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Climate Change & Greenhouse Gases: Keeping Our Vehicle Emissions Standards Safe

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CLIMATE CHANGE & GREENHOUSE GASES: KEEPING OUR VEHICLE EMISSIONS STANDARDS SAFE

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I. INTRODUCTION

Climate change is one of the most pressing issues facing our planet.[1] The impact of greenhouse gases (GHGs) on the environment is a critical factor contributing to climate change.[2] Vehicle emissions contain these damaging GHGs, which accelerate climate change.[3] The United States is the second largest producer of GHG emissions.[4] As one of the world's largest producers of GHG emissions, the failure to adequately address and control GHG emissions places the United States' environment and economy at risk[5] and diminishes the United States' position in international efforts to find solutions to climate change.[6]

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1. Vidar Nordli-Mathisen, *Climate Change*, UNITED NATIONS, http://www.un.org/en/sections/issues-depth/climate-change/ [https://perma.cc/S3YH-N7DX] (last visited Apr. 3, 2020) ("Climate Change [sic] is the defining issue of our time and we are at a defining moment.").
2. *See id.*
3. *See* Massachusetts v. EPA, 549 U.S. 497, 504–05 (2007) ("A well-documented rise in global temperature has coincided with a significant increase in the concentration of carbon dioxide in the atmosphere.").
4. *See* The States of California, Connecticut, Delaware, and others, Detailed Comments on the Environmental Protection Agency's and the National Highway Traffic Safety Administration's Joint Proposed "SAFE" Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks 28 (2018) [hereinafter Detailed Comments], https://www.attorneygeneral.gov/wp-content/uploads/2018/10/Attachment1_States-and-Cities-Detailed-Comments.pdf [https://perma.cc/3HKH-8FTU].
5. *See* Karl Hausker, *4 Reasons Why the US Can and Should Reduce Its Emissions Now*, WORLD RES. INST. (July 8, 2015), https://www.wri.org/blog/2015/07/4-reasons-why-us-can-and-should-reduce-its-emissions-now [https://perma.cc/SLY7-6FVH].
6. *See id.*

During the Obama Administration, the Environmental Protection Agency (EPA) promulgated the Clean Car Standards (CCS).[7] The CCS require automakers to, among other things, annually increase the fuel efficiency of light-duty vehicles to significantly curb their harmful GHG emissions.[8] The CCS are a necessary and aggressive approach to combating vehicle GHG emissions.[9] After only a few years, the CCS have driven technological advances that curtail vehicle GHG emissions while also benefitting human health and the U.S. economy.[10] The CCS, which are in place until 2025, will lead to additional economic and health benefits in their final five years.[11] Recently, however, the Trump Administration's EPA has proposed new vehicle emissions regulations that will significantly weaken the CCS.[12]

This new proposal, the Safer Affordable Fuel Efficient (SAFE) Vehicles Rules, freezes the requirement that automakers annually increase fuel efficiency of light-duty vehicles.[13] If implemented, it will likely lead to a faster increase of the vehicle-generated GHGs collecting in the atmosphere, which would create a multitude of adverse health and economic effects.[14] The proposed increase in fuel efficiency ignores the well-known nexus between climate change and GHG emissions and will inevitably lead to adverse effects on the U.S. economy and environment.[15] Without a proper response to this new proposal, our country will face grave consequences for many years to come.[16]

A. What Is Climate Change?

Before delving into an explanation of climate change, it is important to clarify the distinction between climate and weather. Weather is "what[] [is] going on outside in a certain place on any

7. *See infra* Part II.
8. *See infra* Section II.B.
9. *See The Benefits of the Clean Car Standards*, ENV'T AM. (Mar. 29, 2018), https://environmentamerica.org/reports/amc/benefits-clean-car-standards [https://perma.cc/2G3W-LR6Q].
10. *See infra* Section II.C.
11. *See infra* Sections II.B–C.
12. *See infra* Section III.A.
13. *See* The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks, 83 Fed. Reg. 42,986 (proposed Aug. 24, 2018) [hereinafter SAFE Vehicles Rules Proposal].
14. *See infra* Part IV.
15. *See infra* Part IV.
16. *See infra* Section I.C.

given day" and "[i]t can change quickly."[17] Climate, on the other hand, "describes what weather conditions are usually like in a place over a prolonged period of time—and it changes slowly."[18] When discussing climate change, this discrepancy is important.[19] Climate change is defined as "a significant change in the measures of climate lasting for an extended period of time, including major changes in temperature, precipitation, or wind patterns . . . that occur over several decades or longer."[20]

Earth's natural greenhouse sets its global climate.[21] This is because "[t]he temperature of the Earth is [largely] determined by the balance between the input from energy from the Sun and the reflection of some of this energy back into space."[22] GHGs trap some of the energy that would otherwise escape back into space and re-emits it, which results in the warming of our atmosphere.[23] Specifically, "[GHGs] are invisible gases in the air that act like the glass panes of a greenhouse, trapping some of the sun's heat close to Earth."[24] This process is described as the greenhouse effect.[25]

There are many naturally occurring GHGs in our atmosphere.[26] However, burning "fossil fuels (such as coal and oil) . . . release[s]

17. Laura Anastasia, *Quick Answers to Tough Questions About Climate Change*, JUNIOR SCHOLASTIC, Apr. 23, 2018, at 12, 15.
18. *Id.*
19. *See id.* (determining the difference between weather and climate can help someone "understand how cold weather occurs in a warming world").
20. 1 ANNEMARGARET CONNOLLY, ENVIRONMENTAL LAW IN REAL ESTATE AND BUSINESS TRANSACTIONS § 25.02 (1992); *see also* Anastasia, *supra* note 17, at 12 ("Th[e] shift in Earth's average temperature and precipitation over a long period of time is called climate change.").
21. MARK MASLIN, GLOBAL WARMING: A VERY SHORT INTRODUCTION 4–6 (2d ed. 2009).
22. *Id.* at 4 ("The energy received from the Sun is in the form of short-wave radiation . . . . On average, about one-third of this solar radiation that hits the Earth is reflected back to space. Of the remainder, some is absorbed by the atmosphere, but most is absorbed by the land and oceans. The Earth's surface becomes warm and as a result emits long-wave 'infrared' radiation.").
23. *Id.*
24. Anastasia, *supra* note 17, at 14.
25. *See id.* ("Energy from the sun . . . travels through Earth's atmosphere. About half of this energy is absorbed by Earth's surface. Clouds, snow, land, and the oceans reflect much of the rest of the sun's energy back toward space. Greenhouse gases trap some of that reflected energy in the atmosphere, warming the planet further. Too much of these gases in the air results in global warming.").
26. MASLIN, *supra* note 21, at 4 ("Naturally occurring greenhouse gases include water vapour [sic], carbon dioxide, ozone, methane, and nitrous oxide.").

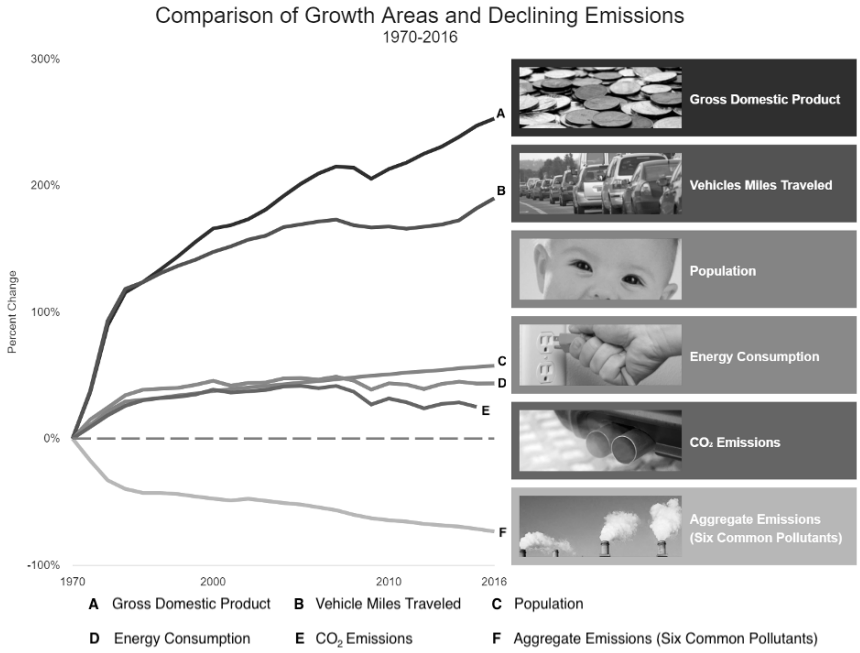
. . . [GHGs], such as carbon dioxide."[27] Carbon dioxide content in the atmosphere is closely linked to global temperature.[28] It is universally accepted that "[s]ince the Industrial Revolution, the amount of carbon dioxide in the atmosphere has increased by more than 40 percent."[29]

B. Climate Change and the Government

Acknowledging that climate change is a serious issue, the U.S. government has monitored it for over sixty years.[30] The first measurements of carbon dioxide concentrations in the atmosphere were taken in 1958.[31] The government initially took a strong stance towards combating climate change in the '70s, in an effort to control air pollution.[32] In accordance with this movement, Congress amended the Clean Air Act (CAA), expanding it to address stationary and mobile sources of air pollution.[33] The CAA "was the first comprehensive federal environmental regulatory program."[34] "The principal statutory authorities for controlling air pollution are contained in the [CAA]."[35] Although it has its critics, "the [CAA]

27. Anastasia, *supra* note 17, at 14 (explaining this occurs when people "power homes, cars, and factories").
28. *See id.* (explaining that when carbon dioxide increases, more heat is trapped in Earth's atmosphere and Earth's average temperature increases).
29. *Id.*; *see also* MASLIN, *supra* note 21, at 8.
30. *See* MASLIN, *supra* note 21, at 8; *see* ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE, AND POLICY 559 (Rachel E. Barkow et al. eds., 8th ed. 2018) ("The initial federal entry into the problem of mobile source emissions was the Schenck Act, which directed the Surgeon General to study the impact of motor vehicle emissions on human health.").
31. *See* MASLIN, *supra* note 21, at 8.
32. *See* PERCIVAL ET AL., *supra* note 30, at 93 ("The federal statutes that dominate environmental law today are the product of a remarkable burst of legislative activity that began in 1970 . . . ."). The first step was taken by Congress when the National Environmental Policy Act (NEPA) was enacted on January 1, 1970. National Environmental Policy Act, 42 U.S.C. §§ 4321–70a (2012); PERCIVAL ET AL., *supra* note 30, at 912 ("[NEPA] established as 'the continuing policy of the Federal Government . . . to use all practicable means . . . to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic and other requirements of present and future generations of Americans.'" (quoting 42 U.S.C. § 4331)).
33. *See* PERCIVAL ET AL., *supra* note 30, at 524.
34. Uma Outka, *The Obama Administration's Clean Air Act Legacy and the UNFCCC*, 48 CASE W. RES. J. INT'L L. 109, 110 (2016).
35. PERCIVAL ET AL., *supra* note 30, at 524.

