



Insight

California's Zero Emissions Vehicle Rule and Its Nationwide Impacts

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EXECUTIVE SUMMARY

- The California Air Resources Board recently approved a rule that would require 100 percent of new light- and medium-duty vehicles sold in the state to be zero emission vehicles (ZEVs) by 2035; this authority is afforded to the state under the Clean Air Act.
- The Clean Air Act also allows certain states to choose to adopt California's vehicle emissions standards, which are more stringent than federal standards; 17 states and the District of Columbia follow California's current rule, but reaction has been mixed as to whether many will follow its mandated transition to a 100 percent ZEV fleet.
- While California regulators project the rule's benefits to outweigh its costs, these benefits are heavily reliant on the price of gasoline staying well above the federal government's projected average price per gallon through 2040 and the value of the social cost of carbon – calling into question whether the state's rosy projection will come to fruition.

INTRODUCTION

The California Air Resources Board (CARB), the state's environmental regulator, approved a rule in August that would require 100 percent of new light- and medium-duty vehicles sold in the state to be zero emission vehicles (ZEVs) by 2035. Due to unique provisions of the federal Clean Air Act, however, the rule is likely to have an impact beyond California's borders; the rule could lead to similar regulations in more than a dozen states that make up about 40 percent of current new vehicle sales in the United States.

This analysis explains how the Clean Air Act allows California to set its own vehicle emissions standards, the new rule and its projected economic impacts, and the implications for states that choose to adopt California's new rule.

CLEAN AIR ACT AND STATE VEHICLE EMISSIONS RULES

Congress first authorized requirements for the control of motor vehicle emissions with the Clean Air Act of 1967. This authorization included [language](#) prohibiting states from setting their own emission standards but did allow any state with emissions standards in place before March 1966 to seek a waiver for "compelling and extraordinary conditions." This provision was written specifically to apply to only one state: California. The federal government [granted](#) California a waiver for several vehicle emissions, including smog-related pollutants, the following year.

In 2009, the Environmental Protection Agency (EPA) for the first time [granted](#) the state a waiver expressly for

vehicular greenhouse gas emissions, a newly listed pollutant due to the Supreme Court's ruling in *Massachusetts v. EPA*, clearing the way for California to develop its own standards for nascent ZEVs. The Trump Administration [withdrew](#) a successor [waiver](#) covering the state's Advanced Clean Cars [program](#) in 2019, finding that the near-direct correlation between greenhouse gas emissions and fuel economy meant that, in effect, California was diverting unnecessarily from nationwide fuel economy standards issued by the Department of Transportation (DOT).^[1] The Biden Administration [reinstated](#) the waiver earlier this year, arguing that the Trump Administration's interpretation was erroneous. The reinstatement allowed California to move forward with its recent rule requiring all new cars sold in the state by 2035 to be ZEVs.

