
CONGRESS’S FIFTY YEAR MISSION TO TRANSITION MOTOR VEHICLES: A BRIEF HISTORY OF FEDERAL ELECTRIC VEHICLE POLICY IN THE UNITED STATES

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As President Trump begins his second term and attempts to reverse Congress’s progress deploying electric vehicles, there is an underappreciation of how much Congress has done to ensure that electric vehicles are an important and growing part of mobility in the United States. For the past 49 years, the federal government has worked to spur research, development, demonstration, and deployment of these zero-emission vehicles. For the past 25 years, the government has used regulatory tools developed pursuant to congressionally-delegated authority and supported through congressional appropriations to push electric vehicles into daily use. This article explores the energy, science, tax, and regulatory policies that have helped create the dominant future for electric vehicles that is expected today.

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INTRODUCTION

On Monday, September 13, 1976, a “brown pall” of air pollution hanging over the city of Washington, DC was visible from the U.S. Capitol Building as President Gerald Ford vetoed legislation to research, develop, and demonstrate electric vehicles.¹ On Thursday, the U.S. House of Representatives voted to override the veto, with Democrats and Republicans alike excusing the veto as surely and

¹ See 122 Cong. Rec. 30,802 (1976) (statement of Rep. Mike McCormack) (describing Washington DC's air quality at the time of the veto); Electric and Hybrid Vehicle Research, Development, and Demonstration Act of 1976, H.R. 8800, 94th Cong. (1976).

regrettably caused by bad advice from Presidential advisors.² Texas Representative Olin “Tiger” Teague, Chair of the House Science Committee, said the legislation was “an investment in the technology of tomorrow,” and explained the benefits of getting 10 million electric cars on the road by the year 2000.³ The lead sponsor of the bill, Washington Representative Mike McCormack, said that the bill was “part of an integrated set of congressional initiatives” aimed at “substitution of other energy sources for petroleum....”⁴ He explained: “By 1990, nearly half of the Los Angeles area cars could be electric. Replacements of a similar percentage of our 100 million gasoline-powered vehicles throughout the Nation would have extremely salut[a]ry effects, both on our petroleum supplies and urban pol[l]ution.”⁵ “We believe we can manufacture 10 million electric vehicles by the year 1990.”⁶ “The Energy Research and Development Administration and the Federal Energy Administration both project 10 to 20 million electric vehicles on our streets by the year 2000, and this is our goal.”⁷ The House voted to override the veto with a vote of 307 to 101.⁸

Although Rep. Charlie Rose of Fayetteville, North Carolina, made no statement during this debate, the vote to override the veto must have been particularly satisfying to him. Rep. Rose had an interest in technology that would later lead him to oversee installation of television cameras in the House chamber.⁹ He owned one of the few electric cars on the road in 1976 and reportedly gave some 50

² See 122 Cong. Rec. 30,802 (1976) (statement of Rep. Mike McCormack); 122 Cong. Rec. 30,803 (1976) (statement of Rep. Barry Goldwater).

³ 122 Cong. Rec. 30,801 (1976) (statement of Rep. Olin Teague).

⁴ 122 Cong. Rec. 30,802 (1976) (statement of Rep. Mike McCormack).

⁵ *Id.*

⁶ *Id.*

⁷ *Id.* Both the Energy Research and Development Administration and the Federal Energy Administration were predecessor agencies to the U.S. Department of Energy, which was created in 1977.

⁸ See 122 Cong. Rec. 30,807 (1976) (Roll No. 738).

⁹ See Adam Bernstein, *Former U.S. Rep. Charlie Rose, 12-term N.C. congressman, Dies at 73*, WASH. POST (Sept. 4, 2012, 7:49 PM), https://www.washingtonpost.com/national/former-us-rep-charlie-rose-12-term-nc-congressman-dies-at-73/2012/09/04/ab537d32-f6d6-11e1-8253-3f495ae70650_story.html.

members of Congress rides around Capitol Hill in order to build support for overriding the President's veto.¹⁰

The following day in the U.S. Senate, Senator Warren Magnuson, the Chair of the Committee on Commerce, explained that "Electric vehicles can provide the public with quiet, nonpolluting vehicles, which are not dependent on petroleum fuels."¹¹ Senator Magnuson had introduced one of the very first bills to encourage development of electric vehicles a decade earlier,¹² and as chair of the Senate Commerce Committee had worked to better understand the potential of electric vehicles.¹³

Republican Senator Jim McClure observed that "when renewable energy sources become more available" in future years, electric vehicles will allow us to meet our transportation needs utilizing those types of resources.¹⁴ The Senate then voted to override the veto 53 to 20, and the Senate's Presiding Officer reported that the legislation was passed notwithstanding "the objections of the President of the United States to the contrary."¹⁵

Just four days after Ford's presidential veto, the Electric and Hybrid Vehicle Research, Development, and Demonstration Act of 1976 had become law, establishing a 5-year, \$160 million (over \$870 million in 2024 dollars) program on electric and hybrid vehicles.¹⁶ The political significance of Congress's veto override is notable. Vetoes are uncommon. Veto overrides are exceptionally rare.¹⁷ Over the last five decades, approximately 12,000 public laws

¹⁰ See George Vecsey, *Electric Company Using Electric Car*, N.Y. TIMES (Apr. 18, 1977), <https://www.nytimes.com/1977/04/18/archives/electric-company-using-electric-car.html>.

¹¹ 122 Cong. Rec. 30,983 (1976) (statement of Sen. Warren Magnuson).

¹² See S. 3785, 89th Cong. (1966).

¹³ See FEDERAL POWER COMMISSION, DEVELOPMENT OF ELECTRICALLY POWERED VEHICLES, PREPARED AT THE REQUEST OF THE COMMITTEE ON COMMERCE, UNITED STATES SENATE 2 (1967).

¹⁴ 122 Cong. Rec. 30,986 (1976) (statement of Sen. James McClure).

¹⁵ 122 Cong. Rec. 30,986-7 (1976).

¹⁶ See Electric and Hybrid Vehicle Research, Development, and Demonstration Act of 1976, Pub. L. No. 94-413, 90 Stat. 1260 (1976).

¹⁷ See MEGHAN M. STUESSY, REGULAR VETOES AND POCKET VETOES: IN BRIEF (2019), <https://crsreports.congress.gov/product/pdf/RS/RS22188> (claiming that through 2019 Congress overrode just 4.3% of Presidential vetoes).

have been enacted.¹⁸ There have been just over 300 presidential vetoes, and Congress has overridden just 32 of them over this same time span.¹⁹

By overriding President Ford's veto, Congress had launched its multi-decadal effort to move modern electric cars from concept to reality.²⁰ From then until now, Congress has revisited policy to support electric vehicles many times and consistently funded research and supportive regulatory efforts. For the past 49 years, the federal government has worked to spur research, development, demonstration, and deployment of these zero-emission vehicles. For the past quarter century, the government—whether led by Democrats or Republicans—has used regulatory tools to push electric vehicles into daily use.

Yet today, there is litigation and partisan politicking over the regulatory policies that help electric vehicles in the marketplace. President Trump has launched an effort to slow or stop the transition to electric vehicles through public pronouncements, executive orders, and appointments.²¹ In light of this sharp departure from a history of federal support, this article examines Congress's consistent effort over many decades to ensure that electric vehicles are an important part of mobility in the United States. This article explores the energy, science, regulatory and tax policies that Congress has established and nurtured to create a dominant future for electric vehicles.

Section II of the article takes stock of where we are in the transition to electric vehicles. Section III explores 25 years of regulatory policy that have facilitated the introduction of electric vehicles,

¹⁸ See *Statutes at Large and Public Laws*, CONGRESS.GOV, <https://www.congress.gov/public-laws> (last visited Nov. 4, 2024).

¹⁹ See *Vetoes, 1789 to Present*, U.S. SENATE, <https://www.senate.gov/legislative/vetoes/vetoCounts.htm> (last visited Nov. 4, 2024).

²⁰ Over a century ago, “[e]lectric vehicles enjoyed success into the 1920s,” and “outsold all other types of cars” in 1899 and 1900. *History of Electric Cars*, IDAHO NAT'L LAB'Y 1, <https://avt.inl.gov/sites/default/files/pdf/fsev/HistoryOfElectricCars.pdf> (last visited Nov. 4, 2024). For an in-depth consideration of the history of electric vehicles during this time period, see DAVID A. KIRSCH, *THE ELECTRIC VEHICLE AND THE BURDEN OF HISTORY* (2000).

²¹ See, e.g., *Unleashing American Energy*, Exec. Order No. 14154, 90 Fed. Reg. 8353 § 2, § 4(a)(viii) (Jan. 20, 2025), <https://www.federalregister.gov/documents/2025/01/29/2025-01956/unleashing-american-energy>.

explaining how Congress monitored EPA's regulatory actions related to zero-emission vehicles and chose to fund the agency to develop, propose, and finalize its regulatory proposals. Section IV examines actions Congress has taken to promote research and development of electric vehicles. Section V looks at how Congress expanded federal policies to help deploy electric vehicles. Finally, Section VI looks at the recent acts of Congress that have helped accelerate the transition.

This history is important for multiple reasons. It reveals that Congress's policies amount to an iterative, holistic set of legislative interventions designed to greatly expand the use of electric vehicles in the United States. Congress has used the many tools at its disposal to help move the country towards a zero-emissions fleet. Additionally, this history responds to the Supreme Court's recent indications that it will look at the historic use of an agency's authority in helping to determine whether the agency's action is "major" for purposes of applying the major questions doctrine.²² Recent federal regulatory policies to facilitate a transition to zero-emission vehicles are not "unheralded"²³; instead, they are the latest application of a regulatory structure that EPA has consistently used ever since Congress gave greater discretion to the agency to set tailpipe standards for light-duty vehicles in 1990. The history demonstrates that Congressional support for electric vehicles has strengthened over time, reflecting the technology's readiness for mass adoption and the need for emissions reductions. Congress's major recent moves to promote electric vehicle deployment, including the Inflation Reduction Act of 2022, have amped up the pace, but they follow on decades of significant legislative actions.

I. THE ERA OF THE ELECTRIC VEHICLE

The era of the electric vehicle has arrived, and it has been decades in the making. While some may attempt to attribute the

²² See *West Virginia v. EPA*, 597 U.S. 697, 721 (2022) (Citing relevance of "history and the breadth of the authority that [the agency] has asserted" in certain "extraordinary cases.") (quoting *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 159–160 (2000)).

²³ *Id.* at 724 (Citing agency claim of discovery of "unheralded power" in a "long-extant statute" as a factor in determining applicability of the major questions doctrine.) (quoting *Util. Air Regul. Grp. v. EPA*, 573 U.S. 302, 324 (2014)).

impending dominance of electric vehicles to U.S. Environmental Protection Agency (EPA) regulation, the reality is more complicated. Congress has supported this transition in explicit policy terms for many decades. As described above, 49 years ago Congress launched an electric vehicle technology development program. Like the landmark environmental laws of the same era, Congress's ambitious goals were not immediately realized. Ten million electric vehicles were not deployed by the year 2000 as Congressman McCormack reported was feasible in 1976. But neither were all discharges of pollution to U.S. waterways eliminated by 1985 as Congress had hoped when passing the Clean Water Act in 1972.²⁴ And while great progress has been made under our landmark environmental laws over the past 50 years, including in controlling water pollution since 1972, so too has progress been made with electric vehicles becoming an available transportation alternative for American families and businesses. Globally, more than 10 million electric vehicles have been manufactured *every year* since 2022.²⁵

Just like the Clean Air Act and the Clean Water Act, Congress periodically built on the Electric and Hybrid Vehicle Research, Development, and Demonstration Act over the years. Congress invested billions of dollars into the technology and leveraged billions more in private sector funds. Federal regulatory programs incentivized the production of electric vehicles by allowing them to help satisfy federal emissions standards. Then, as electric vehicle technology became viable, Congress devoted billions of additional dollars to its deployment in order to unleash its skyrocketing growth. These Congressional efforts over many decades demonstrate a longstanding intention to transition to a cleaner, more secure transportation system.

To see the momentum behind the transition to electric vehicles (EVs), one needs only to assess the growing importance of EVs to

²⁴ See 33 U.S.C. § 1251 (establishing a national goal of eliminating pollution discharges into navigable waters by 1985). “Despite significant progress toward reducing pollutant discharges over the past four decades, however, it is notable that we remain a long way from achieving the goal several decades after the deadline for the initial goal passed.” Robert W. Adler, *The Decline and (Possible) Renewal of Aspiration in the Clean Water Act*, 88 Wash. L. Rev. 759, 766 (2013).

²⁵ See Neil King, *Global EV Growth Forecast in 2024, but Challenges Remain*, EV VOLUMES (May 27, 2024), <https://ev-volumes.com/news/ev/global-ev-growth-forecast-in-2024-but-challenges-remain/>.

the automotive industry even prior to EPA's 2021 rule strengthening emissions standards through model year 2026.²⁶ Prior to EPA's issuance of its proposed rule in August 2021:

- The Ford Motor Company had announced that all of the vehicles it sells in Europe would be electric vehicles by 2030.²⁷
- Jaguar announced it would go electric in 2025.²⁸
- Volvo announced that it would sell only electric cars by 2030.²⁹
- Volkswagen announced its plan to increase its sales of electric vehicles by 2030, such that 70 percent of the vehicles it sells in Europe and 50 percent of the vehicles it sells in the U.S. and China would be electric.³⁰
- Honda announced plans for 40 percent of its sales to be zero-emission vehicles by 2030, 80 percent by 2035 and 100 percent globally by 2040.³¹
- Mini announced its transition to electric vehicles.³²

²⁶ See Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards, 86 Fed. Reg. 74434 (Dec. 30, 2021).

²⁷ See Associated Press, *Ford Pledges its Cars Will Be All Electric in Europe by 2030*, AUTOBLOG (Feb. 17, 2021), <http://web.archive.org/web/20210217133844/https://www.autoblog.com/2021/02/17/ford-all-electric-europe-2030/>.

²⁸ See Leo Leggett, *Jaguar Car Brand to Be All-Electric by 2025*, BBC (Feb. 15, 2021), <https://www.bbc.com/news/business-56072019>.

²⁹ See *Volvo Cars to Be Fully Electric by 2030*, VOLVO (Mar. 2, 2021), <https://www.media.volvocars.com/global/en-gb/media/pressreleases/277409/volvo-cars-to-be-fully-electric-by-2030>.

³⁰ See *Volkswagen is Accelerating Transformation into Software-Driven Mobility Provider*, VOLKSWAGEN (Mar. 5, 2021), <https://www.volkswagen-newsroom.com/en/press-releases/volkswagen-is-accelerating-transformation-into-software-driven-mobility-provider-6878>.

³¹ See Aaron Gold, *Honda Plans to Dump Internal-Combustion Engines by 2040*, MOTORTREND (Mar. 6, 2024), <https://www.motortrend.com/news/honda-electric-vehicles-2040/>.

³² See Viknesh Vijayenthiran, *Mini to Go Electric, Launch Last Car with Internal-combustion Engine in 2025*, MOTOR AUTH. (Mar. 17, 2021), https://www.motorauthority.com/news/1124463_mini-to-go-electric-launch-last-car-with-internal-combustion-engine-in-2025.

- General Motors had announced its intent to produce only electric vehicles by 2035.³³
- The leading trade association for the auto sector declared that it was committed to “net zero carbon transportation” and that it believed 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.”³⁴
- The Alliance for Automotive Innovation, United Autoworkers, and the Motor & Equipment Manufacturers Association further stated in a joint letter that business and labor were “committed to working toward a net zero carbon transportation future that includes a shift to electric-drive vehicles.”³⁵

At the same time that automakers were making these announcements, national and subnational jurisdictions around the world were announcing policies to eliminate sales of emitting vehicles. For example, the United Kingdom had announced in November 2020 that it would ban fossil fuel powered vehicles by 2030.³⁶

³³ See Jessica James, *General Motors, the Largest U.S. Automaker, Plans to be Carbon Neutral by 2040*, GEN. MOTORS CO. (Jan. 28, 2021), <https://investor.gm.com/news-releases/news-release-details/general-motors-largest-us-automaker-plans-be-carbon-neutral-2040/#:~:text=General%20Motors%20is%20committed%20to,leveraging%20minimal%20offsets%20or%20credits%20E2%81%B1%E2%81%B1%E2%81%B1%E2%81%B1>.

³⁴ *Auto Innovation Agenda*, ALL. FOR AUTO. INNOVATION (Dec. 2020), <https://www.autosinnovate.org/about/advocacy/Innovation%20Agenda.pdf>; John Bozzella, *Oral Testimony on Minnesota's Clean Cars Rulemaking Provided at the Administrative Law Judge Hearing February 22–23, 2021*, ALL. FOR AUTO. INNOVATION (Mar. 2, 2021), <https://www.autosinnovate.org/posts/testimony/minnesota-clean-car-rulemaking>.

³⁵ Letter from John Bozzella, All. for Auto. Innovation, Rory Gamble, United Autoworkers Int'l Union, and Bill Long, Motor & Equip. Manufacturers Ass'n, to President Joseph R. Biden, Jr. (Mar. 29, 2021), <https://www.autosinnovate.org/posts/letters/Auto%20Industry%20EV%20Policy%20Letter%20to%20President%20Biden%20March%2029%202021.pdf>.

³⁶ See Henry Edwardes-Evans, *UK Government Brings Forward Ban on New ICE Cars 10 Years to 2030*, S&P GLOB. PLATTS (Nov. 18, 2020), <https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/electric-power/111820-uk-government-brings-forward-ban-on-new-ice-cars-10-years-to-2030>.

Dozens of other jurisdictions had also announced commitments to electrification around this time.³⁷

These developments were not attributable to any one government policy, technological breakthrough, or private sector action. Instead, momentum for these developments swelled across national parliaments, corporate boardrooms, research laboratories, and automakers' showrooms.

