \$93 | \$377 | \$228 | \$26 | - | - | \$782 | \$1131 | 5.5% |
| NH | - | - | - | \$180 | \$118 | \$16 | \$45 | \$4 | \$128 | \$708 | 3.6% |
| NJ | \$1568 | \$995 | \$350 | \$420 | \$667 | \$60 | \$178 | \$293 | \$1460 | \$3086 | 2.8% |
| NM | \$107 | \$68 | \$40 | \$322 | \$228 | \$16 | \$4 | \$22 | \$396 | \$433 | 2.8% |
| NY | \$1610 | \$1021 | \$372 | \$1276 | \$1420 | \$176 | \$66 | \$730 | \$2334 | \$4588 | 1.9% |
| NC | \$569 | \$361 | \$208 | \$2377 | \$1012 | \$126 | \$33 | \$388 | \$1624 | \$3270 | 4.2% |
| ND | \$89 | \$56 | \$20 | \$186 | \$120 | \$4 | \$3 | \$9 | \$120 | \$252 | 2.0% |
| OH | \$1323 | \$839 | \$306 | \$2727 | \$520 | \$88 | - | \$318 | \$2756 | \$4747 | 7.1% |
| OK | \$208 | \$132 | \$67 | \$595 | \$867 | \$23 | \$21 | \$82 | \$614 | \$991 | 4.4% |
| OR | - | - | - | \$620 | \$1001 | \$45 | \$28 | \$225 | \$448 | \$1319 | 2.1% |
| PA | \$1469 | \$932 | \$340 | \$3374 | \$1308 | \$83 | \$93 | \$301 | \$1967 | \$3718 | 3.6% |
| RI | \$148 | \$94 | \$34 | \$139 | \$37 | \$9 | \$4 | \$27 | \$152 | \$284 | 3.2% |
| SC | \$107 | | \$132 | \$1017 | \$303 | \$22 | \$58 | \$192 | \$1058 | \$2129 | 6.8% |
| SD | \$72 | \$46 | \$17 | \$192 | \$96 | \$6 | \$1 | - | \$189 | \$299 | 7.2% |
| TN | \$800 | \$507 | \$185 | \$1273 | \$316 | \$35 | \$198 | - | \$2380 | \$3991 | 10.0% |
| TX | \$4103 | \$2603 | \$949 | \$3832 | \$2313 | \$187 | - | - | \$5969 | \$11931 | 6.9% |
| UT | \$250 | \$158 | \$75 | \$614 | \$271 | \$31 | \$19 | \$147 | \$752 | \$1134 | 5.6% |
| VT | \$114 | \$72 | \$26 | \$128 | \$76 | \$14 | \$4 | \$25 | \$197 | \$206 | 4.4% |
| VA | \$606 | \$384 | \$179 | \$1815 | \$522 | \$47 | \$40 | \$292 | \$1470 | \$2501 | 4.0% |
| WA | \$824 | \$522 | \$191 | \$1568 | \$976 | \$143 | - | - | \$2698 | \$2462 | 7.1% |

ESTIMATED TAXES AND FEES GENERATED BY AUTOS BY STATE CONT.

| STATE | SALES TAX REVENUE (\$ MILLIONS)* | | | USE TAX REVENUE (\$ MILLIONS) | | | STATE CORPORATE PROFITS (\$ MILLIONS) | STATE & LOCAL PERSONAL INCOME TAX (\$ MILLIONS) | TOTAL STATE TAXES (\$ MILLIONS) | TOTAL FEDERAL TAXES (\$ MILLIONS) | AUTO GENERATED TAXES AS % ALL STATE TAX |
|------------|----------------------------------|---------------|----------------|-------------------------------|--------------|---------|---------------------------------------|---|---------------------------------|-----------------------------------|---|
| | NEW VEHICLES | USED VEHICLES | PARTS/SERVICES | FUEL | REGISTRATION | LICENSE | | | | | |
| WV | \$218 | \$138 | \$50 | \$432 | \$5 | \$157 | \$4 | \$39 | \$336 | \$321 | 4.4% |
| WI | \$522 | \$331 | \$121 | \$1178 | \$715 | \$38 | \$72 | \$175 | \$1023 | \$1783 | 4.3% |
| WY | \$40 | \$26 | \$9 | \$117 | \$103 | \$5 | - | - | \$126 | \$171 | 3.8% |
| U.S. Total | \$35,721 | \$22,892 | \$8,561 | \$55,264 | \$33,746 | \$3,085 | \$6,049 | \$17,054 | \$89,418 | \$181,200 | 6.2% |

