



October 1, 2021

Submitted via regulations.gov

Devin Horne
International Trade Administration
U.S. Department of Commerce
1401 Constitution Avenue NW, Room 28018
Washington, DC 20230

RE: ITA–2021–0005

Dear Mr. Horne:

The Alliance for Automotive Innovation¹ (Auto Innovators) appreciates the opportunity to provide comments on the Department of Commerce’s (DOC) and International Trade Administration’s (ITA) “Request for Comments on U.S. Clean Technologies Export Competitiveness Strategy.”²

Supporting over 10 million jobs and accounting for nearly six percent of the Gross Domestic Product, the U.S.-based automotive industry manufactures, sells and exports vehicles. The auto manufacturing sector depends on thousands of companies supplying parts, components, and materials, as well as a vast retail and vehicle maintenance network of dealers and independent repair shops. No other industry in America has such an expansive reach to every state, delivering economic benefits and creating jobs in so many different sectors. Auto production remains the country’s largest manufacturing sector, including 14 automakers operating 50 light-duty vehicle assembly plants across 14 states.³

This robust domestic footprint makes the auto industry a vibrant player in today’s global economy. At present, the auto industry in the U.S. exports vehicles and parts to 213 countries around the world. In 2020, exports of cars and parts from U.S. ports amounted to over \$90 billion– 22 percent more than America exported just 15 years ago.

Today, we stand on the cusp of a transformative moment for the automotive industry in the United States. Through substantial, long-term investments in electrification, as well as advanced safety technologies, including automation, the industry is poised to redefine motor vehicle transportation for

¹ Formed in 2020, the Alliance for Automotive Innovation is the singular, authoritative and respected voice of the automotive industry. Focused on creating a safe and transformative path for sustainable industry growth, the Alliance for Automotive Innovation represents the manufacturers producing nearly 99 percent of cars and light trucks sold in the U.S. The organization, a combination of the Association of Global Automakers and the Alliance of Automobile Manufacturers, is directly involved in regulatory and policy matters impacting the light-duty vehicle market across the country. Members include motor vehicle manufacturers, original equipment suppliers, technology and other automotive-related companies and trade associations. The Alliance for Automotive Innovation is headquartered in Washington, DC, with offices in Detroit, MI and Sacramento, CA. For more information, visit our website <http://www.autosinnovate.org>.

² 86 FR 48399, August 30, 2021. <https://www.federalregister.gov/documents/2021/08/30/2021-18637/request-for-comments-on-us-clean-technologies-export-competitiveness-strategy>.

³ “Driving The U.S. Economy.” *Auto Innovators’ Website*. <https://www.autosinnovate.org/initiatives/the-industry>.

decades. Thus, Auto Innovators and our member companies have an important role and vested interest in assessing opportunities for “growth and [to] ensure U.S. innovation and competitiveness in clean technologies sectors,”⁴ and we look forward to an ongoing dialogue on development of a comprehensive national strategy for clean technologies. Such a strategy is important to our nation’s global competitiveness, economic security, and U.S. workforce. For the auto industry, this vision depends on having a viable U.S. market for clean vehicle technologies, which include electrified vehicles.⁵ A viable and growing U.S. market for electric vehicles reinforces the need to have a growing manufacturing sector that produces these technologies in our nation, and ultimately a surplus of clean technologies for export to other viable markets as well.

U.S. Leadership Will Spur Clean Technology Exports

To support the export of clean technologies, our nation must lead in the adoption of these technologies.

The auto industry has a long history of innovation and leadership in the development of clean vehicle technologies. For instance, over the past 40 years, automakers and their suppliers have developed technologies that reduced criteria emissions over 99 percent.⁶ The auto industry has also invested billions of dollars in improving vehicle fuel economy, resulting in a nearly 30 percent improvement over the past 15 years.⁷ These technologies have significantly reduced emissions, led to cleaner communities, reduced fuel consumption, and provided more value for our customers. These clean technologies have been successful in the U.S., manufactured in our nation, and exported throughout the world.