Government policy does play an important role. The energy, science, tax, and regulatory policies that Congress has established and supported are helping to make electric vehicles a common form of personal transportation in the United States. These policies have been catalytic—subsidizing technology development, easing costs to manufacturers and consumers, and providing regulatory pathways that can ease compliance. Although many of these policies are couched in the technology-neutral term “zero-emission vehicles” (ZEVs), EVs are proving to be the category of ZEV most readily feasible for deployment.

Electric vehicles and plug-in hybrids accounted for approximately 9% of total 2023 light-duty vehicle sales in the United States.³⁸ The consumer price of electric vehicles in the U.S. decreased by more than 24% in 2023 from the peak cost in 2022,³⁹ and there are “early indications that prices are dropping sharply in 2024.”⁴⁰ There are now, for the first time, long-range (> 300 miles) EVs that cost “less than the cost of the average new vehicle sold in

³⁷ See Hongyang Cui et al., *Update on the Global Transition to Electric Vehicles Through 2019*, INT’L COUNCIL ON CLEAN TRANSP. (July 2020), <https://theicct.org/sites/default/files/publications/update-global-EV-stats-sept2020-EN.pdf>.

³⁸ See *Electric Vehicles and Hybrids Surpass 16% of Total 2023 U.S. Light-duty Vehicle Sales*, U.S. ENERGY INFO. ADMIN. (Jan. 31, 2024), <https://www.eia.gov/todayinenergy/detail.php?id=61344>.

³⁹ See *id.*

⁴⁰ BLOOMBERG NEF, *ELECTRIC VEHICLE OUTLOOK 2024*, EXECUTIVE SUMMARY 1 (June 12, 2024), https://assets.bbhub.io/professional/sites/24/847354_BNEF_EVO2024_ExecutiveSummary.pdf.

the US,”⁴¹ and the first “ultra-affordable” (\$25,000) EVs appear on target to hit the U.S. market by June of 2025.⁴²

Globally, electric vehicle sales grew 34% in 2023 compared with sales in 2022,⁴³ and the long-term global sales outlook is promising.⁴⁴ In the U.S., electric vehicle sales hit a record high in the fourth quarter of 2024, the most recent quarter for which we have data as of the writing of this article, and experts foresee continued growth in sales over the long term.⁴⁵ Additionally, experts predict that electric heavy trucks will “become economically viable for most use cases by 2030.”⁴⁶

II. ZERO-EMISSION VEHICLES AND THE CLEAN AIR ACT: CONGRESS’S APPROACH TO FEDERAL AND STATE REGULATION

The authority provided by the Clean Air Act is broad, nearly comprehensive, and technology neutral. It directs EPA to establish needed national emissions standards while allowing the states to set even more stringent standards under certain conditions.⁴⁷ For many years, Congress chose to provide specific statutory minimums to EPA for setting national light-duty vehicle emissions standards,⁴⁸ but in the 1990 Clean Air Act Amendments, Congress handed the agency broader discretion for standard-setting for those vehicles

⁴¹ Tom Randall, *Long-Range EVs Now Cost Less Than the Average New Car in the US*, BLOOMBERG (June 7, 2024), <https://www.bloomberg.com/news/articles/2024-06-07/long-range-evs-now-cost-less-than-the-average-us-new-car>.

⁴² Tom Randall, *When Will America Get Its \$25,000 Electric Car?*, BLOOMBERG (June 17, 2024), <https://www.bloomberg.com/news/articles/2024-06-17/when-will-america-get-its-25-000-electric-car>.

⁴³ See Neil King, *EVs Forecast to Account for Two Thirds of Global Light-Vehicle Sales in 2035*, EV VOLUMES (Nov. 21, 2023), <https://ev-volumes.com/news/ev/evs-forecast-to-account-for-two-thirds-of-global-light-vehicle-sales-in-2035/>.

⁴⁴ See BLOOMBERG NEF, *supra* note 40, at 3.

⁴⁵ See *Electric Vehicle Sales Jump Higher in Q4, Pushing U.S. Sales to a Record 1.3 Million*, COX AUTO (Jan. 13, 2025), <https://www.coxautoinc.com/market-insights/q4-2024-ev-sales/>.

⁴⁶ BLOOMBERG NEF, *supra* note 40, at 3.

⁴⁷ See Clean Air Act, 42 U.S.C. §§ 7507, 7521, 7543.

⁴⁸ See Clean Air Act Amendments of 1970, Pub. L. No. 91-604, § 6(a), 84 Stat. 1676, 1690; Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 201(a), 91 Stat. 685, 751.

beginning in model year 2004.⁴⁹ As a result, Congress has not had to amend the Act in order for EPA to update its regulations over time to continue to require advancements in transportation technology with modern regulatory programs. EPA's use of this authority has been harmonious with Congress's multi-decadal effort to support and incentivize the development and deployment of electric vehicles. This section explains EPA's regulatory actions and congressional involvement over the past decades.

There are two main federal drivers of electric vehicle deployment that can be attributed to regulatory authority. First, Congress has required EPA to grant California a waiver of preemption under section 209(b) of the Clean Air Act under certain circumstances.⁵⁰ Without a waiver, California would be preempted from regulating emissions from cars and trucks.⁵¹ California has repeatedly received waivers to establish electric vehicle requirements that differ from federal requirements.⁵² Other states may then adopt programs identical to California's pursuant to section 177 of the Clean Air Act.⁵³ As discussed below, California established its first requirement for zero-emission vehicles in 1990 and has strengthened the requirement over time; other states have followed suit.

Second, EPA has allowed for deployment of zero-emission vehicles to help comply with emissions standards promulgated pursuant to the Clean Air Act. EPA has allowed auto manufacturers to sell zero-emission vehicles to comply with emissions standards ever since EPA set light-duty emissions standards pursuant to the 1990 Clean Air Act Amendments 25 years ago.

This section discusses both policy areas in turn after a brief discussion of Congress's broad grant of authority to EPA and ongoing oversight role.

⁴⁹ See 42 U.S.C. § 7521(b)(1)(C).

⁵⁰ See 42 U.S.C. § 7543(b).

⁵¹ See 42 U.S.C. § 7543(a).

⁵² See Greg Dotson, *State Authority to Regulate Mobile Source Greenhouse Gas Emissions, Part I: History and Current Challenge*, 49 Env't L. Rep. 11037, 11040 (2019).

⁵³ See 42 U.S.C. § 7507.

A. Congress's Oversight of Agency Action

In the wake of the Supreme Court cases *West Virginia v. EPA*⁵⁴ and *Loper Bright Enterprises et al. v. Raimondo*⁵⁵—decisions that counsel a measure of skepticism about Executive agencies' authority—it is worth detailing Congress's continued engagement in EPA's regulations. Congress did not grant the agency broad authority and then sit idly by as EPA issued emissions standards encouraging electric vehicles. Rather, Congress maintains an important oversight role of the agency's regulatory actions and each year decides whether to fund EPA's activities with or without providing additional direction to the agency or restricting certain potential agency actions.

The federal budgeting process provides a formal means for the executive branch to consult with the legislative branch on the intended use of appropriation dollars prior to congressional consideration of annual appropriations. The executive branch requests funds and explains what it would intend to do with the funds Congress appropriates. This process is governed by the Congressional Budget and Impoundment Control Act of 1974 (the Budget Act).⁵⁶ The law formalizes the process, duties, and roles of the branches of government in the federal budgeting process.⁵⁷ The Act requires the President to propose a budget each year and provide Congress with supporting information.⁵⁸ Agencies provide justifications of the requested budget to the congressional appropriations committees.⁵⁹ Congress then acts on the budget and passes appropriations bills to fund the executive branch, in ways that likely reflect a mix of the President's budget priorities and Congress's budget priorities.

Congress routinely uses the annual appropriations process to monitor agency rulemaking and signal its support or displeasure with agency rulemaking. Each year, Congress's appropriations committees examine agencies' activities, review the President's

⁵⁴ See *West Virginia v. EPA*, 597 U.S. 697 (2022).

⁵⁵ See *Loper Bright Enters. v. Raimondo*, 144 S.Ct. 2244 (2024).

⁵⁶ See The Congressional Budget and Impoundment Control Act of 1974, Pub. L. No. 93-344, 88 Stat. 297.

⁵⁷ See *id.*

⁵⁸ See 31 U.S.C. §§ 1104–1105.

⁵⁹ See 31 U.S.C. § 1105(a), (i).

proposed budget, scrutinize agencies' budget justifications, and often hear testimony from department heads. The appropriations process is a natural venue for airing concerns about agency use of delegated authority. Because of the essential and traditionally annual nature⁶⁰ of appropriations, it is often easier for Congress to act through appropriations, rather than through its authorizing Committees. For example, while congressional appropriators have in recent years routinely curbed the EPA's actions through appropriations limitations, the authorizing committees for the laws EPA implements have been much slower to produce legislation that would amend these landmark laws.

Congress knows how to show its disapproval in the appropriations process and has a variety of tools to do so. When an agency attempts to take action that Congress feels is inappropriate, a "limitation amendment" can be included in the agency's funding bill.⁶¹ A limitation amendment prohibits the agency from using appropriated funds for a specified purpose. These spending limitations provide Congress with a flexible tool to express its concern at a variety of intensities.

Congress has used limitation amendments repeatedly to respond to agency actions. For example, in the EPA's case, Congress has used these amendments to curb agency rules addressing application of permitting requirements to certain sources,⁶² collection of certain pollution emissions data,⁶³ or promulgation of certain drinking water standards.⁶⁴

⁶⁰ Congress has significant latitude in deciding how agencies are funded. *See* *Consumer Fin. Prot. Bureau v. Cmty. Fin. Servs. Assoc. of Am., Ltd.*, 601 U.S. 416 (2024).

⁶¹ *See Amending Appropriations Bills—A Basic Guide Presented by the Committee on Rules*, COMM. ON RULES (May 31, 2011), <https://rules.house.gov/publication/amending-appropriation-bills-basic-guide-presented-committee-rules>.

⁶² *See* Interior Department and Further Continuing Appropriations, Fiscal Year 2010, Pub. L. No. 111-88, § 424, 123 Stat. 2904, 2961 (2009); *see also* Consolidated Appropriations Act, 2012, Pub. L. No. 112-74, § 426, 125 Stat. 786, 1046 (2011).

⁶³ *See* Interior Department and Further Continuing Appropriations, Fiscal Year 2010, Pub. L. No. 111-88, § 425, 123 Stat. 2904 (2009).

⁶⁴ *See* Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 1996, Pub. L. No. 104-134, tit. III, § 301, 110 Stat. 1321, 1321–300 (1995).

Over the years, some in Congress have proposed limitation amendments in the appropriations process to adjust or stop certain regulatory efforts relating to emissions from mobile sources. For instance, some in Congress have attempted to use the appropriations process to prevent EPA from granting California a waiver of preemption, in an effort to prevent the state from regulating mobile sources.⁶⁵ Some in Congress have also attempted to include a limitation amendment to prevent EPA from finalizing proposed emissions standards for cars and trucks.⁶⁶ To date, these efforts have simply lacked sufficient support to pass Congress.

Congress has, however, used the appropriations process to enact substantive changes to mobile source regulatory authority when it has disagreed with proposed regulatory standards. In 2003, Congress was concerned with a California regulation limiting emissions from small engines and the possibility that other states could follow California's lead.⁶⁷ In the appropriations for fiscal year 2004, Congress included provisions directing EPA to establish new emissions standards for small engines by the end of 2005 and prohibiting states from adopting California's standards for those engines.⁶⁸

This history of Congressional engagement is important because it shows that the agency regulates with Congress looking over its shoulder, limiting or redirecting the agency where it chooses to do so. Congress actively examines the EPA's actions, considers whether to intervene in those actions, and has at times decided to change the approach of current law. Sections III.B. and III.C., below, examine federal regulatory policy that has facilitated zero-emission vehicle deployment and include research relating to Congress's decisions to fund the agency's work. These sections demonstrate Congress's partnership with EPA in federal regulatory policy.⁶⁹

⁶⁵ See Department of the Interior, Environment, and Related Agencies Appropriations Act, 2024, H.R. 4821, 118th Cong. § 463 (2023).

⁶⁶ See discussion *infra* in text accompanying footnotes 187–188.

⁶⁷ See Terry Tamminen, *When Politics Kill*, FAST COMPANY (Sept. 15, 2008), <https://www.fastcompany.com/1005026/when-politics-kill> (retelling the events of 2003).

⁶⁸ See Consolidated Appropriations Act, 2004, Pub. L. No. 108-199, Division G, Title IV, § 428, 118 Stat. 3, 418–419.

⁶⁹ For a discussion of how appropriations' history relating to an executive branch action could offer a more sound basis on which to apply the major

B. Federal Policy that Allows State Electric Vehicle Regulations

The first regulations governing motor vehicle emission standards were established in California pursuant to state law enacted in 1959.⁷⁰ Congress recognized California's ongoing authority to set its own more stringent standards than federal standards even as it preempted other states from doing so in the Air Quality Act of 1967.⁷¹ Even during this early period of clean air policy, policymakers were already discussing the ultimate need for zero-emission vehicles while debating the Air Quality Act on the Senate floor. Sen. George Murphy, a California Republican and author of the California-specific provision, proclaimed the importance of meeting the nation's air pollution challenge but expressed hope in the capacity and ingenuity of American business, saying that the automobile industry "should not rest until it produces a pollution-free engine."⁷²

A decade later, the potential of electric vehicles had become part of the policy landscape. The electric and hybrid vehicle legislation enacted over a Presidential veto in 1976 hung over Congress as it took up its work in 1977. Congress built on the existing federal air pollution laws when it enacted the Clean Air Act Amendments of 1977,⁷³ a comprehensive set of amendments that included provisions addressing mobile sources of air pollution.⁷⁴ After examining the potential of electric vehicles in hearings, Congress retained California's authority to set more stringent motor vehicle emissions standards and established a new policy that allowed other states to opt into the California standards.

At a hearing examining vehicle efficiency and emissions standards, the House Committee on Interstate and Foreign Commerce

questions doctrine, see Greg Dotson, *Looking for Your Friends at a Cocktail Party: The Dubious Role of Rejected Legislation and the Overlooked Potential of the Appropriations Process*, HARV. J. ON LEGIS. ONLINE (June 25, 2024), <https://journals.law.harvard.edu/jol/2024/06/25/looking-for-your-friends-at-a-cocktail-party-the-dubious-role-of-rejected-legislation-and-the-overlooked-potential-of-the-appropriations-process/>.

⁷⁰ See Act of April 28, 1959, § 1, 1959 Cal. Stat. 2091, 2091 (repealed 1967).

⁷¹ See Air Quality Act of 1967, Pub. L. No. 90-148, § 208(b), 81 Stat. 485, 501.

⁷² 113 CONG. REC. 19182–83 (1967) (statement of Sen. Murphy).

⁷³ See Clean Air Act Amendments of 1977, Pub. L. No. 95-95, 91 Stat. 685, 766 (1977).

⁷⁴ See H.R. REP. NO. 95-294, at 1–2 (1977).

heard testimony about the implementation of the electric vehicle law from the Energy Research and Development Administration, a precursor agency to the U.S. Department of Energy (DOE).⁷⁵ Members of the Committee saw electric vehicles as a long-term, if not immediate, tool for addressing dependence on oil. Rep. Carlos Moorhead, a Republican from California, asked United Auto Workers president Leonard Woodcock whether he believed the nation would need “the electric car or something else that could be more fuel efficient and come closer to meeting the necessities of [] 5, 10, 20 years down the line...”⁷⁶ Woodcock responded that he “most definitely” did. Later in the hearing, Rep. Clarence J. Brown explained that Congress had to deal with the efficiency of gasoline engines for the time being “until we know that we have got an electric automobile that can substitute entirely for a gasoline automobile.”⁷⁷

At Senate hearings on amending the Clean Air Act, automakers and unions testified that the emissions standards for model year 1978 vehicles were infeasible and they proposed alternative standards for the coming several years.⁷⁸ Senator James McClure of Idaho questioned automakers and their trade associations about why they had not mentioned electric vehicles in their testimony.⁷⁹ Sen. McClure stated that in his view electric vehicles presented “more possibility for impacted airsheds than all that we have been talking about for the last 2 years in internal combustion engines, whether it be individual automobiles or mass transit.”⁸⁰ A representative of American Motors Corporation stated that until there was a breakthrough in battery technology, widespread adoption of electric vehicles was unlikely.⁸¹

⁷⁵ See *Ways and Means to Improve the Fuel Efficiency of Motor Vehicles: Hearing Before the Subcomm. on Energy and Power of the H. Comm. on Interstate and Foreign Com.*, 95th Cong. 591–95 (1977).

⁷⁶ *Id.* at 21–22.

⁷⁷ *Id.* at 186.

⁷⁸ See *Clean Air Act Amendments of 1977: Hearing Before the Subcomm. on Env't Pollution of the S. Comm. on Env't and Pub. Works (Part 1)*, 95th Cong. 1–11 (1977) [hereinafter *Clean Air Act Amendments of 1977 Hearing Part 1*] (containing a Congressional Research Service summary of testimony on mobile source emissions standards, timetables, and other related subjects).

⁷⁹ *Id.* at 79–81.

⁸⁰ *Id.* at 80.

⁸¹ See *id.* at 81.

While the provisions governing near-term automobile emissions standards received the most attention in the legislative record, there is evidence that Congress also sought to provide states with an additional tool to require electric vehicles when those vehicles ultimately became available.

Sen. Gary Hart of Colorado, a member of the Senate's Subcommittee on Environmental Pollution, chaired a hearing in Denver, Colorado to gather testimony for the Clean Air Act Amendments.⁸² At that hearing, Jerry Jensen, the Chairman of the Colorado Air Pollution Control Commission testified that while the states had strong authority to address emissions from stationary sources, the states, except for California, were preempted from addressing air pollution from mobile sources beyond the federal standards.⁸³ Jensen identified two reasons it would be important for states to be able to go beyond federal emissions standards for mobile sources. First, Colorado faced emissions challenges related to altitude that other states did not necessarily face.⁸⁴ Second, Jensen's research indicated that battery technology would allow for electric cars to be developed for commuting in the next 10 years. However, Jensen testified that Colorado would not be able to incentivize electric vehicles through regulation because, he said, such regulation would address emissions on a per automobile basis and such restrictions would be prohibited under the Act.

