



**Testimony of Chet Thompson
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**Hearing before the House of Representatives Energy and Commerce Subcommittee on
the Environment, Manufacturing, & Critical Minerals**

Driving Affordability: Preserving People's Freedom to Buy Affordable Vehicles and Fuel

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The American Fuel & Petrochemical Manufacturers (“AFPM”) is the leading trade association representing the U.S. fuel refining industry, which supplies gasoline, diesel, jet fuel, sustainable aviation fuel, and renewable diesel around the country and the world; the petrochemical industry, which manufactures the essential building blocks for modern life; and the midstream energy industry, which makes it possible to transport energy feedstocks and products where they need to go. Our companies support nearly 3 million high-quality U.S. jobs and have facilities in more than 30 states.

AFPM appreciates the opportunity to testify in support of the legislation before the Committee, and to share its views on the importance of liquid transportation fuels to the U.S. economy, energy security, consumers, and an increasingly diverse future of mobility options. These options include both renewable and petroleum liquid fuels, renewable and geologic natural gas, hydrogen, electric vehicles (EVs), and an array of feedstocks to produce all of the above.

AFPM is committed to working with policymakers to identify ways to meet growing global demand for affordable energy while increasing fuel efficiency and reducing the carbon intensity

of transportation fuels. The U.S. refining and petrochemical industries are essential in this endeavor and are both enthusiastic and well-positioned to lead the world due to years of innovation and investment, our workforce, and the competitive advantages offered by access to domestic crude oil and natural gas.

Policies should encourage competition and innovation among fuel and vehicle technologies, which will deliver the best results at the lowest cost. Unfortunately, the federal government and states led by California are taking the opposite approach, effectively mandating a single technology (EVs) and banning the sale of new internal combustion engine (ICE) vehicles without any discernable regard to consumer preferences, feasibility, cost, impact on U.S. energy and national security interests, or the very real environmental trade-offs. On this last point, it is baffling why the Environmental Protection Agency (“EPA”) and California continue to ignore the lifecycle emissions of vehicles in favor of a tailpipe-only approach, despite professed concern with reducing carbon emissions and environmental impacts. Their approach not only fails to account for carbon emissions associated with the manufacturing and charging of EVs, but also puts in place an arbitrary systemic bias against any liquid fuel. AFPM is not opposed to EVs, but this regulatory approach is neither pro-consumer nor pro-climate.

EPA’s proposals on light-, medium-, and heavy-duty vehicle standards are unlawful, as is the Agency’s proposal to allow participation by EVs in the Renewable Fuel Standard (“RFS”). Likewise, California’s attempt to ban the sale of new ICE vehicles by 2035 was never contemplated by Congress when, a half century ago, it allowed California to set its own criteria pollutant standards in response to the state’s unique air pollution challenges, such as smog in Los Angeles.

Regardless, proposals to limit options and innovation and to increase dependence on foreign supply chains are still bad policy. In contrast, the legislation under consideration today rightly promotes consumer choice and would allow all fuel and vehicle technologies to contribute to a cleaner and more efficient transportation future.

The *Choice in Automobile Retail Sales Act of 2023* and *Preserving Choice in Vehicle Purchases Act* do not prevent EPA from setting tailpipe standards, nor do they prevent California from seeking waivers to address compelling and extraordinary conditions unique to Californians. The bills simply reaffirm the fact that EPA and California do not have the authority to ban vehicle powertrain technologies and limit mobility options for consumers. This should not be controversial. AFPM hopes that every member of Congress supports these bills.

AFPM strongly supports the *No Fuel Credits for Batteries Act of 2023*. As detailed in AFPM's extensive comments to EPA on the 2023-2025 RFS rule, EPA does not have the authority to include EVs in the RFS, which was clearly designed as a liquid fuels program. EPA's failure to conduct the Congressionally-mandated studies of eRINs is a glaring omission and further proof Congress intended to retain the option to decide whether to include eRINs in the RFS program, pending review of those studies. AFPM welcomes Congress reaffirming its intent.