has had considerable success."[36] The graph below illustrates this point:[37]



The United States is not the only country determined to combat climate change.[38] In 1988, the Intergovernmental Panel on Climate Change (IPCC) was created at the Toronto Conference.[39] "The purpose of the IPCC is the continued assessment of the state of knowledge on the various aspects of climate change, including scientific, environmental, and socioeconomic impacts and response strategies."[40] This combined effort of nations taking a strong stance

36. *Id.* at 526 ("[B]etween 1990 and 2016[,] emissions of each of the criteria pollutants fell significantly. This occurred at the same time Gross Domestic Product increased by 161 percent, energy consumption increased 42 percent, and vehicle miles traveled increased 149 percent."); *see also id.* at 521 ("The reasons we have been so much more successful than China in pursuing clean air can be understood by examining . . . the [CAA]."); *see also infra* note 37 and accompanying figure.
37. PERCIVAL ET AL., *supra* note 30, at 558 fig. 5.5.
38. *See* MASLIN, *supra* note 21, at 13.
39. *Id.*
40. *Id.* ("The IPCC is . . . recognized as the most authoritative scientific and technical voice on climate change, and its assessments have had profound influence on the

to fight climate change demonstrates that it is an issue that must be addressed aggressively.[41]

C. The Many Effects of Climate Change

"[T]he United States accounts for approximately 14% of total global CO_2 emissions," making them the "second largest" producer in the world.[42] Further analysis of this data shows that "light-duty vehicles account for approximately 3% of total global emissions."[43] Although this may seem insignificant, comparing our emission output to other countries shows that the statistic is meaningful.[44] In 2014, the United States light-duty vehicles emissions totals "[e]xceeded the individual country share of global GHG emissions of all but the five largest emitting nations . . . and . . . [e]xceeded the individual country share of global GHG emissions of major economies such as Germany and Brazil."[45] These harmful emissions have disastrous impacts on our planet.

1. Temperature Increases

Data shows that the "[g]lobal annual average temperature . . . has increased by more than 1.2°F (0.65°C) for the period 1986-2016."[46] Scientists can confidently assert that "[t]his period is now the warmest in the history of modern civilization."[47] This dramatic change is predominantly caused by "human contribution."[48] These conditions, which will only get worse, will lead to an increased number of heat waves and extreme heat days.[49] Both events would be extremely detrimental to our society.[50]

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negotiators of the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol.").

41. *See id.*
42. Detailed Comments, *supra* note 4, at 28.
43. *Id.*
44. *See id.* at 29.
45. *Id.*
46. *Id.* at 15.
47. *Id.*
48. *Id.*
49. *See id.* at 16.
50. *See* Justin Worland, *Extreme Heat Waves Will Change How We Live. We're Not Ready*, TIME (June 23, 2017), https://time.com/4830147/extreme-heat-climate-change/ [https://perma.cc/FNB5-TJCR].

2. Extreme Weather Event Increase

Scientists state that "climate change is feeding greater intensity of extreme weather events."[51] Scientists within the federal government stressed that "[c]hanges in the characteristics of extreme events are particularly important for human safety, infrastructure, agriculture, water quality and quantity, and natural ecosystems."[52] These extreme weather events have cost the United States billions of dollars.[53]

Global warming also leads to more droughts, which in turn cause many problems for the environment and society.[54] For example, global warming leads to an increase in forest fires, a product of drought.[55] "[I]ncreased forest fire activity across the western United States in recent decades has contributed to widespread forest mortality, carbon emissions, periods of degraded air quality[,] and substantial fire suppression expenditures."[56] In 2017, weather and climate losses reached record levels in the United States, "with total costs of approximately $306 billion dollars from only the 16 most costly weather events."[57]

3. Ocean Warming, Acidification, and Sea Level Rise

Increased temperatures lead to the warming of the ocean, which in turn leads to a rise in the sea level.[58] A rise in sea level will cause coastal flooding, impacting many cities in the United States.[59] This flooding will destroy infrastructure and cost the country untold sums of money.[60] Also, the carbon dioxide in the atmosphere is making

51. Detailed Comments, *supra* note 4, at 17.
52. *Id.* (alteration in original).
53. *See id.* at 17–18 ("It is estimated that Hurricane Harvey will be the costliest natural disaster in United States history, resulting in approximately $190 billion in total damages or one full percentage point of the nation's gross domestic product.").
54. *See id.* at 18 ("The effects of droughts ripple across the environment and society, stressing drinking water supplies in rural areas, reducing hydroelectric generation, harming agricultural production, [and] increasing the duration and intensity of fire seasons.").
55. *See id.* at 19.
56. *Id.*
57. *Id.*
58. *See id.* ("This warming is causing thermal expansion of the oceans, which, along with the accelerated melting of land-based glaciers and ice sheets . . . is resulting in sea level rise.").
59. *See id.* at 22.
60. *See id.*

oceans "more acidic and less able to sustain certain species."[61] If emissions are not decreased, the "global average surface ocean acidity is projected to increase by 100% to 150%."[62] This acidification has detrimental effects on "marine ecosystems" and "seafood businesses."[63]

4. Harm to Human Health

"Climate change endangers human health in numerous ways, from increasing the incidence of heat-related illness and mortality, to air quality impacts that directly impact the lungs and heart, to facilitating the spread of infectious diseases."[64] Physician testimony "confirmed that these concerns about health-impacts are real."[65] Futhermore, the physicians explained that the SAFE Vehicle Rules, which would alter the CCS, would "not benefit" society.[66]

5. Threats to Animal and Plant Species

It is estimated that "35% of animals and plants could become extinct in the wild by 2050 due to global climate change."[67] "Climate change will increasingly become a driver of species decline, extinctions, and biodiversity loss across the United States."[68] The extinction of such a large number of animals and plants will affect more than just the food chain.[69] "Losing species means losing the potential to solve some of humanity's most intractable problems, including hunger and disease."[70]

61. *Id.* at 19–20 ("[T]he current rate of ocean acidification is unparalleled in at least the past 66 million years.").
62. *Id.* at 20.
63. *See id.* at 23.
64. *Id.* at 24; *see infra* Section IV.B.
65. Detailed Comments, *supra* note 4, at 25.
66. *See id.*
67. *Id.*
68. *Id.* at 26 ("[W]armer water temperatures in Narragansett Bay off Rhode Island are causing many changes in ecosystem dynamics and fish, invertebrate, and plankton populations. . . . A recent study found that GHG-driven warming may lead to the death of 72% of the Southwest's evergreen forests by 2050, and nearly 100% mortality of these forests by 2100.").
69. *See* PERCIVAL ET AL., *supra* note 30, at 999.
70. *Id.*

D. Why Is There a Need to Aggressively Pursue the Vehicle GHG Emissions Problem?

GHG emissions regulation is needed for the transportation sector.[71] "[T]ransportation is the single leading source of U.S. emissions, causing over one-third of total CO_2 emissions from fossil fuels."[72] "Globally, the transportation sector is the fastest growing source of dangerous [GHG] pollution."[73] "Cars and light duty trucks make up 60 percent of the country's transportation sector and are the main driver of U.S. dependence on oil. . . ."[74] "[W]ithout aggressive and sustained mitigation policies being implemented, [vehicle] emissions could increase at a faster rate than emissions from the other energy end-use sectors and reach around 12 [billion tons of CO_2 equivalent] by 2050."[75] "[T]he light-duty vehicle sector in the United States is among the largest, and most feasible to reduce, target for GHG emission reductions anywhere in the world."[76] A cost–benefit analysis makes it apparent that aggressively fighting the vehicle GHG emissions problem in our country will be highly beneficial for our society.[77]

II. THE CCS AGGRESIVELY COMBAT VEHICLE GHG EMISSIONS AND HAVE LED TO SEVERAL HEALTH AND ECONOMIC BENEFITS

In May of 2010, "President Obama issued a Presidential Memorandum requesting that . . . [the] EPA develop . . . a

71. *See infra* notes 72–77 and accompanying text.
72. Detailed Comments, *supra* note 4, at 28 (quoting NAT'L HIGHWAY TRAFFIC SAFETY ADMIN, U.S. DEP'T OF TRANSP., NHTSA-2017-0069, DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE SAFER AFFORDABLE FUEL EFFICIENT (SAFE) VEHICLES RULE FOR MODEL YEAR 2021–2026 PASSENGER CARS AND LIGHT TRUCKS 5–8 (July 2018)); *see* Nicholas Bryner & Meredith Hankins, *Why California Gets to Write Its Own Auto Emissions Standards: 5 Questions Answered*, CONVERSATION (Sept. 9, 2016), https://theconversation.com/why-california-gets-to-write-its-own-auto-emissions-standards-5-questions-answered-94379 [https://perma.cc/4L96-93JH] ("[T]ransportation is now the largest source of greenhouse gas (GHG) emissions in the United States.").
73. *Intent to Sue Over Rollback of Clean Car Rule*, BIG ISLAND NOW, http://bigislandnow.com/2018/08/02/statement-of-intent-to-sue-over-rollback-of-clean-car-rule/ [https://perma.cc/79GT-K2KU] (last updated Aug. 2, 2018, 1:42 PM).
74. *Id.*; *see also Fast Facts on Transportation Greenhouse Gas Emissions*, EPA, https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions [https://perma.cc/9LHF-Y9KX] (last visited Apr. 3, 2020).
75. Detailed Comments, *supra* note 4, at 27.
76. *Id.* at 29.
77. *See infra* Part IV.

coordinated National Program to . . . reduce [GHG] emissions of light-duty vehicles for model years 2017–2025."[78] "Under the National Program automobile manufacturers [would] be able to continue building a single light-duty national fleet that satisfies all requirements . . . while ensuring that consumers still have a full range of vehicle choices . . . ."[79]

A. Legal Authority of the EPA to Regulate Vehicle GHG Emissions

The Supreme Court, in *Massachusetts v. EPA*, held that the CAA provides the EPA with the statutory authority to regulate new motor vehicle emissions because GHGs are "air pollutant[s]."[80] In *Massachusetts*, a group of states sued the EPA after petitions to issue regulations governing GHG emissions from new motor vehicles were denied.[81] Massachusetts alleged that the failure to regulate vehicle emissions would ultimately result in the loss of coastal lands due to increased global warming from vehicle emissions.[82] The Court was asked to determine if the EPA had the statutory authority to regulate vehicle GHG emissions under the CAA.[83]

The Court provided many important holdings in this landmark case addressing this cause of action.[84] First, the Court held that GHG emissions were "air pollutant[s]" as defined in the CAA.[85] Second, the Court acknowledged climate change because of the connection between GHGs and the reduction of coastlines.[86] Finally, the Court held that the CAA provides the EPA with the statutory authority to regulate new motor vehicle emissions under § 202(a)(1).[87]

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78. 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, 77 Fed. Reg. 62,624, 62,624 (Oct. 15, 2012) [hereinafter 2012 Standards] (to be codified at 40 C.F.R. pts. 85, 86, and 600) (explaining this final rule was "building on the success of the first phase of the National Program for these vehicles for model years 2012–2016").

