



Shifting Gears: Redefining the Road Map for America's Auto Industry

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ABSTRACT

The American automobile industry has always been more than just a provider of transportation – it's an engine of economic growth, job creation and technological innovation. Today the industry sits at the intersection of unprecedented technological transformation and turbulent geopolitical pressures. As we approach 2030, electrification, automation and connectivity are reshaping the landscape. At the same time, firms like Uber and Lyft are changing the nature of vehicle ownership. Members of Gen Z in particular don't attach the same importance to vehicle ownership that their forbears did. But as technology pushes ahead, policy choices on issues such as global trade, tariffs and domestic electric vehicle policies could either accelerate progress or create obstacles to it. This article advocates for policies that resist outdated models of protectionism and short-term politics in favor of ones that promote the industry's ability to adapt to changes that will outlive the politics of the moment and continue to deliver innovation in a future that will be marked by electrification and autonomous vehicles.

Keywords: Electrification, autonomous vehicles, connectivity, tariffs.

The American automobile industry has always been more than just a provider of transportation—it's an engine of economic growth, job creation, and technological innovation. Today the industry sits at the intersection of unprecedented technological transformation and turbulent geopolitical pressures. From the rollout of electric vehicles (EVs) to the race for autonomous driving and now the reemergence of tariff debates, the future of the car business will help determine not just how individuals move, but how we keep America moving. As we approach 2030, the U.S. auto sector is shifting gears. Electrification, automation and connectivity are reshaping the landscape. But while technology pushes forward, policy choices—especially regarding global trade, tariffs and domestic electric vehicle policies—could either accelerate progress or send us skidding backwards. It is a complicated time to be in the car business. The challenges facing the industry are not just tough, but really tough.

A CORNERSTONE OF AMERICAN LIFE

The auto industry remains a vital part of the U.S. economy. According to the Alliance for Automotive Innovation and the U.S. Bureau of Economic Analysis it supports more than 10

million jobs and contributes \$1.2 trillion to Gross Domestic Product (GDP)*. That includes everything from manufacturing and engineering to dealerships, logistics, and aftermarket services.

In states like Tennessee, the auto sector is a lifeline, employing 143,000 people and producing over 600,000 vehicles annually†. Facilities from Nissan, Volkswagen, and General Motors anchor regional economies, supporting countless other businesses from parts suppliers to logistics and service industries. Transportation accounts for 15% of all state exports‡ and has made Tennessee a manufacturing powerhouse. But this success is not guaranteed to continue.

When you buy a car, you're doing more than purchasing a way to get from point A to point B—you're fueling a complex ecosystem that includes steelmakers in Ohio, tech innovators in Silicon Valley, and rubber suppliers across the Midwest. The ripple effects of auto employment extend to housing, education, and local tax bases to local diners and day care centers that serve working class families. When factories thrive, towns flourish.

AN UNCERTAIN ELECTRIC FUTURE

One of the biggest forces driving change is electrification. Globally, EVs are expected to represent 40–50% of new car sales by 2030§. China leads the charge, but the U.S. was making strides. In 2024, the Edison Electric Institute projected that 7.7 million EVs will be sold annually in the U.S. by 2030**, representing nearly half of all light-duty vehicle sales. In California, the number may exceed 57%.

But President Trump's recently passed "Big Beautiful Bill" quickly phases out subsidies such as the \$7,000 per tax credit for new vehicles, \$4,000 for used ones and funding for chargers under federal laws like the Inflation Reduction Act and Infrastructure Investment and Jobs Act. This means the Edison estimate now likely overstates future EV adoption in the U.S. Edison's baseline projections were based on policies in place as of 2024.

Recent modeling suggests that scrapping federal EV incentives would cause EV sales to fall by about 1.7 million units, or nearly 30%††. A Washington Post analysis warns that eliminating EV

* "Alliance for Automotive Innovation Releases NEW Economic Data," January 29, 2025.

