



## AUTOS

### 'We need more customers!' Calif. revisits clean car rule

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California wants to transform the nation's auto market, aiming for a future where increasing numbers of cars don't belch greenhouse gases.

But after 20 years of the Zero Emissions Vehicle policy requiring cleaner cars, the number remains tiny. This year it constituted about 3 percent of new cars sales in California. That includes full electric vehicles and plug-in hybrid electric vehicles.

Supporters say the state's ZEV mandate has put plug-in EVs and other green options in auto dealerships nationwide. The rule requires automakers to produce clean cars as part of their fleet, if they want to participate in California's sprawling car market.

California's Air Resources Board (ARB) staff is expected to suggest options soon for tweaking the rule. It could have a big impact. Nine states have adopted California's mandate — Connecticut, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Rhode Island and Vermont. ZEVs are also available in other states because automakers don't manufacture them just for California, said Ethan Elkind, climate research fellow at the University of California, Berkeley, School of Law.

"California has been so important because [manufacturers] don't want to have different supply chains," Elkind said. "So whatever we do kind of ends up being the de facto national standard."

Some contend the ZEV requirement needs a major tune-up. Luxury EV maker Tesla Motors Inc. and the Natural Resources Defense Council are among those that say the policy will fail to deliver on its target of making ZEVs 15 percent of automakers' fleets by 2025, if it's not improved. The portion is likely to fall closer to just 6 percent, an NRDC analysis said.

"The truth is, it's almost a dirty little secret, that the actual effective bar for automakers is actually very low on the ZEV program," said Simon Mui, director of NRDC's California vehicles and fuels program. Automakers can comply easily, he said, because "technology has outpaced what the regulators thought was coming back in 2012."

ARB member Daniel Sperling said the rule is working.

"In recent years, it's done a great job," Sperling said. "It's achieved its purpose of signaling to industry that we are transitioning to a zero-emissions vehicle future, and that the auto industry needs to be making early investments so that the transition to an electric drive future will be smooth."

The auto industry is "making massive investments," Sperling added. "Now the challenge is to build the marketplace."

California is looking at ZEV as the state and the federal government re-evaluate the corporate average fuel economy, or CAFE, standards. That federal mileage rule is expected to bring the fleetwide fuel economy to more than 50 mpg in 2025. When carmakers agreed to the target, they negotiated a midterm review. That

originally was scheduled for completion in mid-2017, but President Obama's EPA signaled it could get it done before he leaves office.

Automakers, however, have sought help from President-elect Donald Trump in possibly softening the standard. In a memo sent to the Trump transition team last month, Alliance of Automobile Manufacturers President and CEO Mitch Bainwol called on Trump to "adjust" CAFE and listed several policy recommendations.

The memo also asked for a look at ZEV, saying that the policy creates a "much more expensive compliance pathway that will increase costs for consumers nationally." Automakers lamented dealing with a "patchwork of requirements" as states in the Northeast and California adopt differing incentives and policies to help reach the ZEV sales target ([\*E&E News PM\*](#), Nov. 10).

### **Rule changed to give more flexibility**

In the beginning, California's ZEV program required a flat percent of automakers' sales to come from ZEVs. The goal was 2 percent for 1998, increasing to 10 percent for 2003.

But it resulted in the production of few electric cars, and businesses struggled to meet the standard. In 2012, ARB shifted away from a sales target to a more complex credit-based model. Automakers earn credits based on a car's range per battery charge. There was also a shift to allow a mix of technologies including transitional and partial ZEVs.

When the agency changed the rule, it underestimated how well the market would adapt, Mui said. ARB in 2012 assumed that by 2025, battery electric vehicles would still get only 70 miles per charge. Tesla and Chevrolet zoomed past that; their cars can top 200 miles per charge. They stacked up credits for those cars.

Automakers also accumulated credits for first-generation EVs. Those included "neighborhood electric vehicles," like those made by Global Electric Motorcars, or GEM, in the 1990s. GEM's two-seaters operated like a golf cart, most with top speeds of 25 mph and traveling 100 miles or less on a charge. GEM was formerly owned by Chrysler.

That helped automakers amass credits. Now they can meet their yearly ZEV obligations mostly with banked credits, rather than by making actual vehicles for the next few years. They won't need to significantly ramp up production through the program's end in 2025, Mui, Tesla and others said.