Jensen testified that the ability of states to adopt electric vehicles would be "absolutely essential" if the nation wanted to attain federal air quality standards.⁸⁵ He concluded by observing that the

⁸² See *Clean Air Act Amendments of 1977: Hearing Before the Subcomm. on Env't Pollution of the S. Comm. on Env't and Pub. Works (Part 4)*, 95th Cong. (1977) [hereinafter *Clean Air Act Amendments of 1977 Hearing Part 4*].

⁸³ See *id.* at 41.

⁸⁴ The Colorado congressional delegation had attempted to provide Governors of high altitude states the authority to require manufacturers to ensure that the vehicles produced would comply with emissions standards at altitude. See H.R. 4977, 94th Cong. (1975) (amending the Clean Air Act to provide for more effective motor vehicles emission controls at high altitudes). While authority for the EPA to address high-altitude issues was included in sections 211 and 213 of the 1977 amendments, Congress did not include provisions in those amendments empowering state Governors to act. *Clean Air Act Amendments of 1977*, Pub. L. No. 95-95, §§ 211, 213, 91 Stat. 685, 757-9 (1977).

⁸⁵ See *Clean Air Act Amendments of 1977 Hearing Part 4*, *supra* note 82, at 41.

nation is “going to have to have cleaner cars than are even mandated” in the Clean Air Act Amendments of 1977 and therefore he said “I will simply state unequivocally that I think the most important fact I would like to see in the Federal legislation is the preemption removed from a State such as Colorado.”⁸⁶ He urged that all states be provided the same authority as California to set vehicle emission standards, or, “at worst” Congress should allow other states to require of mobile sources what California requires.⁸⁷

Congress did include provisions in the Clean Air Act Amendments of 1977 to better empower states as urged by Chairmen Jensen. The purpose of the 1977 Amendments, in part, was “to provide a greater role and greater assistance for State and local governments in the administration of the Clean Air Act.”⁸⁸ Congress included a provision to “broaden and strengthen” California’s authority to adopt and enforce emissions standards separate from the federal standards.⁸⁹ The House Committee report explained that the legislation sought to “ratify and strengthen the California waiver provision and to affirm the underlying intent of that provision, i.e. to afford California the broadest possible discretion in selecting the best means to protect the health of its citizens and the public welfare.”⁹⁰ Then, as recommended by Jensen, the 1977 Amendments added section 177 to the Clean Act, providing for other states to adopt California’s emissions standards.⁹¹

Although discussed on the Senate floor in 1967, it took more than another two decades for the vision of a pollution-free vehicle to be reflected in regulation. California first implemented a requirement for ZEVs in 1990 as part of a suite of new vehicle emissions standards, requiring 10 percent of new vehicles to be ZEVs by

⁸⁶ *Id.*

⁸⁷ *Id.* Jensen’s testimony is notable because it is the only testimony this researcher has found advocating for the provision ultimately adopted by Congress in 1977. On the other hand, there are more examples of elements of the automobile manufacturing industry urging Congress to preempt California’s authority during this time *See Clean Air Act Amendments of 1977 Hearing Part 1, supra* note 78, at 137, 139 (containing testimony from the Motor & Equipment Manufacturers Association as well as from the Automotive Service Industry Association).

⁸⁸ H.R. Rep. No. 95-294 at 1 (1977).

⁸⁹ H.R. Rep. No. 95-294 at 23 (1977).

⁹⁰ H.R. Rep. No. 95-294 at 301–302 (1977).

⁹¹ *See id.* at 26.

2003.⁹² California revised the ZEV requirement multiple times until the current Advanced Clean Cars (ACC) II regulations were adopted in 2022.⁹³ ACC II requires that all new passenger cars, trucks and SUVs sold in California be ZEVs by 2035.⁹⁴

In 2023, Colorado, home to Jerry Jensen and Sen. Gary Hart, went on to adopt California's ACC II rule through 2032,⁹⁵ which requires 82% of new passenger vehicles to be zero-emission vehicles by that year.⁹⁶ Currently, eleven states and the District of Columbia have joined in adopting this California rule, representing 30.6% of new car sales.⁹⁷ This would not have been possible without the provision Jensen testified about back in 1977.

C. Federal Regulation that Encourages Electric Vehicle Deployment

EPA has been explicitly incorporating zero-emission vehicles into its regulatory emissions standards for light-duty vehicles for a quarter century.

Even before that, EPA developed and adopted policies to ease the regulatory compliance burden on vehicle manufacturers while achieving environmental objectives. In 1983, EPA finalized a rule to allow automakers to average the emissions from light-duty

⁹² See *Zero Emission Vehicle Program*, CAL. AIR RES. BD. (Jul. 2024), <https://ww2.arb.ca.gov/our-work/programs/zero-emission-vehicle-program/about>.

⁹³ *Id.*

⁹⁴ See *Advanced Clean Cars II*, CAL. AIR RES. BD. (Jul. 2024), <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii>.

⁹⁵ See *States that have Adopted California's Vehicle Regulations*, CAL. AIR RES. BD. (Apr. 2024), <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/states-have-adopted-californias-vehicle-regulations>.

⁹⁶ See *Advanced Clean Cars II: Regulations*, CAL. AIR RES. BD. (Jul. 2024), <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii>.

⁹⁷ See *States that have Adopted California's Vehicle Regulations*, CAL. AIR RES. BD. (Apr. 2024), <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/states-have-adopted-californias-vehicle-regulations> (percentage calculated through query on webpage).

vehicles powered by diesel fuel.⁹⁸ The agency explained at the time that the rule would allow “manufacturers to control some vehicles more and others less, so long as average emissions comply with standards.”⁹⁹ This approach, the agency claimed, could save as much as \$111 million annually in compliance costs while having no “appreciable effect on air quality.”¹⁰⁰ EPA expanded on averaging in 1985 by allowing heavy-duty vehicles to use averaging, banking and trading to comply with emissions standards.¹⁰¹ Environmental advocacy groups sued EPA over the standards, arguing, among other things, that averaging “flouted” congressional intent.¹⁰² In *NRDC v. Thomas*, the Court of Appeals for the District of Columbia Circuit disagreed and upheld the EPA’s use of averaging.¹⁰³

Still, some in Congress were concerned about the agency’s use of averaging. During development of the Clean Air Act Amendments of 1990, the Senate included language prohibiting EPA from using averaging.¹⁰⁴ As Congress considered this issue, EPA made it clear that it intended to continue to pursue averaging as long as it had authority to do so.¹⁰⁵ Ultimately, language prohibiting

⁹⁸ See Control of Air Pollution From New Motor Vehicles and New Motor Vehicle Engines; Averaging of Particulate Emissions From 1985 and Later Model Year Diesel-Fueled Light-Duty Vehicles and Light-Duty Trucks, 48 Fed. Reg. 33456 (July 21, 1983), <https://www.govinfo.gov/content/pkg/FR-1983-07-21/pdf/FR-1983-07-21.pdf>.

⁹⁹ *Id.* at 33456.

¹⁰⁰ *Id.* at 33456. \$111 million in 1983 translates to more than \$360 million in 2025. See *CPI Inflation Calculator*, U.S. BUREAU OF LAB. STATS., https://www.bls.gov/data/inflation_calculator.htm (last visited April 4, 2025).

¹⁰¹ See Control of Air Pollution from New Motor Vehicles and New Motor Vehicle Engines; Gaseous Emission Regulations for 1987 and Later Model Year Light-Duty Vehicles, and for 1988 and Later Model Year Light-Duty Trucks and Heavy-Duty Engines; Particulate Emission Regulations for 1988 and Later Model Year Heavy-Duty Diesel Engines, 50 Fed. Reg. 10606, 10607-09 (Mar. 15, 1985), <https://www.govinfo.gov/content/pkg/FR-1985-03-15/pdf/FR-1985-03-15.pdf>.

¹⁰² See *Nat. Res. Def. Council v. Thomas*, 805 F.2d 410, 425 (D.C. Cir. 1986).

¹⁰³ See *id.* at 424.

¹⁰⁴ See 136 Cong. Rec. 3311, 3336 (Mar. 5, 1990) (including § 211(d) of amendment No. 1293 to S. 1630).

¹⁰⁵ See Control of Air Pollution from New Motor Vehicles and New Motor Vehicle Engines; Interim Regulations for Cold Temperature Carbon Monoxide Emissions From Light-Duty Vehicles and Light-Duty Trucks, 55 Fed. Reg. 38250, 38258 (Sept. 17, 1990), <https://tile.loc.gov/storage-services/service/l1/fedreg>

averaging was dropped from the final legislation before enactment and House and Senate conferees stated that they would allow the court's decision in *NRDC v. Thomas* to stand.¹⁰⁶ Accordingly, in 1995, EPA joined a statement of principles with the California Air Resources Board (CARB) and representatives of the engine manufacturing industry pledging to "work cooperatively... to develop improved national averaging, banking, and trading [] programs."¹⁰⁷ Banking and trading would allow manufacturers to even out fluctuations from year to year and between manufacturers to further ease compliance burdens. The agency recognized that not only would this ease compliance challenges with emissions standards, but it would also "provide an incentive for early introduction of cleaner technology."¹⁰⁸ EPA subsequently adopted broader averaging, banking and trading policies for heavy-duty mobile source emissions in 1997.¹⁰⁹

In the 1990 Clean Air Act Amendments, Congress continued the practice it had established in 1970 of legislatively setting minimum emissions standards for EPA to implement for light-duty cars and trucks. Specifically, Congress prescribed minimum standards for light-duty cars and trucks with a gross vehicle weight of 6,000 pounds or less, beginning with model year 1994.¹¹⁰ For these

/fr055/fr055180/fr055180.pdf ("EPA is aware that its authority to permit mobile source averaging, trading and banking has been an issue in the ongoing Congressional effort to amend the CAA ... Provided that EPA retains this authority, EPA will issue a supplemental notice proposing such programs before finalizing this rule.").

¹⁰⁶ See 136 Cong. Rec. 35367 (Oct. 26, 1990) (Statement of Rep. Edward Madigan); 136 Cong. Rec. 36713 (Oct. 27, 1990) (Statement of Sen. Patrick Moynihan, Clean Air Act Amendments).

¹⁰⁷ See Control of Air Pollution From Heavy-Duty Engines, 60 Fed. Reg. 45580, 45603 (Aug. 31, 1995), <https://www.govinfo.gov/content/pkg/FR-1995-08-31/pdf/95-21525.pdf>.

¹⁰⁸ *Id.* at 45598.

¹⁰⁹ See Control of Emissions of Air Pollution from Highway Heavy-Duty Engines, 62 Fed. Reg. 54694 (Oct. 21, 1997), <https://www.govinfo.gov/content/pkg/FR-1997-10-21/pdf/97-27494.pdf>.

¹¹⁰ See 42 U.S.C. § 7521 (g)-(h). The one exception to the 100% compliance standard was for particulate matter emissions from light-duty trucks, which did not apply to 100% of such vehicles until 1997. 42 U.S.C. § 7521 (g) (see table entitled "Implementation Schedule for PM Standards"). The minimum standards that Congress established in 1970 were in § 6(a) of the Clean Air Act Amendments

standards, Congress generally required “100%” of all vehicles to meet the standard starting in 1996, effectively deviating from *NRDC v. Thomas* and prohibiting averaging in the establishment of this limited set of emissions standards.¹¹¹ However, Congress did not apply this “100%” requirement to standards EPA was authorized to establish beginning in model year 2004. Free of that restriction, EPA promulgated standards in the year 2000 to reduce conventional air pollutants from light-duty vehicles that not only allowed manufacturers to average, bank, and trade their emissions, but also to earn additional credits for compliance by manufacturing zero-emission vehicles.¹¹² EPA stated that its approach was an accommodation to the automobile industry, explaining that the rule would allow for manufacturers to “comply with the very stringent new standards in a flexible way while ensuring that the needed environmental benefits occur.”¹¹³

The incorporation of averaging and zero-emission vehicle credits has been a consistent feature of EPA’s light-duty emissions rules since that time. In subsequent rules, EPA provided for zero-emission vehicles to serve as compliance options in rules designed to reduce conventional pollutants¹¹⁴ and greenhouse gas emissions.¹¹⁵ The first Trump administration maintained the regulatory

of 1970. Clean Air Act Amendments of 1970, Pub. L. No. 91-604, § 6(a), 84 Stat. 1676, 1690. Congress prescribed more stringent minimum standards in § 201(a) of the Clean Air Act Amendments of 1977. Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 201(a), 91 Stat. 685, 751.

¹¹¹ 42 U.S.C. § 7521 (g)(2) & (h) (specifying that “100%” of each manufacturer’s sales volume had to comply with the congressionally set standards). For a discussion of this provision, see The Honorable Henry A. Waxman, *Cars, Fuels, and Clean Air: A Review of Title II of the Clean Air Act Amendments of 1990*, 21 ENV’T. L. 1947, 1960 (1991).

¹¹² See Control of Air Pollution from New Motor Vehicles: Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements, 65 Fed. Reg. 6698, 6698, 6746 (Feb. 10, 2000), <https://www.govinfo.gov/content/pkg/FR-2000-02-10/pdf/00-19.pdf>.

¹¹³ *Id.* at 6698.

¹¹⁴ See Control of Air Pollution from Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards, 79 Fed. Reg. 23414, 23748 (Apr. 28, 2014), <https://www.govinfo.gov/content/pkg/FR-2014-04-28/pdf/2014-06954.pdf>.

¹¹⁵ See Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, 75 Fed. Reg. 25324, 25434 (May 7, 2010), <https://www.govinfo.gov/content/pkg/FR-2010-05-07/pdf/2010-8159.pdf>; 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emission Standards

mechanisms to support electric vehicle deployment, even as it worked to reduce the stringency of greenhouse gas standards for mobile sources.¹¹⁶ Most recently, EPA has finalized a multipollutant rule that limits emissions of both conventional pollutants and greenhouse gasses from vehicle tailpipes.¹¹⁷ Under this rule, electric vehicles provide a tool for compliance. In sum, Administrations of both political parties have explicitly encouraged electric vehicles through regulatory standards for conventional pollutants and greenhouse gasses.

In each of these cases, EPA has relied upon broad authority delegated to the agency by Congress to develop the regulatory programs. The agency has crafted the regulations in close conversation with Congress, describing proposals in reports to Congress, testimony before Congress, budget justification documents sent to Congress, and other documents available to the public. Informed of EPA's regulatory approaches, Congress has consistently funded the agency's rulemaking initiatives. A review of the past 25 years of regulations highlights the common approach of allowing ZEVs as a mechanism to comply with federal Clean Air Act requirements.

1. 1990s–2000s: The Advent of Zero-Emission Vehicles as a Compliance Option

Although EPA has had authority to set regulatory standards for the emissions of passenger cars and trucks since the Clean Air Act was originally passed in 1970,¹¹⁸ for two decades Congress

and Corporate Average Fuel Economy Standards, 77 Fed. Reg. 62624 (Oct. 15, 2012), <https://www.govinfo.gov/content/pkg/FR-2012-10-15/pdf/2012-21972.pdf>; Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards, 86 Fed. Reg. 74434, 74458 (Dec. 30, 2021), <https://www.govinfo.gov/content/pkg/FR-2021-12-30/pdf/2021-27854.pdf>.

¹¹⁶ See The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks, 85 Fed. Reg. 24174, 24211 (Apr. 30, 2020), <https://www.govinfo.gov/content/pkg/FR-2020-04-30/pdf/2020-06967.pdf>.

¹¹⁷ See Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, 89 Fed. Reg. 27842 (Apr. 18, 2024), <https://www.govinfo.gov/content/pkg/FR-2024-04-18/pdf/2024-06214.pdf>.

¹¹⁸ See Clean Air Act Amendments of 1970, Pub. L. No. 91-604, § 6(a), 84 Stat. 1676, 1690 (1970) (amending Section 202 of the Clean Air Act, including adding the following language to Section 202(a)(1): “The Administrator shall by regulation prescribe (and from time to time revise) in accordance with the

prescribed minimum standards that EPA then implemented (i.e., EPA elected not to exercise its statutory authority to promulgate more stringent standards than the minimum standards statutorily prescribed by Congress). The 1990 Clean Air Act Amendments significantly modified this historic practice. The Amendments increased the stringency of mobile source emissions standards for model years 94–96, but then relied on EPA’s expertise in setting emissions standards thereafter. Congress authorized EPA to revise light-duty emissions standards if more stringent standards were necessary, achievable, and cost-effective.¹¹⁹ Congress directed EPA to study the issues related to revising emissions standards and report on the agency’s findings prior to establishing these so-called “Tier 2” standards.¹²⁰

EPA issued its report to Congress in 1998.¹²¹ The report observed that California “requires manufacturers to develop [zero-emission vehicle] technology, with widespread introduction targeted for [model year] 2003”¹²² and stated that zero-emission vehicles could be used to meet state and federal programs.¹²³ The report to Congress also discussed the merits of an averaging approach to emissions standards, noting that it can “encourage the design and production of vehicles with advanced emission controls” including electric vehicles.¹²⁴ EPA also explained how averaging can allow for more stringent standards and allow emissions reductions to be achieved at the lowest cost.¹²⁵ Prior to issuing the report, EPA accepted public comment on a draft. EPA reported that it had received “no comments opposed to the concept” of averaging in the new Tier

provisions of this section, standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment causes or contributes to, or is likely to cause or to contribute to, air pollution which endangers the public health or welfare.”). The authority to regulate mobile source emissions resided with the Secretary of Health, Education, and Welfare from 1967 until EPA was established in 1970.

¹¹⁹ See Clean Air Act, 42 U.S.C. § 7521(i).

¹²⁰ See Clean Air Act, 42 U.S.C. § 7521(i)(2)–(3).

