

THOMAS R. CARPER, DELAWARE, *CHAIRMAN*
SHELLEY MOORE CAPITO, WEST VIRGINIA, *RANKING MEMBER*

BENJAMIN L. CARDIN, MARYLAND
BERNARD SANDERS, VERMONT
SHELDON WHITEHOUSE, RHODE ISLAND
JEFF MERKLEY, OREGON
EDWARD J. MARKEY, MASSACHUSETTS
TAMMY DUCKWORTH, ILLINOIS
DEBBIE STABENOW, MICHIGAN
MARK KELLY, ARIZONA
ALEX PADILLA, CALIFORNIA

JAMES M. INHOFE, OKLAHOMA
KEVIN CRAMER, NORTH DAKOTA
CYNTHIA M. LUMMIS, WYOMING
RICHARD SHELBY, ALABAMA
JOHN BOOZMAN, ARKANSAS
ROGER WICKER, MISSISSIPPI
DAN SULLIVAN, ALASKA
JONI ERNST, IOWA
LINDSEY GRAHAM, SOUTH CAROLINA

MARY FRANCES REPKO, *DEMOCRATIC STAFF DIRECTOR*
ADAM TOMLINSON, *REPUBLICAN STAFF DIRECTOR*

United States Senate

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

WASHINGTON, DC 20510-6175

April 29, 2021

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency

Dear Administrator Regan:

The automobile manufacturing sector is undergoing a technological revolution. Embracing this change can invigorate the nation's economy, slash dangerous pollution in our communities, and help meet the challenge posed by climate change. I am writing to urge you to develop tailpipe emissions regulations that require rigorous annual decreases in all pollutants based on the increasing annual availability of zero emission vehicles in the U.S. This approach can accelerate the deployment of electric vehicles in the years to come.

The world's automakers are moving towards broad adoption and ultimate transition to zero emission vehicle technology. Just a decade ago, the number of plug-in electric automobiles in the United States amounted to mere hundreds. Today, they number in the millions. Moreover, automakers are expected to invest nearly \$260 billion worldwide on electrification by 2030.¹

However, the regulatory structure that has helped deliver this emerging dynamic has suffered a serious attack in the last few years. The Trump Administration promulgated two rules that have upended federal and state policies to curb greenhouse gas emissions from cars and trucks and to bring electric vehicles to market. These controversial rules, if allowed to stand, would cede technology leadership to other nations, prolong Americans' exposure to unhealthy air pollution, and slow the transition to a clean transportation system. The first rule purported to preempt state electric vehicle requirements and clean emission standards. The second rule relaxed federal greenhouse gas emissions standards and fuel economy standards. Although some automakers sought agreement with California in order to promote innovation and regulatory certainty, the Trump Administration was not receptive to that approach.

Fortunately, President Joe Biden has announced a plan to revisit these deeply flawed rules. The Department of Transportation and the U.S. EPA have already acted to undo the preemption rule. The President has directed these agencies to reexamine the weakened federal greenhouse gas

¹ M.J. Bradley and Associates, Electric Vehicle Market Status - Update (Jan. 2021)
https://www.mjbradley.com/sites/default/files/EDF_EV_Market_Report_January_2021_Update_0.pdf.

emissions standards by July 2021.² I support the President's decision to make revision of these rules a priority. Revised rules can deliver broad public health benefits, address environmental justice concerns, and dramatically reduce the nation's greenhouse gas emissions.

The auto industry recognizes that their future is zero emission vehicles. Ford announced that all of the vehicles it sells in Europe will be electric vehicles by 2030.³ Jaguar will go electric in 2025.⁴ Volvo has announced that it will sell only electric cars by 2030.⁵ VW has announced its plan to increase its sales of electric vehicles by 2030, such that 70 percent of vehicles it sells in Europe and 50 percent of the vehicles it sells in the U.S. and China will be electric.⁶ Honda has announced plans for 40 percent of its sales to be zero emission vehicles by 2030, 80 percent by 2035 and 100 percent globally by 2040.⁷ Mini has also announced its transition to electric vehicles.⁸ General Motors has announced its intent to produce only electric vehicles by 2035.⁹ The leading trade association for the auto sector states that it is committed to "net zero carbon transportation" and believes that the nation that leads development and adoption of electrification and other innovative technologies will "shape supply chains, define global standards, and potentially, reshape the international marketplace."¹⁰ A recent letter from the Alliance for

² Sec. 2(a)(ii), Executive Order entitled, "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis" (Jan. 20, 2021),

<https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-protecting-public-health-and-environment-and-restoring-science-to-tackle-climate-crisis/>.