Now, the auto industry is committed to working toward a net-zero carbon transportation future that includes a shift to electric-drive vehicles. Our industry is making substantial, long-term investments in electrification, as well as in advanced safety technologies, to create a cleaner, safer and smarter future for personal mobility. Specifically, the auto industry is investing over \$330 billion in electric vehicle technologies by 2025 and has committed to the goal of obtaining 40 to 50 percent electric vehicle sales in the United States by 2030.⁸

Since being commercially introduced over ten years ago, electric vehicle sales have only recently grown to over three percent of light-duty vehicle sales in the U.S. While Auto Innovators supports the goal of 40 to 50 percent EV sales by 2030, we must work collaboratively to achieve this ambition. Neither the current trajectory of consumer adoption of electric vehicles, nor existing levels of federal support for supply- and demand-side policies, is sufficient to meet our goal of a net-zero carbon transportation future. The auto industry is investing heavily to achieve these goals, but we also recognize our efforts alone will not be sufficient for achieving -these ambitions.

In order for the U.S. to remain a leader in the development and adoption of clean vehicle technologies that will define the future of transportation, we need a comprehensive national strategy that brings all

⁴ 86 FR at 48399.

⁵ For purposes of this document, the terms, “electrified vehicles”, “electric vehicles” and “EVs”, refers to the three following technologies: battery electric vehicles, plug-in hybrid electric vehicles and fuel cell electric vehicles.

⁶ U.S. EPA. “Automotive Trends Report: Highlights of the Automotive Trends Report.” <https://www.epa.gov/automotive-trends/highlights-automotive-trends-report>.

⁷ *Ibid.*

⁸ “Auto Innovators: Aligning Policies for a Cleaner Future.” *Press Release*. August 5, 2021. <https://www.autosinnovate.org/posts/press-release/aligning-policies-for-a-cleaner-future>.

stakeholders to the table and recognizes the societal commitment – and opportunity – of the transformative moment to clean vehicle technology. We must work together to develop a holistic vision that ensures charging and hydrogen refueling infrastructure are being built, customers are increasingly purchasing or leasing electric vehicles, and our manufacturing workforce and supply chain are being integrated in this transition.

Consumer acceptance, a robust market, and sustained manufacturing and supply chain efforts are intrinsically linked, and all three legs are integral to continued U.S. competitiveness in the EV transformation. Individually, each is insufficient to sustain or accelerate U.S. competitiveness in clean vehicle technologies. A comprehensive strategy that harmonizes these three critical elements and identifies necessary complementary measures has the potential to transform the U.S. from a global competitor to a global leader in the future of clean vehicle technologies.

Supply and Demand Side Policies

In late 2020, Auto Innovators released the attached Innovation Agenda⁹ to provide a broad, holistic vision of the complementary supply-side and demand-side policies necessary to support U.S. leadership at this transformative moment. These policies are aimed at preparing the market, manufacturing, and the customer for EVs, and for greatly expanding adoption of EVs in the U.S.

Supply-side policies may represent one of the best opportunities to develop long-term and sustainable U.S. leadership in automotive innovation, contributing to the long-term goals to also expand exports of electric vehicles. Supply-side policies include, but are not limited to, incentives for research and development, modernizing regulatory approaches for advanced technologies, supporting manufacturing investments, and encouraging workforce evolution.

On the demand-side, policies that facilitate consumer awareness and wider-scale adoption are critical to sustaining a robust supply base and providing a smooth transition to advanced clean technologies. Examples of influential demand-side policies include, but are not limited to, consumer incentives, infrastructure investment, building codes, and ways for governments to lead by example.

Our national success in achieving a zero-emission future is a shared and collective responsibility that will demand immediate and sustained action from many partners. As President Biden has established an “all of government” approach to addressing climate change, so too must an “all in” approach to transforming America’s manufacturing base, workforce, fueling infrastructure and vehicle fleet be established. Expanded manufacturing, adoption, and success of EVs in the U.S. will provide a strong foundation for increasing our exports of this clean technology.

Ten Actions to Expand U.S. EV Sales

In addition to federal, state and local complementary policies aimed at increasing supply and demand, Auto Innovators has identified ten key actions needed to support the transition to electric vehicles (EVs):

⁹ “Alliance for Automotive Innovation Releases Auto Innovation Agenda.” *Press Release*, December 15, 2020. <https://www.autosinnovate.org/posts/press-release/alliance-for-automotive-innovation-releases-auto-innovation-agenda>.