Finally, AFPM supports the *Fuels Parity Act*. The statutory prohibition on corn starch ethanol from qualifying as an advanced biofuel in the RFS, even if it meets the requisite greenhouse gas reduction thresholds, is not grounded in current science. Allowing feedstock competition is a more market-based approach to governing the RFS. However, AFPM cautions against concurrent calls for higher mandates, that would not only negate the positive impact of more feedstock competition, but would likely cause more harm to consumers and the refining sector. In that respect, AFPM strongly encourages Congress to consider taking other steps to

modernize the RFS to promote competition, reduce costs, and achieve better emissions outcomes.

I. U.S. Refiners, Petrochemical Manufacturers, Midstream Companies, and Biofuel and Agricultural Producers are a Source of U.S. Strength and Global Leadership

The U.S. is fortunate to have an abundance of not only natural resources that it develops responsibly, but also the refining capacity and infrastructure to produce and move refined products and biofuels to consumers. In fact, the U.S. is largest producer of crude oil and petroleum products in the world, as well as being home to the world's largest biofuels industry. Our refineries and petrochemical producers are the most competitive in the world, taking advantage of a sophisticated workforce, low-cost resources, complexity, and scale to compete with even the largest state-owned enterprises in foreign markets. In 2022, the crude oil processed by U.S. refineries was 84 percent sourced from North America. The U.S. produces more petroleum and refined products than it consumes and became a net exporter of total petroleum in 2020, after being a net exporter of refined products for the past decade.¹

In addition to transportation fuels, approximately 5 percent of a barrel of crude oil produces the precursors to the plastics that are necessary for many applications, including EVs, renewable energy projects, medical devices, food safety packaging, technology, and infrastructure projects. In fact, plastics make up 50 percent of an automobile's volume, but less than 10 percent of its weight.² In other words, simply banning the production and use of petroleum and its products will have significant implications for the manufacturing of the very products that the Administration and California are seeking to promote.

¹ [Oil imports and exports - U.S. Energy Information Administration \(EIA\)](#)

² [Chemistry-and-Automobiles-March-2023.pdf \(plasticmakers.org\)](#)

The U.S. advantage in refining and petrochemical production is an objectively positive outcome for the U.S., which is not as reliant on hostile powers for necessities, and therefore not as exposed to supply disruptions seen in Europe since Russia's invasion of Ukraine.

Indeed, global events of the past 18 months underscore the linkage between energy security and national security. It is simply not possible to have one without the other. Of course, having a stable supply of energy is important for powering the basics of our economy- including road transport, shipping, aviation, and other basic functions. But importantly, petroleum fuels are critical for military functions. In the context of this hearing's discussion on California's ban on the sale of new ICE vehicles, for instance, consider that West Coast refineries are the primary supplier of fuel to the Pacific Fleet for the U.S. Navy. If those refineries close as a result of these policies, it not only disadvantages consumers and harms the economy, but also threatens force readiness in the event of conflict in the Pacific.

President Biden understands this, which makes his support of California's and EPA's proposed bans the sale of new ICE vehicles so baffling. In fact, it was only a year ago that President Biden was calling on our industry to keep refineries open and to expand capacity.³ At the time, a combination of factors, including difficult economics from the COVID pandemic and government policies, led to the closure of more than 1 million barrels per day of refining capacity between 2020 and 2022. The U.S. will recover some of that capacity in 2023, but the industry does not have any other major expansion projects announced at this time. In the meantime, China continues to invest in its energy industry. Earlier this month the International Energy Agency ("IEA") reported that China has overtaken the U.S. as the largest refining industry in the world and would add the most capacity between now and 2028, making it the holder of global spare

³ [Biden looking to address oil refinery capacity, White House adviser says | Reuters](#)

capacity.⁴ Compounding the challenges with this emerging dynamic is the fact that China does not follow market signals and is an unreliable source of product to the global market in the event of a disruption.

As AFPM said in response to the President last year – policy and policy signals matter. Refiners are long-cycle businesses and do not make multi-billion-dollar investment decisions based on quarterly economics. If policymakers wish to avoid the implications of refinery closures, then they should not send signals that the products and processes we utilize will not be permitted to compete for consumers and emissions reductions.

