



# Fact Sheet

California Environmental Protection Agency

 **Air Resources Board**

## The Zero Emission Vehicle Program

The Zero Emission Vehicle (ZEV) regulation was first adopted in 1990 as part of the Low Emission Vehicle Program. Although it has been modified several times over the years, as shown in the timeline on page four, it still remains an important program for California’s air quality and has spurred many new technologies that are being driven on California’s roads.

While critics maintain that the ZEV regulation is a failure, in reality many successes have come out of the regulation. For instance, over 750,000 Californians are driving partial zero and advanced technology partial zero emission vehicles (PZEV and AT PZEV). These vehicles have near-zero tailpipe emissions, zero evaporative emissions and an extended emissions warranty of 15 years or 150,000 miles. In fact, they are 80% cleaner than the average 2002 model year car.

In addition to the variety of PZEVs and AT PZEVs available, gas-electric hybrid vehicles are also a success. With more than 100,000 hybrids on California’s roads, they give consumers a way to reduce emissions and fuel consumption. Although these “near- zero” emission vehicles provide critical pollution reductions in the near term, with the increases in California’s population and in the number of miles we travel each day, we must continue to pursue pure zero emission transportation technologies.

The Board’s motivation has always been to have zero emission technologies on the roads on a mass scale as soon as possible. Whether using fuel cells, battery electric vehicles, or other technologies, our commitment to zero emissions has never wavered. Our strategy, however, has appropriately considered the state of technology, market factors, economic impact, and our mission.

Below are Frequently Asked Questions and Answers about the ZEV Regulation.

### Which types of vehicles are included in the zero emission vehicle (ZEV) Program?

<u>Category</u>	<u>Vehicle Acronym</u>	<u>Technology</u>
“Gold”	ZEV	Battery, hydrogen fuel cell
“Silver Plus”*	Enhanced AT PZEV	AT PZEV that uses a ZEV fuel such as electricity or hydrogen. Examples include plug-in hybrids or hydrogen internal combustion engine.
“Silver”	AT PZEV	Hybrid, compressed natural gas, methanol fuel cell
“Bronze”	PZEV	Extremely clean conventional vehicle with extended warranty and reduced evaporative emissions

\* New category per 2008 Board Amendments.

## How many of these vehicles are on the road?

The ZEV program continues to bring innovative, clean technologies to California's roads. Many of these cars, such as hybrids, have become widely accepted, like the Toyota Prius and Honda Civic. The table below represents the number of vehicles placed between 1994 and 2006.

Vehicle Type		Quantity
ZEV	Fuel cell	160
	Battery electric	4,400
	Neighborhood electric	26,000
AT PZEV	Hybrid/Compressed Natural Gas	109,000
PZEV	Conventional	672,000

## What are the most recent changes to the ZEV Program?

The Board approved modifications to the ZEV Program in a public hearing on March 27, 2008. These changes will be effective in early 2009, once the final rulemaking package is approved by the Office of Administrative Law. The changes include:

- Creation of a new category of Type IV ZEV (a ZEV with a 300 mile or more range plus fast refueling).
- Creation of a new category of AT PZEV called Enhanced AT PZEV. An Enhanced AT PZEV is a vehicle using a fuel that would be used in a ZEV such as hydrogen or electricity. Examples for this category are hydrogen internal combustion engine vehicles and plug-in hybrid electric vehicles.
- Creation of the New Path (2012 and onward) for regulatory compliance.
  - Combine the base path and alternative path into the New Path.
  - Lower the number of required gold vehicles for 2012-2014.
  - Allow Enhanced AT PZEVs to meet a portion of the gold requirement. Enhanced AT PZEVs may be used to meet up to 70% of the requirement during Phase III (2012 - 2014) and up to 50% during Phase IV (2015 – 2017).
- Provide more equal treatment of battery electric vehicles by allowing them to meet the full gold requirement.
- Release manufacturer production data and ZEV bank credits for MY 2009 and beyond.
- Redesign the ZEV Program to affect the 2015+ model years. The redesign will place the bronze and silver vehicle requirements into other vehicle programs. The new program will greatly strengthen the gold requirement to meet the need of moving advanced technologies from the laboratory and demonstration phase to commercialization.

The table below shows how many vehicles will be placed due to the approved changes in the program.