1. *Supporting American drivers with reliable and convenient EV refueling infrastructure*

The 2021 National Academies report on improving light-duty vehicle fuel economy cites location and availability of charging stations as the number one reason for a consumer to avoid an electric vehicle.¹⁰ Electric vehicle recharging and hydrogen fueling infrastructure availability and visibility will be critical to promoting EV market growth and supporting manufacturer sales targets to both meet the proposed standards and long-term electrification goals. Home charging will cover some needs, but not all. State and federal governments, together with private sector charging companies, have the opportunity to establish a fueling infrastructure plan that will provide confidence to American drivers that they will never be afraid of running out of fuel. Auto Innovators supports the National EV Charging Initiative.¹¹ In the long-run, over 250 million light-duty vehicles will need to be supported with convenient, affordable and reliable EV and hydrogen fueling infrastructure.

2. *Helping consumers bridge near-term cost premiums with purchase incentives*

For many popular vehicle segments and for longer range plug-in electric vehicles, price parity with ICE vehicles may not be achieved until 2030 or later, and even that projection is highly uncertain.¹² Many consumers may be unable, or simply unwilling to shoulder the higher upfront cost premiums. Purchase incentives help close the price gap and drive electrified vehicle sales. A study by Resources for the Future finds that federal income tax credits resulted in a 29 percent increase in EV sales.¹³ Federal, state, and local governments should put in place rebates and other incentives to drive market share for EVs.

3. *Fleet purchase requirements*

Over 8 million cars and trucks are owned by fleet operators in the U.S.¹⁴ Fleets represent a significant opportunity for electrification given regular routes and often centralized fueling. Federal, state, local, and private fleets have an opportunity to demonstrate leadership in accelerating adoption of EVs. Recently, Auto Innovators wrote to the California Air Resources Board's (CARB) executive officer in support of such requirements as part of CARB's Advanced Clean Cars 2 rulemaking.¹⁵ Fleet requirements provide an opportunity for federal, state and local governments to lead by example.

4. *Policies to support development of EV and battery manufacturing and domestic supply chains, including critical minerals*

¹⁰ National Academies of Sciences, Engineering, and Medicine, *Assessment of Technologies for Improving Light-Duty Vehicle Fuel Economy 2025-2035*, Washington, DC: The National Academies Press, 2021, at 5-135. Available at <https://doi.org/10.17226/26092> (accessed Sep. 9, 2021). Hereinafter "NASEM Report".

¹¹ See *EV Charging Initiative*, National EV Charging Initiative, <https://www.evcharginginitiative.com/> (accessed Aug. 26, 2021).

¹² *NASEM Report* (*supra* note 9) at 5-141.

¹³ Jianwei Xing, Benjamin Leard, Shanjun Lee, *What Does an Electric Vehicle Replace?*, Working Paper 19-05, Resources for the Future (Feb. 2019), <https://www.rff.org/publications/working-papers/what-does-electric-vehicle-replace/> (accessed Aug. 26, 2021).

¹⁴ *U.S. Automobile and Truck Fleets by Use*, U.S. Department of Transportation Bureau of Transportation Statistics, <https://www.bts.gov/content/us-automobile-and-truck-fleets-use-thousands> (accessed Sep. 14, 2021).

¹⁵ Letter from Alliance for Automotive Innovation letter, to Richard Corey, Executive Officer, California Air Resources Board, "Zero Emission Vehicles – Requirements for Fleets" (Aug. 20, 2021).

At present, most critical minerals necessary for the production of advanced EV motors and batteries are mined and processed outside of the U.S. Additional domestic sources are needed to supply EV production and encourage domestic processing, manufacturing, and jobs.

5. *A nationwide low carbon fuel standard program*

Low carbon fuel standards are a market-based approach to decarbonizing transportation fuel and driving funds toward incentivizing EVs.

6. *Development of a battery and EV recycling system in the United States*

As EV manufacturing in the U.S. grows, so will the demand for critical minerals. In addition, as today's EVs are retired, a robust recycling system is required to ensure valuable components of EVs, such as batteries and the metals within them, are reused and recycled. Auto Innovators is actively working with government and recycling industry stakeholders to develop such a system.

7. *Increased research and development investments*

EVs remain relatively more expensive than equivalent internal combustion engine ("ICE") vehicles. Significant additional research is required to achieve the cost reductions projected and hoped for.