¹²¹ See EPA, TIER 2 REPORT TO CONGRESS (1998).

¹²² *Id.* at 35.

¹²³ See *id.* at 34.

¹²⁴ *Id.* at 51.

¹²⁵ See *id.*

2 standards, and that some from the states and the auto industry recommended EPA adopt an averaging approach.¹²⁶

During the public comment period on the proposed rule, EPA Administrator Carol Browner testified before a subcommittee of the U.S. Senate Committee on Environment and Public Works. She testified that EPA's proposal used "a market-based approach that is both flexible and fair to industry."¹²⁷ The agency's "innovative and flexible incentives," she explained, included "the opportunity for fleet averaging."¹²⁸

Congress provided the necessary funding for EPA to finalize the Tier 2 standards.¹²⁹ Despite including limitations on other EPA actions, Congress did not limit or redirect EPA's action with regard to the Tier 2 standards.¹³⁰ In the final rule, EPA allowed zero-emission vehicles to weigh more heavily in compliance than typical internal combustion engine-powered vehicles because, the agency explained, "these inducements may help pave the way for greater and/or more cost effective emission reductions from future vehicles."¹³¹ The agency further stated:

We believe it is important in a rule of this nature to provide extra incentive to encourage manufacturers to produce and market very clean vehicles. We believe this is especially important in the earliest years of the program when manufacturers must make resource commitments to technologies and vehicle designs that

¹²⁶ See *id.* at F-3

¹²⁷ See *Clean Air Act: Sulfur in the Tier 2 Standards for Automobiles: Hearing on S. 106-503 before the Subcomm. on Clean Air, Wetlands, Priv. Prop. and Nuclear Safety*, 106th Cong. 1 (1999) (statement of Carol Browner, EPA Administrator).

¹²⁸ *Id.* at 170.

¹²⁹ Pub. L. No. 106-74, 113 Stat. 1047, 1080 (1999), <https://www.congress.gov/106/statute/STATUTE-113/STATUTE-113-Pg1047.pdf>.

¹³⁰ See Title III, 113 Stat at 1080–81 (prohibiting EPA from using funds to implement interim guidance relating to the Civil Rights Act of 1964); Title IV, § 429, 113 Stat. at 1096 (extending a comment period for an EPA rulemaking); § 431, 113 Stat. at 1096 (prohibiting finalization of stormwater rules until EPA meets certain conditions); § 432, 113 Stat. at 1097 (prohibiting an EPA rulemaking relating to pesticide fees).

¹³¹ Control of Air Pollution From New Motor Vehicles: Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements, 65 Fed. Reg. 6698, 6746 (Feb. 10, 2000) <https://www.govinfo.gov/content/pkg/FR-2000-02-10/pdf/00-19.pdf>.

will have multi-year life spans. We believe this program provides a strong incentive for manufacturers to maximize their development and introduction of the best available vehicle/engine emission control technology, and this in turn provides a stepping stone to the broader introduction of this technology soon thereafter.¹³²

2. 2010s: Zero-Emission Vehicles as a Compliance Option for Greenhouse Gas Emissions Standards

After the Supreme Court decided *Massachusetts v. EPA*,¹³³ EPA was obligated to complement the regulation of conventional air pollutants with regulations limiting greenhouse gas emissions from cars and trucks. EPA issued its first regulation of greenhouse gas emissions from mobile sources in 2010.¹³⁴ These regulations continued the agency's practice of allowing electric vehicles to serve as a compliance mechanism for the emissions standards.¹³⁵ According to the Congressional Research Service, promulgating the new tailpipe rule had "not been particularly controversial" in Congress.¹³⁶ Still, the record shows that Congress monitored the agency's activities and provided additional guidance to ensure congressional concerns were appropriately considered. The conference report for EPA's fiscal year 2010 funding stated—

The conferees are aware that efforts to improve fuel efficiency and to reduce greenhouse gas emissions will require careful evaluation for potential consequences for human health and the environment. To ensure that the Agency can meet the need for this critical information in a timely and credible manner, the

¹³² *Id.*

¹³³ See *Massachusetts v. EPA*, 549 U.S. 497 (2007).

¹³⁴ See Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, 75 Fed. Reg. 25324 (May 7, 2010), <https://www.govinfo.gov/content/pkg/FR-2010-05-07/pdf/2010-8159.pdf>; see also *Timeline of Major Accomplishments in Transportation, Air Pollution, and Climate Change*, EPA, <https://www.epa.gov/transportation-air-pollution-and-climate-change/timeline-major-accomplishments-transportation-air> (last visited Dec. 12, 2024).

¹³⁵ Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, 75 Fed. Reg. 25324, 25434 (May 7, 2010), <https://www.govinfo.gov/content/pkg/FR-2010-05-07/pdf/2010-8159.pdf>

¹³⁶ CONG. RSCH. SERV., APPROPRIATIONS FOR FY2011 18 (2011), <https://crsreports.congress.gov/product/pdf/R/R41149/38>.

conferees encourage the Agency to work with experienced and independent extramural research partners to strengthen ongoing human health research and assessment efforts on alternative fuels, engines, and emission reduction technologies.¹³⁷

Once the regulations were finalized, Congress debated the prudence of the EPA rules, but ultimately did not amend, repeal or delay the standards. Like almost all issues considered by Congress, the legislature's ultimate position was not unanimous,¹³⁸ but had Congress been convinced that the rules were problematic, Congress certainly had the power to modify the rules.

The courts confirmed to Congress that EPA's implementation of the Clean Air Act via its tailpipe rule was legally sound: the DC circuit upheld the rule in *Coalition for Responsible Regulation v. EPA*,¹³⁹ and the Supreme Court denied petitions for certiorari except on the very limited and unrelated grounds of whether EPA's "regulation of greenhouse gas emissions from new motor vehicles triggered permitting requirements under the Clean Air Act for stationary sources."¹⁴⁰

During fiscal year 2011, EPA worked to develop the second round of greenhouse gas emissions standards for mobile sources. In EPA's FY2011 budget submission, the agency requested \$13.5 million "for implementing new emission standards that will reduce Greenhouse Gas (GHG) emissions from mobile sources" including "developing potential standards for large transportation sources such as locomotives and aircraft engines, and analyzing the

¹³⁷ H.R. REP. NO. 111-316, at 109 (2009), <https://www.congress.gov/congressional-report/111th-congress/house-report/316/1>.

¹³⁸ Sen. Murkowski attempted an unsuccessful parliamentary maneuver to legislatively nullify EPA's endangerment finding relating to greenhouse gasses. *See* S.J. Res. 26, 111th Cong. (2010). Had it been successful, this effort would have interfered with EPA's mobile source emissions standards, but Sen. Murkowski argued that her proposal would have "allow[ed] one Federal agency to set one standard that works for all 50 States." 156 CONG. REC. S4791 (2010) (statement of Sen. Lisa Murkowski). For a discussion of this effort, *see* Greg Dotson, *State Authority to Regulate Mobile Source Greenhouse Gas Emissions, Part 2: A Legislative and Statutory History Assessment*, 32 GEO. ENV'T L. REV. 625 (2020).

¹³⁹ *Coal. for Responsible Reg., Inc. v. EPA*, 684 F.3d 102, 126–29 (D.C. Cir. 2012) (per curiam), *aff'd in part, rev'd in part sub nom. Util. Air Reg. Grp. v. EPA*, 573 U.S. 302 (2014).

¹⁴⁰ 134 S.Ct. 418, 419, 468 (2013) (the cited pages include six partial grants of cert and three denials of cert).

potential need for standards under petitions relating to major stationary sources.”¹⁴¹ According to the Congressional Research Service, “[w]hether to modify these [budget] amounts or to prevent EPA from developing or implementing GHG emission standards *for stationary sources* were among the prominent areas of debate and amendments considered during the debate of the FY2011 appropriations.”¹⁴²

With the rise of the Tea Party in the 2010 midterm elections, the Republican party retook control of the House of Representatives. The new Republican majority was anxious to rein in regulatory proposals by the Obama Administration. This anti-regulatory zeal was apparent in one of the first pieces of legislation brought to the House floor by the new House leadership—H.R. 1, a continuing appropriations act, intended to fund the government and prevent a government shutdown. H.R. 1 contained more than 20 provisions to prohibit the use of appropriated funds for certain regulatory activities under EPA’s jurisdiction.¹⁴³ Specifically, H.R. 1 included prohibitions on implementing certain provisions of the Clean Air Act,¹⁴⁴ Clean Water Act,¹⁴⁵ hazardous waste laws,¹⁴⁶ and mining-related environmental protections.¹⁴⁷ Although the legislation passed the House of Representatives, President Obama issued a

¹⁴¹ CONG. RSCH. SERV., APPROPRIATIONS FOR FY2011 19 (2011), <https://crsreports.congress.gov/product/pdf/R/R41149/38>.

¹⁴² *Id.* (emphasis added).

¹⁴³ *See id.* at 7.

¹⁴⁴ *See* H.R. 1, 112th Cong. § 1746 (2011) (prohibiting funding for certain regulatory actions based on emissions of greenhouse gasses), *id.* § 4008 (relating to limits on hazardous air pollutants from cement plants); *id.* § 4014 (prohibiting funds for invalidating permits for offshore development); *id.* § 4015 (prohibiting funds for actions relating to emissions of greenhouse gasses from stationary sources); *id.* § 4043 (prohibiting decisions related to use of ethanol in gasoline); *id.* § 4048 (prohibiting funds for modifying the national ambient air quality standard for particulate matter).

¹⁴⁵ *See id.* § 1746 (prohibiting funding related to the scope of the Clean Water Act); *id.* § 4033 (relating to TMDLs for the Chesapeake Bay Watershed); *id.* § 4035 (relating to water quality standards for Florida’s lakes and flowing waters); *id.* § 4044 (prohibiting funding to carry out certain provisions of the Clean Water Act’s dredge and fill program).

¹⁴⁶ *See id.* § 4045.

¹⁴⁷ *See id.* § 4039 (prohibiting funding for actions related to enhanced surface coal mining and Appalachian surface coal mining).

veto-threat,¹⁴⁸ and it proved to be too extreme to be passed by the Senate.

Even though H.R. 1 contained provisions to restrict funding for a host of environmental policies, action related to addressing climate change was particularly targeted.¹⁴⁹ The bill sought to prohibit many potential regulatory actions, prevent engagement with the global scientific community, eliminate any further grants to communities seeking to address climate change, and even sought to eliminate the positions of presidential climate advisors. However, despite this broadside against climate change action, H.R.1 explicitly *protected* EPA's authority to act under section 202 of the Clean Air Act, stating that restrictions on climate funding to EPA would apply to certain regulatory actions "other than with respect to section 202 of the Clean Air Act."¹⁵⁰ This is notable given EPA's final rule on greenhouse gasses from May 2010 (months prior to the mid-term elections) and work to complete the subsequent rule which was ultimately promulgated in 2012.

In requesting funds from Congress for the 2012 regulation, EPA explained the intended use of funds. In testimony about the annual budget that applied when the greenhouse gas standards were finalized, EPA Administrator Lisa Jackson testified that EPA's budget "includes implementation of the President's historic agreement with the auto industry for carbon pollution and fuel economy

¹⁴⁸ See OFF. OF MGMT. & BUDGET, EXEC. OFF. OF THE PRESIDENT, STATEMENT OF ADMIN. POLICY H.R. 1—FULL-YEAR CONTINUING APPROPRIATIONS ACT (2011), https://obamawhitehouse.archives.gov/sites/default/files/omb/legislative/sap/112/saphr1h_20110215.pdf.

¹⁴⁹ See H.R. 1, 112th Cong. § 1743 (2011) (eliminating funds for competitive grants to communities to develop plans and demonstrate and implement projects which reduce greenhouse gas emissions); *id.* § 1746 (prohibiting funding for certain regulatory actions based on emissions of greenhouse gasses); *id.* § 4009 (prohibiting funds for the salaries of the Assistant to the President for Energy and Climate Change, the Special Envoy for Climate Change, and the Special Advisor for Green Jobs, Enterprise and Innovation at the Council on Environmental Quality); *id.* § 4015 (prohibiting funds for actions relating to emissions of greenhouse gasses from stationary sources); *id.* § 4038 (prohibiting funding for NOAA's Climate Service); *id.* § 4042 (prohibiting contributions to the Intergovernmental Panel on Climate Change).

¹⁵⁰ *Id.* § 1746.

standards through 2025 for cars and light duty vehicles,”¹⁵¹ and that the budget would “help support implementation of the first ever carbon pollution and fuel economy standards for heavy duty trucks.”¹⁵²

In the final rule, EPA provided a credit multiplier for electric vehicles as part of an effort to incentivize “game changing” advanced vehicle technology.¹⁵³ The agency explained that “[t]he incentives are expected to promote increased application of these advanced technologies in the program’s early model years, which could achieve economies of scale that will support the wider application of these technologies to help achieve the more stringent standards in [model years] 2022–2025.”¹⁵⁴

Congress debated legislation to overturn these emissions standards, but ultimately did not pass legislation to accomplish that.¹⁵⁵

3. 2020s: EPA Continues to Structure Regulations to Encourage Zero-Emission Vehicles as Congress Endorses Regulatory Approach

In 2020, the first Trump Administration issued regulations establishing greenhouse gas emissions standards for model year vehicles 2021–2026.¹⁵⁶ These regulations were a relaxation of the standards that EPA had established in 2012.¹⁵⁷ Nevertheless, EPA retained incentives for auto makers to comply with the rule by

¹⁵¹ *Testimony of Lisa P. Jackson, Administrator, EPA, before the Senate Committee on Environment and Public Works*, EPA (Mar. 22, 2012), https://www.epa.gov/sites/default/files/2013-10/documents/2012_0322_lpj.pdf.

¹⁵² *Id.*

¹⁵³ 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, 77 Fed. Reg. 62628, 62812–13 (Oct. 15, 2012), <https://www.govinfo.gov/content/pkg/FR-2012-10-15/pdf/2012-21972.pdf>.

¹⁵⁴ *Id.* at 62628.

¹⁵⁵ See H.R. 910, 112th Cong. (2011); H.R. 3409, 112th Cong. (2012) (proposing to repeal a large number of regulations including EPA’s emissions standards).

¹⁵⁶ See The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks, 85 Fed. Reg. 24174 (Apr. 30, 2020), <https://www.govinfo.gov/content/pkg/FR-2020-04-30/pdf/2020-06967.pdf>.

¹⁵⁷ See *id.* at 24176 (explaining that the revised standards would result in “1.9 to 2.0 additional billion barrels of fuel consumed and from 867 to 923 additional million metric tons of CO₂ as compared to current estimates of what the standards set forth in 2012 would require”).

bringing electric vehicles to market.¹⁵⁸ This demonstrated bipartisan support for a regulatory structure that encouraged sales of electric vehicles.

The EV sector grew significantly in the United States between when EPA's emissions rules were finalized in 2012 and 2020. Five EV models were available in 2011 and by 2020 59 models were available.¹⁵⁹ Electric vehicle sales grew from less than 50,000 vehicles in 2012 to more than 300,000 in 2020.¹⁶⁰ The Biden Administration reflected the increased availability of this emission-reducing technology in EPA's emissions standards.

In August 2021, President Biden made clear to Congress and the public his intention to establish multi-pollutant emissions standards by signing an Executive Order directing EPA to establish new emissions standards, "including for greenhouse gas emissions, for light- and medium-duty vehicles beginning with model year 2027 and extending through and including at least model year 2030;" this order also included "a goal that 50 percent of all new passenger cars and light trucks sold in 2030 be zero-emission vehicles."¹⁶¹

However, before proposing or finalizing these multi-pollutant standards, EPA first proposed to revise the greenhouse gas emissions standards for passenger cars and light trucks for model years 2023 through 2026 that had been finalized by the first Trump Administration.¹⁶² This proposal contained provisions to regulate greenhouse gasses and allow auto makers to comply based on fleet-wide averages and again provided credits to automakers for bringing electric vehicles to market.¹⁶³ Congress funded EPA along with other government activities with a continuing resolution in

¹⁵⁸ See *id.* at 24209–11 (explaining the retention of multiplier credit incentives for electric vehicles).

¹⁵⁹ See ANH BUI, PETER SLOWIK & NIC LUTSEY, EVALUATING ELECTRIC VEHICLE MARKET GROWTH ACROSS U.S. CITIES 2 (Sept. 2021), https://theicct.org/wp-content/uploads/2021/12/ev-us-market-growth-cities-sept21_0.pdf.

¹⁶⁰ See *id.*

¹⁶¹ See Exec. Order No. 14,037, 86 Fed. Reg. 43583, 43583 (Aug. 5, 2021) (revoked by Exec. Order No. 14,154, 90 Fed. Reg. 8353, 8355 § 4(viii) (Jan. 29, 2025)).

¹⁶² Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards, 86 Fed. Reg. 43726, 43726 (Aug. 10, 2021), <https://www.govinfo.gov/content/pkg/FR-2021-08-10/pdf/2021-16582.pdf>.

¹⁶³ *Id.* at 43731–34.

December 2021.¹⁶⁴ Later that month, EPA finalized revised greenhouse gas emissions standards for passenger cars and light trucks for model years 2023 through 2026.¹⁶⁵

EPA's multi-pollutant standards for light- and medium-duty vehicles were developed and finalized over the fiscal years 2021 to 2024. During this time the Biden Administration was engaged with Congress to inform them of their plans for the standards. "In FY 2022," EPA's budget justification explained to Congress, "EPA will take action to tackle climate change per the Presidential executive orders, by focusing on the transportation sector's largest contributors to GHG emissions: light-duty vehicles (LDVs) and heavy-duty vehicles (HDVs)."¹⁶⁶ EPA will in the coming year, the agency told Congress, "initiate a rulemaking to set strong standards for [light-duty vehicles] post-2026 that provide an incentive for transportation electrification."¹⁶⁷

EPA Administrator Michael Regan testified before Congress about the FY22 budget and stated that the agency was focused on issuing new greenhouse gas standards for cars and trucks and said the agency would "be very aggressive there."¹⁶⁸

Congress funded EPA's activities without any limitation or direction relating to their regulation of multiple pollutants from mobile sources.¹⁶⁹ Importantly, congressional appropriators expressed their concerns with a wide array of other ongoing actions across the

¹⁶⁴ See Further Extending Government Funding Act, Pub. L. No. 117-70, 135 Stat. 1503, <https://www.congress.gov/117/plaws/publ70/PLAW-117publ70.pdf>.