*New and used vehicle sales tax revenue computed from NADA Data & state tax rates

**U.S. Census, "2023 State Government Tax Dataset"

***U.S. totals are higher than state totals due to the macro analysis of the entirety of the U.S.

Multi-industry contribution analysis of the economic impact of automotive manufacturing, selling, repairing, renting, and additional maintenance modeled using IMPLAN economic analysis data software, 2022 data year

2023 NEW LIGHT-DUTY VEHICLE REGISTRATIONS BY VEHICLE TYPE, SEGMENT, & POWERTRAIN

| STATE | VEHICLE TYPE | | LIGHT TRUCK SEGMENTS | | | POWERTRAIN | | | | | |
|-------|--------------|--------------|----------------------|---------|---------------|------------|--------|-------|--------|-------|--------|
| | CARS | LIGHT TRUCKS | UVS | PICKUPS | VANS/MINIVANS | ICE | HYBRID | PHEV | BEV | FCEV | ZEV |
| AL | 20.54% | 79.46% | 51.90% | 24.15% | 3.41% | 88.91% | 8.52% | 0.61% | 1.96% | 0.00% | 2.57% |
| AK | 8.44% | 91.56% | 53.73% | 33.76% | 4.07% | 88.18% | 8.25% | 0.78% | 2.79% | 0.00% | 3.58% |
| AZ | 21.35% | 78.65% | 49.36% | 20.57% | 8.72% | 81.12% | 9.49% | 1.24% | 8.15% | 0.00% | 9.39% |
| AK | 15.16% | 84.84% | 53.11% | 28.83% | 2.90% | 90.35% | 7.39% | 0.53% | 1.73% | 0.00% | 2.26% |
| CA | 29.68% | 70.32% | 55.21% | 12.16% | 2.95% | 60.44% | 13.85% | 3.46% | 22.09% | 0.17% | 25.71% |
| CO | 12.64% | 87.36% | 63.40% | 20.07% | 3.90% | 74.74% | 10.13% | 4.22% | 10.91% | 0.00% | 15.14% |
| CT | 19.82% | 80.18% | 65.84% | 10.79% | 3.55% | 77.41% | 12.40% | 3.44% | 6.74% | 0.00% | 10.19% |
| DE | 18.51% | 81.49% | 61.02% | 16.05% | 4.41% | 80.02% | 11.20% | 2.16% | 6.62% | 0.00% | 8.78% |
| DC | 26.34% | 73.66% | 66.14% | 4.15% | 3.37% | 64.93% | 15.44% | 4.05% | 15.58% | 0.00% | 19.63% |
| FL | 24.13% | 75.87% | 57.58% | 14.45% | 3.85% | 82.86% | 9.71% | 0.93% | 6.50% | 0.00% | 7.43% |
| GA | 23.50% | 76.50% | 53.57% | 18.57% | 4.36% | 83.79% | 8.82% | 0.84% | 6.54% | 0.00% | 7.39% |
| HI | 26.57% | 73.43% | 53.71% | 15.11% | 4.61% | 82.03% | 6.96% | 1.26% | 9.75% | 0.00% | 11.01% |
| ID | 11.72% | 88.28% | 54.12% | 31.06% | 3.11% | 84.27% | 10.98% | 1.39% | 3.36% | 0.00% | 4.75% |
| IL | 18.30% | 81.70% | 63.34% | 13.16% | 5.20% | 81.69% | 10.52% | 1.28% | 6.52% | 0.00% | 7.80% |
| IN | 15.40% | 84.60% | 55.06% | 22.08% | 7.46% | 85.69% | 10.18% | 0.95% | 3.18% | 0.00% | 4.13% |
| IA | 10.58% | 89.42% | 55.71% | 29.03% | 4.68% | 88.18% | 8.66% | 0.88% | 2.28% | 0.00% | 3.16% |
| KS | 15.57% | 84.43% | 54.72% | 25.14% | 4.56% | 86.16% | 9.06% | 1.03% | 3.76% | 0.00% | 4.79% |
| KY | 16.70% | 83.30% | 56.38% | 22.34% | 4.58% | 87.50% | 9.16% | 0.76% | 2.58% | 0.00% | 3.34% |
| LA | 18.86% | 81.14% | 50.79% | 27.27% | 3.08% | 90.92% | 7.10% | 0.54% | 1.43% | 0.00% | 1.98% |
| ME | 11.02% | 88.98% | 57.83% | 27.79% | 3.36% | 84.12% | 9.83% | 2.81% | 3.24% | 0.00% | 6.05% |