8. *Continued actions and commitments by automakers to improve the availability, variety, and affordability of EVs in the United States*

Manufacturers are on pace to debut almost 100 pure electric models by the end of 2024.¹⁶

9. *Consumer education programs*

Additional consumer education and advertising campaigns can help promote the purchase of EVs. With over 130 models expected in the coming years, a federal consumer-based program will be important to growing customer awareness and adoption of EVs.

10. *Metrics and milestones that align with nationwide EV sales targets*

For the nine above action items, development of specific metrics to track progress and identify milestones linked to EV sales targets will be critical. These metrics and milestones will ensure the necessary conditions for success are being developed and will provide federal, state, and local governments with guidance on policies and funding needed to support expanded electrification across the nation.

Summary

To remain a leader in the development and adoption of these transformational technologies, the U.S. needs a comprehensive national vision and strategy rooted in economic, social, environmental, and cultural realities and requires a sustained holistic approach. This transformation is greater than any one policy, branch or level of government, or industry sector, and we stand ready to work with your Administration to define the bold, comprehensive vision and innovation that will place the U.S. at the forefront of creating a cleaner future for motor vehicle transportation. Such a holistic approach will

¹⁶ Hot, New Electric Cars That Are Coming Soon, Consumer Reports (Dec. 30, 2019, updated Sep. 9, 2021), <https://www.consumerreports.org/hybrids-evs/hot-new-electric-cars-are-coming-soon-a1000197429/> (accessed Sep. 14, 2021).

complement and amplify significant private sector resources that will accelerate a net-zero carbon transportation future.

Nations that lead the development and adoption of innovative technologies will also shape supply chains and job creation, define global standards and, potentially, reshape the international marketplace. These efforts will, in turn, support a healthy and vibrant economy for exports of our clean and innovative technologies globally.