79. *Id.*

80. Massachusetts v. EPA, 549 U.S. 497, 500 (2007).

81. *Id.* at 510–14.

82. *Id.* at 522–23.

83. *Id.* at 505.

84. *See infra* notes 85–87 and accompanying text.

85. *Massachusetts*, 549 U.S. at 500; *see* 42 U.S.C. § 7602(g) (2012) ("The term 'air pollutant' means any air pollution agent or combination of such agents, including any physical, chemical, biological, radioactive . . . substance or matter which is emitted into or otherwise enters the ambient air.").

86. *See Massachusetts*, 549 U.S. at 499.

87. *Id.* at 528 ("[T]he first question is whether § 202(a)(1) of the [CAA] authorizes [the] EPA to regulate [GHG] emissions from new motor vehicles in the event that it forms a 'judgment' that such emissions contribute to climate change. We have little trouble concluding that it does."); *see* 42 U.S.C. § 7521(a) (2012) ("The [EPA] Administrator

Undoubtedly, under this statutory authority, the EPA has a duty to slow and reduce global warming by creating vehicle GHG emissions standards.[88] "In establishing such standards, [the] EPA must consider issues of technical feasibility, cost, and available lead time."[89] Therefore, the EPA's standards "take effect only 'after providing such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period . . . .'"[90]

B. The CCS

"In 2012, in [a] joint rulemaking and with the support of the auto industry, [the] EPA promulgated vehicle [GHG] emissions standards for [model years] 2017–2025."[91] "The first phase, from [model years] 2017–2021, includes final standards that are projected to require . . . a range from 40.3-41.0 mpg in [model year] 2021" vehicles.[92] The second phase, which is not final and is subject to a mid-term evaluation, "projects that [the] standards could require . . . a range from 48.7–49.7 mpg in model year 2025" vehicles.[93]

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shall by regulation prescribe . . . standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which . . . cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare."); *see also* Coal. for Responsible Regulation, Inc. v. EPA, 684 F.3d 102, 126 (D.C. Cir. 2012) (citation omitted) ("If [the] EPA makes a finding of endangerment, the Clean Air Act requires the [A]gency to regulate emissions of the deleterious pollutant from new motor vehicles.").

88. *Massachusetts*, 549 U.S. at 525–26.
89. 2012 Standards, 77 Fed. Reg. 62,624, 62,627 (Oct. 15, 2012) (to be codified at 40 C.F.R. pts. 85, 86, and 600).
90. *Id.* (citation omitted).
91. Petitioners' Response to Motions to Dismiss of Respondents and Movant-Intervenors at 1, Ctr. for Biological Diversity v. EPA (2018) (No. 18–1139).
92. 2012 Standards, 77 Fed. Reg. at 62,627.
93. *Id.* ("[D]ue to the statutory requirement that NHTSA set average fuel economy standards not more than 5 model years at a time."); *see infra* Section II.D.

The following chart illustrates the minimum average fuel economy standards for passenger automobiles and lights trucks for model years 2018–2025:[94]

Minimum Fuel Economy Standards for Model Years 2018-2025 (mpg)		
Model Year	Passenger Automobiles	Light Trucks
2018	38.0	31.3
2019	39.4	31.7
2020	40.9	32.2
2021	42.7	33.5
2022	44.7	35.0
2023	46.8	36.7
2024	49.0	38.5
2025	51.3	40.3

The following chart illustrates the target values of carbon dioxide emissions for passenger automobiles and light trucks:[95]

CO_2 Target Values (grams/mile) for Model Year Vehicles 2018-2025				
Model Year	Passenger Automobile with a footprint ≤ 41 ft^2	Passenger Automobile with a footprint > 56 ft^2	Light Trucks with a footprint ≤ 41 ft^2	Light Trucks with a footprint > 66 ft^2
2018	185.0	250.0	227.0	342.0
2019	175.0	238.0	220.0	339.0
2020	166.0	226.0	212.0	337.0
2021	157.0	215.0	195.0	335.0
2022	150.0	205.0	186.0	321.0
2023	143.0	196.0	176.0	306.0
2024	137.0	188.0	168.0	291.0
2025	131.0	179.0	159.0	277.0

C. The CCS Have Provided Several Health and Economic Benefits

"The [CCS are] estimated to save approximately 4 billion barrels of oil and to reduce GHG emissions by the equivalent of approximately 2 billion metric tons over the lifetimes of those light duty vehicles

94. 49 C.F.R. §§ 531.5, 533.5 (2012).
95. 40 C.F.R. § 86.1818–12 (2016).

produced in [model years] 2017–2025."[96] This dramatic decrease in vehicle GHG emissions will benefit the health of Americans.[97]

The estimated net benefits to the country from fuel savings range from $326 billion to $451 billion "over the lifetimes of those light duty vehicles sold in [model years] 2017–2025."[98] The CCS are also expected to save consumers money at the fuel pump.[99] When comparing the added costs to vehicles from new technologies and consumer savings on fuel, consumers are expected to gain a "net lifetime savings of $3,400 to $5,000."[100]

Maryland has gained an enormous economic benefit thus far from the CCS.[101] Specifically, "strong fuel economy and global warming emissions standards" have resulted in savings of $620 million.[102] Contrary to current EPA stances, Maryland "can expect 10,500 new jobs" if the CCS remain in their current state.[103] Jobs will be created by the savings from the CCS being "pumped back into the local economy" and "driv[ing] growth."[104] These beneficial effects of the CCS will be eradicated if the SAFE Vehicles Rules are promulgated.[105]

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96. 2012 Standards, 77 Fed. Reg. at 62,627.
97. *See id.* at 62,910–12; *see Vehicles, Air Pollution, and Human Health: Cars and Trucks Are One of the Leading Causes of Air Pollution—but Cleaner Vehicles Can Help*, UNION CONCERNED SCIENTISTS (July 18, 2004), https://www.ucsusa.org/resources/vehicles-air-pollution-human-health#.WqgC25PwaRt [https://perma.cc/3JXG-ECUE].
98. 2012 Standards, 77 Fed. Reg. at 62,627.
99. *See id.*; *see infra* notes 100–04 and accompanying text.
100. 2012 Standards, 77 Fed. Reg. at 62,627.
101. *See Maryland: How Does Our State Benefit from Federal Fuel Economy and Global Warming Emission Standards?*, UNION CONCERNED SCIENTISTS (Aug. 2017) [hereinafter *Maryland Benefits Factsheet*], https://ucsusa.org/sites/default/files/images/reports/vehicles/cv-factsheet-mpg-benefits-maryland.pdf [https://perma.cc/CN9V-WR6G]; *see also State Benefits of Vehicle Efficiency Standards*, UNION CONCERNED SCIENTISTS (Aug. 7, 2017), https://www.ucsusa.org/state-benefits-vehicle-efficiency-standards#.XE4QjVxKhPZ [https://perma.cc/9GQ6-ALVX] (providing the benefits of vehicle efficiency standards for all fifty states and Washington, D.C.).
102. *See Maryland Benefits Factsheet*, *supra* note 101 (estimating that by 2030 gas savings will make each household $3,400 richer).
103. *See id.*
104. *See id.*
105. *See supra* notes 14–16 and accompanying text.

D. The Midterm Evaluation

There is a mechanism within the CCS that evaluates the projected standards for model years 2022–2025.[106] The reasons provided for this evaluation are "the long time-frame of the rule and the uncertainty in assumptions due to this long timeframe."[107] The evaluation was to be completed by April 1, 2018.[108] The following factors were to be examined during the evaluation:

1. The availability and effectiveness of technology, and the appropriate lead time for introduction of technology;
2. The cost on the producers or purchasers of new motor vehicle engines;
3. The feasibility and practicability of the standards;
4. The impact of the standards on reduction of emissions, oil conservation, energy security, and fuel savings by consumers;
5. The impact of the standards on the automobile industry;
6. The impacts of the standards on automobile safety[109]

In January of 2017, the EPA released its final findings of the midterm evaluation (January 2017 Determination).[110] The EPA considered comments from "auto manufacturers and suppliers, . . . labor unions, fuels and energy providers, auto dealers, [and] academics" during the midterm evaluation.[111] "[B]ased on [an] evaluation of [the] extensive technical information available, . . . [with] significant input from the [auto] industry and other stakeholders, and in light of the [provided midterm evaluation] factors" the EPA determined that the current "[model year] 2022-2025 standards remain appropriate."[112]

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106. 2012 Standards, 77 Fed. Reg. 62,624, 62,652 (Oct. 15, 2012) (to be codified at 40 C.F.R. pts. 85, 86, and 600).
107. *Id.*
108. *Id.*
109. Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022–2025 Light-Duty Vehicles, 83 Fed. Reg. 16,077, 16,078 (Apr. 13, 2018) [hereinafter Revised Determination].
110. *See* U.S. ENVTL. PROT. AGENCY, EPA-420-R-17-001, FINAL DETERMINATION ON THE APPROPRIATENESS OF THE MODEL YEAR 2022-2025 LIGHT-DUTY VEHICLE GREENHOUSE GAS EMISSIONS STANDARDS UNDER THE MIDTERM EVALUATION (Jan. 2017) [hereinafter 2017 FINAL DETERMINATION], https://19january2017snapshot.epa.gov/sites/production/files/2017-01/documents/420r17001.pdf [https://perma.cc/AVH9-YMJK].
111. *See id.* at 10.
112. *See id.* at 1.