2023 NEW LIGHT-DUTY VEHICLE REGISTRATIONS BY VEHICLE TYPE, SEGMENT, & POWERTRAIN CONT.

| STATE | VEHICLE TYPE | | LIGHT TRUCK SEGMENTS | | | POWERTRAIN | | | | | |
|-------|--------------|--------------|----------------------|---------|---------------|------------|--------|-------|--------|-------|--------|
| | CARS | LIGHT TRUCKS | UVS | PICKUPS | VANS/MINIVANS | ICE | HYBRID | PHEV | BEV | FCEV | ZEV |
| MD | 22.62% | 77.38% | 59.01% | 12.64% | 5.72% | 76.16% | 12.15% | 2.94% | 8.76% | 0.00% | 11.70% |
| MA | 17.84% | 82.16% | 65.39% | 12.81% | 3.95% | 75.15% | 12.81% | 3.96% | 8.08% | 0.00% | 12.04% |
| MI | 8.32% | 91.68% | 65.92% | 22.86% | 2.90% | 88.71% | 7.29% | 0.97% | 3.03% | 0.00% | 4.00% |
| MN | 11.21% | 88.79% | 61.47% | 22.69% | 4.63% | 84.00% | 9.63% | 1.41% | 4.96% | 0.00% | 6.37% |
| MS | 21.13% | 78.87% | 49.77% | 26.21% | 2.89% | 90.93% | 7.54% | 0.48% | 1.05% | 0.00% | 1.53% |
| MO | 16.01% | 83.99% | 49.43% | 26.26% | 8.30% | 86.31% | 7.74% | 2.43% | 3.52% | 0.00% | 5.95% |
| MT | 11.15% | 88.85% | 49.79% | 34.81% | 4.26% | 86.61% | 10.00% | 1.17% | 2.22% | 0.00% | 3.40% |
| NE | 11.39% | 88.61% | 56.55% | 27.80% | 4.27% | 88.06% | 8.22% | 1.17% | 2.55% | 0.00% | 3.72% |
| NV | 24.59% | 75.41% | 55.88% | 16.53% | 3.00% | 76.52% | 10.24% | 1.68% | 11.56% | 0.00% | 13.23% |
| NH | 14.08% | 85.92% | 54.86% | 23.23% | 7.83% | 85.05% | 10.04% | 1.73% | 3.19% | 0.00% | 4.91% |
| NJ | 21.76% | 78.24% | 65.65% | 8.74% | 3.84% | 75.69% | 10.73% | 2.73% | 10.85% | 0.00% | 13.59% |
| NM | 18.13% | 81.87% | 51.39% | 27.97% | 2.50% | 85.30% | 9.81% | 1.16% | 3.73% | 0.00% | 4.89% |
| NY | 17.04% | 82.96% | 68.06% | 11.08% | 3.83% | 79.98% | 10.96% | 3.49% | 5.57% | 0.00% | 9.06% |
| NC | 20.59% | 79.41% | 55.69% | 19.63% | 4.08% | 82.14% | 10.84% | 1.08% | 5.94% | 0.00% | 7.03% |
| ND | 6.58% | 93.42% | 50.36% | 40.73% | 2.33% | 92.51% | 6.21% | 0.53% | 0.76% | 0.00% | 1.28% |
| OH | 17.69% | 82.31% | 60.29% | 16.81% | 5.21% | 86.37% | 9.41% | 1.11% | 3.11% | 0.00% | 4.23% |
| OK | 26.68% | 73.32% | 52.31% | 13.30% | 7.71% | 90.88% | 4.38% | 3.04% | 1.70% | 0.00% | 4.74% |
| OR | 16.54% | 83.46% | 58.56% | 19.40% | 5.50% | 70.84% | 13.75% | 3.66% | 11.75% | 0.00% | 15.42% |
| PA | 16.91% | 83.09% | 61.31% | 17.15% | 4.62% | 82.65% | 11.01% | 2.14% | 4.20% | 0.00% | 6.34% |
| RI | 19.91% | 80.09% | 62.33% | 13.51% | 4.25% | 81.86% | 10.39% | 3.36% | 4.40% | 0.00% | 7.75% |