³ Ford, Press Release, Ford Europe Goes All-In On EVs On Road To Sustainable Profitability; Cologne Site Begins \$1 Billion Transformation (Feb. 17, 2021)

<https://media.ford.com/content/fordmedia/feu/en/news/2021/02/17/ford-europe-goes-all-in-on-evs-on-road-to-sustainable-profitabil.html>.

⁴ Jaguar Website, Reimagine, <https://www.jaguarlandrover.com/reimagine>.

⁵ Volvo Press Release, Volvo Cars to be fully electric by 2030 (Mar. 2, 2021)

<https://www.media.volvocars.com/global/en-gb/media/pressreleases/277409/volvo-cars-to-be-fully-electric-by-2030>.

⁶ Volkswagen Press Release, Volkswagen is accelerating transformation into software-driven mobility provider (Mar. 5, 2021) <https://www.volkswagen-newsroom.com/en/press-releases/volkswagen-is-accelerating-transformation-into-software-driven-mobility-provider-6878>.

⁷ Aaron Gold, MotorTrend, Honda Plans to Dump Internal-Combustion Engines by 2040 (Apr. 23, 2021) <https://www.motortrend.com/news/honda-electric-vehicles-2040/>.

⁸ Viknesh Vijayenthiran, Motor Authority, Mini to go Electric, Launch Last Car with Internal-Combustion Engine in 2025 (Mar. 17, 2021)

https://www.motorauthority.com/news/1124463_mini-to-go-electric-launch-last-car-with-internal-combustion-engine-in-2025.

⁹ General Motors, Press Release, General Motors, the Largest U.S. Automaker, Plans to be Carbon Neutral by 2040 (Jan. 28, 2021),

<https://media.gm.com/media/us/en/gm/home.detail.html/content/Pages/news/us/en/2021/jan/0128-carbon.html>.

¹⁰ Alliance for Automotive Innovation, Auto Innovation Agenda (Dec. 2020)

https://www.autosinnovate.org/about/advocacy/Autos_innovation_Agenda_12152020.pdf;

Automotive Innovation, United Autoworkers, and the Motor & Equipment Manufacturers Association states that both business and labor is “committed to working toward a netzero carbon transportation future that includes a shift to electric-drive vehicles.”¹¹ To accomplish this, they believe that the United States must have a “comprehensive national vision and strategy.”

National and subnational jurisdictions around the world are beginning to announce policies to eliminate sales of emitting vehicles. For example, the United Kingdom has announced that it will ban fossil fuel powered vehicles by 2030.¹² Dozens of other jurisdictions have also announced commitments to electrification.¹³

Yet other countries are better preparing for this reality than the United States currently is. As the *New York Times* recently reported, “The business of making cars has reached a critical juncture — and it looks as if China is in the driver’s seat.”¹⁴ By requiring a rapid transition to electric vehicles in their country, China hopes to establish itself as the dominant provider of automotive technology and components in the years to come.

Strong policies in the United States will encourage those investments to be made here. We have many years of experience that inform us that when the Clean Air Act is used to establish strong standards, it can help point a clear direction for the automobile manufacturing sector and accelerate current market trends. Our nation gains a first-mover advantage that leads to research and development, manufacturing and ultimately export opportunities in automotive technology.

Accordingly, I urge you to apply the California framework agreement to all auto makers through model year 2026. But EPA cannot rest there. EPA should also establish an emission standard for cars and trucks beginning for model year 2027 that reflects the increasing availability of zero emission vehicles. Consistent with the ambition we are seeing from automakers, EPA should set standards in a manner that will result in 50 percent of new vehicles being zero emission vehicles by 2030 and all new vehicles being zero emission vehicles by 2035.