After a thorough examination, the EPA concluded that "in light of technologies available today and improvements we project will occur between now and [model year] 2022-2025, it will be practical and feasible for automakers to meet the [model year] 2022-2025 standards at reasonable cost."[113] The EPA further explained that "long-term regulatory certainty and stability are important for the automotive industry . . . which in turn will reduce emissions, improve fuel economy, deliver significant fuel savings to consumers, and benefit public health and welfare."[114]

III. THE TRUMP ADMINISTRATION RECONSIDERS THE CCS AND PROPOSES THE SAFE VEHICLES RULES

On April 13, 2018, the EPA issued a revised determination (Revised Determination) stating that the current model year 2022–2025 CCS were "not appropriate" and "should be revised."[115] The EPA explained that "key assumptions [the] EPA relied upon in its January 2017 Determination, including gas prices, and the consumer acceptance of advanced technology vehicles, were optimistic or have significantly changed."[116] The midterm evaluation factors were re-examined to illustrate the inaccuracies of the January 2017 Determination and the need for a new proposal for vehicle emissions standards.[117]

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113. *See id.* at 29.
114. *See id.* at 1.
115. *See* Revised Determination, 83 Fed. Reg. 16,077, 16,077 (Apr. 13, 2018).
116. *Id.* at 16,087.
117. *See id.* at 16,079–87; *see generally* 2017 FINAL DETERMINATION, *supra* note 110, at 17–28 (discussing EPA's current assessment of the midterm evaluation factors). On July 5, 2018, Andrew Wheeler was introduced as the new acting administrator of the EPA. *EPA's Administrator*, EPA, https://www.epa.gov/aboutepa/epas-administrator [https://perma.cc/QJ4C-HZA8] (last visited Apr. 3, 2020). Mr. Wheeler "began his career during the George H. W. Bush Administration as a Special Assistant in EPA's Pollution Prevention and Toxics office." *Id.* Mr. Wheeler was a legislative aide to Oklahoma Senator Jim Inhofe, who is the "most virulent climate denier on Capitol Hill." Jeff Turrentine, *Who Is Andrew Wheeler? (And Why You Should Be Afraid of Him)*, NAT. RESOURCES DEF. COUNCIL (Apr. 13, 2018), www.nrdc.org/onearth/who-andrew-wheeler-and-why-you-should-be-afraid-him [https://perma.cc/H6QC-VB68] ("[Mr. Inhofe] regularly refers to the science of climate change as 'the greatest hoax' ever perpetrated on the American people . . . ."). Moreover, Mr. Wheeler was also an energy lobbyist for the largest coal mining company in America, Murray Energy Corporation. *See id.* Mr. Wheeler is also the Vice President of the Washington Coal Club. *See id.* This group "of more than 300 coal producers, lawmakers, business leaders, and policy experts" strives to protect the future of coal. *See id.* ("[W]hose

A. The SAFE Vehicles Rules

On August 24, 2018, the EPA released a new proposal, the SAFE Vehicles Rules, for model year 2021–2026 passenger cars and light trucks.[118] This proposal is a major change in law and policy from the CCS.[119] The EPA proposes to "retain the model year 2020 [emissions] standards . . . for [passenger cars and light trucks] through model year 2026."[120] As a result, the minimum fuel economy standards under the CCS for model year 2025 passenger cars and light trucks, 51.3 mpg and 40.3 mpg respectively, will be reduced under the SAFE Vehicles Rules to 40.9 mpg and 32.2 mpg.[121] If this proposal is enacted, the GHG emission standards for passenger cars and light trucks cannot be altered until 2026.[122]

In support of its proposal, the EPA explains that the "SAFE Vehicles Rule would save over 500 billion dollars in societal costs and reduce highway fatalities by 12,700 lives."[123] The EPA also highlights the many proposed benefits of the SAFE Vehicles Rules from social, manufacturer, private, and physical perspectives, including: "Pre-tax Fuel Savings," "Additional Congestion and Noise (Costs)," "Welfare Loss," "Sales Change," and "Mobility Benefit[s]."[124] To counteract the argument that vehicle GHG emissions accelerate climate change, the EPA suggests that the fuel consumption under the SAFE Vehicles Rules "would impact the global climate by 3/1000th of one degree Celsius by 2100."[125]

The EPA analyzed many factors using "new information and analysis" to offer the following reasons, among others, for their proposal:

> [1.] Technologies have played out differently in the fleet from what the agencies assumed in 2012.

CEO, Robert E. Murray, vigorously fought the Obama administration's attempts to reduce carbon emissions and strengthen environmental and public health laws.").

118. *See* SAFE Vehicles Rules Proposal, 83 Fed. Reg. 42,986 (proposed Aug. 24, 2018).

119. *Compare supra* Sections II.A–B (discussing how the EPA utilized its statutory authority to develop the CCS to reduce GHG emission), *with* Section III.A (explaining that the SAFE Vehicles Rules will lower the emissions standards the CCS put in place and the impact these lower standards will have on climate change).

120. *See* SAFE Vehicles Rules Proposal, 83 Fed. Reg. at 42,986; *see supra* notes 93–94 and accompanying table.

121. *See supra* note 94 and accompanying table.

122. *See generally* SAFE Vehicles Rules Proposal, 83 Fed. Reg. at 42,986.

123. *Id.* at 42,986, 42,990 (providing eight alternatives including their proposal that will go under consideration).

124. *Id.* at 43,254–55.

125. *Id.* at 42,986.

. . . .

[2.] Technology that can improve both fuel economy and/or performance may not be dedicated solely to fuel economy.

. . . .

[3.] Incremental additional fuel economy benefits are subject to diminishing returns.

. . . .

[4.] Increased vehicle prices keep consumers in older, dirtier, and less safe vehicles.[126]

IV. ADVERSE HEALTH AND ECONOMIC EFFECTS FROM THE SAFE VEHICLES RULES

A. What Will Happen if the SAFE Vehicles Rules Are Enacted?

Americans can expect a plethora of detrimental health and economic effects if the SAFE Vehicles Rules are enacted.[127] The effect of SAFE Vehicles Rules on the environment must be discussed before talking about any detrimental health or economic effects.[128] Examining the effects on the fuel economy of cars, it is clear that the average fuel economy will drastically decline from CCS levels.[129] Consequently, the country's oil consumption will increase from "5.3 to 11.9 million gallons per day in 2025."[130] This increase in oil consumption will lead to "16 to 37 million metric tons more carbon pollution" and carbon emissions being added to the atmosphere, which is equivalent to having 400 million more cars operating on the road.[131] This increase in vehicle GHG emissions will have devastating health and economic effects.[132]

126. *Id.* at 42,990–93.
127. *See infra* Sections IV.B–C.
128. *See infra* notes 129–32 and accompanying text.
129. *See Statement from Attorney General Josh Shapiro, National Coalition Announcing Intent to Sue Over EPA Rollback of Clean Car Rule*, PA. OFF. ATT'Y GEN. (Aug. 2, 2018) [hereinafter *Attorney General Statement*], https://www.attorneygeneral.gov/taking-action/statements/statement-from-attorney-general-josh-shapiro-national-coalition-announcing-intent-to-sue-over-epa-rollback-of-clean-car-rule/ [https://perma.cc/WN3B-ZGNY]; *see supra* notes 120–21 and accompanying text.
130. *Attorney General Statement*, *supra* note 129.
131. *See id.*
132. *See infra* Sections IV.B–C.

B. The Detrimental Health Effects of the SAFE Vehicles Rules

Climate change influences human health "by affecting the food we eat, the water we drink, the air we breathe, and the weather we experience."[133] The resulting increase in vehicle GHG emissions from the SAFE Vehicles Rules will cause a significant amount of air pollutants to be dispersed into our atmosphere.[134] The additional air pollutants will cause a plethora of detrimental health effects.[135] A few of the air pollutants created by vehicle emissions and their adverse effect on human health include:

1. Carbon Monoxide: Carbon monoxide is "emitted from combustion processes."[136] "Nationally, particularly in urban areas, the majority of [carbon monoxide] emissions to ambient air come from mobile sources."[137] Carbon monoxide exposure can cause "headaches, fatigue and reduced reflexes."[138]
2. Ground-Level Ozone: Ground-level ozone is "formed through reactions involving [volatile organic compounds] and [nitrogen oxide] in the lower atmosphere in the presence of sunlight."[139] "Ozone damages vegetation . . . [which] may alter ecosystem structure, reduce biodiversity, and decrease plant uptake of CO_2."[140] It is predicted that "warmer temperatures from climate change will increase the frequency of days with unhealthy levels of ground-level ozone."[141] Ozone "can inflame and cause harmful changes in breathing passages, decrease the lungs' working ability, and cause coughing and chest pains."[142]

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133. *Climate Impacts on Human Health*, EPA (Jan. 19, 2017), https://19january2017snapshot.epa.gov/climate-impacts/climate-impacts-humanhealth_.html [https://perma.cc/2BQB-QCAU].
134. *See* Detailed Comments, *supra* note 4, at 33–35.
135. *Health Effects from Automobile Emissions*, WASH. ST. DEP'T ECOLOGY, https://fortress.wa.gov/ecy/publications/documents/0002008.pdf [https://perma.cc/M9L5-QF26] (last visited Apr. 3, 2020).
136. SAFE Vehicles Rules Proposal, 83 Fed. Reg. 42,986, 43,338 (proposed Aug. 24, 2018).
137. *Id.*
138. *Health Effects from Automobile Emissions*, *supra* note 135.
139. SAFE Vehicles Rules Proposal, 83 Fed. Reg. at 43,337.
140. PERCIVAL ET AL., *supra* note 30, at 523.
141. *Climate Impacts on Human Health*, *supra* note 133.
142. *Health Effects from Automobile Emissions, supra* note 135; *see generally Climate Impacts on Human Health*, *supra* note 133 ("People exposed to higher levels of ground-level ozone are at greater risk of dying prematurely . . . ."); *see generally*

3. Sulfur Dioxide: Sulfur dioxide is "formed from burning fuels containing sulfur."[143] "[E]xposure [to sulfur dioxide] constricts air passages, creating problems for people with asthma and for young children . . . ."[144] Exposure can lead to "pain when taking a deep breath, coughing, throat irritation, and breathing difficulties."[145]
4. Toxic Air Pollutants (TAP): TAP include such air pollutants as benzene, formaldehyde, acetaldehyde, acrolein, and naphthalene.[146] TAP have "significant inventory contributions from mobile sources."[147] They are "known to cause or are suspected of causing cancer, genetic mutation, birth defects, or other serious illnesses in people even at relatively low levels."[148]

These serious health issues will affect "[c]hildren, the elderly, [and] those with compromised immune systems" most severely.[149] Specifically, "[p]eople who suffer from . . . asthma, chronic obstructive pulmonary disease (COPD), cardiovascular disease, diabetes, and lung cancer," a group that includes "[t]ens of millions of Americans," will suffer most often.[150]

PERCIVAL ET AL., *supra* note 30, at 523 ("Exposure to ozone may also increase the risk of premature mortality from respiratory causes. Short-term exposure to ozone is also associated with increased total non-accidental mortality, which includes deaths from respiratory causes.").