2023 NEW LIGHT-DUTY VEHICLE REGISTRATIONS BY VEHICLE TYPE, SEGMENT, & POWERTRAIN CONT.

| STATE | VEHICLE TYPE | | LIGHT TRUCK SEGMENTS | | | POWERTRAIN | | | | | |
|-------------|---------------|---------------|----------------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|--------------|
| | CARS | LIGHT TRUCKS | UVS | PICKUPS | VANS/MINIVANS | ICE | HYBRID | PHEV | BEV | FCEV | ZEV |
| SC | 19.95% | 80.05% | 55.84% | 20.33% | 3.88% | 86.42% | 9.70% | 0.83% | 3.05% | 0.00% | 3.88% |
| SD | 7.38% | 92.62% | 54.46% | 35.27% | 2.89% | 90.86% | 7.02% | 0.87% | 1.25% | 0.00% | 2.12% |
| TN | 19.61% | 80.39% | 55.23% | 20.91% | 4.26% | 86.51% | 8.61% | 0.65% | 4.23% | 0.00% | 4.88% |
| TX | 19.43% | 80.57% | 52.69% | 24.92% | 2.96% | 85.80% | 8.00% | 0.72% | 5.48% | 0.00% | 6.20% |
| UT | 13.77% | 86.23% | 52.60% | 28.67% | 4.95% | 80.50% | 10.77% | 1.63% | 7.10% | 0.00% | 8.73% |
| VT | 10.75% | 89.25% | 59.77% | 26.85% | 2.64% | 79.09% | 10.59% | 3.62% | 6.70% | 0.00% | 10.32% |
| VA | 21.96% | 78.04% | 57.83% | 14.16% | 6.05% | 78.34% | 11.93% | 1.38% | 8.34% | 0.00% | 9.73% |
| WA | 17.92% | 82.08% | 62.41% | 15.64% | 4.04% | 65.80% | 15.41% | 3.01% | 15.77% | 0.00% | 18.79% |
| WV | 14.63% | 85.37% | 58.06% | 25.01% | 2.30% | 89.73% | 8.51% | 0.63% | 1.14% | 0.00% | 1.77% |
| WI | 12.27% | 87.73% | 60.02% | 22.64% | 5.07% | 85.99% | 9.75% | 0.92% | 3.34% | 0.00% | 4.26% |
| WY | 7.11% | 92.89% | 49.31% | 41.59% | 1.99% | 89.57% | 8.31% | 0.84% | 1.28% | 0.00% | 2.11% |
| U.S. | 19.98% | 80.02% | 57.67% | 18.05% | 4.29% | 80.37% | 10.12% | 1.87% | 7.62% | 0.02% | 9.51% |