Testimony of John Bozzella, Alliance for Automotive Innovation (Feb. 2021)
<https://www.autosinnovate.org/posts/testimony/minnesota-clean-car-rulemaking>.

¹¹ Letter to President Joe Biden from John Bozzella, Alliance for Automotive Innovation, Rory Gamble, United Autoworkers International Union, and Bill Long, Motor & Equipment Manufacturers Association (Mar. 29, 2021).

¹² Henry Edwardes-Evans, SPG PLatts, UK government brings forward ban on new ICE cars 10 years to 2030 (Nov. 18, 2020) <https://www.spglobal.com/platts/en/market-insights/latest-news/electric-power/111820-uk-government-brings-forward-ban-on-new-ice-cars-10-years-to-2030>.

¹³ Hongyang Cui, Dale Hall, and Nic Lutsey, International Council on Clean Transportation, Update on the global transition to electric vehicles through 2019 (July 2020)
<https://theicct.org/sites/default/files/publications/update-global-EV-stats-sept2020-EN.pdf>.

¹⁴ Keith Bradsher, G.M.’s Electric Car Push Could Put China in the Driver’s Seat, *New York Times* (Jan. 29, 2021), <https://www.nytimes.com/2021/01/29/business/gm-china-electric-cars.html#:~:text=Just%20three%20months%20ago%2C%20Chinese,of%20G.M.'s%20Indonesi a%20operations>.

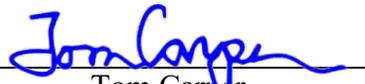
If the U.S. does not establish a robust policy that leads to zero emission vehicle deployment, combined with appropriate incentives, we will be at risk of losing our automotive jobs and industry leadership to other nations, as well as enduring unnecessary public health impacts from pollution.

The approach described here would offer major economic, public health and climate change benefits. The future of automobile manufacturing sector is at a crossroads. The Clean Air Act provides sufficient authority for the U.S. EPA to rise to this challenge. EPA can establish requirements on new cars that would significantly reduce air pollution harming communities, put the nation on track to maintain its leadership in vehicle technology, and make significant progress in fighting climate change.

I urge you to consider adopting regulations as I've described and the enclosed attachment provides further details. Should you or your staff have questions, please feel free to contact Greg Dotson, Chief Counsel on the Senate Committee on Environment and Public Works, at Greg_Dotson@epw.senate.gov. Thank you for your time and consideration.

With best personal regards, I am,

Sincerely yours,


Tom Carper
Chairman

Establishing Vehicle Emissions Standards that Accelerate the Deployment of Zero Emission Vehicles

U.S. EPA should adopt the California framework agreement for light-duty vehicles Model Years 2021 through 2026. Then beginning in Model Year 2027, U.S. EPA should require rigorous annual decreases in all pollutants emitted from new vehicles based on the increasing annual availability of zero emission vehicles in the U.S. In doing so, EPA can invigorate the nation's economy, deliver broad public health benefits, and help meet the challenge posed by climate change.

Clean transportation is a public health and environmental justice imperative.

EPA's current emissions standards do not adequately address particle pollution from vehicles that sicken and kill Americans. Nearly 21 million Americans¹ live in areas with year-round particle pollution that exceeds EPA's national ambient air quality standards for fine particle pollution of 12.0 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).²

But even this large number understates the extent to which Americans are living with unhealthy levels of particle pollution because the effects of particulate pollution are more serious than were understood when tailpipe standards were last strengthened in 2014 with the Tier 3 Motor Vehicle Emission and Fuel Standards. The World Health Organization recommends an air quality standard significantly more stringent than the U.S. standard of 10 $\mu\text{g}/\text{m}^3$.³ In 2019, the Independent Particulate Matter Review Panel urged EPA to revise the PM_{2.5} annual standard to a range of 10 $\mu\text{g}/\text{m}^3$ to 8 $\mu\text{g}/\text{m}^3$.⁴

There are nearly 195 million Americans in thirty-nine states that are annually exposed to particle air pollution exceeding 8 $\mu\text{g}/\text{m}^3$.⁵ Twenty-six states have more than 1 million residents breathing unhealthy levels of particle pollution. Almost 83 million of these Americans are people of color and more than 66 million of them are living at or below twice the federal poverty level. This is an important public health issue and environmental justice issue. Studies have demonstrated that in addition to other health effects, more than 20,000 Americans die prematurely each year as a

¹ American Lung Association, State of the Air (2021) <https://www.lung.org/research/sota/key-findings/year-round-particle-pollution>.