	<b>Phase III (2012-2014) (12 % Total Requirement)<sup>1</sup></b>		
	Percent	Vehicles Per Year <sup>2</sup>	Vehicles over period <sup>2</sup>
<b>ZEV<sup>3</sup></b>	0.9%– 3%	1,786 – 8,353	5,357 – 25,000
<b>Enhanced AT PZEV</b>	0 – 2.1%	Up to 19,500	Up to 58,500
<b>AT PZEV</b>	3%	65,000	195,000
<b>PZEV</b>	6.0%	420,000	1,260,000
<b>TOTAL %</b>	<b>12%</b>		

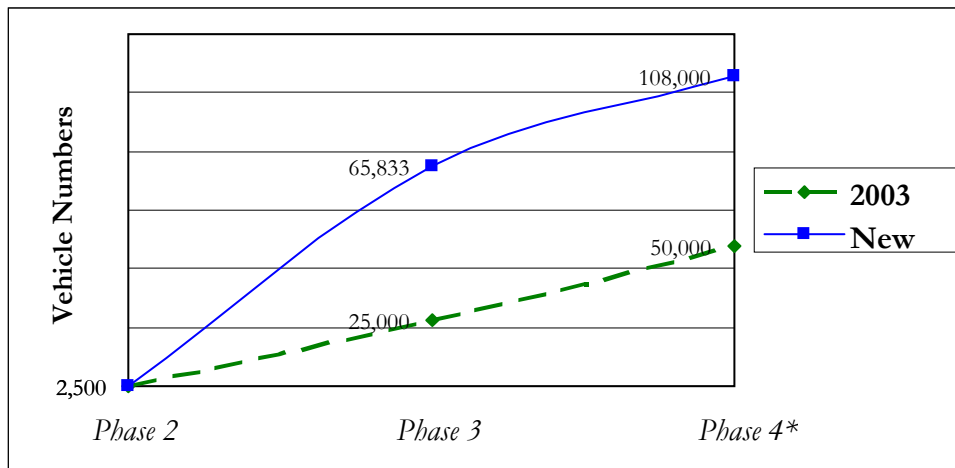
<sup>1</sup> Based on annual California vehicle sales of 1.4 million passenger cars, light-duty trucks (LDT 1 and LDT 2) by the six large volume auto manufacturers.

<sup>2</sup> Assumes that Enhanced AT PZEVs earn 1.5 credits, AT PZEVs earn 0.65 credits in 2012 – 2014. Credits earned vary by vehicle technology, and thus the number of vehicles produced may vary from the volumes in this table.

<sup>3</sup> Percentage based on a ZEV earning 5 credits each. The range in the “Vehicles Per Year” and “Vehicles over period” reflects the different credits assigned to specific technology types.

## What do these changes mean for California?

More clean vehicles will be introduced to California because of these proposed amendments. The graph below illustrates the increases in vehicle numbers between 2009 and 2017 due to the proposed changes. This increase is due to the introduction of Enhanced AT PZEVs. The increase also means greater clean air benefit.



\* The ZEV Program will be redesigned prior to the Phase 4 requirements reflected in this graph.

## The ZEV Program Timeline:

1990	California embarked on a plan to reduce vehicle emissions to zero through the introduction of the Zero Emission Vehicle (ZEV) Program. At that time, the Board required that in 1998, 2% of the vehicles that large manufacturers produced for sale in California had to be ZEVs, increasing to 5% in 2001 and 10% in 2003.
1996	The ZEV mandate was adjusted to eliminate the “ramp up” years but left in place the 10% ZEV requirement for 2003, and again in 1998 to allow partial ZEV (PZEV) credits for extremely clean vehicles that were not pure ZEVs. The underlying goal, however, never changed. California remained committed to seeing increasing numbers of ZEVs in the vehicle fleet. The challenge was determining how to reach this goal.
2001	The challenge at this time was to maintain progress towards commercialization of ZEVs, while recognizing constraints due to cost, lead-time, and technical challenges. The 2001 modifications allowed large manufacturers to meet their ZEV requirement with 2% pure ZEVs, 2% Advanced Technology PZEVs and 6% PZEVs.
2002	Due to a lawsuit filed against the Board, a federal district judge issued a preliminary injunction that prohibited the Board from enforcing the 2001 ZEV amendments with respect to the sale of new motor vehicles in model years 2003 or 2004. Once the Board adopted the 2003 Amendments to the ZEV regulation, the parties to the lawsuits agreed to end the litigation.
2003	In order to address the preliminary injunction and better align the program requirements with the status of technology development, staff proposed additional modifications to the ZEV regulation in March 2003. The reasons and benefits are described above.
2006	ARB held a Technology Symposium and an Independent Expert Review Panel submitted their report on the status of all ZEV technologies.
2007	Staff went to the Board in early 2007 with the information gathered from the Symposium as well as the report from the Independent Expert Review Panel. The Board determined that staff should recommend changes to the regulation for the 2009 and subsequent model years.
2008	The Board approved modifications to the regulation at the March 27, 2008 hearing. The Board also directed staff to redesign the ZEV Program so it will affect the 2015+ model years.

## Where can I get more information?

If you'd like to do your part and find out what clean cars are available today, go to [www.DriveClean.ca.gov](http://www.DriveClean.ca.gov).

For more information about the ZEV Regulation, please contact Elise Keddie, Manager for the ZEV Implementation Section, [ekeddie@arb.ca.gov](mailto:ekeddie@arb.ca.gov), or visit ARB's ZEV Program website: [www.arb.ca.gov/zev](http://www.arb.ca.gov/zev).

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