143. SAFE Vehicles Rules Proposal, 83 Fed. Reg. at 43,338.
144. *Health Effects from Automobile Emissions*, *supra* note 135.
145. *Sulfur Dioxide Effects on Health*, NAT'L PARK SERV., https://www.nps.gov/subjects/air/humanhealth-sulfur.htm [https://perma.cc/U5NJ-GFL8] (last updated Sept. 11, 2018).
146. *Health Effects from Automobile Emissions*, *supra* note 135; *Toxic Air Pollutants*, AM. LUNG ASS'N, https://www.lung.org/our-initiatives/healthy-air/outdoor/air-pollution/toxic-air-pollutants.html [https://perma.cc/7KGL-QRZF] (last updated Jan. 4, 2018); *see* SAFE Vehicles Rules Proposal, 83 Fed. Reg. at 43,340.
147. SAFE Vehicles Rules Proposal, 83 Fed. Reg. at 43,340.
148. *Health Effects from Automobile Emissions*, *supra* note 135.
149. Ronni Esther Rossman, *The Effect of Vehicular Emissions on Human Health*, YALE NAT'L INITIATIVE, http://teachers.yale.edu/curriculum/viewer/initiative_08.07.09_u [https://perma.cc/DK8K-5T3S] (last visited Apr. 3, 2020) ("Studies have shown that school children are exposed to an extremely high amount of air pollution, due to walking or standing by roadsides, sitting on idling buses, and riding buses to school.").
150. *Id.*

The increase in natural disasters caused by climate change will create a multitude of problems for humans.[151] These problems include a "[r]educ[tion] [in] the availability of safe food and drinking water"; "[d]amage[ed] roads and bridges, [which] disrupt[s] access to hospitals and pharmacies"; "[i]nterrupt[ed] communication, utility, and health care services"; and "[c]reat[ed] or worsen[ed] mental health impacts such as depression and post-traumatic stress disorder (PTSD)."[152]

Climate change will also "increase[] the geographic range of [vectorborne] diseases."[153] "Vectorborne diseases are illnesses that are transmitted by disease vectors, which include mosquitoes, ticks, and fleas."[154] For example, an increase in air temperature leads to ticks, which carry Lyme disease, "becom[ing] active earlier in the season."[155]

A combination of climate change effects increases the risk of illness from "contaminated drinking or recreational water."[156] Exposure to this water can cause "gastrointestinal illness like diarrhea, effects on the body's nervous and respiratory systems, or liver and kidney damage."[157] This contamination is caused by "runoff and flooding resulting from increases in extreme precipitation, hurricane rainfall, and storm surge[s]."[158]

An increase in "carbon dioxide in the atmosphere [is] expected to affect food safety and nutrition."[159] "Higher air temperatures can increase cases of Salmonella and other bacteria-related food poisoning because bacteria grow more rapidly in warm environments."[160] "[H]igher sea surface temperatures will lead to higher mercury concentrations in seafood, and increases in extreme weather events will introduce contaminants into the food chain through stormwater runoff."[161] Finally, with regard to nutrition, a

151. *See Climate Impacts on Human Health*, *supra* note 133.

152. *Id.* ("Any changes in a person's physical health or surrounding environment can also have serious impacts on their mental health. In particular, experiencing an extreme weather event can cause stress and other mental health consequences, particularly when a person loses loved ones or their home.").

153. *Id.*

154. *Id.*

155. *Id.* ("The geographic range of ticks that carry Lyme disease is limited by temperature . . . and their range is likely to continue to expand northward.").

156. *Id.*

157. *Id.*

158. *Id.*

159. *Id.*

160. *Id.* ("These diseases can cause gastrointestinal distress and, in severe cases, death.").

161. *Id.*

"[h]igher concentration of carbon dioxide in the air . . . lowers the levels of protein and essential minerals in crops . . . making these foods less nutritious."[162]

The sheer volume of health effects resulting from the SAFE Vehicles Rules is alarming and concerning.[163] Environmental law is supposed to protect the vulnerable groups in our society,[164] but the SAFE Vehicles Rules would only increase the damaging, detrimental health effects that these groups will experience due to climate change.[165] It is clear that we will only be harming ourselves if vehicle GHG emissions are not intelligently and vigorously regulated.[166]

C. The Detrimental Economic Effects of the SAFE Vehicles Rules

Lawmakers passing environmental legislation incorporate an economic analysis into the drafting process.[167] An indisputable economic effect of the SAFE Vehicles Rules is that Americans will spend roughly $193 billion to $236 billion more on gas through 2035.[168] However, the ramifications of the SAFE Vehicles Rules will affect more than a citizen's wallet at the fuel pump.[169] It will also cause great harm to many aspects of our country's economy.[170]

The major industries around the country will absorb some of the biggest losses from climate change.[171] The SAFE Vehicles Rules will "threaten[] 1.2 billion jobs" in the forestry, fishery, and

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162. *Id.*
163. *See supra* Section IV.B.
164. *See* PERCIVAL ET AL., *supra* note 30, at 17.
165. *See supra* Section IV.B; *see also* PERCIVAL ET AL., *supra* note 30, at 17.
166. *See supra* Sections IV.A–B.
167. *See* PERCIVAL ET AL., *supra* note 30, at 29–41 ("[E]conomics has become increasingly the lingua franca in government policy discussions about the environment.").
168. *Attorney General Statement*, *supra* note 129; *see* Kate Larsen et al., *Sizing Up a Potential Fuel Economy Standards Freeze*, RHODIUM GROUP (May 3, 2018), https://rhg.com/research/sizing-up-a-potential-fuel-economy-standards-freeze/ [https://perma.cc/6F5X-S7KM].
169. *See infra* notes 171–93.
170. *See infra* notes 171–93.
171. *See* Alyssa Satara, *3 Things Entrepreneurs Should Know About the Climate Report That Went Public over the Weekend*, INC. (Nov. 26, 2018), https://www.inc.com/alyssa-satara/climate-change-could-cut-us-gdp-by-10-what-entrepreneurs-should-be-looking-out-for.html [https://perma.cc/YSP4-NZPT]; *see also* Nicholas Duva, *7 Industries at Greatest Risk from Climate Change*, CNBC (Oct. 22, 2014, 6:00 AM), https://www.cnbc.com/2014/10/22/7-industries-at-greatest-risk-from-climate-change.html?slide=1 [https://perma.cc/84UM-BJ4Y].

agriculture industries.[172] For example, the need to relocate where certain crops are grown will affect the agriculture markets in certain regions.[173] Even the ocean farming industry will be affected by the SAFE Vehicles Rules.[174]

The real estate industry will also be impacted.[175] The endangerment of coastal cities by climate change will affect "real estate projects [that] boost [the] US economy and provide $1 trillion of our national wealth."[176] Finally, the automotive sector, which is heavily involved with GHG emissions, will also be affected by the SAFE Vehicles Rules.[177] "[P]rojected job losses [under the SAFE Vehicles Rules] rise to between 180,000 and 275,000 [by] 2035," which is drastically more than the EPA's current analysis of employment loss in this sector.[178]

Gross domestic product (GDP) is a "comprehensive measure of U.S. economic activity."[179] "The [positive or negative] growth rate of GDP is the most popular indicator of the nation's overall economic health."[180] Studies have determined that the SAFE Vehicles Rules "would result in GDP reductions of between $13 billion and $17 billion in 2035."[181] If climate change is not combated in the United States, it will affect more than just our GDP.[182] The "[g]lobal GDP would decline by more than 30 percent from 2010

172. Kimberly Amadeo, *Climate Change Facts and Effect on the Economy*, BALANCE, https://www.thebalance.com/economic-impact-of-climate-change-3305682 [https://perma.cc/B8HR-JXGP] (last updated June 25, 2019); *see generally* Detailed Comments, *supra* note 4, at 10–14 (to avoid catastrophic affects of climate change immediate reduction in emissions is vital).

173. *See* Amadeo, *supra* note 172; *see also* Satara, *supra* note 171 ("In 2010 alone, global warming cost this industry $1.2 billion . . . . One example of this is how these conditions could leave areas in the Midwest with the means to grow 75 percent less of the amount of corn these areas currently generate.").

174. Satara, *supra* note 171 ("This study predicts that in the next century s[hel]lfish production will have seen a $230 million cut to its industry.").

175. *Id.*

176. *Id.*

177. *See* Detailed Comments, *supra* note 4, at 106–07.

178. *Id.* ("The Agencies' limited employment analysis finds that the Proposed Rollback will result in automotive sector employment losses of 50,000 in 2025 and 60,000 in 2030.").

179. *What Is Gross Domestic Product*, BUREAU ECON. ANALYSIS, https://www.bea.gov/data/gdp/gross-domestic-product [https://perma.cc/68GR-VHDY] (last visited Apr. 3, 2020) ("GDP is the value of the goods and services produced in the United States.").

180. *Id.* (alteration in original).