¹⁶⁵ See Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards, 86 Fed. Reg. 74434 (Dec. 30, 2021), <https://www.govinfo.gov/content/pkg/FR-2021-12-30/pdf/2021-27854.pdf>.

¹⁶⁶ EPA, FISCAL YEAR 2022, JUSTIFICATION OF APPROPRIATION ESTIMATES FOR THE COMM. ON APPROPRIATIONS (May, 2021), <https://www.epa.gov/sites/default/files/2021-05/documents/fy-2022-congressional-justification-all-tabs.pdf>.

¹⁶⁷ *Id.*

¹⁶⁸ *Hearing on Fiscal Year 2022 EPA Budget Before the Subcomm. on Env't and Climate Change, H. Comm. on Energy and Commerce*, 117th Cong. 46 (2021).

¹⁶⁹ See Consolidated Appropriations Act, 2022, Pub. L. No. 117-103, 136 Stat. 49, 921-292.

agency in a Joint Explanatory Statement on EPA's funding.¹⁷⁰ For example, the joint explanatory statement says:

The Committees are aware of a strong interest from a number of stakeholders to generate Renewable Fuels Standard credits from renewable electricity, also referred to as "eRINs". The Committees understand that EPA is planning to propose to revise the existing EPA regulations related to eRINs as part of a future rulemaking action. The Committees urge the Agency to undertake this rulemaking in a timely manner to provide transparency and clarity for all stakeholders and direct the Agency to brief the Committees on its progress within 180 days of the enactment of this Act.¹⁷¹

Congress was not shy about expressing its concerns and would engage the agency as necessary to address those concerns.

Over the course of fiscal years 2023 and 2024, EPA developed, proposed and finalized the multi-pollutant standards that the President directed EPA to issue in 2021. In fiscal year 2023, EPA developed and proposed the multipollutant emissions rule.

As the Biden Administration sought funding for that fiscal year, they communicated to Congress their plan to develop the rule. The President's proposed budget for fiscal year 2023 highlights the President's efforts to "jumpstart an electric transportation future that's Made in America" by working with "automakers and auto-workers around a new ambitious goal for 50 percent electric vehicle sales share in 2030."¹⁷² The budget proposes to accomplish this through federal procurement, infrastructure investment, and regulation.

¹⁷⁰ See U.S. House of Representatives, Joint Explanatory Statement—Division G accompanying H.R. 2471, Consolidated Appropriations Act, 117th Cong. (Mar. 9, 2022), 47–64, <https://docs.house.gov/billsthisweek/20220307/BILLS-117RCP35-JES-DIVISION-G.pdf> (noting "The joint explanatory statement accompanying this division is approved and indicates congressional intent.").

¹⁷¹ See *id.* at 48–49.

¹⁷² OFF. OF MGMT. & BUDGET, EXEC. OFF. OF THE PRESIDENT, BUDGET OF THE UNITED STATES GOVERNMENT, FISCAL YEAR 2023 8 (2022), <https://www.govinfo.gov/content/pkg/BUDGET-2023-BUD/pdf/BUDGET-2023-BUD.pdf>.

To provide additional information to congressional appropriators, EPA provided a document to Congress justifying its budget request.¹⁷³ EPA explained:

In FY 2023, EPA will develop a longer-term emissions standard rulemaking proposal for new multi-pollutant emissions standards, including for greenhouse gas emissions, for light- and medium-duty vehicles beginning with MY 2027 and extending through and including at least MY 2030. These standards will help transition the fleet to zero and near-zero emissions. Many automakers have recently announced ambitious plans for electrifying their new LDV fleets in the 2030 to 2040 timeframe. This rulemaking also will be a key measure in contributing to the President's commitment under the Paris Agreement to reduce U.S. GHG emissions by 50–52 percent from 2005 levels by 2030.¹⁷⁴

EPA informed Congress that if Congress provided the resources, the agency would “invest significant resources to address a myriad of new technical challenges” to support the rulemaking.¹⁷⁵

Congress funded the agency through the end of 2022 with three continuing resolutions.¹⁷⁶ None of these resolutions contained any provisions limiting, redirecting, or otherwise discouraging EPA from developing the proposed rule about which the agency had informed Congress.

Congress passed a consolidated appropriations bill on December 29, 2022, to fund the remainder of fiscal year 2023.¹⁷⁷ While Congress chose to include other funding limitations on certain

¹⁷³ See EPA, FISCAL YEAR 2023, JUSTIFICATION OF APPROPRIATION ESTIMATES FOR THE COMM. ON APPROPRIATIONS, TAB 04: SCIENCE AND TECHNOLOGY (2022).

¹⁷⁴ *Id.* at 86–87.

¹⁷⁵ *Id.* at 87.

¹⁷⁶ See Continuing Appropriations and Ukraine Supplemental Appropriations Act, 2023, Pub. L. No. 117-180, 136 Stat. 2114, 2115 <https://www.congress.gov/117/plaws/publ180/PLAW-117publ180.pdf> (providing resources through Dec. 16, 2022); Further Continuing Appropriations and Extensions Act, 2023, Pub. L. No. 117-229, 136 Stat. 2308, 2308–09, <https://www.congress.gov/117/plaws/publ229/PLAW-117publ229.pdf> (providing resources through Dec. 23, 2022); Further Additional Continuing Appropriations and Extensions Act, 2023, Pub. L. No. 117-264, 136 Stat. 4167, 4167, <https://www.congress.gov/117/plaws/publ264/PLAW-117publ264.pdf> (providing resources through Dec. 30, 2022).

¹⁷⁷ See Consolidated Appropriations Act, 2023, Pub. L. No. 117-328, 136 Stat. 4459, 4799 <https://www.congress.gov/117/plaws/publ328/PLAW-117publ328.pdf>.

regulatory activities at EPA,¹⁷⁸ no limitations regarding EPA's plan to propose multi-pollutant regulatory standards for light- and medium-duty vehicles was included.

With adequate resources, an established record of applying section 202 to greenhouse gas emissions as well as to other pollutants, and no limitation from Congress, EPA proposed a multi-pollutant rule that would control both conventional pollutants and greenhouse gasses from vehicle tailpipes in May 2023.¹⁷⁹ In the proposed rule, EPA explained the global trend towards vehicle electrification.¹⁸⁰ The agency noted that it was "not reopening its averaging, banking, and trading provisions, which continue to be a central part of its fleet average standards compliance program and which help manufacturers to employ a wide range of compliance paths."¹⁸¹ EPA proposed to limit the availability of credit multipliers to encourage zero-emission vehicles,¹⁸² but proposed to continue to recognize the emissions benefits of zero-emission vehicles as a tool for easing compliance with emissions standards.¹⁸³

The President's proposed budget for fiscal year 2024 continued to emphasize the Administration's work towards transportation electrification.¹⁸⁴ EPA, as it does each year, provided a document to Congress justifying its budget request.¹⁸⁵ EPA explained to Congress that should it provide the resources requested by the President, EPA would complete its rulemaking:

¹⁷⁸ See *id.* at Division G, Title IV, §§ 436–38, 4821–22, (relating to Clean Air Act regulatory permits for livestock, greenhouse gas reporting requirements by manure management systems, and regulation of lead content in ammunition).

¹⁷⁹ See Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, 88 Fed. Reg. 29184 (May 5, 2023), <https://www.govinfo.gov/content/pkg/FR-2023-05-05/pdf/2023-07974.pdf>.

¹⁸⁰ See *id.* at 29187–96.

¹⁸¹ *Id.* at 29196–7.

¹⁸² See *id.* at 29197.

¹⁸³ See *id.* at 29419.

¹⁸⁴ See OFF. OF MGMT. & BUDGET, EXEC. OFF. OF THE PRESIDENT, BUDGET OF THE UNITED STATES GOVERNMENT, FISCAL YEAR 2024 8 (2023), <https://www.govinfo.gov/content/pkg/BUDGET-2023-BUD/pdf/BUDGET-2023-BUD.pdf>.

¹⁸⁵ See EPA, FISCAL YEAR 2024, JUSTIFICATION OF APPROPRIATION ESTIMATES FOR THE COMM. ON APPROPRIATIONS, TAB 04: SCIENCE AND TECHNOLOGY, 10 (2023).

In FY 2024, EPA will promulgate a final rulemaking for new multi-pollutant emissions standards, including for greenhouse gas emissions, for light- and medium-duty vehicles beginning with MY 2027 and extending through and including at least MY 2030. These standards will help transition the fleet to zero and near-zero emissions.¹⁸⁶

With the regulatory standards proposed, the details of the EPA's multi-pollutant emissions proposal were formalized, fully articulated, and available to everyone interested in federal regulatory policy. Some in Congress apparently did not like the proposal. In November 2023, the House of Representatives passed a bill¹⁸⁷ to fund EPA that included a prohibition against using funds to finalize the multi-pollutant proposal.¹⁸⁸ This bill, had it been enacted, also would have prohibited EPA from using appropriated funds for a host of additional regulatory programs including those addressing clean water,¹⁸⁹ the social cost of carbon,¹⁹⁰ pesticide labeling,¹⁹¹ discharges from power plants,¹⁹² regional ozone air pollution,¹⁹³ hazardous air pollution from power plants,¹⁹⁴ and greenhouse gas emissions from power plants.¹⁹⁵

For its part, the Senate Appropriations Committee reported a bill to fund EPA and included a provision that required EPA to report to Congress regarding how the multi-pollutant regulations would affect critical mineral supplies.¹⁹⁶ This legislation never advanced to the Senate floor.

¹⁸⁶ *Id.* at 86–87.

¹⁸⁷ *See* Department of the Interior, Environment, and Related Agencies Appropriations Act, 2024, H.R. 4821, 118th Cong. (2023).

¹⁸⁸ *See id.* § 488. (prohibiting funds for the proposed rule titled “Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles”).

¹⁸⁹ *See id.* § 441.

¹⁹⁰ *See id.* § 447.

¹⁹¹ *See id.* § 461.

¹⁹² *See id.* § 462.

¹⁹³ *See id.* § 467.

¹⁹⁴ *See id.* § 480.

¹⁹⁵ *See id.* § 482.

¹⁹⁶ *See* S. 2605, 118th Cong. § 449 (2023), <https://www.congress.gov/bills/118/congress/senate/bills/2605/text>.

In fact, neither the House nor the Senate appropriations bills were enacted. Instead, Congress funded the government for the majority of fiscal year 2024 (October through March) with a series of continuing resolutions.¹⁹⁷ In March 2024, Congress passed and President Biden signed a consolidated appropriations bill including funding for EPA for the remainder of the fiscal year.¹⁹⁸ While this funding bill did limit some aspects of EPA's regulatory authority as it would apply in other contexts,¹⁹⁹ it did not impose any limitation or direction with regard to EPA's multi-pollutant emissions rule-making.

With the resources to finalize the regulations from Congress and no direction to do otherwise, EPA finalized the multipollutant rule in April 2024.²⁰⁰ This regulation imposes limitations on both conventional pollutants and greenhouse gases from light-duty vehicle tailpipes.²⁰¹ Some members of Congress have sought to undo these standards, but their efforts have not been successful.²⁰²

¹⁹⁷ See Continuing Appropriations Act, 2024 and Other Extensions Act, Pub. L. No. 118-15, 137 Stat. 71 (2023), <https://www.congress.gov/118/plaws/publ15/PLAW-118publ15.pdf> (providing resources through Nov. 17, 2023); Further Continuing Appropriations and Other Extensions Act, 2024, Pub. L. No. 118-22, 137 Stat. 112 (2023), <https://www.congress.gov/118/plaws/publ22/PLAW-118publ22.pdf> (providing resources through Feb. 2, 2024); Further Additional Continuing Appropriations and Other Extensions Act, 2024, Pub. L. No. 118-35, 138 Stat. 3 (2024), <https://www.congress.gov/118/plaws/publ35/PLAW-118publ35.pdf> (providing resources through Mar. 8, 2024); Extension of Continuing Appropriations and Other Matters Act, 2024, Pub. L. No. 118-40, 138 Stat. 17 (2024), <https://www.congress.gov/118/plaws/publ40/PLAW-118publ40.pdf> (providing resources through Mar. 22, 2024).

¹⁹⁸ See Consolidated Appropriations Act, 2024, Pub. L. No. 118-42, 138 Stat. 25 (2024), <https://www.congress.gov/bill/118th-congress/house-bill/4366/text>.

¹⁹⁹ See *id.* §§ 435–7 (relating to Clean Air Act regulatory permits for livestock, greenhouse gas reporting requirements by manure management systems, and regulation of lead content in ammunition).

²⁰⁰ See Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, 89 Fed. Reg. 27842 (Apr. 18, 2024), <https://www.govinfo.gov/content/pkg/FR-2024-04-18/pdf/2024-06214.pdf>.

²⁰¹ See *id.* (EPA “is establishing new, more protective emissions standards for criteria pollutants and greenhouse gases . . .”).

²⁰² See H.R. 4468, 118th Cong. (2023), <https://www.congress.gov/bill/118th-congress/house-bill/4468>; H.R.J. Res. 136, 118th Cong. (2024) (proposing legislation would have prohibited EPA from finalizing, implementing, or enforcing Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty

4. Heavy-Duty Vehicle Emissions Standards Have Encouraged Deployment of Electric Vehicles

EPA has also encouraged deployment of ZEVs through three iterations of regulations of greenhouse gas emissions from heavy-duty vehicles, in 2011, 2016, and 2024.²⁰³ Congress has not repealed or modified any of these regulations. However, both chambers of Congress passed a “resolution of disapproval” in an attempt to block another recent EPA rulemaking governing emissions of nitrogen oxides (NOx) and particulate matter from heavy-duty vehicles, which is discussed below.²⁰⁴

A resolution of disapproval is the legislative tool Congress uses to exercise its prerogatives under the Congressional Review Act (CRA).²⁰⁵ The CRA provides a process for the Congress to act upon any recently promulgated rule, nullifying that rule, and ensuring that no rule that is “substantially the same” goes into effect.²⁰⁶ To exercise the power of the CRA, a resolution of disapproval must be passed by both chambers of Congress and signed by the President.

In 2023, EPA finalized a rule to reduce emissions of NOx from heavy-duty vehicles.²⁰⁷ In developing the rule, EPA had proposed allowing zero-emission vehicles to earn NOx credits in order to ease compliance and encourage ZEVs. Heavy duty vehicle

and Medium-Duty Vehicles), <https://www.congress.gov/bill/118th-congress/house-joint-resolution/136>.

²⁰³ See Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles, 76 Fed. Reg. 57106, 57245–57 (Sept. 15, 2011), <https://www.govinfo.gov/content/pkg/FR-2011-09-15/pdf/2011-20740.pdf>; Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2, 81 Fed. Reg. 73478, 73497–8 (Oct. 25, 2016); Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles—Phase 3, 89 Fed. Reg. 29440, 29603–6 (Apr. 22, 2024), <https://www.govinfo.gov/content/pkg/FR-2024-04-22/pdf/2024-06809.pdf>.

²⁰⁴ See S.J. Res.11, 118th Cong. (2023), <https://www.congress.gov/bill/118th-congress/senate-joint-resolution/11>.

²⁰⁵ See 5 U.S.C. §§ 801–808.

²⁰⁶ For additional background on the Congressional Review Act, See Maeve P. Carey & Christopher M. Davis, *The Congressional Review Act (CRA): A Brief Overview* (Aug. 29, 2024), <https://crsreports.congress.gov/product/pdf/IF/IF10023>.

²⁰⁷ See *Control of Air Pollution From New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards*, 88 Fed. Reg. 4296 (Jan. 24, 2023), <https://www.govinfo.gov/content/pkg/FR-2023-01-24/pdf/2022-27957.pdf>.

manufacturers commented in support of allowing ZEVs to generate NOx credits and thereby satisfy the standards.²⁰⁸ However, EPA decided not to include this compliance option “[a]fter further consideration, including consideration of public comments.”²⁰⁹ Thus the rule did not include provisions to incentivize EVs. A resolution disapproving of this rule was introduced and narrowly passed by Congress.²¹⁰ It was vetoed by the President and did not become law.²¹¹ While it is impossible to know whether this rule might have had more support in Congress if it had included provisions to encourage EVs, the record suggests that had it included such provisions, it would have had more support from vehicle manufacturers.²¹²

5. Congress Endorsed EPA’s Understanding that the Clean Air Act Applies to State and Federal Regulation of GHG Emissions from Mobile Sources

In the Inflation Reduction Act of 2022, Congress included a provision to encourage states to adopt and enforce greenhouse gas and zero-emission standards for mobile sources pursuant to existing authority under the Clean Air Act.²¹³ This provision appropriates \$5 million to provide grants to states “to adopt and implement greenhouse gas and zero-emission standards for mobile sources pursuant to section 177 of the Clean Air Act (42 U.S.C. 7507).”²¹⁴ In addition to providing funding, the IRA provision affirms EPA’s legal interpretations of how the Clean Air Act governs state and federal regulation of greenhouse gas emissions from mobile sources. By providing grants to states to adopt and implement California’s GHG and zero-emission standards for mobile sources, the IRA provision makes clear that Congress endorses EPA’s understanding that not

²⁰⁸ See *id.* at 4403.

²⁰⁹ *Id.* at 4401.

²¹⁰ See S.J. Res. 11, 118th Cong. (2023).

²¹¹ See *id.*

²¹² See Control of Air Pollution From New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards, 88 Fed. Reg. 4296, 4403 (Jan. 24, 2023) (noting comments from “heavy-duty engine and vehicle manufacturers” in support of the zero-emission vehicle credits that were dropped from the final rule).