**New and used vehicle sales tax revenue computed from NADA Data & state tax rates*

LIGHT VEHICLE RELATED TRADE BY STATE

| STATE | MOTOR VEHICLES & PARTS IMPORTS | MOTOR VEHICLES & PARTS EXPORTS | TOTAL MOTOR VEHICLES & PARTS TRADE | TOTAL STATE TRADE | MOTOR VEHICLES & PARTS AS A % TOTAL STATE TRADE |
|------------------|-----------------------------------|-----------------------------------|--|----------------------|---|
| Alabama | \$10,439,830,411 | \$12,442,622,823 | \$22,882,453,234 | \$64,671,624,335 | 35% |
| Alaska | \$30,637,898 | \$16,177,374 | \$46,815,272 | \$8,500,663,892 | 1% |
| Arizona | \$1,660,849,170 | \$872,140,579 | \$2,532,989,749 | \$64,257,835,830 | 4% |
| Arkansas | \$457,534,679 | \$239,882,720 | \$697,417,399 | \$13,288,791,940 | 5% |
| California | \$48,200,856,462 | \$8,083,794,385 | \$56,284,650,847 | \$629,191,297,278 | 9% |
| Colorado | \$379,976,716 | \$108,721,723 | \$488,698,439 | \$28,191,769,886 | 2% |
| Connecticut | \$254,872,198 | \$339,374,284 | \$594,246,482 | \$37,834,698,887 | 2% |
| Delaware | \$67,939,138 | \$231,889,582 | \$299,828,720 | \$15,543,783,379 | 2% |
| Dist of Columbia | \$1,438,251 | \$220,663,302 | \$222,101,553 | \$3,337,449,379 | 7% |
| Florida | \$11,475,646,331 | \$2,005,753,949 | \$13,481,400,280 | \$181,406,336,751 | 7% |
| Georgia | \$18,567,906,074 | \$2,745,517,443 | \$21,313,423,517 | \$186,761,758,011 | 11% |
| Hawaii | \$322,847,859 | \$6,788,917 | \$329,636,776 | \$3,247,908,099 | 10% |
| Idaho | \$127,056,139 | \$63,049,869 | \$190,106,008 | \$10,097,415,243 | 2% |
| Illinois | \$5,885,795,625 | \$5,794,294,781 | \$11,680,090,406 | \$303,700,061,820 | 4% |
| Indiana | \$6,689,863,143 | \$10,454,356,730 | \$17,144,219,873 | \$145,668,236,913 | 12% |
| Iowa | \$1,492,133,808 | \$997,999,717 | \$2,490,133,525 | \$31,708,820,847 | 8% |
| Kansas | \$459,998,405 | \$455,786,120 | \$915,784,525 | \$27,041,246,076 | 3% |
| Kentucky | \$6,451,361,763 | \$5,930,136,760 | \$12,381,498,523 | \$112,669,196,269 | 11% |
| Louisiana | \$924,557,637 | \$42,297,253 | \$966,854,890 | \$131,055,617,154 | 1% |
| Maine | \$80,929,336 | \$93,034,261 | \$173,963,597 | \$10,234,192,213 | 2% |
| Maryland | \$15,398,624,440 | \$1,420,268,992 | \$16,818,893,432 | \$64,655,422,469 | 26% |
| Massachusetts | \$1,120,121,976 | \$98,325,296 | \$1,218,447,272 | \$78,509,740,835 | 2% |
| Michigan | \$107,658,570,628 | \$29,621,208,814 | \$137,279,779,442 | \$236,299,711,056 | 58% |
| Minnesota | \$1,021,260,781 | \$1,548,515,009 | \$2,569,775,790 | \$62,167,281,164 | 4% |
| Mississippi | \$1,273,873,455 | \$902,406,014 | \$2,176,279,469 | \$34,173,081,591 | 6% |
| Missouri | \$2,651,925,777 | \$3,828,563,877 | \$6,480,489,654 | \$44,717,003,048 | 14% |
| Montana | \$112,607,784 | \$53,469,694 | \$166,077,478 | \$9,672,841,469 | 2% |