<https://www.autosinnovate.org/posts/press-release/auto-innovators-data-driven-report-release>

† Kevin Litwin, "Tennessee's Thriving Industries Support Its Economy," *Livability*, November 22, 2024.

<https://livability.com/tn/education-careers-opportunity/tennessees-thriving-industries-support-its-economy/>

‡ "Masters of Automotive Manufacturing," Tennessee Department of Economic and Community Development.

<https://tnecd.com/industries/automotive/>

§ "Outlook for Electric Mobility," iea. <https://www.iea.org/reports/global-ev-outlook-2024/outlook-for-electric-mobility>

** "EEI Projects 78.5 Million EVs Will Be on U.S. Roads in 2035," Edison Electric Institute, October 2, 2024.

<https://www.eei.org/en/news/news/all/eei-projects-78-million-evs-will-be-on-us-roads-in-2035>

†† Pras Subramanian, "'Not Trivial': EV Sales Could Drop Nearly 30% if Trump Repeals Tax Credit," *yahoo/finance*, November 23, 2024. https://finance.yahoo.com/news/not-trivial-ev-sales-could-drop-nearly-30-if-trump-repeals-tax-credit-194135070.html?guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAAM109S5czl7keWAyK8CZF_7DFEjHij1ZakiRF0i2m9CSlx0TuDCrF0-FHSHB-OdQOhZdR4aY8DMaoQOh798RauChHHaJP4lb1U7VhiRS4Lc-m5kDEPQG3DODgEFZbSwSY4BJFImzMVZwOMhZNvycK2fkWaj4uBZUu-enJi4DFhgp&guccounter=2

credits and charger support risks a 40% plunge in EV sales by 2030^{##}, along with factory slowdowns and stalled investment. In sum, the EV adoption may fall 30% to 40% short of earlier projections, shifting the 2030 market share closer to 25% to 30% rather than nearly half.

The phasing out of EV incentives will pose immediate problems for firms such as Tesla and Ford to BMW and Hyundai that are already struggling to sell EVs in the U.S., where they have stalled at about 8% of the market.

To win Freedom Caucus votes for his Big Beautiful Bill, President Trump signed an executive order earlier this year that revoked the Biden-era targets like the 50% new EV sales by 2030 goal and paused federal grants for EV chargers under the Infrastructure Investment and Jobs Act. The executive order creates additional obstacles to EV deployment and represents a significant departure from previous federal incentives aimed at accelerating the electric transition.

Still, battery costs continue to decline and charging infrastructure is improving. The arrival of solid-state battery technology and innovations in vehicle-to-grid (V2G) integration promise to further boost efficiency and affordability. EVs not only cut fuel bills; they also require less maintenance thanks to fewer moving parts.

As global demand for EVs and battery storage increases, manufacturers are producing batteries in much larger volumes. This mass production reduces per-unit costs through shared fixed costs, automation and optimized manufacturing processes. Technological advancements such as improved battery chemistries like lithium-ion phosphate and high-nickel cathodes are also delivering more energy density at lower cost. Solid-state battery development promises even cheaper, safer and longer-lasting batteries. In sum, battery prices are falling thanks to scaling, smarter chemistry, better supply chains, and tech-driven efficiencies.

In addition to the sunseting federal EV credits, 27 states also offer similar incentives, but more conservative states could follow the federal government's lead and reduce or eliminate EV subsidies. Bumps in the road aren't just political in nature. Range anxiety, infrastructure gaps, and high upfront costs remain concerns.

Looking at the EV policy landscape, a question hovers in the background: if climate change and damage to the environment are central reasons why governments are/were offering incentives, why not incentivize not buying a car at all by subsidizing public transit? But cars are part of the American fabric and transit subsidies would act as a wealth transfer from rural to urban residents. That, in political terms, translates into a transfer from red America to blue America.

THE RISE OF AUTONOMOUS VEHICLES

Another seismic shift lies in autonomy. By 2030, most new cars are expected to have some level of driver assistance, with full self-driving vehicles starting to make commercial headway in robotaxis and freight.