²¹³ See Inflation Reduction Act, Pub. L. No. 117-169, § 60105(g), 136 Stat. 1818, 2068–69 (2022).

²¹⁴ *Id.*

only does § 177 allow states to adopt California's GHG and zero-emission standards,²¹⁵ but also that California *itself* can adopt GHG and zero-emission standards. Moreover, section 177 is only relevant when the state of California has acted to regulate where it would be otherwise preempted by federal action.²¹⁶ This demonstrates Congress's understanding that not only can California regulate greenhouse gasses; EPA can as well.²¹⁷

III. RESEARCH, DEVELOPMENT AND DEMONSTRATION OF ELECTRIC VEHICLES

The U.S. Government's first high-profile foray into the world of encouraging electric vehicles through federal research began with a special message to Congress from President Richard Nixon in 1970.²¹⁸ Observing that "[a]ir is our most vital resource, and its pollution is our most serious environmental problem" the President focused attention on the pollution from motor vehicles, as "[a]bout half [of U.S. air pollution] is produced by motor vehicles."²¹⁹ The President explained that to control air pollution, it might become necessary to move away from internal combustion engines and it was therefore prudent to develop an alternative to the internal combustion engine.²²⁰ He announced a new program that would marshal government and private sector research with "the goal of producing an unconventionally powered, virtually pollution free automobile."²²¹ This program became known as the Alternative Automotive Power Systems Program and was housed at the U.S.

²¹⁵ See *id.*

²¹⁶ See 42 U.S.C. § 7507(1) (allowing states other than California to adopt California's vehicle emissions standards only if California has adopted standards "for which a waiver has been granted").

²¹⁷ For a detailed discussion of how the Inflation Reduction Act ratifies these Clean Air Act interpretations, see generally Greg Dotson & Dustin J. Maghamfar, *The Clean Air Act Amendments of 2022: Clean Air, Climate Change, and the Inflation Reduction Act*, 53 ENV'T L. REP. 10017 (2023).

²¹⁸ See Richard M. Nixon, *Special Message to the Congress on Environmental Quality*, AM. PRESIDENCY PROJECT (Feb. 10, 1970), <https://www.presidency.ucsb.edu/documents/special-message-the-congress-environmental-quality>.

²¹⁹ *Id.*

²²⁰ See *id.*

²²¹ *Id.*

Environmental Protection Agency.²²² EPA issued its first report on the topic in 1974, which included a discussion of electric and hybrid engines.²²³ Shortly after issuing this report, in 1975 Congress transferred the program to the new Energy Research and Development Administration, a predecessor to the DOE.²²⁴ Congress nurtured this embryonic program over the next half century into a robust research, development, and demonstration program for electric vehicles.

A. Congress Adopts a Policy to Promote the Substitution of Electric Vehicles for Gasoline-powered Vehicles

With the Arab Oil Embargo of the 1970s, oil dependence became another reason for focus on the potential benefits of electric vehicles. Congress quickly appreciated that electric vehicles could address the energy security concerns raised by the nation's dependence on oil. In establishing the corporate average fuel economy standards in 1975, Congress required the executive branch to examine whether electric vehicles should be included in the new program.²²⁵ Although the Energy Reorganization Act of 1974²²⁶ and the Federal Nonnuclear Energy Research and Development Act of 1974²²⁷ provided authority for federal research into battery technology and alternatives to the internal combustion engine, Congress

²²² See JOHN B. HEYWOOD ET AL., THE ROLE FOR FEDERAL R & D ON ALTERNATIVE AUTOMOTIVE POWER SYSTEMS A-9, A-14 (1974).

²²³ See EPA, EPA-460/3-74-013-A, CURRENT STATUS OF ALTERNATIVE AUTOMOTIVE POWER SYSTEMS AND FUELS (1974).

²²⁴ See Energy Reorganization Act of 1974, Pub. L. No. 93-438, § 104(g), 88 Stat. 1233 (1974).

²²⁵ See Energy Policy and Conservation Act, Pub. L. No. 94-163, § 512(b), 89 Stat. 871 (1975), <https://www.govinfo.gov/content/pkg/STATUTE-89/pdf/STATUTE-89-Pg871.pdf>. In 1980, Congress amended the fuel economy law to provide details regarding how electric vehicles should be incorporated into corporate average fuel economy standards. See Chrysler Corporation Loan Guarantee Act of 1979, Pub. L. No. 96-185, § 18, 93 Stat. 1336 (1980), <https://www.congress.gov/96/statute/STATUTE-93/STATUTE-93-Pg1324.pdf>.

²²⁶ See Energy Reorganization Act of 1974, Pub. L. No. 93-438, 88 Stat. 1233 (1974).

²²⁷ See Federal Nonnuclear Energy Research and Development Act of 1974, Pub. L. No. 93-577, § 6(b)(3)(A)(iii), 88 Stat. 1878, 1882 (1974) (authorizing the Department to investigate "the full range of alternatives to the internal combustion engine").

wasted no time in establishing a dedicated program to develop electric vehicles for commercialization.

As mentioned in the introduction to this article, in September 1976 Congress enacted the Electric and Hybrid Vehicle Research, Development, and Demonstration Act of 1976 (EHVRDDA) to establish a 5-year, \$160 million program on electric and hybrid vehicles.²²⁸ In this Act, Congress found that the nation's consumption of petroleum was harmful from a national security perspective and that "expeditious introduction" of electric and hybrid vehicles could not only help substantially reduce the nation's use of oil and dependence on petroleum but would also reduce pollution.²²⁹ Congress declared in the statute that it was "the policy of Congress" to support accelerated research, development, and demonstration of these vehicles, to facilitate and remove barriers to their use and to "promote the substitution of electric and hybrid vehicles for many gasoline- and diesel-powered vehicles..."²³⁰ This statutory policy statement has never been amended or repealed.²³¹

As the name of the law suggests, EHVRDDA provided for research, development, and demonstration of electric and hybrid vehicles, while also offering loan guarantees and encouragement for these vehicles to be used by government and small business. Once it was passed by Congress, however, President Ford vetoed the bill, announcing his preference for additional federal research into electric vehicle batteries under existing research authorities.²³² Congress, however, felt so certain about the need for a specific electric vehicle and hybrid program that it overrode President Ford's veto to enact the legislation.²³³

²²⁸ See Electric and Hybrid Vehicle Research, Development, and Demonstration Act of 1976, Pub. L. No. 94-413, § 16(a), 90 Stat. 1260 (1976).

²²⁹ *Id.* § 2(a).

²³⁰ *Id.* § 2(b) (codified at 15 U.S.C. § 2501(b)(4)).

²³¹ See 15 U.S.C. § 2501(b)(4).

²³² See Gerald R. Ford, *Veto of the Electric and Hybrid Vehicle Research, Development and Demonstration Bill*, AM. PRESIDENCY PROJECT (Sept. 13, 1976), <https://www.presidency.ucsb.edu/documents/veto-the-electric-and-hybrid-vehicle-research-development-and-demonstration-bill>.

²³³ See *All Actions: H.R.8800—94th Congress (1975–1976)*, CONGRESS.gov, <https://www.congress.gov/bill/94th-congress/house-bill/8800/all-actions?overview=closed#tabs>.

Over the ensuing years, DOE sent annual reports to Congress on the implementation of EHVRDDA.²³⁴ In the 1995 report for fiscal year 1994, DOE stated that “[t]he Department remains focused on the technologies that are critical to making electric and hybrid vehicles commercially viable and competitive with current production gasoline-fueled vehicles in performance, reliability, and affordability.”²³⁵ There had been “significant progress,” DOE reported, “toward fulfilling the intent of Congress.”²³⁶

The Department further reported that Congress had increased the program’s annual budget over time to \$74 million.²³⁷ The Department also detailed the program’s achievements in the past fiscal year: significant electrode, battery, and ultracapacitor advancements, the first U.S.-built fuel cell powered bus, the use of a DOE-developed electric drivetrain in the electric Ford Ecostar minivan, the creation of a coalition of electric utilities known as “EV America” for demonstration of electric vehicle use, and other concrete efforts to develop and demonstrate electric and hybrid vehicle technology.²³⁸

Congress returned to the topic of electric vehicles, beyond support through annual appropriations, during the Persian Gulf War. Crafted during the war and finalized in its aftermath, the Energy Policy Act of 1992²³⁹ (EPAct 1992) was comprehensive energy legislation with the goal, in part, of reducing “the costly, impending rise in U.S. oil imports” and “reduc[ing] our use of oil-based fuels

²³⁴ DOE produced annual reports on the program through fiscal year 1994. The annual reporting requirement was suspended in 1995, along with many other annual reports from other agencies, as part of a government reform effort. Federal Reports Elimination and Sunset Act of 1995, Pub. L. No. 104-66, tit. I, § 1051(o), 109 Stat. 717 (1995).

²³⁵ U.S. Dep’t of Energy, *Preface* to U.S. DEP’T OF ENERGY ELECTRIC AND HYBRID VEHICLES PROGRAM: 18TH ANNUAL REPORT TO CONGRESS FOR FISCAL YEAR 1994 (1995), <https://www.osti.gov/servlets/purl/91943>.

²³⁶ *Id.*

²³⁷ *See id.* at 1-1. The \$74 million was up from the previous year’s \$59.2 million appropriation. *See* U.S. DEP’T OF ENERGY ELECTRIC AND HYBRID VEHICLES PROGRAM: 17TH ANNUAL REPORT TO CONGRESS FOR FISCAL YEAR 1993 1-1 (1994).

²³⁸ U.S. Dep’t of Energy, *supra* note 235, at 2-1–2-4.

²³⁹ *See* Energy Policy Act of 1992, Pub. L. No. 102-486, 106 Stat. 2776 (1992), https://epact.energy.gov/pdfs/epact_titles_3-4-5-6-19.pdf.

in our motor vehicle sector.”²⁴⁰ To help achieve this outcome, among other provisions, the law contains numerous provisions designed to promote the development and adoption of electric vehicles.²⁴¹

The House Science Committee reported that electric vehicles offered an opportunity to address smog and climate change while displacing petroleum use.²⁴² With such significant environmental and energy benefits available, the Committee stated that “it is important to expedite the development of electric vehicles. Overcoming such barriers as technical uncertainty, customer acceptance and the numerous institutional issues are key to accelerated adoption of electric vehicles.”²⁴³ Accordingly, some methods of promoting electric vehicles included demonstration programs, fleet programs, and incentive programs.²⁴⁴

While EPCA 1992 contained electric vehicle-specific provisions, such as the Electric Motor Vehicle Commercial Demonstration Program²⁴⁵ and the Electric Motor Vehicle Infrastructure and Support Systems Development Program,²⁴⁶ the legislation relied heavily on establishing requirements for federal, state, and private fleets to increasingly use alternative-fueled vehicles as a way to expand deployment of new alternative automotive technology.²⁴⁷ As crafted, vehicles capable of operating on any of a large variety of alternative fuels would satisfy this requirement including ethanol, natural gas, propane, electricity, and biodiesel. While research into electric vehicles and other alternative fuel technologies continued under the EPCA 1992, Congress’s effort to increase deployment of EVs and other vehicles through the fleet-based approach ultimately proved ineffective. DOE determined that the “prevalent view during the passage of EPCA [1992], that the fleet vehicle market could

²⁴⁰ H.R. REP. NO. 102-474, pt. 1, at 132 (1992).

²⁴¹ See Energy Policy Act of 1992, Pub. L. No. 102-486, §§ 611–626, 106 Stat. 2776, 2778 (1992).

²⁴² See H.R. REP. NO. 102-474, pt. 2 at 69 (1992).

²⁴³ *Id.*

²⁴⁴ See *id.* at 69–70.

²⁴⁵ See 42 U.S.C. § 13281.

²⁴⁶ See 42 U.S.C. § 13291.

²⁴⁷ See 42 U.S.C. §§ 13212(a), 13257(a), 13257(o).

act as a catalyst to spur the entire market, was not accurate.”²⁴⁸ In fact, a 1994 General Accounting Office (GAO) report found that just 10 of 15,000 planned alternative fueled vehicle purchases for the federal fleet were for electric vehicles.²⁴⁹

The 1994 GAO report found that the future of electric vehicles was uncertain and that “technical and program supports appear to be less than what would be required for success.”²⁵⁰ GAO concluded: “[i]n sum, in direct contrast to many of the countries we visited, the United States has devoted proportionately less of its money and attention to comprehensive EV demonstration and promotion programs or infrastructure needs assessment and development.”²⁵¹

This shortfall in funding changed dramatically as congressional spending on electric vehicle programs ramped up during the Clinton, George W. Bush, and Obama administrations.

B. Increased Congressional Funding for Electric Vehicles Programs

There are close relationships between battery-electric vehicles (referred to as “electric vehicles”), hybrid electric vehicles, and fuel cell electric vehicles (referred to as “fuel cell vehicles”). Both an electric vehicle and a fuel cell vehicle rely solely upon an electric propulsion system (in contrast to gasoline or diesel-fueled vehicles, which rely on gasoline or diesel-fueled propulsion).²⁵² While an electric vehicle uses a battery to power that system, a fuel cell vehicle generates electricity with a fuel cell from a fuel carried onboard the vehicle, typically hydrogen. A hybrid electric vehicle uses an internal combustion engine in conjunction with an electric motor to

²⁴⁸ U.S. GOV’T ACCOUNTABILITY OFF., ENERGY POLICY ACT OF 1992: LIMITED PROGRESS IN ACQUIRING ALTERNATIVE FUEL VEHICLES AND REACHING FUEL GOALS 33 (2000), <https://www.gao.gov/assets/rced-00-59.pdf>.

²⁴⁹ See U.S. GOV’T ACCOUNTABILITY OFF., ELECTRIC VEHICLES: LIKELY CONSEQUENCES OF U.S. AND OTHER NATION’S PROGRAMS AND POLICIES 73 (1994), <https://www.gao.gov/assets/pemd-95-7.pdf>.

²⁵⁰ *Id.*

²⁵¹ *Id.*

²⁵² See *Alternative Fuels Data Center, Electric Vehicles*, DEP’T OF ENERGY, <https://afdc.energy.gov/vehicles/electric> (last visited Nov. 3, 2024); see also *Alternative Fuels Data Center, Fuel Cell Electric Vehicles*, DEP’T OF ENERGY, <https://afdc.energy.gov/vehicles/fuel-cell> (last visited Nov. 3, 2024).

propel the vehicle. The relationship between these technologies is noteworthy because it shows how certain federal investments to commercialize fuel cell vehicles would also facilitate electric vehicles and vice versa. For example, when the Bush Administration announced its fuel cell initiative in 2002, which is discussed in detail below, the director of advanced technology portfolio management at a major automaker noted that fuel-cell car research isn't just about fuel cells themselves, but also about the electric drive technologies that fuel-cell cars require to work.²⁵³ These electric drive technologies—ranging from improved batteries to regenerative brakes that help recharge those batteries—are useful for fuel cell, electric, and hybrid electric vehicles.

In September 1993, the Clinton Administration announced the Partnership for a New Generation of Vehicles (PNGV).²⁵⁴ This public/private partnership between the federal government and the major domestic automakers was established to improve domestic automobile manufacturing and significantly increase the fuel efficiency of family cars, while maintaining performance, safety, and affordability. It operated between 1993 and 2002, and simply coordinated previously authorized research among federal agencies.²⁵⁵ The federal government spent approximately \$250 million annually for research related to PNGV,²⁵⁶ and in the private sector, auto manufacturers were estimated to have spent approximately \$800 million annually over the same time period.²⁵⁷

While the PNGV program's focus on diesel/electric hybrid vehicles received the most public attention, program research also supported a host of technology areas, including fuel cells, lithium-ion batteries, power electronics and electric drive systems, energy

²⁵³ See Alan Leo, *FreedomCAR: Will it Drive?*, MIT TECH. REV., (Jan. 28, 2002), <https://www.technologyreview.com/2002/01/28/235265/freedomcar-will-it-drive/>.

²⁵⁴ See CONG. RSCH. SERV., THE PARTNERSHIP FOR A NEW GENERATION OF VEHICLES: STATUS AND ISSUES CRS-1 (2003), https://www.everycrsreport.com/files/20030122_RS20852_45384fa93764404210695783b732baab92cf58f1.pdf.

²⁵⁵ See *id.* at CRS-1, CRS-6.

²⁵⁶ See CONG. RSCH. SERV., THE PARTNERSHIP FOR A NEW GENERATION OF VEHICLES: STATUS AND ISSUES CRS-2 (2003), https://www.everycrsreport.com/files/20030122_RS20852_45384fa93764404210695783b732baab92cf58f1.pdf.

²⁵⁷ See *id.*

storage, and structural materials.²⁵⁸ In reviewing the PNGV program in 2000, the National Research Council (NRC) noted the “substantial accomplishments in virtually every technical area of the PNGV program” and was particularly complimentary of the work of the power electronics and electrical systems research which indicated that “improved performance and reduced cost were feasible.”²⁵⁹ The NRC found that significant barriers—specifically relating to cost, emissions, and fuel infrastructure—remained to achieving a principal goal of PNGV: developing technologies for vehicles to achieve fuel economies up to three times those of a comparable 1994 sedan.²⁶⁰

Increased congressional spending on automotive technology to substitute for the traditional internal combustion engine continued during the George W. Bush Administration, although the administration’s public emphasis shifted from hybrid electric vehicles to fuel cell vehicles.²⁶¹ In January 2002, the Bush Administration announced the “FreedomCar” program, which replaced the PNGV program.²⁶² In announcing the program, DOE Secretary Spencer Abraham stated that “the long-term results of this cooperative effort will be cars and trucks that are more efficient, cheaper to operate, pollution-free and competitive in the showroom.”²⁶³ A goal of the FreedomCAR program was “[e]lectric drive systems with a 15-year life and significantly reduced hardware costs.”²⁶⁴

In 2003, President Bush launched a complementary initiative to ensure hydrogen fuel would be available for fuel cell vehicles

²⁵⁸ See TREVOR O. JONES ET AL., REVIEW OF THE RESEARCH PROGRAM OF THE PARTNERSHIP FOR A NEW GENERATION OF VEHICLES: SIXTH REPORT 3, 5, 8, 16 (2000), <https://doi.org/10.17226/9873>.