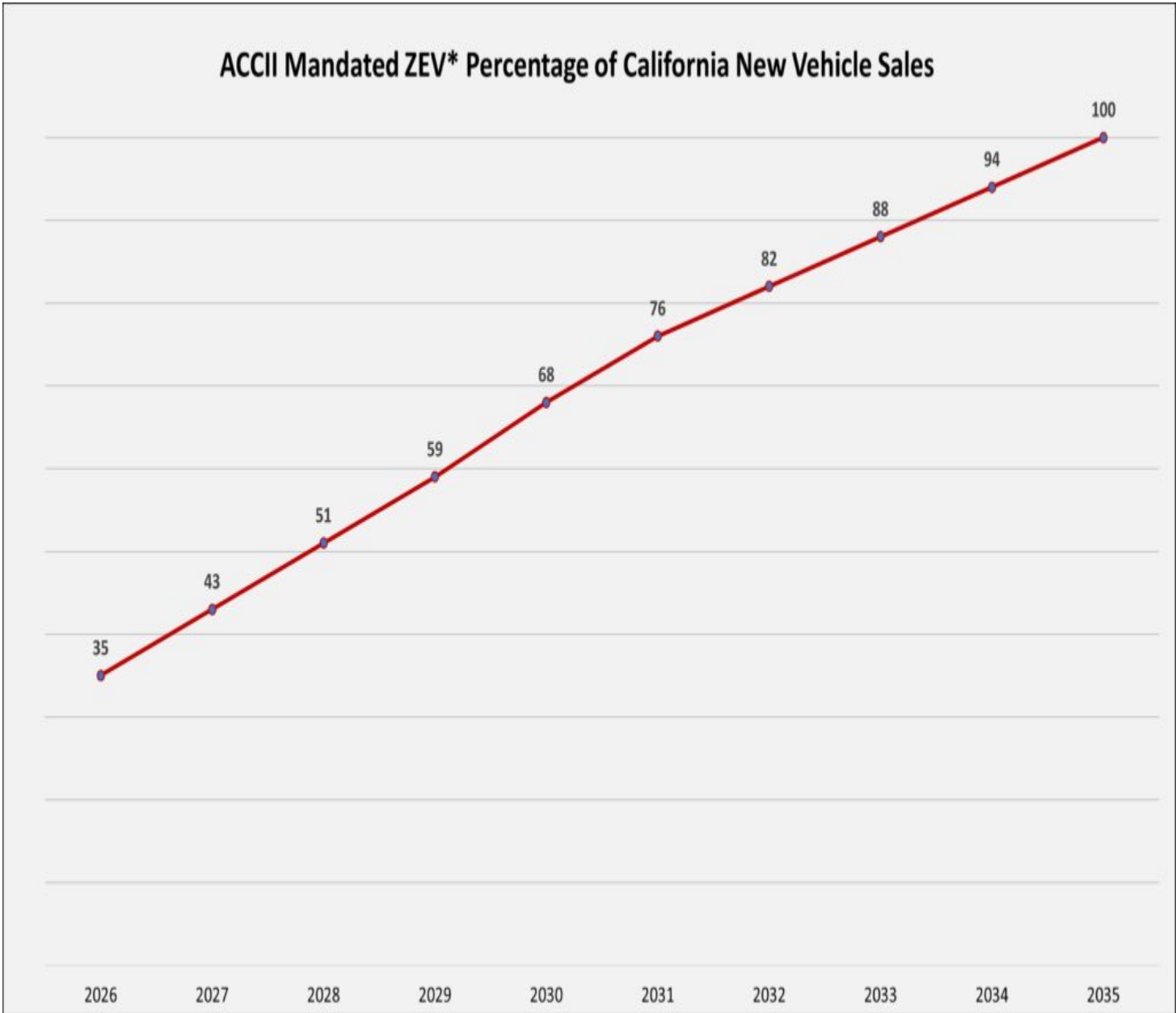
Under a separate provision of the Clean Air Act not specifically tied to vehicle emissions, states that are not in compliance with certain ambient air quality standards can choose to adopt California's standards. As of May, 17 other states and the District of Columbia had opted to follow California's current regulations. These states make up at least 40 percent of new vehicle sales, [according](#) to CARB.

CARB'S NEW RULE

Advanced Clean Cars II

CARB's latest rule is known as Advanced Clean Cars II (ACCII). As the name implies, it expands upon its current Advanced Clean Cars (ACCI) regulations, which combined standards for smog-producing pollutants and greenhouse gases into one program and covers model years (MY) through 2025. ACCI consists of two major components, increasing stringency for fuel-efficiency standards and increasing the number of ZEVs in the vehicle fleet. ACCII continues the concept starting with MY 2026 until MY 2035, when all new vehicles sold in the state must be ZEVs.

The following chart shows the increasing percentage requirement for ZEVs as part of the total new vehicle fleet for ACCII.



Source: CARB. *ZEVs include certain “low emission” plug-in hybrid vehicles.

ACCII does not consist solely of emissions standards and ZEV sales targets. It also includes several other [components](#) aimed at ensuring that the necessary infrastructure is in place to allow for the transition to a fully electric fleet. These include setting minimum warranty requirements and establishing battery charging and replacement requirements. It also involves various incentives both for consumers (subsidies for ZEV purchases, charging, and ride sharing) and manufacturers (compliance relief for offering discounts on ZEVs in low-income areas and participating in community mobility programs). Details on these incentives, however, have yet to be worked out.

While ACCII is technically a proposed rule, it has been approved by CARB. The last hurdle to make the rule final is approval by the Office of Administrative Law (OAL), which reviews rules to make sure agencies followed proper procedures. The rule was submitted to OAL on October 14 and is expected to be cleared no

later than November 30.

Estimated Economic Impacts

A draft [Standardized Regulatory Impact Assessment](#) (SRIA) explores the estimated costs, savings, and macroeconomic impacts for the proposed rule. CARB estimates the total cost associated with the rule, including vehicles, home plug purchases, insurance, and maintenance at \$289 billion through MY 2040. The average new vehicle purchased will cost about \$2,000 more than it would have by MY 2040 if ACCI standards remained in place. CARB expects these costs to be more than offset via benefits totaling \$383 billion.^[2] More than 80 percent of these benefits come from savings on gasoline (68 percent) and savings from reductions in carbon emissions (12 percent); just 4.3 percent of the estimated benefits are related to health.^[3]

The estimate of benefits, accordingly, is heavily reliant on the price of gas from MY 2026 through MY 2040. CARB estimates an average price of about \$4 per gallon.^[4] According to the U.S. Energy Information Administration, the average nationwide projected price per gallon from 2026–2040 is \$2.89.^[5] While California consistently has the highest gas prices in the United States, CARB’s \$4 per gallon projection is no certainty.