II. The World will Increasingly Need More Energy, All Energy, and Diverse Mobility Options

AFPM supports the diversification of energy and mobility solutions. Consider, for instance, that the U.N.'s median projection for global population growth of 2 billion, from approximately 8 billion people today to nearly 10 billion by 2050.⁵ This will require a large global expansion of gross domestic product (“GDP”), with some estimates projecting that world GDP would double between 2021 and 2050.⁶ In addition to population and GDP growth, the global population is becoming wealthier. Pre-pandemic, the global middle class was expanding rapidly.⁷ According to the Brookings Institute, by mid-2021, the global economy had recovered to pre-pandemic levels, and by 2030 these middle and upper-class households would be spending 50 percent more than they did in 2020—more than \$90 trillion.⁸

⁴ [Column: China to become oil refining juggernaut, raising global risks | Reuters](#)

⁵ [World Population Prospects - Population Division - United Nations](#)

⁶ [Energy Outlook - Global fundamentals | ExxonMobil](#)

⁷ [The Pandemic Stalls Growth in the Global Middle Class, Pushes Poverty Up Sharply | Pew Research Center](#)

⁸ [A long-term view of COVID-19's impact on the rise of the global consumer class \(brookings.edu\)](#)

With resources comes demand for mobility and demand for the lifestyles enjoyed by developed nations. ExxonMobil's 2022 Outlook for Energy projected that by 2050 the world would use 15 percent more energy than it did in 2022, with a 30 percent increase in transportation-related energy demand, with much of the increase coming from commercial transportation.⁹

There is considerable uncertainty in how the world will deliver this much energy and its implications for the oil markets. To forecast energy supply and demand, the IEA utilizes various scenarios tied to emissions targets. These include an Announced Pledge Scenario ("APS"), Stated Policies Scenario ("STEPS"), and a Net Zero Emissions Scenario ("NZE"). Liquid fuels play an important part in each scenario, particularly for commercial applications, but within these scenarios are significant uncertainties about how global governments will follow through on net-zero pledges, how consumers will react, how prices will evolve, and how new energy demand will be met. If the U.S. takes steps to ban new ICE vehicles, it will harm the U.S. refining industry and its ability to meet continued demand for liquid fuels, leaving the U.S. and consumers vulnerable if one-technology solutions like EVs are not sufficient or feasible, while eroding U.S. security and leaving cost-effective emissions reductions on the table.

III. Liquid Fuels and Internal Combustion Engine Vehicles are, and will Continue, Reducing Carbon Intensity

AFPM supports continuous improvement in fuel and vehicle efficiency. According to EPA, since 2004 new vehicle fuel economy increased 32 percent while horsepower increased 20 percent.¹⁰ There are more improvements that can be accomplished through continued research and investment in liquid fuels and ICEs. U.S. refiners and petrochemical companies are doing just

⁹ [Outlook for Energy | ExxonMobil](#)

¹⁰ [The 2022 EPA Automotive Trends Report: Greenhouse Gas Emissions, Fuel Economy, and Technology since 1975, Executive Summary \(EPA-420-S-22-001, December 2022\)](#)

that. For just some of the many initiatives AFPM members are undertaking to reduce carbon intensity of fuels and operations today, please see AFPM's 2023 Sustainability Report.¹¹

The Fuels Institute published a literature review in November 2022 outlining some of the relevant technologies, noting that the report's authors "identified approximately 17,000 research articles published within the past two years focused on improving ICEs or lowering their carbon footprint."¹² The same report includes a quotation from a 2021 National Academies of Science report that is worth highlighting:

Internal combustion engines (ICEs) will continue to play a significant role in the new vehicle fleet in MY 2025–2035 in ICE-only vehicles, as well as in hybrid electric vehicles (HEVs) from mild hybrids to plug-in hybrids, but will decrease in number with increasing battery electric vehicle (BEV) and fuel cell electric vehicle penetration. In this period, manufacturers will continue to develop and deploy technologies to further improve the efficiency of conventional powertrains, for ICE-only vehicles and as implemented in HEVs. Developments in the ICE for hybrids will advance toward engines optimized for a limited range of engine operating conditions, with associated efficiency benefits. Major automakers are on differing paths, with some focusing their research and development and advanced technology deployment more squarely on BEVs, and others more focused on advanced HEVs to maximize ICE efficiency.¹³

A diverse approach to efficiency improvements that provides consumers a choice in how they reduce their own emissions footprints is an important attribute of any rational policy discussion about transportation.