Sincerely,



Vice President, Energy & Environment



John Ohly
Senior Director, Strategy, Advocacy, and
Technology Policy

CC: Andy Parris, Department of Commerce

Attachment

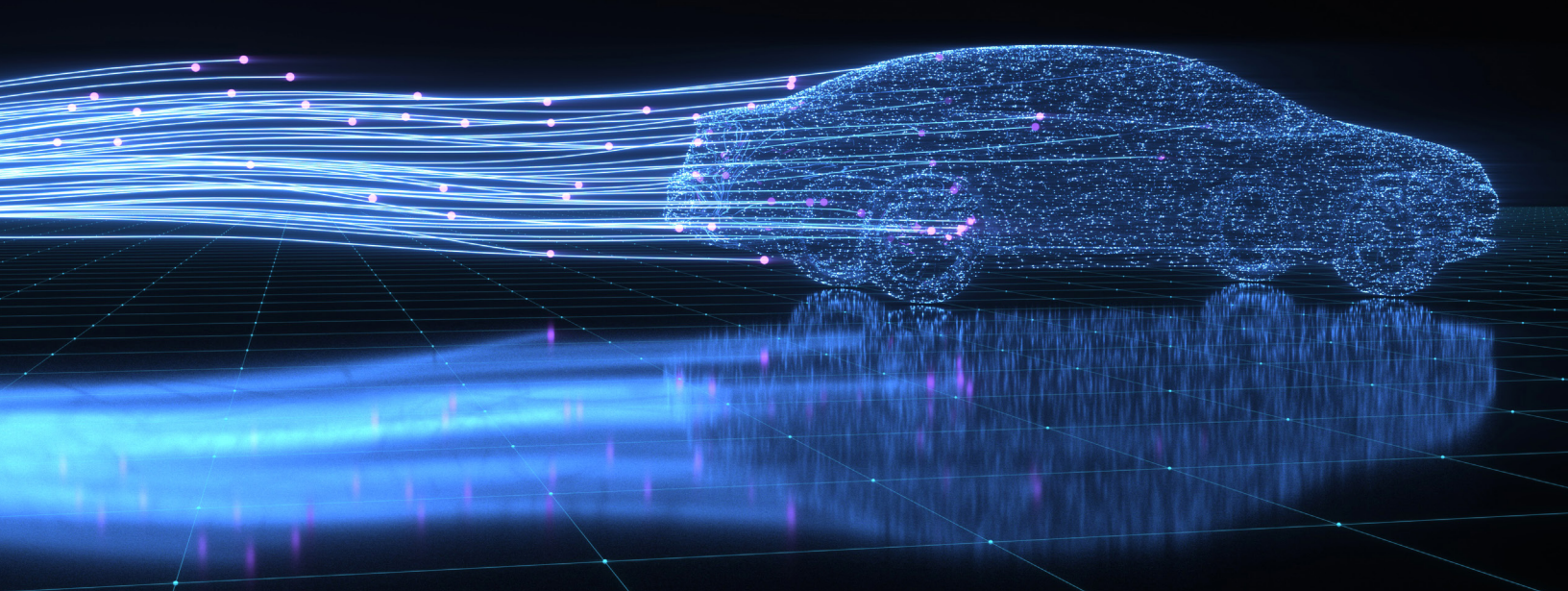


ALLIANCE
FOR AUTOMOTIVE
INNOVATION



Auto Innovation Agenda

December 2020



Background

We are on the cusp of a transformative moment for the automotive industry in the United States. Through substantial, long-term investments in electrification,¹ as well as advanced safety technologies, including automation, the industry has committed to creating a cleaner, safer, and smarter future for personal mobility. Due to intense global competition, the U.S. must recommit itself to developing these innovative technologies — supported by complementary legislative and regulatory policies — that will redefine motor vehicle transportation for decades.

This comes at a challenging time as the auto industry — and the nation — navigates near- and long-term uncertainty due to the ongoing COVID-19 public health emergency. In the U.S., the pandemic pushed industry sales from above average in February to a nearly 50 percent reduction in April when the industry — for the first time since World War II — witnessed the idling of all major North American production facilities.

Although motor vehicle manufacturing ground to a halt for roughly eight weeks, the automotive industry did not stop working. Instead, Auto Innovators' members continued innovating; putting decades of experience in precision manufacturing, supply networks, logistics, and purchasing to work in helping combat the coronavirus.

The innovative spirit that fueled the industry's contributions to the national response was coupled with efforts to create, adopt, and implement robust health and safety practices to protect employees and restart our nation's economic engine.

The auto industry has weathered COVID-19's storm remarkably well compared to other sectors, but its long-term economic effects are still unknown. While the industry continues to work to mitigate COVID-related losses, the loss in vehicle sales and economic uncertainty resulting from the ongoing public health emergency means there will be less capital to invest in future technology development. While the commitment to a cleaner, safer, smarter future is unwavering, the pathway to realizing that vision will be far more challenging, and it includes uncertainties related to the nation's leadership role.

In many respects, how individual nations respond to COVID-19 will shape the future of this highly competitive, capital-intensive industry. **Today, the auto sector employs roughly 10 million Americans, in addition to those who are employed in the technology and mobility sectors.** It accounts for nearly six percent of our country's gross domestic product and represents the nation's largest durable goods manufacturing sector.

This is what is at stake as we look to the future of the auto industry in the U.S. The nations that lead the development and adoption of innovative technologies, such as electrification, connectivity, and automation, will also shape supply chains, define global standards, and potentially, reshape the international marketplace. This is not just about the future of the auto industry in the U.S. — it is about the nation's global competitiveness and economic security.

To remain a leader in the development and adoption of these transformational technologies, the U.S. needs a comprehensive national vision and strategy rooted in economic, social, environmental, and cultural realities.

- What supply chains are available and how stable will they be? What are the challenges to developing the U.S. supply base for a specific technology?
- How are we preparing or repositioning the U.S. workforce, including auto workers, suppliers, and related workers for these new technologies?
- What are the impediments to consumer adoption of specific advanced safety technologies or vehicle electrification?
- How do we address the challenges and barriers unique to certain communities, such as rural and disadvantaged, and ensure advanced vehicle technologies are accessible and beneficial to all Americans?
- What other industries, sectors, or stakeholders will be necessary to realize the potential of these important transformations?

These are but a few of the challenging questions at the core of a comprehensive approach to maintaining U.S. competitiveness in automotive innovation. Strategies that do not account for these realities and decisions deferred could, inadvertently, harm the nation's workforce, limit consumer options, and handcuff our nation's global competitiveness. Our goal is to avoid such outcomes by continuing to work collaboratively with policymakers and other stakeholders to maintain the U.S.'s global leadership in automotive innovation.