^{##} Nicolás Rivero, "The electric vehicle revolution may be on shakier ground than you think," *Washington Post*, March 20, 2025. <https://www.washingtonpost.com/climate-environment/2025/03/20/trump-ev-tesla-tax-credits/>

Waymo, Tesla, and Cruise are each charting their own paths. Waymo is cautiously scaling ride-hailing services in cities like Phoenix and San Francisco. Tesla, betting on camera-based artificial intelligence (AI), wants to turn its cars into self-driving software platforms. Cruise, under GM, is integrating its technology into broader vehicle lines after setbacks in large-scale deployments.

Tesla recently announced that "GROK," the AI chatbot built by Musk's AI startup xAI, is about to roll out an integrated voice-activated assistant in Tesla vehicles. If successful, this marks a significant step toward AI driven driving experiences.

Artificial Intelligence is evolving at light speed. It is a driving force behind autonomous vehicles, but adoption will depend as much on public policy as on technological readiness. While AI enables vehicles to process real-time data, interpret complex road conditions, and improve through continuous learning, widespread deployment requires clear regulatory standards, liability frameworks, and public trust. Without these foundational elements, AI's technical potential may outpace society's ability to absorb and govern its impact.

Forecasts vary, but experts expect 60% of vehicles sold globally to have Level 2 autonomy (like adaptive cruise control) by 2030^{§§}. More advanced levels, such as Level 3 autonomy, where vehicles can operate without human intervention under certain circumstances, and Level 4, where vehicles can continue to operate in specific conditions even if a human doesn't respond to a request to take over, will gain ground in niche applications. The robotaxi market alone could exceed \$40 billion by the end of the decade^{***}.

These forecasts will likely remain viable. A recent Berg Insight report expects the share of new vehicles with Level 2 automation to rise from 28% in 2024 to 51% by 2030⁺⁺⁺. The new legislation does not diminish the trend, since L2 systems are already well regulated and widely accepted. For example, new federal and state rules, such as Texas requiring strict AV testing and National Highway Traffic Safety Administration's AV STEP voluntary framework, focus on safety and regulation but do not restrict Level 2 systems.

Autonomy also raises complex questions: Who's liable in a crash? How should vehicles make moral decisions in emergencies? How will professional drivers be impacted? And how do we keep the data they generate secure? These questions aren't just philosophical, they're essential to building public trust.

^{§§} "Majority Of New Vehicles Will Have Level 2 Autonomy By 2030," *Autobody News*, February 1, 2024.

<https://www.autobodynews.com/news/majority-of-new-vehicles-will-have-level-2-autonomy-by-2030#:~:text=Majority%20of%20New%20Vehicles%20Will,manual%2C%20visual%20or%20cognitive%20disengagement>

^{***} "Robotaxi Market Summary," Grand View Research. <https://www.grandviewresearch.com/industry-analysis/robotaxi-market-report#:~:text=The%20global%20robotaxi%20market%20size,and%20Level%205%20automation%20systems>.

⁺⁺⁺ "Berg Insight expects rapid adoption of autonomous vehicle technology in the next 10 years."

<https://www.berginsight.com/berg-insight-expects-rapid-adoption-of-autonomous-vehicle-technology-in-the-next-10-years>

CONNECTIVITY WILL DEFINE THE EXPERIENCE

Cars of the future won't just be cleaner or smarter; they'll also be connected. By 2030, nearly all new vehicles will have vehicle-to-everything (V2X) capabilities. That means communication with other cars, infrastructure, pedestrians, and even the power grid.

Imagine AI-personalized settings, augmented reality windshields – advanced displays that project real-time information such as navigation directions, hazard alerts and vehicle data directly onto the windshield – or subscription-based infotainment services that auto update over 5G. The V2X market could top \$2.3 billion by 2031^{***}. And automakers see data-driven experiences as a lucrative new frontier.

THE PUSH AND PULL OF TRADE POLICY

Even as technology speeds ahead, trade policy could slam on the brakes. In April, President Trump proposed a 25% tariff on all foreign-made cars and parts. The idea: bring manufacturing back home. But the reality is far more complex.