² EPA, NAAQS Table, <https://www.epa.gov/criteria-air-pollutants/naaqs-table>.

³ World Health Organization, Ambient (outdoor) air pollution (May 2018) [https://www.who.int/news-room/fact-sheets/detail/ambient-\(outdoor\)-air-quality-and-health](https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health).

⁴ Formerly the EPA CASAC Particulate Matter Review Panel that was dismissed without notice by press release on October 10, 2018, <https://ucs-documents.s3.amazonaws.com/science-and-democracy/IPMRP-FINAL-LETTER-ON-DRAFT-PA-191022.pdf>

⁵ Calculated from data available on EPA's EJSCREEN. Although EJSCREEN is not intended for regulatory purposes, it does provide relevant data for understanding the extent of environmental exposure and key demographic data. <https://www.epa.gov/ejscreen>.

result of air pollution from cars and trucks.⁶ Reducing pollution from vehicles will deliver major public health benefits to communities currently suffering from unhealthy air quality.

Clean transportation is essential for addressing climate change.

The group Environmental Defense Fund has found that if all new cars and trucks are zero emission vehicles by 2035, we will avoid more than 285 million metric tons of tailpipe GHG emissions annually in 2035 and more than 700 million tons every year by 2050. That could nearly eliminate all tailpipe carbon dioxide emissions from the light-duty fleet by 2050.

There is compelling evidence that vehicles powered by internal combustion engines are already in decline.⁷ However, this does not diminish the importance of government policy in facilitating a timely transition to cleaner transportation options. The combination of incentives and requirements that are established for the remainder of this decade will shape how quickly our transportation sector is able to reduce its emissions. A recent study reveals that the projected share of the light duty fleet made up of zero emission vehicles varies greatly depending on how aggressively electrification is pursued.⁸ Under one scenario, electric vehicles may make up just 6% of vehicles in 2030 and 61% of vehicles in 2050. However, with additional financial incentives, electric vehicles could make up 17% of light duty vehicles in 2030 and 96% in 2050. With strong EPA standards, the transition could be even faster.

Adopting clear requirements for zero emission vehicles that rapidly accelerate is critically important in achieving this transition in a timely manner.

U.S. EPA should establish standards that will grow the economy, protect public health and slash carbon pollution

The following approach could deliver the multiple benefits discussed above.

- 1. EPA should lock-in the benefits of California's framework agreements through model year 2026.** There is significant support for the framework agreements that California regulators reached with the automakers BMW, Ford, Honda, Volvo, and Volkswagen. EPA should adopt this agreement as the rule at the national level, ensuring that cars and trucks get cleaner through model year 2026 in every state.

⁶ Environmental Defense Fund, Clean Cars, Clean Air, Consumer Savings: 100% New Zero Emission Vehicle Sales by 2035 Will Deliver Extensive Economic, Health and Environmental Benefits to all Americans (Jan. 2021) <http://blogs.edf.org/climate411/files/2021/01/FINAL-National-White-Paper-Protective-Clean-Car-Standards-1.26.21.pdf>.

⁷ Tom Randall and Hayley Warren, Bloomberg (Dec. 1, 2020) <https://www.bloomberg.com/graphics/2020-peak-oil-era-is-suddenly-upon-us/>.

⁸ Eric Larson et al, Net Zero America (Dec. 15, 2020) https://environmenthalfcentury.princeton.edu/sites/g/files/toruqf331/files/2020-12/Princeton_NZA_Interim_Report_15_Dec_2020_FINAL.pdf.

- 2. EPA should establish standards that result in increased sales of zero emission vehicles beginning in model year 2027.** The California framework agreements only apply to vehicles manufactured through Model Year 2026, which ends in calendar year 2025. It is vitally important that the agency appreciate that new regulations that reflect the urgency of the climate crisis point a clear direction in 2026 and beyond.