"Entering into 2018 and beyond, they'll have enough credits to carry them through many years of compliance," Mui said.

Automakers last year had more than 345,000 ZEV credits, an ARB database shows. Tesla said credit balances have grown by 46 percent on average each year since 2012.

Most battery electric vehicles earn three credits each. Tesla's Model S sedan and Model X crossovers, which have longer battery ranges, each earn four credits. Fuel-cell electric vehicles constitute a sliver of the market but go a long way in helping manufacturers reach compliance with the ZEV rule. Toyota's Mirai fuel cell racks up nine credits for each car sold.

Chrysler, Ford and Toyota have the largest numbers of banked credits.

Mui estimated that automakers combined have credits worth about 100,000 cars. As a result, they'll only need to deliver ZEVs that equal 6 percent of their sales in 2025, instead of the 15 percent the mandate aims to hit, he said.

Tesla said the ZEV requirement needs to be quadrupled to soak up the excess credits if California wants to meet the program goals announced in 2012.

Jeremy Michalek, director of the Vehicle Electrification Group at Carnegie Mellon University, said a stricter standard benefits Tesla because it can then sell the ZEV credits it accumulates to other automakers.

"The standard being more stringent hurts their competitors," Michalek said.

### **Clean Air Act waiver an issue**

Sperling contended that "the credit thing is overstated." He said the requirements for the number of cars needed under the rule "don't really take off until 2018, and then they build very quickly."

California could look at upping the numbers that would be needed by 2025 or 2030, Sperling said. But there's a complication with the incoming Trump administration. California is allowed to require emission standards stronger than those at the federal level because the state has a waiver under the Clean Air Act through 2025.

If ARB sought to change the ZEV mandate to make it more stringent than the federal rule, it would have to get another waiver from EPA. That could be problematic.

"Who knows" whether California would get that waiver, Sperling said. While automakers might want a somewhat lower federal greenhouse gas emissions standard, he said, the industry is "strongly committed to electric drive technology, because it's not just California and the other states. It's Europe, it's China, and it's the marketplace."

In terms of options for enhancing the ZEV rule, California could also look at incentives to put EV technology in trucks and bigger cars, Sperling said. Under the current mandate, the least expensive way to comply is by making smaller vehicles, he said.

California might also examine whether there should be changes to how the rule is applied in the nine other states that follow the mandate. They're lagging behind California in terms of sales, Sperling said, and there might be a "better way of creating rules for them" that accounts for differences such as colder weather and a preference for all-wheel-drive vehicles.

Some automakers, meanwhile, say the problem isn't the rule but a lack of buyers for ZEVs.

The ZEV market "has stagnated at about 3 percent market share since its peak in 2014, despite the rapid growth in the number of ZEVs and aggressive pricing of ZEVs by automakers," Dan Gage, spokesman for trade group Alliance of Automobile Manufacturers, said in an email.

"Increasing the number of ZEVs with a more stringent mandate doesn't solve the problem — we have plenty of ZEVs, we need more customers!" he added.

ARB should focus on increasing the fueling locations for the cars, increasing incentives for buying the cars and addressing ZEV fueling costs because in some parts of California "it costs almost twice as much to recharge an EV than it does to refuel a gas-powered equivalent," Gage said. The state should also educate consumers about the cars.

"Customers don't buy cars they don't know about," Gage said. "This education has to target consumers even before they begin the search process."

Sperling said ARB is doing all of those things.

"That's the role of the ZEV mandate to assure that the industry is developing the technology, making the investments," Sperling said.

There are other flaws with the ZEV program. Right now, it actually results in increased greenhouse gas emissions, according to a study from Carnegie Mellon University.

It happens because automakers complying with ZEV also must adhere to the federal rule on cars and greenhouse gas emissions. But when they make a non-emitting car for California, that gives them room to make a larger car with higher emissions to sell in another state, said Michalek at Carnegie Mellon University.

EPA is aware of the effect, but allows it because it sees the ZEV rule as laying the foundation for broader electrification of transportation, he said.

"You're saying that I'm willing to take a hit in the near term in order to get on a path where these technologies are plausible alternatives to the kinds of vehicles that mainstream consumers drive right now," Michalek said.

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