To that end, this document is an outline — the beginning of a broader conversation about what it will take to prepare for the future of automotive innovation, manufacturing, and personal mobility. It is the first step in developing the connective tissue and bipartisan support necessary to realize policy objectives through a shared understanding of economic and political realities.



Supply Side Transformation

While many traditional policy approaches focus on demand-side solutions (consumer incentives and technology mandates, for example), these only contribute to sustained U.S. leadership if they align with supply-side realities. In fact, the supply side may represent one of the best opportunities to develop long-term and sustainable U.S. leadership in automotive innovation.

1. Incentivize R&D

Globally, the automotive industry annually invests more than \$125 billion in R&D, \$20 billion more than the software and internet technology industry.² Roughly \$26 billion of this annual investment occurs in the U.S., which harnesses the innovation and ingenuity of major automakers and their workforce.³ As companies, including the broader supply chain, absorb the pandemic's economic effects with forecasted sales down 16 percent to 25 percent for 2020, evidence points to an existing capital resource strain. This will likely drive companies to curtail key investments, allocate resources toward technologies with the most promise, or markets with the most regulatory certainty. The U.S. has an opportunity to further its position in automotive R&D by:

- a. Enhancing R&D incentives over the next 3-5 years;
- b. Avoiding overly restrictive export control policies that could undermine the competitiveness of U.S.-based innovation in the global market; and
- c. Facilitating and expanding access to capital to support such transformations over the next 3-5 years.

2. Modernize Regulatory Approaches for Advanced Technologies

Regulatory uncertainty creates tremendous challenges for companies looking to make investment decisions, especially in the current environment. For example, the U.S. has presented an attractive market for investments in the research, testing, and development of advanced safety technologies. At present, however, the U.S. risks falling behind global competitors that are moving more proactively to embrace and deploy these technologies. The U.S. can strengthen its position as a global leader in safety innovation by:

- a. **Advancing U.S. Leadership in Automated Vehicles (AVs)**
AV technologies have the potential to revolutionize motor vehicle safety — as well as mobility concerns such as congestion, emissions, equity, and quality of life — while also fueling a \$2 trillion global industry. The U.S. can advance global leadership in developing these revolutionary technologies and new mobility business models through a national approach that reduces uncertainty and paves the way to long-term success. This coordinated approach would benefit from elements such as modernizing or adapting regulatory approaches to accommodate new technologies, clarifying and aligning federal and state roles and responsibilities, and advancing consumer education and awareness, among others.
- b. **Modernizing the New Car Assessment Program (NCAP)**
Uncertainty with respect to safety priorities from both a regulatory and consumer ratings perspective has

an inhibiting effect on investment in advanced safety technologies. An effective and consistently maintained NHTSA NCAP, guided by mid- and long-term roadmaps, will leverage market forces to accelerate the development and deployment of advanced safety technologies — many of which serve as the building blocks for Automated Vehicles (AVs).

Policies that drive adoption of advanced automotive safety technologies exemplify the potential to evolve regulation to support the broader transformation to smarter, safer, and cleaner personal transportation. There are many examples across the regulatory landscape — from clean energy, to data, privacy security, and beyond — where creativity and collaboration present opportunity for U.S. leadership and innovation.

3. Support Manufacturing Investments

Global competitors have already established market dominance over certain supply chains and become the primary manufacturing base for certain innovative technologies. For example, China dominates the critical mineral global supply chain and EV battery manufacturing, creating potential long-term economic security risks. In contrast, the North American supply base heavily aligns toward internal combustion engine vehicles. Transitioning the existing U.S. supply base and retooling manufacturing facilities to produce the latest vehicle technologies will require substantial time and resources. Incentivizing these investments now will help prepare the manufacturing and supply sectors for greater adoption of new technologies, provide workforce transition opportunities, and limit the risk of workforce loss due to international investments elsewhere.