181. Detailed Comments, *supra* note 4, at 107.

182. *See* Amadeo, *supra* note 172.

levels."[183] This would be "worse than the Great Depression" and "would be permanent."[184]

While it is true that natural disasters have impacted human civilizations for countless years, today's natural disasters are "more calamitous, increasing in both frequency and cost" due to climate change.[185] "Economic losses caused by climate-related disasters have soared by about two and a half times in the last 20 years . . . ."[186] As a result of these disasters, the United States lost $945 billion.[187] Two of the disasters included in this figure were Hurricane Katrina and Hurricane Harvey.[188] These hurricanes cost the country $156 billion and $95 billion, respectively.[189]

Pure monetary loss will not be the only catastrophic economic effect of these natural disasters.[190] "Natural disasters have already cost 23 million working life years since 2000."[191] Also, a study examining the association between economic attainment and the level of air pollution in a given area concluded that "an individual's exposure to lower ambient air pollution levels in the year of birth positively affects earnings 30 years later."[192] This conclusion was

183. *Id.*

184. *Id.* (explaining that during the Great Depression "global trade fell 25 percent").

185. Joe Speicher, *As Climate Change and Natural Disasters Intensify, It's Time to Build Back Better*, AUTODESK (May 10, 2018), https://www.autodesk.com/redshift/climate-change-and-natural-disasters/ [https://perma.cc/K6R5-VJS6] ("In 2017 alone, the United States experienced 15 natural disasters that each caused more than $1 billion in damages.").

186. Michael Taylor, *Climate Change Is Making Disasters More Expensive*, WORLD ECON. F. (Oct. 11, 2018), https://www.weforum.org/agenda/2018/10/climate-disasters-cause-global-economic-losses-un/ [https://perma.cc/M865-D526] ("From 1998 to 2017, direct losses from all disasters totalled $2.9 trillion, of which 77 percent was due to extreme weather . . . .").

187. *Id.*; *see* Inder Bugarin, *Natural Disasters: The High Cost of Climate Change*, EL UNIVERSAL (Oct. 11, 2018, 7:16 PM), https://www.eluniversal.com.mx/english/natural-disasters-the-high-cost-climate-change [https://perma.cc/H236-MHNW].

188. Bugarin, *supra* note 187.

189. *Id.*

190. *See* Amadeo, *supra* note 172.

191. *Id.* ("On the other hand, efforts to stop climate change would create 24 million new jobs by 2030.").

192. Adam Isen et al., *Every Breath You Take – Every Dollar You'll Make: The Long-Term Consequences of the Clean Air Act of 1970*, 125 J. POL. ECON. 848, 896 (2017) ("[T]he approximate 10 percent reduction in [total suspended particulates] that resulted from [the 1970 CAA Amendments] implementation is associated with a 1 percent increase in age 30 earnings . . . . [W]e calculate an approximate $4,300 average cumulative lifetime income gain in present value terms, implying that early-

reached by showing that areas with lower air pollution benefit from "improvements in educational attainment . . . and improvements in later-life health measures."[193]

V. THERE ARE MANY ACTIONS THAT MUST BE TAKEN TO PRESERVE THE STRICT STANDARDS OF THE CCS

Americans and the government must be proactive when addressing our vehicle GHG emissions problem.[194] Everyone will experience the ramifications of climate change, regardless of location, socioeconomic status, or age.[195] There are two courses of action that may help preserve the strict standards of the CCS: (1) a citizen suit; and (2) individual states adopting California's strict vehicle emissions standards.[196] Also, there is an option that would render government vehicle emissions standards mostly moot—states can adopt strict programs advocating electric vehicles and zero emissions.[197]

A. Citizen Suit

"[T]he environmental laws do not leave enforcement entirely in the hands of [the] government."[198] The CAA contains a citizen suit provision.[199] Congress created this citizen suit to "enlist citizens in the tasks of ensuring that the laws were implemented and enforced properly."[200] Instituting a citizen suit entails a two-step process.[201] First, notice of the violation must be sent to the EPA and it must be given sixty days to correct the violation.[202] After sixty days, a citizen suit may be filed.[203] Citizen suits may be brought by any person, including "an individual, corporation, partnership, association, State, municipality, political subdivision of a State, and any agency,

life air quality contributes a total of $6.5 billion in lifetime earnings for each affected cohort.").

193. *Id.*
194. *See supra* notes 1–6 and accompanying text.
195. *See supra* Sections IV.B–C.
196. *See infra* Sections V.A–B.
197. *See infra* Section V.C.
198. PERCIVAL ET AL., *supra* note 30, at 1139.
199. 42 U.S.C. § 7604(a) (2012).
200. PERCIVAL ET AL., *supra* note 30, at 1139.
201. 42 U.S.C. § 7604(b).
202. *Id.*
203. *Id.*

department, or instrumentality of the United States and any officer, agent, or employee thereof."[204]

The CAA "specifically authorize[s] judicial review of agency action taken pursuant to [it.]"[205] "[This] statute[], coupled with the judicial review provisions of the APA, . . . lay out the ground rules for challenging agency decisions in the federal courts."[206] Pursuant to the applicable statutes, seventeen States and the District of Columbia (Petitioners) have filed an action against the EPA regarding the SAFE Vehicles Rules proposal.[207] This suit was also joined by multiple advocacy groups.[208] Petitioners "seek[] . . . a declaratory judgment that, by failing to implement and enforce the Emission Guidelines, [the] EPA has violated the [CAA], and [petitioners seek issuance of] a mandatory injunction compelling [the] EPA to implement and enforce [the CCS]."[209]

Petitioners provide many contentions in support of their suit.[210] First, petitioners allege that the EPA's SAFE Vehicles Rules proposal "suffer[s] from a surfeit of significant procedural flaws and a lack of transparency."[211] Petitioners also claim that the SAFE Vehicles Rules proposal "[c]ontravenes" the CAA, specifically section 202(a), and therefore is arbitrary and capricious.[212] Petitioners allege that the

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204. *Id.* § 7602(e); *see also* PERCIVAL ET AL., *supra* note 30, at 1157–58 ("[O]rganizations have standing to assert the interests of their members if (1) at least one member would have standing to sue individually, (2) the interests the organization seeks to protect are 'germane to the organization's purposes,' and (3) neither the claims asserted nor the relief requested requires the participation in the lawsuit of individual members.").

205. PERCIVAL ET AL., *supra* note 30, at 190; *see* 42 U.S.C. § 7607(b).

206. PERCIVAL ET AL., *supra* note 30, at 190–91; *see* 5 U.S.C. §§ 701–06 (2018).

207. State Petitioners' Non-Binding Statement of Issues at 1, California v. EPA (2018) (No. 18-1114).

208. Brief of Petition for Review of Agency Action at 2, California v. EPA (D.C. Cir. 2019) (No. 18-1114) (including National Coalition for Advanced Transportation, Consolidated Edison Company of New York, Inc., National Grid USA, New York Power Authority, and the City of Seattle's Light Department).

209. California v. EPA, 360 F. Supp. 3d 984, 988 (N.D. Cal. 2018).

210. *See infra* notes 211–214 and accompanying text.

211. Detailed Comments, *supra* note 4, at 37. Petitioners allege that the EPA's SAFE Vehicles Rules proposal is unlawful because, among other things, it relies on their Revised Determination which was arbitrary and capricious, the EPA failed to "identify and disclose the data on which it relied" on for the SAFE Vehicles Rules proposal, and the EPA "continued to contravene procedural norms and acted without transparency when they inexplicably held back for weeks the transcripts from the three public hearings they held in connection with the Proposed Rollback." *Id.* at 37–47.

212. *Id.* at 48. Petitioners contend the EPA "fail[ed] to propose a finding that six years . . . is '*necessary* to permit the *development and application* of the requisite technology.'"

SAFE Vehicles Rules proposal is "[c]ontrary to the Energy Policy Conservation Act [(EPCA)]," which states the National Highway Traffic Safety Administration (NHTSA) shall "prescribe . . . average fuel economy standards for automobiles[,] . . . [which are at] the maximum feasible average fuel economy level."[213] Finally, petitioners allege that the SAFE Vehicles Rules proposal "relies on a technical analysis that is arbitrary and capricious."[214] The opponents of the SAFE Vehicles Rules base their position in the laws that guide agencies in determining vehicle emissions standards.[215] Any proposal that does not abide by the proper standards is detrimental to society and conflicts with the legal safeguards intended to provide protection against harmful vehicle GHG emissions.[216]

If the petitioners receive a favorable judgment, the EPA must rescind its proposal of the SAFE Vehicles Rules and continue to administer the CCS.[217] If the EPA receives a favorable judgment, it

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Id. at 50 (emphasis added) (quoting 42 U.S.C. § 7521(a) (1994)). Moreover, the EPA's "discussion of costs" failed to meet the requirements of Section 202(a)(2), and the EPA "improperly weighed the factors it considered, giving far too little weight to those factors it must consider under the Clean Air Act." Detailed Comments, *supra* note 4, at 51, 55.

213. Detailed Comments, *supra* note 4, at 64; *see* 42 U.S.C. § 32902(a) (2012). Petitioners specifically provide that the SAFE Vehicles Rules proposal and "proposed reinterpretation of the 'maximum feasible' statutory language . . . flies in the face of the unambiguous text, structure, and purpose of the Act," and the interpretation of the EPCA factors "are both impermissible and unreasonable." Detailed Comments, *supra* note 4, at 64–65; *see Final Rule for Model Year 2017 and Later Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards*, EPA, https://www.epa.gov/regulationsemissions-vehicles-and-engines/final-rule-model-year-2017-and-later-light-duty-vehicle [https://perma.cc/HWS3-56B2] (last visited Apr. 3, 2020) (explaining the NHTSA establishes "Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act, as amended by the Energy Independence and Security Act (EISA)").

214. Detailed Comments, *supra* note 4, at 80. Specifically, the petitioners claim that the EPA "substantially overstated compliance costs," the EPA "grossly misle[d] the public" when discussing the societal impacts of the SAFE Vehicles Rules, and the EPA failed to properly weigh the societal benefits against the costs of the SAFE Vehicles Rules. *Id.* at 85, 89, 103.

215. *See supra* notes 211–14 and accompanying text.

216. *See* Chris Harto et al., *The Un-SAFE Rule: How a Fuel Economy Rollback Costs Americans Billions in Fuel Savings and Does Not Improve Safety*, CONSUMER REP. (Aug. 2019), https://advocacy.consumerreports.org/wp-content/uploads/2019/08/The-Un-SAFE-Rule-How-a-Fuel-Economy-Rollback-Costs-Americans-Billions-in-Fuel-Savings-and-Does-Not-Improve-Safety-2.pdf [https://perma.cc/ZSN8-QRGB].