The benefits projection is also contingent on the social cost of carbon (SCC). CARB estimates the range of SCC benefits to be \$10.9–\$46 billion, depending on whether a discount rate of 5 percent or 2.5 percent is used.^[6] For its benefits projection, CARB uses the highest possible projection of \$46 billion. Similar to its projection of gas prices noted above, a realized savings that is on the lower end of the SCC benefits range would drastically alter the net impacts of the rule.

If average gas prices were \$3 per gallon, for instance, and the realized SCC is \$10.9 billion, the rule would have net *costs* of about \$6.5 billion. Lower gas prices would also slow consumer uptake of electric vehicles, however, meaning CARB’s projection of gallons of gas not consumed would be an overestimate – further reducing benefits. The benefits projection also may be subject to error if assumptions on consumer willingness to switch from gasoline-fueled cars to ZEVs turn out to be overstated.

CARB’s SRIA includes a projection of the macroeconomic impacts of the rule, including on employment and gross state product (GSP). That analysis finds that the state would endure a net loss of about 85,000 jobs by 2040, primarily in retail trade (47,000 jobs) and automotive maintenance and repair (32,000 jobs).^[7] GSP is expected to decline by \$8.9 billion, or .021 percent over the same period.^[8]

IMPLICATIONS BEYOND CALIFORNIA

The ACCII rule has reinvigorated attention on [Section 177](#) of the federal Clean Air Act, a provision that allows states to adopt air quality standards issued by California if the state in question is considered in “nonattainment” with federal standards. The rationale behind the section is that states in nonattainment may want to go further than EPA’s standards on specific pollutants in order to meet a compelling need. Since many states – particularly in the populous eastern part of the country – have historically been out of compliance with smog-causing pollutant standards, several have adopted California’s emissions standards for vehicles.

As of May, according to CARB, 17 other states and the District of Columbia had adopted California’s ACCI standards. These states are Colorado, Connecticut, Delaware, Maine, Maryland, Massachusetts, Minnesota, Nevada, New Jersey, New Mexico, New York, Oregon, Pennsylvania, Rhode Island, Vermont, Virginia, and

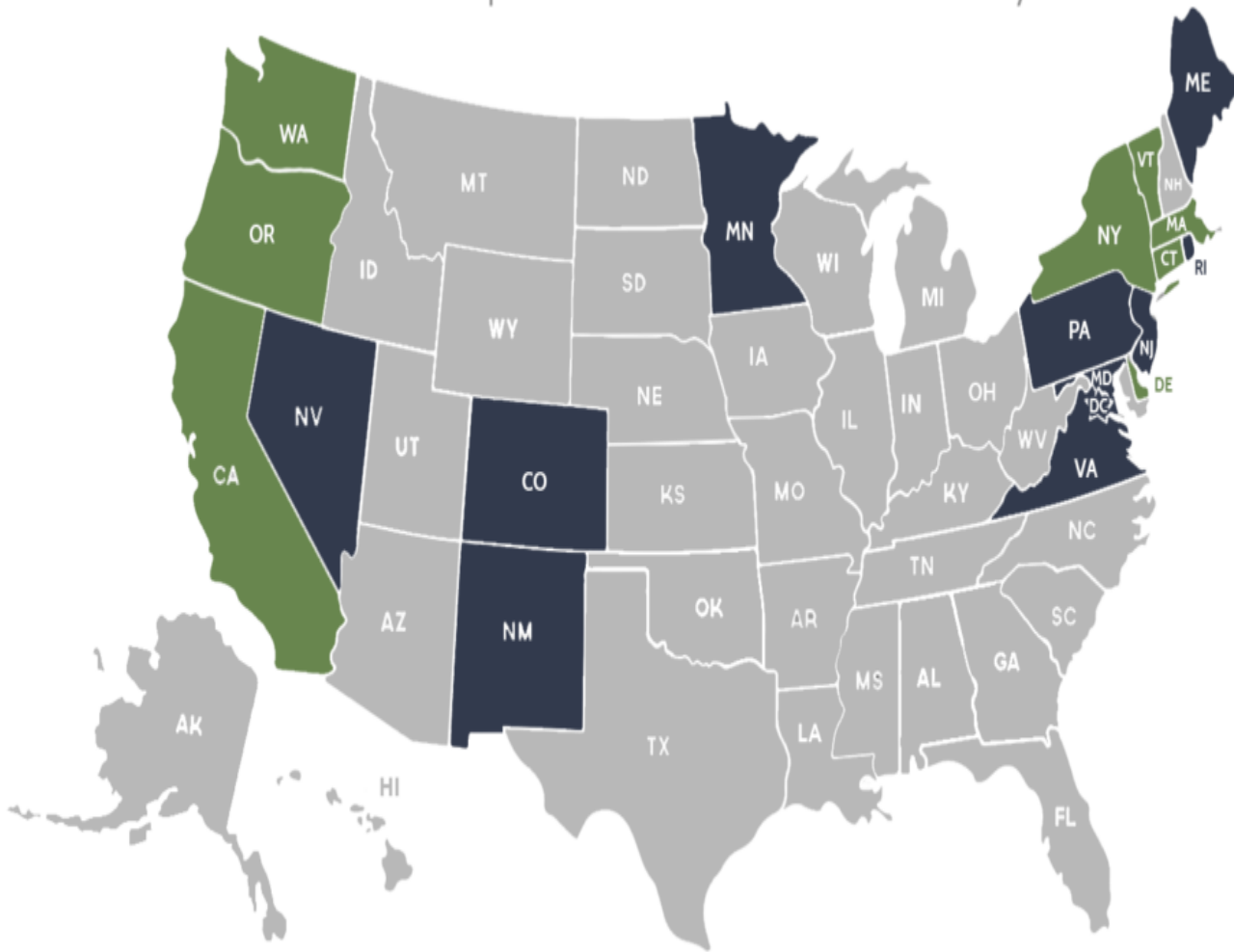
Washington. Combined with California and D.C., these states make up more than 40 percent of new light-duty vehicle sales nationwide.