4. Encourage Evolution of the Workforce

Innovative automotive technologies have the potential to disrupt or transform existing jobs, professions, or even industries. Because these transitions will not happen overnight, we have an opportunity to understand and develop solutions to minimize how technology could possibly impact the greater workforce. In addition to the suite of complementary policies necessary to preserve the U.S. manufacturing and supply base, additional measures include developing or examining:

- a. Training programs to educate and facilitate a transition of the existing workforce;
- b. Programs to attract and develop a pipeline of new talent; and
- c. The way in which specific technologies may impact jobs and whether potential compensatory measures are appropriate.



Complementary Demand Side Policies and Programs

Supply side measures are vital to transitioning and sustaining U.S. leadership in technology innovation and manufacturing. These efforts, however, are muted without a robust market and customer demand for these innovative technologies. **In the case of Zero Emission Vehicles (ZEVs), the auto industry plans to invest \$330 billion in vehicle electrification by 2025⁴ and IHS Markit predicts there will be 130 models available in the U.S. by 2026.⁵** Yet, despite more than 40 models available today, just 2 percent of all light-duty vehicles sold in the U.S. are currently zero emission vehicles.⁶ Thus, strategies that facilitate consumer awareness and wider-scale adoption are critical to sustaining a robust supply base and providing a smooth transition to advanced clean technologies.

Rather than viewing this through the lens of “cost parity” to achieve meaningful consumer acceptance, we need to examine supportive policies that take it a step further, toward “convenience parity.” This is most applicable in the context of EVs — what is necessary to reach a point where a consumer can go shopping for a new vehicle and look at the EV and ICE options with few questions about the relative costs, ease, or convenience of ownership between the two?

This is an opportunity to address these existing barriers and to ensure the U.S. can be a leader and not a follower in the adoption and use of lower-carbon technologies. The following examples reflect the supportive/complementary measures necessary to achieve regulatory requirements or policy objectives focused on accelerating the transition to electric vehicles:

1. Consumer Incentives

The industry has made significant progress in driving down electric vehicles costs — specifically battery technology, which is the largest cost-driver for EVs. Even then, these vehicles remain more expensive than their ICE counterparts, especially in the larger vehicle platforms that American buyers favor. Even as we get closer to price parity, complementary challenges around convenience factors, such as access to or cost of home charging infrastructure or the ability to drive longer distances and easily, quickly “refuel,” are impediments to widespread adoption.

As the cost and convenience gaps narrow, broad-based consumer incentives (at the state and federal level) remain a strong complementary policy tool to drive greater EV adoption. In New York, for example, electric car sales surged 74 percent when the state implemented an electric car rebate. And in Georgia, sales dropped 90 percent when the EV incentive was phased out. Incentives can range from state or federal purchase/lease incentives, to consumer benefits such as free or preferred public parking, HOV access, and free charging, among others. Consumer incentives, however, are not a panacea and must be coupled with other supply and demand-side measures.

2. Infrastructure Investment

Access to electric charging and hydrogen fueling infrastructure along with concerns surrounding “range anxiety” are among the most substantial impediments to widespread EV adoption. Failure to align infrastructure investments or incentives will impede EV adoption and undermine shared policy objectives. We must work collaboratively on the near-term policy support, such as federal tax incentives or grants to spur infrastructure

development, but also on the long-term questions — such as the need for, and effect on, grid resilience — to realize a sustainable market for these technologies. Likewise, while developing adequate infrastructure is a challenge across all communities, it is especially pronounced in disadvantaged communities, multi-unit dwellings, and urban settings where access to in-home charging is likely not an option. These are important factors that must be taken into consideration by federal, state, and local planning efforts.

3. Building Codes

The Department of Energy (DOE) estimates at least 80 percent of vehicle charging occurs at home.⁷ Most homes and businesses, however, lack the electric infrastructure to support vehicle charging, creating additional expense or inconvenience for those seeking to adopt the technology. As part of a holistic approach to ensure that supply/demand barriers are reduced, we need to work together with state and local governments to carefully consider what is necessary to equip homes and businesses (especially new construction) with the infrastructure to support cleaner transportation both now and in the future.

4. Lead by Example

Federal and state governments have an opportunity to lead by example and maximize EV adoption by prioritizing these vehicles’ purchases for public fleets. This action also has the benefit of ensuring growing demand for more EVs as they come to market, while also socializing consumers to the reality of EVs on American roadways. Further, government employees’ experience of driving and charging an EV, even if only for work, helps expand consumer awareness to diverse communities, as they share their experience with family and friends.