²⁵⁹ *Id.* at 5, 73.

²⁶⁰ See *id.* at 13.

²⁶¹ See BRENT D. YACOBUCCI, HYDROGEN AND FUEL CELL VEHICLE R&D: FREEDOMCAR AND THE PRESIDENT’S HYDROGEN FUEL INITIATIVE 1–2 (Apr. 5, 2007), https://www.everycrsreport.com/files/20070405_RS21442_98b968117304fee0e8c6a24a446da3b4796aa969.pdf.

²⁶² Neela Banerjee, *U.S. Ends Car Plan on Gas Efficiency; Looks to Fuel Cells*, N.Y. TIMES (Jan. 9, 2002), <https://www.nytimes.com/2002/01/09/business/us-ends-car-plan-on-gas-efficiency-looks-to-fuel-cells.html>.

²⁶³ *US DOE starts Freedom CAR, retires PNGV*, DIESELNET (Jan. 12, 2002), <https://dieselnet.com/news/2002/01doe.php>.

²⁶⁴ BRENT D. YACOBUCCI, *supra* note 261 at 4.

developed through the FreedomCAR program. The express objective of these initiatives was to promote technological alternatives to the traditional internal combustion engine. President Bush stated in his 2003 State of the Union address that fuel cell cars would emit “only water, not exhaust fumes.”²⁶⁵ He stated: “[w]ith a new national commitment, our scientists and engineers will overcome obstacles to taking these cars from laboratory to showroom, so that the first car driven by a child born today could be powered by hydrogen, and pollution-free.”²⁶⁶

According to the White House at the time,

Through partnerships with the private sector, the hydrogen fuel initiative and FreedomCAR will make it practical and cost-effective for large numbers of Americans to choose to use clean, hydrogen fuel cell vehicles by 2020. This will dramatically improve America’s energy security by significantly reducing the need for imported oil, as well as help clean our air and reduce greenhouse gas emissions.²⁶⁷

After hearing the President describe a vision of automobiles that were no longer tied to internal combustion engines, Congress continued to show their support for the goal by appropriating \$1.558 billion for these two initiatives between fiscal year 2003 and fiscal year 2008.²⁶⁸

C. New Legislation to Promote Alternative Vehicles

In 2005, Congress passed, and President Bush signed, the Energy Policy Act of 2005 (EPA 2005). This Act included numerous provisions to promote research and development of both hydrogen-

²⁶⁵ Off. of the Press Sec’y, *President Delivers “State of the Union”*, WHITE HOUSE (Jan. 28, 2003), <https://georgewbush-whitehouse.archives.gov/news/releases/2003/01/20030128-19.html>.

²⁶⁶ *Id.*

²⁶⁷ *Fact sheet: Hydrogen Fuel: A Clean and Secure Energy Future*, WHITE HOUSE OFF. OF PRESS SEC’Y (Feb. 6, 2003), <https://georgewbush-whitehouse.archives.gov/news/releases/2003/02/20030206-2.html#>.

²⁶⁸ See BRENT D. YACOBUCCI, HYDROGEN AND FUEL CELL VEHICLE R&D: FREEDOMCAR AND THE PRESIDENT’S HYDROGEN FUEL INITIATIVE 2 (2008), https://www.everycrsreport.com/files/20080320_RS21442_def83efaf421f30ed5ebee86a4855602703a4160.pdf.

powered vehicles and other types of alternative fuel vehicles.²⁶⁹ In addition to providing funding for research and development, Congress also included new consumer tax credits for hybrid electric vehicles and fuel-cell vehicles to encourage individual consumers to purchase alternative-fuel vehicles and encourage car manufacturers to produce more alternative fuel vehicles.²⁷⁰

EPAct 2005 included the Joint Flexible Fuel/Hybrid Vehicle Commercialization Initiative to improve technologies for the commercialization of hybrid electric/flexible fuel vehicles and plug-in hybrid electric/flexible fuel vehicles.²⁷¹ Congress authorized \$40 million to be appropriated between fiscal year 2006 and fiscal year 2009 for this initiative.²⁷²

The Spark M. Matsunaga Hydrogen Act was included in EPAct 2005 to expand on the President's past hydrogen initiatives by pushing for continued research and development of hydrogen fuel cell technology and related infrastructure needed to commercialize the use of hydrogen in vehicles.²⁷³ The overall goal of the program was to build a "mature hydrogen economy" in order to create "fuel diversity in the . . . transportation sector . . . and sharply decrease the dependency of the United States on foreign oil."²⁷⁴ Congress authorized \$1.06 billion in federal funds for appropriation between fiscal year 2006 and fiscal year 2010 to be spent on projects related to this program.²⁷⁵

EPAct 2005 also included new grant programs for state and local governments to fund projects aimed at acquiring alternative fuel and fuel cell vehicles and the infrastructure to fuel them.²⁷⁶

Congress also established a new loan guarantee program²⁷⁷ in EPAct 2005 to support projects that avoid or reduce air pollutants,

²⁶⁹ See Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 494, 1132-5 (2005), <https://www.govinfo.gov/app/details/PLAW-109publ58>.

²⁷⁰ See *id.* at 1038-1042.

²⁷¹ See *id.* at 817-818.

²⁷² See *id.* at 817-818.

²⁷³ See *id.* at 888.

²⁷⁴ *Id.* at 884.

²⁷⁵ See *id.* at 847.

²⁷⁶ See *id.* at 818-821.

²⁷⁷ See *id.* at 1117.

including greenhouse gasses, and employ new or improved technology.²⁷⁸ This program was expanded two years later to support EV manufacturing.²⁷⁹

In his 2006 State of the Union address, President Bush announced a new initiative to increase funding for vehicle battery technology, and in so doing, articulated clearly the enduring goal of moving beyond the internal combustion engine. He stated: “[w]e must also change how we power our automobiles. We will increase our research in better batteries for hybrid and electric cars, and in pollution-free cars that run on hydrogen.”²⁸⁰

In 2007, Congress passed, and President Bush signed into law, the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Act (America COMPETES Act).²⁸¹ This legislation boosted research on electric vehicles by establishing the Advanced Research Projects Agency—Energy (ARPA-E) in order to “overcome the long-term and high-risk technological barriers in the development of energy technologies.”²⁸² Congress gave ARPA-E the explicit goal of enhancing the economic and energy security of the United States through the development of energy technologies that result in “reductions of imports of energy from foreign sources,” and “reductions of energy-related emissions, including greenhouse gasses.”²⁸³ This goal matched the promise of electric vehicles—that with widespread adoption, EVs could both reduce dependence on foreign oil and cut pollution.

Congress provided ARPA-E with its first appropriation of \$400 million in 2009.²⁸⁴ ARPA-E has launched numerous projects to accelerate the development of electric vehicles. For example, ARPA-E funded 15 projects in the Advanced Management and Protection

²⁷⁸ See *id.* at 1120.

²⁷⁹ See *infra* note 297.

²⁸⁰ George W. Bush, *State of the Union Address by the President*, WHITE HOUSE (Jan. 31, 2006), <https://georgewbush-whitehouse.archives.gov/stateoftheunion/2006/>.

²⁸¹ See America COMPETES Act, Pub. L. No 110-69, 121 Stat. 572 (2007).

²⁸² *Id.* at 621.

²⁸³ *Id.*

²⁸⁴ See *ARPA-E History*, U.S. DEP’T OF ENERGY, <https://arpa-e.energy.gov/about/arpa-e-history> (last visited July 4, 2023).

of Energy Storage Devices Program to focus on battery management and thus enable a new generation of electric vehicles.²⁸⁵ ARPA-E also funded 12 projects in the Batteries for Electrical Energy Storage in Transportation Program in order to develop “better batteries for electric and plug-in hybrid vehicles (EV/PHEV) to truly compete with gasoline-powered cars.”²⁸⁶ Among other EV-relevant programs,²⁸⁷ ARPA-E is currently funding 12 projects in the Electric Vehicles for American Low-Carbon Living Program which will “increase EV market share by developing next-generation battery technologies to significantly improve EV affordability, convenience, reliability, and safety.”²⁸⁸

IV. DEPLOYING ELECTRIC VEHICLES

As research, development, and demonstration continued, Congress increased its support for deployment of electric vehicles in a major way in 2007. As discussed below, with the Energy Independence and Security Act of 2007, Congress adopted policies to help automakers modernize their manufacturing facilities to produce electric vehicles of various types. In the Energy Improvement and Extension Act of 2008, Congress established billions of dollars in consumer tax incentives to help ensure electric vehicles would move from the company’s showroom to the consumer’s driveway.

A. Energy Independence and Security Act of 2007

In December 2007, Congress passed, and President Bush signed into law the Energy Independence and Security Act of 2007.²⁸⁹ The legislation established a host of programs designed to

²⁸⁵ See *AMPED: Advanced Management and Protection of Energy Storage Devices*, U.S. DEP’T OF ENERGY (Apr. 2, 2012), <https://arpa-e.energy.gov/technologies/programs/amped>.

²⁸⁶ *BEEST: Batteries for Electrical Energy Storage in Transportation*, U.S. DEP’T OF ENERGY (Feb. 7, 2009), <https://arpa-e.energy.gov/technologies/programs/beest>.

²⁸⁷ See *Search Our Programs*, U.S. DEP’T OF ENERGY, <https://arpa-e.energy.gov/technologies/programs> (last visited Dec. 30, 2024).

²⁸⁸ See *EVs4All: Electric Vehicles for American Low-carbon Living*, U.S. DEP’T OF ENERGY (May 3, 2022), <https://arpa-e.energy.gov/technologies/programs/evs4all>.

²⁸⁹ See Energy Independence and Security Act of 2007, Pub. L. No. 110-140, 121.

support the auto industry's transition to electric vehicles, including the following:

- Grants to state and local entities to support plug-in electric drive vehicles²⁹⁰
- Grants for “qualified electric transportation projects”²⁹¹
- Domestic manufacturing conversion grant program²⁹²
- Provisions to encourage fleet ownership of electric vehicles²⁹³
- Loan guarantees for fuel-efficient auto parts manufacturing²⁹⁴
- Advanced battery loan guarantee program²⁹⁵
- Advanced technology vehicles manufacturing incentive program²⁹⁶

These financing provisions, along with improvements to the original loan guarantee provisions that the DOE established in 2005,²⁹⁷ had a significant impact on EV manufacturing in the U.S. For example, DOE loaned Tesla \$465 million to bring the Model S EV to market.²⁹⁸ Nissan received a \$1.45 billion loan to bring the LEAF EV to market.²⁹⁹ Ford received a \$5.9 billion loan to upgrade 13 facilities to prepare, in part, for plug-in vehicle production.³⁰⁰

Stat. 1492 (2007).

²⁹⁰ See *id.* at 1509.

²⁹¹ *Id.* at 1510.

²⁹² See *id.* at 1511.

²⁹³ See *id.* at 1512.

²⁹⁴ See *id.* at 1513.

²⁹⁵ See *id.*

²⁹⁶ See *id.* at 1514.

²⁹⁷ See Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 494, 1132–5 (2005). The Energy Independence and Security Act of 2007 made electric vehicle manufacturing specifically eligible for loan guarantees. Energy Independence and Security Act of 2007, Pub. L. No. 110-140, § 134, 122 Stat. 1492, 1513 (2007).

²⁹⁸ See *Tesla*, LOAN PROGRAMS OFF., <https://www.energy.gov/lpo/tesla> (last visited Dec. 30, 2024).

²⁹⁹ See *Nissan*, LOAN PROGRAMS OFF., <https://www.energy.gov/lpo/nissan> (last visited Dec. 30, 2024).

³⁰⁰ See *Ford*, LOAN PROGRAMS OFF., <https://www.energy.gov/lpo/ford> (last visited Dec. 30, 2024).

B. *Energy Improvement and Extension Act of 2008*

In 2008, Congress established tax credits to broaden EV deployment.³⁰¹ These tax credits were available for purchasers of new light-duty “plug-in electric drive” vehicles, and ranged from \$2,500 to \$7,500, depending on the capacity of the EV’s battery.³⁰²

The tax credits were capped at 200,000 vehicles per manufacturer.³⁰³ Once a manufacturer’s EV sales exceed 200,000, the available tax credit entered a phase-out period that began with full rebate amounts in that quarter and the following quarter.³⁰⁴ After this grace period, the tax credit was cut in half for the next two quarters.³⁰⁵ Then the amount was cut in half again for a final two quarters before it was phased out completely.³⁰⁶ This approach provided an incentive for each manufacturer to enter the EV market at their own pace with their own strategy.

³⁰¹ See Emergency Economic Stabilization Act of 2008, Pub. L. No. 110-343, 122 Stat. 3765 (2008) (establishing sec. 30D of the tax code through Sec. 205 of Division B), <https://www.govinfo.gov/content/pkg/PLAW-110publ343/pdf/PLAW-110publ343.pdf>.

³⁰² *Id.* These tax credits are in Secs. 30D(a)(2) & 30D(b)(1)(A) of the tax code provision established by Sec. 205. There are even higher credits for heavier/non-light-duty vehicles (i.e., those with gross vehicle weights in excess of 10,000 pounds). *Id.* at Sec. 30D(b)(1)(B)–(D).

³⁰³ See American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, § 1141(e), 123 Stat. 115, 327 (2009). The American Recovery and Reinvestment Act of 2009 amended the vehicle cap provisions of the Energy Improvement and Extension Act of 2008 about four-and-half months after the effective date of the Energy Improvement and Extension Act. The cap provisions were at Section 30D(b)(2) per the 2008 law, whereas the amended provisions were at Section 30D(e).

³⁰⁴ This provision was originally enacted with a 250,000-vehicle threshold, but Section 1141-1144 of the American Recovery and Reinvestment Act of 2009 modified the tax credit so that it would phase out for each manufacturer after 200,000 qualified plug-in electric-drive vehicles had been sold by that manufacturer for use in the United States, rather than phased out once the total number of qualified vehicles sold by all manufacturers reached 250,000. Additionally, ARRA added a 10% tax credit for qualified low-speed electric vehicles, electric motorcycles, three-wheeled electric vehicles, and electric vehicle conversions. *Id.*

³⁰⁵ American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, § 1141(e), 123 Stat. 115, 327 (2009).

³⁰⁶ *Id.*

Tesla, which sells only electric vehicles, hit the 200,000 vehicle sales threshold in the summer of 2018.³⁰⁷ General Motors crossed that threshold later that same year.³⁰⁸ While Toyota has been slow to bring EVs to market, its production of plug-in hybrid vehicles helped the company sell its 200,000th plug-in vehicle in 2022.³⁰⁹ Nissan and Ford were close to the sales threshold prior to enactment of the Inflation Reduction Act.³¹⁰

The Joint Committee on Taxation estimated the cost of these tax credits, along with a one-year extension of some energy efficiency tax credits and an expansion of the advanced coal project and coal gasification investment credits, would amount to \$15.7 billion.³¹¹ Congress's large financial commitment to encouraging consumer sales of EVs was a powerful springboard for automakers to launch their EV programs.

C. American Recovery and Reinvestment Act

In February 2009, Congress enacted the American Recovery and Reinvestment Act (ARRA).³¹² Intended to counter a major economic downturn that began in 2008,³¹³ Congress took the opportunity to invest heavily in the continuing transition to electric vehicles.

³⁰⁷ See Nick Carey & Sonam Rai, *Tesla Hits 200,000 Cars, Meaning Lower Tax Credit for Buyers*, REUTERS (July 12, 2018), <https://www.reuters.com/article/us-tesla-tax-credit-idUSKBN1K222F>.

³⁰⁸ See David Shepardson, *GM Sold 200,000 Electric Vehicles in U.S. by 2018, Triggering Tax-Credit Phaseout: Source*, REUTERS (Jan. 2, 2019), <https://www.reuters.com/article/us-gm-electric-idUSKCN1OW1BO>.

³⁰⁹ See Andrew Hawkins, *Toyota Will Be the Third Automaker to Lose the EV Tax Credit in the US*, THE VERGE (July 6, 2022) <https://www.theverge.com/2022/7/6/23196712/toyota-ev-tax-credit-phaseout-cap>.

³¹⁰ See *id.*

³¹¹ See CONGRESSIONAL BUDGET OFFICE, COST ESTIMATE, H.R. 6049, ENERGY AND TAX EXTENDERS ACT OF 2008 4, <https://www.cbo.gov/sites/default/files/110th-congress-2007-2008/costestimate/hr60490.pdf>.

³¹² See American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 (2009). For a summary of the vehicle related provisions of ARRA, see *American Recovery and Reinvestment Act of 2009*, ENERGY, <https://afdc.energy.gov/laws/arra.html> (last visited Nov. 6, 2024).

³¹³ See Jared Bernstein, *Lessons from the Recovery Act on its 10-year Anniversary*, WASH. POST (Feb. 18, 2019), <https://www.washingtonpost.com/outlook/2019/02/18/lessons-recovery-act-its-year-anniversary/>.

ARRA provided more than \$2 billion toward grants for advanced battery systems and electric vehicle components manufacturing to support domestic manufacturing of advanced lithium-ion batteries and hybrid electric systems and components.³¹⁴ Specifically, DOE made the following awards pursuant to ARRA:

- \$1.5 billion to “produce lithium-ion batteries and expand battery recycling.”
- \$500 million “for the development and production of electric drive vehicle components, including motors and drive train components.”
- \$400 million “for the demonstration and deployment of plug-in hybrid and all-electric vehicles,” including installation of charging infrastructure and “workforce training to support the transition to electric transportation systems.”³¹⁵

The Act provided \$6 billion towards the Loan Guarantee Program, authorized by Section 1705 of EPAct 2005.³¹⁶ A \$10 million portion of these funds supported the administrative expenses of the Advanced Technology Vehicles Manufacturing Loan Program.³¹⁷

ARRA provided \$300 million for acquiring more fuel-efficient vehicles for the federal fleet.³¹⁸ According to DOE, these funds were intended to “increase the federal fleet’s fuel efficiency and reduce emissions while stimulating the market for advanced technology vehicles such as hybrid electric, battery electric, and commercially available plug-in hybrid electric vehicles.”³¹⁹

ARRA also included new tax incentives for EV manufacturing and fueling infrastructure. Congress temporarily increased the

³¹⁴ See American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, Division A, Title IV Energy and Water Development, 123 Stat. 115, 138 (2009).