Zero emission vehicles will deliver huge benefits for both public health and climate change mitigation. Therefore the legal basis for emissions standards should be rooted in both climate change and public health impacts. To date, the EPA has regulated emissions with two distinct regulatory structures – one focused on conventional air pollutants and one focused on greenhouse gas emissions. These regulatory structures should be combined.

When EPA has established car and truck emissions standards for particles, carbon monoxide, nitrogen oxides and non-methane organic gases, such as with the Tier 3 tailpipe standards, the agency has adopted a flexibility mechanism for compliance that has been supported by the automakers. Under this mechanism, EPA set an overarching emission standard that automakers were obligated to comply with during each model year. To determine compliance, automakers certify each of their model vehicles or engines into one of a number of “bins.” These bins require different levels of performance with regard to pollution control. Some bins underperform the overarching emission standard and some bins overperform the standard, but compliance is determined when on a sales-weighted average the manufacturer is able to achieve the emission standard for a given model year. The Tier 3 regulations include a “bin 0” category which allows auto manufacturers to certify zero emission vehicles. Obviously, the more bin 0 vehicles sold, the easier it is for an automaker to comply with the emissions standard for a given model year.

This regulatory structure could be readily adapted to incorporate greenhouse gas emissions and to result in an increasing percentage of new vehicles to be zero emission vehicles. The agency could establish bins to reflect different levels of performance by different types of vehicles. Like Tier 3, the most stringent bin would be set for vehicles that have both zero tailpipe greenhouse gas emissions and zero emissions of conventional air pollutants. EPA would then need to set an overarching standard at a level of stringency such that automakers would unavoidably comply by bringing zero emission vehicles to market. The agency could increase the stringency of the overarching standard for subsequent model years in order to ensure that zero emission vehicles make up a growing portion of the new vehicle fleet.

General Motors suggested a similar approach in its comments to EPA’s and NHTSA’s August 2018 proposal to relax tailpipe greenhouse gas emission standards and fuel economy standards.⁹ GM stated, “EPA has the statutory authority to adopt and enforce an

⁹ Barbara Kiss, Director, Environment & Energy, Global Public Policy, General Motors, Comments of General Motors on Docket ID Nos. NHTSA-2018-0067;EPA-HQ-OAR-2018-

NZEV [National Zero Emission Vehicle] policy designed to control vehicle GHG and criteria emissions.” GM argued that EPA should adopt such a program.

EPA must work in consultation with the Department of Transportation in establishing these regulations. The Secretary of Transportation, acting through the National Highway Transportation Safety Administration, has the duty to establish fuel economy standards for purposes of energy security. While DOT’s authority is not intended to protect public health and the environment or mitigate climate change, I urge you to coordinate with DOT in the immediate term and recognize that standards established pursuant to the Clean Air Act may quickly outpace those that would be justified on the basis of energy security.

- 3. EPA should reinstate state authority to work together and go beyond federal standards.** For more than 50 years, the State of California set its own tailpipe standards and for more than 40 years other states have been able to adopt those standards when they saw fit. This regulatory approach dramatically reduced air pollution while keeping the United States automobile manufacturing sector at the forefront of vehicle technology. Unfortunately, in the SAFE Rule Part One, the Trump Administration claimed to determine that states are preempted from establishing tailpipe standards for greenhouse gas emissions or requiring the sale of zero emission vehicles. This flawed rule ignores Congress’ repeated actions to preserve state authority to innovate, and must be reversed. Only with an all hands on deck approach will we have the best chance possible for mitigating the worst impacts of climate change. That means allowing California and other 177 states to innovate and accelerate where feasible.

- 4. EPA should ensure annual standards for emissions and zero emission targets are legally enforceable.** EPA should establish these standards beginning in 2026 (for model year 2027) and provide for incremental improvement each year thereafter. Since the federal government established its first regulatory standards for motor vehicles in the Clean Air Act Amendments of 1965, the government has had a practice of ensuring that emissions standards are legally enforceable to ensure that no manufacturer can obtain a competitive advantage by shortchanging public health or the environment. EPA should ensure that standards issued for model year vehicles 2027 and beyond are also legally enforceable.