217. *See* Peter Whitfield & Aaron L. Flyer, *SAFE Rule: Federal-State Tension in Auto Emission Regulation*, A.B.A. (Dec. 20, 2019), https://www.americanbar.org/groups/environment_energy_resources/publications/trends/2019-2020/january-february-2020/safe-rule-federal/ [https://perma.cc/GLR5-DHZR].

will be allowed to follow CAA procedures for promulgating regulations and ultimately enact the SAFE Vehicles Rules.[218] Since this action allows for the possible implementation of the SAFE Vehicles Rules, a more dependable option must also be explored.[219]

B. States Must Take the Initiative and Adopt California's Stricter Standards

Because of the unpredictability of judicial review and the serious adverse effects of weak federal vehicle emissions standards,[220] it is necessary to take action regardless of the result of the pending litigation against the SAFE Vehicles Rules.[221] California has its own set of regulations to curtail vehicle GHG emissions.[222] California was allowed to enact these regulations because of a waiver within the CAA.[223] The CAA explicitly states, "[n]o State . . . shall adopt or attempt to enforce any standard relating to the control of emissions from new motor vehicles."[224] However, a state could be granted a waiver from this prohibition if the "State standards [would] be . . . at least as protective of public health and welfare as applicable Federal standards."[225] A state's standards would have had to be in place prior to March 30, 1996.[226] Therefore, California received a waiver because "[it] was already developing innovative laws and standards to address its unique air pollution problems."[227]

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218. *See* Robinson Meyer, *How the U.S. Protects the Environment, from Nixon to Trump*, ATLANTIC (Mar. 29, 2017), https://www.theatlantic.com/science/archive/2017/03/how-the-epa-and-us-environmental-law-works-a-civics-guide-pruitt-trump/521001/ [https://perma.cc/Y3KS-57MX].
219. *See infra* Section V.B.
220. *See supra* Section III.A.
221. *See supra* notes 207–16 and accompanying text.
222. *See, e.g.*, CAL. CODE REGS. tit. 13, §§ 1950, 1961.2(a)(1) (2020).
223. 42 U.S.C. § 7543(b) (2012); *see also* Timothy Cama, *Trump to Propose Blocking California's Clean Car Standards: Report*, HILL (July 23, 2018, 12:38 PM), https://thehill.com/policy/energy-environment/398372-trump-admin-to-propose-blocking-californias-clean-car-standards [https://perma.cc/CB39-BCNK] ("The Trump administration is planning a proposal to block California regulators from enforcing their own emissions standards for vehicles sold in the [S]tate.").
224. 42 U.S.C. § 7543(a).
225. *Id.* § 7543(b)(1)(B) ("No such wavier shall be granted if the Administrator finds that . . . such State does not need such State standards to meet compelling and extraordinary conditions . . . .").
226. *Id.* § 7543(b)(1).
227. Bryner & Hankins, *supra* note 72.

Although other states cannot receive this waiver, they can choose to follow California's regulations.[228] "The [CAA] allows other states to adopt California's motor vehicle emissions standards under section 177."[229] Currently, there are thirteen states and the District of Columbia that have adopted California's regulations.[230] Alarmingly, thirty-six states have no emissions standards in place that are stricter than the federal standards.[231] This will lead to a problem if the SAFE Vehicles Rules are adopted.[232] Over half of the states in the country will lack stricter regulations to implement in place of the SAFE Vehicles Rules,[233] this will lead to an increase in the rate of vehicle GHG emissions and the resulting adverse economic and health effects.[234]

The remaining states that have not adopted California's regulations must quickly take the necessary steps to do so. Adopting and implementing California's regulations is not a rigorous process.[235] A state's governor may execute an executive order to force the state's commission or board regulating air quality control to decide the issue, or a state's legislature may take the initiative to come together on this bipartisan issue and adopt California's stricter standards.[236]

228. *Id.*; *see* PERCIVAL ET AL., *supra* note 30, at 567–68 ("In 1990, Congress amended the [CAA's] preemption provisions to give states other than California the option to adopt California's auto emission standards if they so choose. That election has withstood judicial challenges by manufacturers, but only when the standards adopted by other states have been identical to current California standards.").

229. *Vehicle Emissions California Waivers and Authorizations*, EPA, https://www.epa.gov/state-and-local-transportation/vehicle-emissions-california-waivers-and-authorizations [https://perma.cc/3J97-KBMR] (last visited Apr. 3, 2020) ("Section 177 requires . . . that such standards be identical to the California standards for which a wavier has been granted.").

230. *Tailpipe Emission Standards*, AM. COUNCIL ENERGY-EFFICIENT ECON., https://database.aceee.org/state/tailpipe-emission-standards [https://perma.cc/3KGM-9W39] (last updated July 2019); *see States Adopting California's Clean Car Standards*, MD. DEP'T ENV'T, https://mde.maryland.gov/programs/Air/MobileSources/Pages/States.aspx [https://perma.cc/MF4K-LMXY] (last visited Apr. 3, 2019).

231. *See Tailpipe Emission Standards*, *supra* note 230.

232. *See supra* Section IV.A.

233. *See States Adopting California's Clean Car Standards*, *supra* note 230.

234. *See supra* Part IV.

235. *See infra* notes 236–37 and accompanying text.

236. *See* Natalia V. Navarro, *Colorado Adopts California's Stricter Emissions Standards, Bucking Trump Administration*, COLO. PUB. RADIO (Nov. 16, 2018), https://www.cpr.org/news/story/colorado-adopts-californias-stricter-emissions-standards-bucking-trump-administration [https://perma.cc/27Y9-SYZX]; *see also* Paul Frisman, *Adoption of California Emissions Standards*, CONN. GEN. ASSEMBLY (Jan. 23, 2004), https://www.cga.ct.gov/2004/rpt/2004-R-0089.htm [https://perma.cc/

Since the SAFE Vehicles Rules proposal, several states have already started the process of adopting California's stricter standards.[237] Citizens must reach out to their elected officials and urge them to advocate for adopting California's stricter vehicle emissions standards. With such passion from its constituents, a state's legislature will have no option but to adopt California's standards.

With all states, or even a large percentage of states, applying California's stricter emissions standards the overall rate reduction of vehicle GHG emissions from light-duty vehicles is attainable and cannot be obstructed by federal rulemaking.[238] The federal government would lack the power to force states to follow weaker vehicle emissions standards, leading to stricter vehicle emissions standards around the country regardless of who the president is.[239]

C. Embracing and Promoting Zero Emission and Electric Vehicles Will End the Vehicle GHG Emissions Problem

The best way to eradicate the vehicle GHG emissions problem is to promote the widespread purchase of zero emission vehicles (ZEV).[240] A genuine effort to substitute ZEV for the existing vehicle fleet would make emissions regulation unnecessary.[241] ZEV are "non-fossil-fuel-driven vehicles" and include "battery-electric cars," "plug-in hybrid vehicles," and "hydrogen fuel cell vehicles."[242]

ME83-SR5V] (report from Connecticut's Office of Legislative Research regarding California's emissions standards for the Connecticut General Assembly).

237. *See* Mark Hand, *Colorado Becomes 14th State to Adopt Stronger Vehicle Emission Standards*, THINKPROGRESS (June 18, 2018, 4:08 PM), https://thinkprogress.org/colorado-to-join-backers-of-california-vehicle-emissions-rules-in-face-of-epa-rollbacks-19cc2c233ded/ [https://perma.cc/4PVE-Z3JR]; *see Washington Senate Moves to Adopt California Emissions Rules*, U.S. NEWS (Mar. 4, 2019), https://www.usnews.com/news/best-states/california/articles/2019-03-04/washington-senate-moves-to-adopt-california-emission-rules [https://perma.cc/R3FU-6F9V].

238. *See* Coral Davenport, *Trump to Revoke California's Authority to Set Stricter Auto Emissions Rules*, N.Y. TIMES (Sept. 17, 2019), https://nyti.ms/305luT3 [https://perma.cc/3DVV-WWFV].

239. *But see id.*

240. *See infra* notes 243–52 and accompanying text.

241. *See* Stephen Edelstein, *General Motors Calls for National Zero Emissions Vehicle Program*, DRIVE (Oct. 26, 2018), http://www.thedrive.com/news/24482/general-motors-calls-for-national-zero-emissions-vehicle-program [https://perma.cc/K335-9M5P].

242. PERCIVAL ET AL., *supra* note 30, at 566; *What is ZEV?*, UNION CONCERNED SCIENTISTS, https://www.ucsusa.org/clean-vehicles/california-and-western-states/what-is-zev [https://perma.cc/8WU2-W5CK] (last updated Oct. 31, 2016) ("Plug-in hybrid vehicles combine a conventional gasoline-powered engine with a battery that can be

California enacted a ZEV program to "ensure that automakers research, develop, and market [ZEV.]"[243] The program, which has been adopted by ten other states, is "considered one of the nation's most forward-looking climate policies, and a driving force behind an expanding market with a current offer of over 30 zero emission models available to the U.S. public."[244]

One prominent automaker is advocating for the development of a national ZEV program.[245] General Motors (GM) is "calling on the federal government to do more to promote electric cars and other vehicles that produce no 'tailpipe' emissions."[246] GM's proposed national ZEV program that is similar to California's program.[247] However, there is one significant difference between the two programs.[248] California's ZEV program only applies to automakers with a certain total sales volume.[249] Conversely, GM's proposed program does not have a total sales volume threshold—it would apply to all fifty states uniformly.[250] GM estimated that its program "could put more than 7 million long-range electric cars on United States roads by 2030."[251] Although the program has drawn criticism, GM believes its program would "better promote[] U.S. innovation

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recharged from the electrical grid. Battery electric vehicles run entirely on electricity and can be recharged from the electricity grid. Hydrogen fuel cell vehicles run on electricity produced from a fuel cell using hydrogen gas.").

243. CAL. CODE REGS. tit. 13, § 1962.2 (2020); *What is ZEV?*, *supra* note 242 ("The ZEV program assigns each automaker 'ZEV credits.' Automakers are required to maintain ZEV credits equal to a set percentage of non-electric sales. Each car sold earns a number of credits based on the type of ZEV and its battery range. The credit requirement is 7 percent in 2019, which will require about 3 percent of sales to be ZEVs. The credit requirement rises to 22 percent in 2025, which will require about 8 percent of sales to be ZEVs.").