LIGHT VEHICLE RELATED TRADE BY STATE CONT.

| STATE | MOTOR VEHICLES & PARTS IMPORTS | MOTOR VEHICLES & PARTS EXPORTS | TOTAL MOTOR VEHICLES & PARTS TRADE | TOTAL STATE TRADE | MOTOR VEHICLES & PARTS AS A % TOTAL STATE TRADE |
|-------------------|-----------------------------------|-----------------------------------|--|----------------------------|---|
| Nebraska | \$549,705,837 | \$282,741,323 | \$832,447,160 | \$13,896,727,910 | 6% |
| Nevada | \$263,811,779 | \$84,174,957 | \$347,986,736 | \$28,478,046,816 | 1% |
| New Hampshire | \$104,785,817 | \$75,907,012 | \$180,692,829 | \$17,237,286,204 | 1% |
| New Jersey | \$13,525,482,422 | \$628,176,532 | \$14,153,658,954 | \$187,885,553,843 | 8% |
| New Mexico | \$247,396,810 | \$104,116,086 | \$351,512,896 | \$10,969,173,794 | 3% |
| New York | \$4,604,593,230 | \$1,637,885,462 | \$6,242,478,692 | \$257,255,895,781 | 2% |
| North Carolina | \$6,990,025,915 | \$1,153,538,464 | \$8,143,564,379 | \$122,259,525,484 | 7% |
| North Dakota | \$219,751,174 | \$102,971,829 | \$322,723,003 | \$13,475,563,700 | 2% |
| Ohio | \$9,119,361,269 | \$10,781,969,486 | \$19,901,330,755 | \$135,885,142,238 | 15% |
| Oklahoma | \$362,830,099 | \$184,811,928 | \$547,642,027 | \$24,269,579,742 | 2% |
| Oregon | \$2,215,243,027 | \$6,372,174,698 | \$8,587,417,725 | \$47,103,338,626 | 18% |
| Pennsylvania | \$8,862,752,347 | \$1,374,568,509 | \$10,237,320,856 | \$165,939,269,790 | 6% |
| Rhode Island | \$4,743,049,091 | \$47,389,595 | \$4,790,438,686 | \$13,090,755,043 | 37% |
| South Carolina | \$9,369,963,318 | \$12,764,918,217 | \$22,134,881,535 | \$91,467,574,010 | 24% |
| South Dakota | \$102,396,963 | \$131,381,999 | \$233,778,962 | \$4,082,701,946 | 6% |
| Tennessee | \$19,017,388,117 | \$4,942,132,092 | \$23,959,520,209 | \$145,390,952,787 | 16% |
| Texas | \$67,057,049,487 | \$16,008,718,916 | \$83,065,768,403 | \$828,757,048,423 | 10% |
| Utah | \$1,667,306,177 | \$471,114,899 | \$2,138,421,076 | \$35,948,128,521 | 6% |
| Vermont | \$40,322,741 | \$40,111,246 | \$80,433,987 | \$5,762,086,160 | 1% |
| Virginia | \$1,804,030,872 | \$1,395,574,520 | \$3,199,605,392 | \$56,337,479,150 | 6% |
| Washington | \$10,541,812,060 | \$844,953,633 | \$11,386,765,693 | \$127,265,664,021 | 9% |
| West Virginia | \$460,058,695 | \$1,236,192,595 | \$1,696,251,290 | \$10,476,485,051 | 16% |
| Wisconsin | \$1,308,907,972 | \$1,616,137,631 | \$2,925,045,603 | \$67,308,587,624 | 4% |
| Wyoming | \$31,141,648 | \$30,460,438 | \$61,602,086 | \$3,179,456,887 | 2% |
| U.S. Total | \$406,418,182,751 | \$150,929,162,335 | \$557,347,345,086 | \$1,923,244,394,636 | 11% |



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