³¹⁵ CTR. FOR CLIMATE AND ENERGY SOLUTIONS, U.S. DEPARTMENT OF ENERGY’S RECOVERY ACT INVESTMENTS 9 (Jan. 5, 2013), <https://www.e2es.org/wp-content/uploads/2013/01/arra-brief-feb-2013.pdf>.

³¹⁶ See American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115, 140 (2009).

³¹⁷ See *id.* at Division A, Title IV Energy and Water Development.

³¹⁸ See *id.* at 150.

³¹⁹ See Alt. Fuels Data Ctr., *American Recovery and Reinvestment Act of 2009*, U.S. DEP’T OF ENERGY, <https://afdc.energy.gov/laws/arra.html> (last visited Nov. 11, 2024).

alternative fuel infrastructure tax credit to 50% of the cost of the equipment.³²⁰ ARRA created a 30% tax credit to encourage investment in advanced energy property manufacturing facilities.³²¹ The credit applies to facilities that manufacture clean energy technologies, including electric vehicles, components of electric vehicles, and energy storage systems for use with electric vehicles.³²²

In 2016, the White House Council of Economic Advisors released a retrospective analysis of the clean energy investments in ARRA, stating that ARRA's "unprecedented investment in clean energy" was a "down payment towards an innovative 21st century clean economy and promise to yield benefits for many years into the future."³²³ The analysis argued that ARRA addressed "environmental externalities, energy security externalities, innovation market failures, and even network externalities."³²⁴

V. ACCELERATING THE TRANSITION TO ELECTRIC VEHICLES

President Obama marshaled an impressive collection of federal actions that aimed to accelerate commercial adoption of the electric vehicle.³²⁵ These actions were centered on a set of "Guiding

³²⁰ See American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, § 1123, 123 Stat. 115, 325 (2009).

³²¹ See *id.* at § 1302.

³²² See *id.* (inserting Sec. 48C into Internal Revenue Code; Sec. 48C(c)(1)(A)(i)(II) (123 Stat. 345) pertains to storage, and Sec. 48C(c)(1)(A)(i)(VI) (123 Stat. 346) pertains to vehicles and components).

³²³ WHITE HOUSE COUNCIL OF ECON. ADVISORS, A RETROSPECTIVE ASSESSMENT OF CLEAN ENERGY INVESTMENTS IN THE RECOVERY ACT 2 (Feb. 2016), https://obamawhitehouse.archives.gov/sites/default/files/page/files/20160225_cea_final_clean_energy_report.pdf.

³²⁴ *Id.* at 44.

³²⁵ See Off. of the Press Sec'y., *Obama Administration Announces New Actions To Accelerate The Deployment of Electrical Vehicles and Charging Infrastructure*, THE WHITE HOUSE (Nov. 3, 2016) <https://obamawhitehouse.archives.gov/the-press-office/2016/11/03/obama-administration-announces-new-actions-accelerate-deployment>. During the Obama Administration, EPA also began recognizing zero emission vehicles as a compliance mechanism for emissions requirements established pursuant to the Clean Air Act. See Control of Air Pollution from Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards, 40 C.F.R. § 79 (2014).

Principles to Promote Electric Vehicles and Charging Infrastructure.”³²⁶ The government-wide effort focused on scaling up the number of electric vehicles on the road and increasing the amount of alternative fueling infrastructure to support the additional vehicles.³²⁷ Among these actions, the executive branch offered \$4.5 billion dollars in loan guarantees for commercial-scale deployment of innovative electric vehicle charging facilities.³²⁸ The U.S. Department of Transportation, at the direction of Congress, launched the process of identifying alternative fuel corridors where the government could create a national network of electric vehicle fast-charging stations.³²⁹

Federal work on electric vehicles continued during the first Trump Administration, although electric vehicles occupied a less prominent role in the executive branch’s agenda. President Trump made multiple statements doubting the feasibility of electric vehicles.³³⁰ His administration attempted to defund ARPA-E,³³¹ threatened to repeal the EV tax credit,³³² and as discussed in III.C.2, weaken regulations that encouraged EVs. However, the tax credits were not repealed. Congress provided ARPA-E with increased funding despite the Trump Administration’s proposal³³³ and the

³²⁶ *Public Plug-In Electric Vehicle Infrastructure Guiding Principles*, U.S. DEP’T OF ENERGY, <https://www.energy.gov/eere/vehicles/public-plug-electric-vehicle-infrastructure-guiding-principles> (last visited Oct. 29, 2024).

³²⁷ *See id.*

³²⁸ *See* Off. of the Press Sec’y., *supra* note 325.

³²⁹ *See* Fixing America’s Surface Transportation Act, Pub. L. No. 114-94, § 1413(a), 129 Stat. 1312 (2015).

³³⁰ *See e.g.*, Reuters, *Trump Says GM Shift to Electric Vehicles Is ‘Not Going to Work’*, BUS. STANDARD (Dec. 14, 2018), https://www.business-standard.com/article/international/trump-says-gm-shift-to-electric-vehicles-is-not-going-to-work-report-118121400059_1.html.

³³¹ *See* Brad Plumer, *Scientists Praise Energy Innovation Office Trump Wants to Shut Down*, THE N.Y. TIMES (June 13, 2017), <https://www.nytimes.com/2017/06/13/climate/arpa-e-national-academy-sciences.html>.

³³² *See* Paul A. Eisenstein, *Trump’s Threats to Pull Electric Car Subsidies Could Kill U.S. Jobs and Give China an Edge*, NBC NEWS (Dec. 12, 2018), <https://www.nbcnews.com/business/autos/trump-s-threats-pull-electric-car-subsidies-could-kill-u-n947141>.

³³³ *See* *Trump, Congress Approve Largest U.S. Research Spending Increase in a Decade*, SCIENCE (Mar. 23, 2018), <https://www.science.org/content/article/updated-us-spending-deal-contains-largest-research-spending-increase-decade>

agency's work on electric vehicles continued.³³⁴ Finally, the Trump Administration retained regulatory incentives for EVs as discussed in III.C.2.

Electric vehicles returned to the forefront during the Biden Administration, as Congress enacted two hugely consequential bills to usher in mainstream deployment of electric vehicles.

A. Infrastructure Investment and Jobs Act

In November 2021, Congress passed, and President Biden signed into law the Infrastructure Investment and Jobs Act (IIJA).³³⁵ This sprawling infrastructure legislation signaled Congress's understanding that electric vehicles had long since surpassed any previous status as a niche technology. As discussed below, Congress recognized that electric vehicles were now ready for widespread adoption in every state and demonstrated support for this by establishing new federal funding programs to deploy EV charging infrastructure in every state.

The IIJA included a new National Electric Vehicle Formula Program that will provide funding to each state for the development of a national electric vehicle charging network.³³⁶ This program provides \$5 billion over five years for this purpose. Funds have been announced for FY 22³³⁷ and FY 23.³³⁸

(reporting that Congress provided DOE's Office of Science and ARPA-E with more funding than requested by the Administration).

³³⁴ See, i.e., *The Long and Winding Road—ARPA-E Retrospective with Program Director Chris Atkinson*, ARPA-E (Dec. 18, 2019), <https://arpa-e.energy.gov/news-and-media/blog-posts/long-and-winding-road-arpa-e-retrospective-program-director-chris>.

³³⁵ See Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, 135 Stat. 429 (2021).

³³⁶ See *id.* at 1421.

³³⁷ See Fed. Highway Admin., *President Biden, USDOT and USDOE Announces \$5 Billion over Five Years for National EV Charging Network, Made Possible by Bipartisan Infrastructure Law*, U.S. DEP'T OF TRANSP. (Feb. 10, 2022), <https://highways.dot.gov/newsroom/president-biden-usdot-and-usdoe-announce-5-billion-over-five-years-national-ev-charging>.

³³⁸ See Fed. Highway Admin., *Apportionment of Fiscal Year (FY) 2023 Highway Infrastructure Program Funds for the National Electric Vehicle Infrastructure Formula Program Pursuant to the Infrastructure Investment and Jobs Act*,

Moreover, Congress made clear that it did not see EVs as an amenity that would be limited to the affluent or to urban communities. The IIJA included a new \$2.5 billion program to fund EV charging in communities on public roads and other publicly accessible locations.³³⁹ Congress deemed electric vehicle charging to be so important that US DOT is authorized to fund EV charging infrastructure at locations that aren't even associated with the national highway system, with prioritization of rural areas, low- and moderate-income neighborhoods, and areas with multi-family housing.³⁴⁰ The legislation also includes an array of programs to support deployment of electric buses.³⁴¹

B. Inflation Reduction Act of 2022

In August 2022, Congress passed the Inflation Reduction Act³⁴² (IRA) and demonstrated its support for widespread, unlimited deployment of electric vehicles. The IRA accomplishes this by establishing a suite of programs and tax credits that incentivize EV manufacturing, EV purchases, and deployment of EV charging infrastructure.

The IRA establishes or funds a number of efforts to support EV manufacturing, including:

- \$2 billion for the Domestic Manufacturing Conversion Grant Program to provide grants for “domestic production of efficient hybrid, plug-in electric hybrid, plug-in electric drive, and hydrogen fuel cell electric vehicles.”³⁴³
- \$3 billion for the Advanced Technology Vehicle Manufacturing program to support domestic advanced technology vehicle manufacturing facilities and engineering integration.³⁴⁴

U.S. DEP'T OF TRANSP. (Oct. 6, 2022), <https://www.fhwa.dot.gov/legisregs/directives/notices/n4510873.cfm>.

³³⁹ See Infrastructure Investment and Jobs Act, 23 U.S.C. § 151(f)(8)(E) (2021).

³⁴⁰ See *id.* § 151(f)(8)(F).

³⁴¹ See Infrastructure Investment and Jobs Act, 42 U.S.C. § 16091 (2021).

³⁴² See Inflation Reduction Act, Pub. L. No. 117-169, 136 Stat. 1818 (2022).

³⁴³ *Id.* at § 50143.

³⁴⁴ See *id.* at § 50142.

- A new Advanced Manufacturing Production Credit in Section 45X of the tax code to incentivize production of batteries, including EV batteries.³⁴⁵ Acknowledging the important role of IRA incentives, a leading global battery manufacturer recently stated that the U.S. battery market is “the world’s largest and fastest-growing [battery] market...”³⁴⁶ This manufacturer announced that it would increase its battery manufacturing capacity in the United States by a factor of more than 55 by 2027.³⁴⁷ Battery manufacturing has received the largest share of the IRA’s domestic EV manufacturing incentives in the two years since passage of the IRA.³⁴⁸

The IRA established tax credits to encourage consumers to purchase electric vehicles:

- The section 30D tax credit provides up to \$7,500 for consumers who purchase electric vehicles.³⁴⁹ Congress lifted the previous cap on EV tax credits of 200,000 vehicles per manufacturer, allowing those manufacturers who had depleted the opportunity for EV tax credits, such as Tesla and GM, to now have tax credits through 2032.³⁵⁰ Congress imposed certain conditions for full availability of the credit, such as requiring a vehicle to be assembled domestically and to use domestically

³⁴⁵ See *id.*

³⁴⁶ Julian Spector, *LG Kicks Off Colossal Ramp-up of US Factories for EV and Grid Batteries*, CANARY MEDIA (June 26, 2023), <https://www.canarymedia.com/articles/batteries/lg-kicks-off-colossal-ramp-up-of-us-factories-for-ev-and-grid-batteries>.

³⁴⁷ See *id.*

³⁴⁸ See LILY BERMEL ET AL., CLEAN INVESTMENT MONITOR: TALLYING THE TWO-YEAR IMPACT OF THE INFLATION REDUCTION ACT 6 (2024), https://rhg.com/wp-content/uploads/2024/08/Clean-Investment-Monitor_Tallying-the-Two-Year-Impact-of-the-Inflation-Reduction-Act-1.pdf.

³⁴⁹ See 26 U.S.C. § 30D(b) (amending Internal Revenue Code to allow for up to \$7,500 credit if battery and battery components meet “critical mineral” requirements).

³⁵⁰ See Inflation Reduction Act, Pub. L. No. 117-69, § 13401, 136 Stat. 1818, 1954 (2022).

sourced materials or materials sourced from certain trading partners.³⁵¹

- The IRA established a new tax credit in Section 25E for the purchase of used electric vehicles to ensure that EVs are available to low- and moderate-income consumers.³⁵² This provision provides a credit worth the lesser of \$4,000 or 30% of the sale price of the used vehicle.³⁵³
- The IRA also established the section 45W commercial clean vehicles tax credit.³⁵⁴ This credit provides \$7,500 for vehicles under 14,000 pounds and up to \$40,000 for all other vehicles.³⁵⁵ Because leased vehicles remain the property of the auto manufacturer, this provision will be widely available for leased vehicles even if they don't meet the domestic assembly and sourcing requirements required under section 30D.³⁵⁶
- The IRA extended the section 30C tax credit for EV charging equipment.³⁵⁷ This provision provides a 30% tax credit on the purchase of EV charging equipment and also expands the availability of the credit to bidirectional charging equipment.³⁵⁸ The credit is available for charging infrastructure installed in areas that are not considered "urban" by the Secretary of Commerce.³⁵⁹

Congress also took steps to ensure that the tax incentives described above for electric vehicles and their charging equipment would be available to entities that have not historically been able to

³⁵¹ See 26 U.S.C. §§ 30D(a), (d)(1)(G) (applying credit to "new clean vehicles" and defining that term to include the requirement that final assembly of such vehicles occur in North America).

³⁵² See Inflation Reduction Act § 13402.

³⁵³ See *id.* § 13402(a) (codified at 26 U.S.C. § 25E).

³⁵⁴ See *id.* § 13403.

³⁵⁵ See Inflation Reduction Act, Pub. L. No. 117-69, § 13403(a), 136 Stat. 1818, 1964 (2022)) (codified at 26 U.S.C. § 45W(b)(4)).

³⁵⁶ See *id.* § 13403(a) (codified at 26 U.S.C. § 45W(c)).

³⁵⁷ See *id.* § 13404.

³⁵⁸ See *id.* § 13404(b)(3) (codified at 26 U.S.C. § 30C(a)).

³⁵⁹ See *id.* § 13404(e) (codified at 26 U.S.C. § 30C (c)(3)).

avail themselves of these types of incentives. The IRA included “direct pay” provisions that will allow state, tribal, and municipal governments, along with nonprofits, to elect to receive the value of a tax credit in the form of a direct payment from the federal government.³⁶⁰ This important provision has the potential to result in even more EV deployment than would be anticipated with a tax credit-only approach by encouraging tax exempt entities to take advantage of the time-limited incentives.

The joint Committee on Taxation estimated that the demand for tax credits for clean vehicles and their charging/refueling equipment amounted to more than \$14 billion over 10 years.³⁶¹

It is already apparent that Congress’s effort to encourage electric vehicles through incentives in the IRA has been successful. According to one analysis, the automobile industry has invested more than \$120 billion in electric vehicle manufacturing in the U.S., and forty percent of that was announced shortly after passage of the IRA.³⁶² Moreover, Congress has increased these incentives while at the same time preserving and ratifying the EPA’s Clean Air Act authority to require further reductions in greenhouse gas emissions from mobile sources.³⁶³

CONCLUSION

In seeking to facilitate the development and deployment of electric vehicles, Congress has deployed a multi-prong policy

³⁶⁰ See Inflation Reduction Act, Pub. L. No. 117-69, § 13801, 136 Stat. 1818, 2003-4 (2022).

³⁶¹ See *Estimated Budgetary Effects of Public Law 117-169 to Provide for Reconciliation Pursuant to Title II of S. Con. Res. 14*, CONG. BUDGET OFF. 12 (Sept. 7, 2022), <https://www.cbo.gov/publication/58455#:~:text=CBO%20estimates%20that%20Public%20Law,in%20revenues%20of%20%24108.7%20billion>.

³⁶² See *Report Finds Investments in U.S. Electric Vehicle Manufacturing Reach \$120 Billion, Create 143,000 New Jobs*, ENV’T DEF. FUND (Mar. 14, 2023), <https://www.edf.org/media/report-finds-investments-us-electric-vehicle-manufacturing-reach-120-billion-create-143000> (finding that more than 40 percent of these investments were announced in the six months after passage of the IRA).

³⁶³ For a discussion of how Congress ratified the Clean Air Act’s regulatory structure for mobile source greenhouse gas reductions in the Inflation Reduction Act, see Greg Dotson & Dustin Maghamfar, *The Clean Air Act Amendments of 2022: Clean Air, Climate Change, and the Inflation Reduction Act*, 53 Env’t L. Rep. 10017 (2023).

strategy over the last five decades that has relied upon energy, science, tax, and regulatory policy. For the past 49 years, the federal government has worked to spur research, development, demonstration, and deployment of these zero-emission vehicles. For the past 25 years—half of that time period—the government has also used regulatory tools to push electric vehicles into daily use. Congress has insisted on the development of electric vehicles since 1976 and has provided many billions of dollars for EV research, development, demonstration, and deployment, while also funding and supporting EPA’s regulatory efforts. Congress has clearly demonstrated its support for the widespread adoption of electric vehicles in the years to come. However, as this article goes to publication in the early weeks of President Trump’s second term, it is clear that the new administration will attempt to stall or reverse this progress. Whether this attempt will be able to overcome decades of congressional support and the technological advancement and private sector investment this congressional support has encouraged remains to be seen.