Some states, such as Massachusetts and Virginia, have laws requiring them to follow California's emissions standards. Others can choose to adopt the standards by merely updating their state environmental regulations to refer to the ACCII standards, and no action from a state legislature would be required since they have been previously granted authority to follow California on vehicle emissions.

Reaction from these states has been mixed. Since the rule was announced in August, [New York](#), [Massachusetts](#), [Oregon](#), and [Washington](#) have stated that they intend to follow California. Others, namely [Colorado](#) and [Pennsylvania](#), have been reported as saying they will not. In Virginia, one of the states required to follow California by law, the new governor [announced](#) an effort to repeal that law signed last year by his predecessor. The map below shows states that currently follow California's standards and indicates whether that state has committed to adopting ACCII.

California's ZEV Rule's Effects Beyond Its Borders

New CA Rule Requires 100% Zero Emission Vehicle Sales by 2035



■ States that Follow CA Standards and Committed to New Rule

■ States that Follow CA Standards but Not Committed to New Rule



While California's economic analysis cannot be assumed on other states that adopt the ACCII standards, the reliance on gas prices in California to drive benefits may mean that the rule is likely to be less beneficial in states that have gas prices closer to, or below, the national average. These states may find the rule would impose net costs rather than benefits.

The federal government is due to consider its own new vehicle emissions [standards](#) for MY 2027 and beyond early next year. While a proposed rule like California's may seem to be too broad a jump from current federal standards, the possibility of a similar federal mandate cannot be ruled out. More likely, the EPA and DOT may

feel they have more political cover to push for stringent standards than otherwise might have been expected, while still falling short of a ban on new gasoline-fueled cars.

CONCLUSION

CARB's new vehicle emissions rule will have an effect beyond the state's borders. How large of an impact will depend on how many states choose to adopt the standards as their own, and how much the federal government uses the rule as a model for its upcoming proposed standards next year.

The economic cost of the rule will be significant for those that adopt it. While California expects the rule to be net beneficial, that projection is heavily dependent on the price of gas, the realized value of SCC, and consumers' willingness to switch to ZEVs.

[1] The EPA and DOT work together to issue standards on vehicle emissions, however, EPA's standards apply to emitted pollutants while DOT's apply to a vehicle's fuel economy. The distinction is essentially without difference – since pollutants are emitted in proportion to how much fuel a vehicle uses, the standards are inherently linked.

[2] State of California Air Resources Board. *Advanced Clean Cars II: Proposed Amendments to the Low Emission, Zero Emission, and Associated Vehicle Regulations; Standardized Regulatory Impact Assessment*. Updated March 29, 2022. See Table 49.

[3] *Ibid.* See Table 48.

[4] *Ibid.* p. SRIA – 89.

[5] U.S. Energy Information Administration. *Annual Energy Outlook 2022*. Table 12. Petroleum and Other Liquids Prices. March 2022.

[6] State of California Air Resources Board. *Advanced Clean Cars II: Proposed Amendments to the Low Emission, Zero Emission, and Associated Vehicle Regulations; Standardized Regulatory Impact Assessment*. Updated March 29, 2022. p. SRIA – 48.

[7] *Ibid.* pp. SRIA – 121 and 122.

[8] *Ibid.* pp. SRIA – 128.