Today's cars are global products. One might include semiconductors from Taiwan, transmissions from Mexico, batteries from South Korea, and software from Germany. Automakers depend on streamlined logistics and just-in-time inventory. Tariffs that interrupt these supply chains don't just hurt foreign firms—they raise costs for American manufacturers and consumers and throw a wrench in the system.

Protecting the auto ecosystem of places like Tennessee, where it includes over 900 related firms, requires trade policies that reflect how the industry works today. Disrupting that system with broad tariffs could make American-made vehicles less competitive and stifle investment. This would jeopardize jobs from engineers and machinists to diners and daycare centers that serve working families.

That doesn't mean all tariffs are bad. Selective tariffs—like those aimed at unfairly priced Chinese EVs—may be necessary to level the playing field. Anti-dumping duties or component-specific measures (such as on batteries) can support domestic production without breaking the bank for consumers. The key is balance: protect jobs without punishing progress.

OTHER CHANGES IMPACTING THE AUTO INDUSTRY

Changes in car ownership and use will also have important effects. The rise of firms like Uber and Lyft are changing the nature of vehicle ownership and have disrupted the taxi and car rental industries, which in the past were serious customers for automakers. These changing mobility patterns will have significant implications for auto firms.

Gen Z has different attitudes about owning a car. They don't seem to attach the same importance to car ownership that previous generations did. Even getting a driver's license is not the milestone it was in the past. This generation appears more interested in mobility but

^{***} "Automotive V2X Market is Forecasted to Reach US\$ 2.3 Billion in 2031, says Stratview Research," June 11, 2025.
https://www.stratviewresearch.com/press_details/automotive-v2x-market-to-reach-2-3-billion-by-2031?srsId=AfmBOooTTNiOH-e8HFCiqwhehTxwE58gfmtUqrfZGtSqQYE0jrWr8CCF

less interested in actually owning a car. They want much more optionality. That will require automakers to navigate a less certain future that will likely include fewer stable customers.

THE RIGHT ROADMAP FOR 2030

What should a smart strategy look like? First, it must invest in infrastructure—charging stations, grid upgrades, and 5G networks. Second, trade policy must reflect the real structure of today's industry: global, just-in-time, and innovation-driven. Third, workforce development must help Americans adapt to software-defined vehicles and AI-powered logistics.

Finally, policymakers should encourage collaboration across sectors—automakers, tech firms, energy providers, and governments must align. Sustainability, not protectionism, should guide investment. And regulatory frameworks must offer clarity without stifling innovation.

CONCLUSION: DRIVING TOMORROW (AN UNCERTAIN BUT ACCELERATING ELECTRIC FUTURE)

The road to 2030 is filled with both promise and potholes. The U.S. auto industry has the potential to emerge as a global leader in clean, connected, and autonomous mobility. But that requires more than slogans. It demands a fusion of investment, thoughtful regulation and international cooperation.

The industry can't afford to be driven by outdated models of protectionism or short-term politics. While the future of cars may still lean electric, that future is no longer assured or evenly distributed. The rollback of federal EV subsidies and infrastructure incentives will introduce real uncertainty, which will slow investment and make widespread adoption more challenging. The future of jobs remains digital and the future of trade is still deeply interconnected---but the road ahead for clean transportation in the U.S. may now be shaped less by national leadership and more by fragmented efforts, regional commitments, and market resilience.

This refers to the ability of the auto industry and related players, such as battery producers and charging network operators, to adapt, innovate, and continue progressing toward electrification and clean transportation despite the loss of federal support.

It includes sustained consumer demand for EVs even without subsidies, automakers following through on long-term electrification commitments, private capital continuing to fund EV infrastructure, battery innovation and autonomous technologies, as well as regional or state policy support stepping in to fill gaps left by the federal rollbacks. Even in the absence of cohesive national policy, the private sector and regional actors may still push the clean transportation transition forward, though more unevenly and with greater risk.

If America wants to lead, it must be willing to drive—not just ride along.