IV. Policies Should Embrace Competition by Utilizing a Full Lifecycle Approach

Policy should allow for a comparison of different fuel and vehicle options using a full lifecycle approach. Under EPA's current approach, and that of California, emissions are measured solely

¹¹ [Sustainability Report | American Fuel & Petrochemical Manufacturers \(afpm.org\)](#)

¹² Fuels Institute, Literature Review Summary: Future Capabilities of Combustion Engines and Liquid Fuels (Nov. 2022)

¹³ National Academies of Sciences, Engineering, and Medicine. 2021. Assessment of Technologies for Improving Light-Duty Vehicle Fuel Economy—2025-2035. Washington, DC: The National Academies Press. p. 369. <https://doi.org/10.17226/26092>

at the tailpipe. This approach ignores important sources of carbon emissions and places any combustion engine- including the liquid fuels it utilizes- at a disadvantage to a battery EV. This does not even include potential battery replacements. Likewise, measuring emissions exclusively at the tailpipe ignores the emissions from the power generation used to charge the battery. In this scenario, an EV that is charged with electricity generated by coal-fired power or a diesel generator is still attributed with zero carbon emissions for purposes of tailpipe regulations. In a less extreme example, refineries utilizing carbon capture, lower-carbon hydrogen, electrified process units, alternative feedstocks, and biofuel producers doing the same with waste oils, regenerative farming, etc. are given no credit for their lower carbon products. Fuels like renewable diesel and sustainable aviation fuel, produced by AFPM members, can reduce emissions by more than 80 percent and do not require a complete overhaul of our fuel and vehicle infrastructure. The approach being considered by EPA and pursued by California discourages investment and innovation in all parts of the fuel and vehicle system and ignores important aspects of an EV's lifecycle. Consider further that encouraging continued investments in liquid fuels will also accrue emissions benefits to the 300 million combustion engines on the road in the U.S. today, rather than waiting for the automotive fleet to turn over.

The Fuels Institute recently released an analysis showing why this lifecycle approach is important. Their analysis showed that in a high carbon grid, a hybrid vehicle outperforms both the ICE vehicle and battery EV, and in an extremely high-carbon grid the BEV actually has the highest lifecycle footprint.¹⁴ Although the grids are getting cleaner and share of renewables is increasing, the speed of that change is uncertain, as is the ability to deploy new transmission capabilities and retain reliable service.

¹⁴ [Achieving Carbon Reductions Strategically - Transportation Energy Institute](#)

In addition to carbon lifecycle, policymakers should also consider non-GHG impacts. For example, less than five percent of lithium-ion batteries, the most common batteries used in BEVs, are currently being recycled “due in part to the complex technology of the batteries and cost of such recycling.”¹⁵ Just this month, EPA issued guidance finding that lithium-ion batteries generally qualify as “hazardous waste” at their end of life due to their ignitability and reactivity characteristics.

These are important issues that are unfortunately missing from the debate over what the right policy is.

V. Picking Technologies and Banning Options, as EPA and California are Attempting, Will Lead to Less Choice, Higher Costs, and Less Security

It is critical that policymakers weigh additional implications of banning the sale of new ICE vehicles. First and foremost, consumer choice is rarely mentioned as part of these rulemakings other than a generic assumption that consumers will like these new vehicles. But that ignores important ways consumers make purchasing decisions. For example, according to Kelley Blue Book, the average EV costs over \$14,000 more than the average non-luxury vehicle.¹⁶ Cost, range anxiety, and other factors make consumer acceptance far from a foregone conclusion. For example, a Gallup poll conducted in April revealed that only 4 percent of adults said they owned an EV and just 12 percent are seriously considering buying one. However, 41 percent of adults said they would never buy one.¹⁷

Policymakers must also weight the serious national security implications for the U.S.

Importantly, China has a dominant position in the global supply chain for battery production,

¹⁵ Gavin Harper, Roberto Sommerville, et al., NATURE, “Recycling lithium-ion batteries from electric vehicles” (Jan. 21, 2020) available at <https://www.nature.com/articles/s41586-019-1682-5>.