244. *What is ZEV?*, *supra* note 242. The California program has been adopted by Connecticut, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Rhode Island, and Vermont. *Id.*; *see* PERCIVAL ET AL., *supra* note 30, at 567 ("The California ZEV standards have been technology-forcing. [The California Air Resource Board] claimed that the ZEV regulations had 'spurred advances in natural gas and other alternative fueled vehicles, super-clean gasoline vehicles, fuel efficient hybrids that are powered by a combination of electric motors and internal combustion engines, and fuel cell vehicles powered by electricity created from pollution-free hydrogen.'").

245. *See* Edelstein, *supra* note 241.

246. *Id.*

247. *Id.*

248. *See id.*

249. *Id.*; *see* CAL. CODE REGS. tit. 13, § 1962.2 (2020).

250. Edelstein, *supra* note 241.

251. *Id.*

and start[] a much-needed national discussion on electric vehicle development and deployment."[252]

ZEV programs may have flaws,[253] but they are steps towards the goal of eliminating the country's production of vehicle emissions.[254] Collaboration between the government and automakers is necessary for the creation of a nationwide ZEV program that would end the need for vehicle emissions regulations.

VI. JOINT ACTION AGAINST VEHICLE EMISSIONS PRODUCTION WOULD MAKE OUR ENVIRONMENT AND SOCIETY HEALTHIER AND ECONOMICALLY PROSPEROUS

Far too often, action is taken after serious and sometimes deadly foreseeable incidents have occurred.[255] Plenty of examples from the last fifty years illustrate this point.[256] The Cuyahoga River Fire cost millions and killed five people, leading to the passage of the Clean Water Act.[257] The Milwaukee Waterborne Disease Outbreak impacted more than 400,000 people and resulted in more than $96 million in healthcare costs and productivity losses; this led to the creation of a specialized group dedicated to addressing waterborne disease outbreaks.[258] Finally, the BP Oil Spill resulted in eleven

252. *Id.* ("GM's proposal drew criticism from the Union of Concerned Scientists (UCS), which said the plan would undermine state initiatives the group views to already be working well. In a statement, the UCS said GM's proposal would only bring ZEVs to 5 percent of new-car sales by 2025, while current requirements in California and nine other states would result in 8 percent ZEV sales by that time.").

253. *See* Virginia McConnell & Benjamin Leard, *The California ZEV Program: A Long and Bumpy Road, but Finally Some Success*, RESOURCES (Dec. 2, 2019), https://www.resourcesmag.org/common-resources/california-zev-program-long-and-bumpy-road-finally-some-success/ [https://perma.cc/XWN5-CY37].

254. *See id.*

255. *See infra* notes 257–59 and accompanying text.

256. *See infra* notes 257–59 and accompanying text.

257. *See* Julie Grant, *How A Burning River Helped Create the Clean Water Act*, ALLEGHENY FRONT (Apr. 21, 2017), https://www.alleghenyfront.org/how-a-burning-river-helped-create-the-clean-water-act/ [https://perma.cc/N4GQ-V5WU].

258. Stephen Gradus, *Milwaukee, 1993: The Largest Documented Waterborne Disease Outbreak in US History*, WATER QUALITY & HEALTH COUNCIL (Jan. 10, 2014), https://waterandhealth.org/safe-drinking-water/drinking-water/milwaukee-1993-largest-documented-waterborne-disease-outbreak-history/ [https://perma.cc/3W6X-2BMN] ("From the two-day meeting The Working Group on Waterborne Cryptosporidiosis was created which included 17 task forces to address specific topics related to waterborne cryptosporidiosis.").

deaths, billions of dollars in damage, and led to stricter requirements for oil companies who participate in offshore drilling.[259]

In the face of the risks and dangers of climate change, ZEV programs present the country with a unique opportunity.[260] Americans have yet another foreseeable environmental issue that will lead to drastic ramifications if not aggressively addressed.[261] Without decreasing vehicle GHG emissions, these ramifications are inescapable.[262] The CCS were enacted to aggressively reduce vehicle GHG emissions.[263] Since the inception of the CCS, the country has seen many beneficial results.[264] The CCS have greatly reduced the country's oil dependency, which solves more issues than just vehicle emissions.[265] Americans have saved money at fuel pumps because of the technological advances driven by the CCS.[266] The CCS have even created many jobs, as the money saved returns to the economy, which drives growth.[267]

259. *See* Gary Pullman, *10 Disasters That Sparked New Safety Regulations*, LISTVERSE (Aug. 6, 2016), https://listverse.com/2016/08/06/10-disasters-that-sparked-new-safety-regulations/ [https://perma.cc/A27H-896G]; *see also* Kimberly Amadeo, *BP Oil Spill Economic Impact*, BALANCE, https://www.thebalance.com/bp-gulf-oil-spill-facts-economic-impact-3306212 [https://perma.cc/3FU3-XQDM] (last updated Nov. 20, 2019).

260. *See infra* notes 276–90 and accompanying text.

261. *See supra* Section I.C; *see supra* Part IV.

262. *See supra* Part IV.

263. *See supra* Section II.B.

264. *See supra* Section II.C.

265. *See supra* note 96 and accompanying text; *see also* Rebecca Lefton & Daniel J. Weiss, *Oil Dependence Is a Dangerous Habit*, CTR. FOR AM. PROGRESS (Jan. 13, 2010, 9:00 AM), https://www.americanprogress.org/issues/green/reports/2010/01/13/7200/oil-dependence-is-a-dangerous-habit/ [https://perma.cc/48SW-B73A] ("Reducing oil imports through clean-energy reform would reduce money sent overseas for oil, keep more money at home for investments, and cut global warming pollution."); *see also* Michael A. Levi, *Reducing U.S. Oil Consumption*, COUNCIL ON FOREIGN REL. (June 11, 2010), https://www.cfr.org/expert-roundup/reducing-us-oil-consumption [https://perma.cc/57H8-7DEP] ("The U.S. economy would be less vulnerable to oil price shocks."); *see also* Daniel J. Weiss, *Reducing U.S. Oil Consumption*, COUNCIL ON FOREIGN REL. (June 11, 2010), https://www.cfr.org/expert-roundup/reducing-us-oil-consumption [https://perma.cc/7G9J-FQQD] ("A clean energy economy and reduction in oil use will benefit all Americans by saving families money, enhancing national security, creating jobs, and protecting public health by making pollution reductions.").

266. *See supra* notes 98–100 and accompanying text.

267. *See supra* note 143 and accompanying text.

The SAFE Vehicles Rules are a dramatic shift from the aggressive regulations to curtail vehicle GHG emissions under the CCS.[268] The EPA's proposal is a sad attempt at following the text of the CAA, which states that "[t]he [EPA] Administrator shall by regulation prescribe . . . standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which . . . cause, or contribute to, air pollution which may reasonably be anticipated to *endanger public health or welfare*."[269] It is unrefuted that GHGs are air pollutants.[270] It is unrefuted that GHG emissions contribute to air pollution.[271] It is unrefuted that vehicle GHG emissions endanger public health and welfare.[272] Therefore, it is the EPA's duty to strictly regulate vehicle GHG emissions.[273] Failing to continue implementing the CCS and enacting weaker vehicle emission standards is contrary to the EPA's statutory duty and is capricious and arbitrary.[274] The far-reaching adverse effects of the SAFE Vehicles Rules are inescapable.[275]

If the EPA does not retract its proposal and continues to implement the CCS action must be taken to counteract the weakened vehicle emissions standards.[276] One of these options, a citizen suit, has already commenced.[277] A plethora of states and advocacy groups that take vehicle GHG emissions seriously have sued the EPA, alleging that the SAFE Vehicle Rules are unlawful.[278] However, judicial review of the EPA's proposal is not guaranteed to deliver the necessary result.[279] Consequently, states must be proactive and adopt California's stricter vehicle emissions standards.[280] This process is

268. *Compare supra* Sections II.A–B (discussing how the EPA utilized its statutory authority to develop the CCS to reduce GHG emission), *with* Section III.A (explaining that the SAFE Vehicles Rules will lower the emissions standards the CCS put in place and the impact these lower standards will have on climate change).
269. *Compare* SAFE Vehicles Rules Proposal, 83 Fed. Reg. 42,986, 42,896 (proposed Aug. 24, 2018), *with* 42 U.S.C. § 7521(a) (2012) (emphasis added).
270. *See supra* note 85 and accompanying text.
271. *See supra* Section I.A; *see supra* note 87 and accompanying text.
272. *See supra* Part IV.
273. *See supra* note 87 and accompanying text.
274. *See supra* notes 87, 212–214 and accompanying text.
275. *See supra* Part IV.
276. *See supra* Part V.
277. *See supra* Section V.A.
278. *See supra* Section V.A.
279. *See supra* Section V.A.
280. *See supra* Section V.B.

not rigorous and can be driven by strong and persistent citizen advocacy.[281]

There is an alternative option that eliminates the need for vehicle GHG emission regulation.[282] A nationwide push for zero emission and electric cars will eradicate the acceleration of climate change by vehicle GHG emissions.[283] Zero emission and electric car technology has substantially advanced;[284] thus, it is attainable to implement a program that substitutes most of the vehicles that emit harmful emissions on the road today with environmentally friendly vehicles.[285]

Scientists have shown that individuals who live in a clean environment tend to be be in better health overall than individuals who live in polluted areas.[286] These positive outcomes from decreasing our vehicle GHG emissions will benefit our entire country for years.[287] Curtailing the country's vehicle GHG emissions must be a bipartisan issue that is intelligently addressed and monitored. The health and welfare of our country is not something that should be ignorantly handled and decided along party lines.[288] With a drastic and potentially catastrophic problem facing the United States and the world,[289] options to eliminate the SAFE Vehicles Rules must be pursued to "ensure that present and future generations enjoy the benefits of both a prosperous economy and a healthy environment."[290]

281. *See supra* Section V.B.
282. *See supra* Section V.C.
283. *See supra* Section V.C.
284. *See* Maryline Daviaud Lewett & Randal Kaufman, *New Advances in Zero Emissions Vehicles Offer Promise for Work Fleets*, MARKET WATCH (July 17, 2019), https://www.marketwatch.com/press-release/new-advances-in-zero-emissions-vehicles-offer-promise-for-work-fleets-2019-07-17 [https://perma.cc/N99K-64Y4].
285. *See supra* Section V.C.
286. *See supra* notes 192–93 and accompanying text.
287. *See supra* Section V.C.
288. *See supra* Section V.B.
289. *See supra* Section I.C.
290. PERCIVAL ET AL., *supra* note 30, at 1.