Economic Contributions

THE AUTO INDUSTRY IS AN ECONOMIC ENGINE:

10.3 Million Jobs

\$272

Billion Annually in the Form of Federal, State, and Local Tax Revenues

\$650 Billion in Paychecks

5.5%

Percent Which the Collective Auto Industry Accounts for of U.S. GDP

\$1.1 Trillion Put into the Economy by Auto Manufacturing Each Year

\$26

Billion in U.S.-based R&D, Annually, Supporting More Than 60,000 Jobs

A Time for Action

The U.S. has long been a leader in automotive innovation — as evidenced by the robust R&D investments by automakers, the number of patents issued on an annual basis, or the number of companies — new and established — at the forefront of testing, deploying, and manufacturing the next generation of innovative technologies here in the U.S. This not only benefits the auto industry and our workforce, but also the numerous other sectors that leverage our innovations and share similar supply chains, including defense and aerospace. For example, imagine what a robust U.S. battery industry would mean for the resilience of our electric grid, among other consumer applications.

While the U.S. is well positioned to continue its long-standing leadership in automotive innovation, we cannot be complacent. Globally, nations are backing bold commitments with government investments and policy support. China has already established EV battery supply chain and manufacturing dominance. Likewise, Europe is responding by developing its own supply chains. Meanwhile, Japan has made a bold commitment to support fuel cell technology advancements.

Similarly, China is moving aggressively to lead in safety technology advancements — including AVs. As evidenced by experience in other sectors — such as information and communications technologies — as well as the current EV battery supply chain, falling behind global competitors presents long-term risks to U.S. competitiveness and economic security.

For the millions of workers depending on the auto industry for their livelihoods, we must seize this window of opportunity. Working collaboratively to develop a coherent, national approach to automotive innovation opens the door to endless possibilities and avoids the unintended consequences of focusing on narrow policy objectives. For example, technology mandates without complementary supply side investments risk eroding the U.S. manufacturing base for innovative technologies. Likewise, a failure to embrace and encourage adoption of advanced vehicle technologies in the U.S. risks ceding technology leadership and supply chain dominance to global competitors. Fortunately, we have an opportunity to avoid those outcomes.

The auto industry has long been an economic engine for the nation, and it is poised to remain the bedrock of U.S. innovation and manufacturing for decades to come. Realizing this potential, however, requires collaboration, cooperation, and creativity among all stakeholders. This is an opportunity to open our minds to new possibilities and work together to take a fresh, comprehensive look at what it will take to realize a shared vision of a cleaner, safer, smarter future.

References

¹ For the purposes of this document, the term electrification includes all zero emission or electric vehicles (“ZEVs” or “EVs”), including plug-in and plug-in hybrid EVs as well as fuel cell technologies.

² Strategy&. “The Global Innovation 1000 Study.” Accessed November 2, 2020. https://www.strategyand.pwc.com/gx/en/insights/innovation1000.html?utm_campaign=sbpwc&utm_medium=site&utm_source=articletext

³ National Science Foundation. “U.S. Businesses Reported \$441 Billion for R&D Performance in the United States During 2018, a 10.2% Increase from 2017.” Accessed November 2, 2020. <https://ncses.nsf.gov/pubs/nsf20316>.

⁴ AlixPartners. “AlixPartners, Press Release, “Automakers And Suppliers Need To Adopt ‘All-New Ways Of Doing Business’ To Master The Conversion To Electric Vehicles, Materials Shortages, The Rise Of New Entrants And Other Disruptors Such As Autonomy And Connectivity, Says AlixPartners Analysis,” June 17, 2021. <https://www.alixpartners.com/media-center/press-releases/2021-alixpartners-global-automotive-outlook/>

⁵ Brinley, Stephanie. IHS Markit. “IHS Markit Forecasts EV Sales to Reach U.S. Market Share of 7.6% in 2026.” Accessed November 24, 2020. <https://ihsmarket.com/research-analysis/-ihs-market-forecasts-ev-sales-us.html>.

⁶ This includes battery electric, fuel cell, and pg-in hybrid electric vehicles.

⁷ U.S. Department of Energy. “Batteries, Charging, and Electric Vehicles.” Accessed November 24, 2020. <https://www.energy.gov/eere/electricvehicles/charging-home>.



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