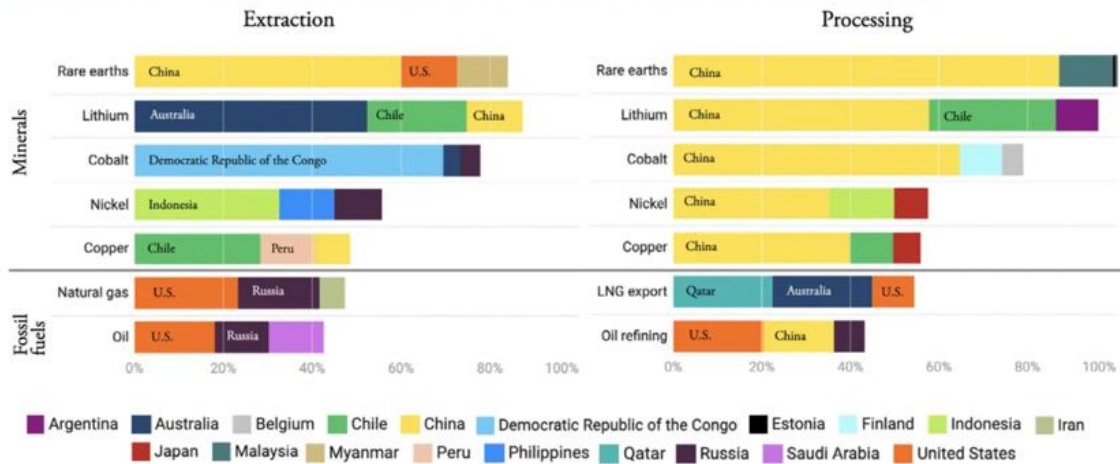
¹⁶ [Kelley Blue Book](#)

¹⁷ [Most Americans Are Not Completely Sold on Electric Vehicles \(gallup.com\)](#)

including 90% of anode production.¹⁸ The Chinese government also dominates the global market for critical minerals, such as lithium and cobalt. China operates the majority of Africa’s largest lithium mining projects and 80 percent of lithium refining.¹⁹ Within two years, they are also expected to control half of all cobalt production.²⁰ Neither EPA nor California adequately address the market constraints for foreign sources of critical minerals needed to produce EV batteries and copper for transmission wiring.²¹

CHINA DOMINATES PROCESSING OF CRITICAL ENERGY TRANSITION MINERALS

Share of top three countries for extraction and processing of critical minerals and petroleum



Source: International Energy Agency

Finally, the EPA and California policies would place unprecedented strain on the U.S. power grid, threatening its reliability and further exacerbating energy security concerns. The power grid cannot expand nearly fast enough to accommodate a forced accelerated EV transition. To provide power for millions of new EVs alongside other future power draws, the U.S. power grid would need to more than double its electricity supply by 2050 and build more than 75,000 miles

¹⁸ [Bloomberg](#)

¹⁹ [Bloomberg](#), [Financial Times](#)

²⁰ [Financial Times](#)

²¹ International Energy Agency, *The Role of Critical Minerals in Clean Energy Transitions* (March 2022), available at <https://iea.blob.core.windows.net/assets/ffd2a83b-8c30-4e9d-980a-52b6d9a86fdc/TheRoleofCriticalMineralsinCleanEnergyTransitions.pdf>; James Fernyhough, Copper Mine Flashes Warning of ‘Huge Crisis’ for World Supply, Bloomberg News, May 2, 2023.

of high-voltage power lines by 2035.²² The proposed forced transition to EVs would outpace grid capacities, meaning decreased access to reliable electricity and the possibility of rolling blackouts.

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AFPM supports cost-effective fuel efficiency improvements that promote competition, innovation, and consumer choice. The legislation under consideration today takes steps towards accomplishing that objective by ensuring EPA and California stay true to their existing statutory authorities to set technology-neutral standards. If Congress wishes to allow EPA and California to go further, it must say so, although that is still not the right policy for consumers or the climate. AFPM further supports both RFS bills under consideration. EPA does not have the authority to include EVs in the RFS program, as Congress made clear in the 2007 Energy Independence and Security Act. AFPM also supports efforts to increase feedstock flexibility in the RFS program, and therefore also supports removing artificial barriers to competition. In that respect, we continue to strongly encourage the Committee to consider further RFS reforms to promote competition, reduce costs, and achieve better emissions outcomes.

²² [Washington Post](#)