



# Fact Sheet

California Environmental Protection Agency  
**Air Resources Board**

## 2003 Zero Emission Vehicle Program Changes

In 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 Air Resources Board (ARB) required that in 1998, 2% of the vehicles produced for sale in California had to be ZEVs, increasing to 5% in 2001 and 10 percent in 2003.

The ZEV mandate was adjusted in 1996 to eliminate the “ramp up” years but left in place the 10 percent ZEV requirement for 2003, and 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.

In January 2001 the Board once again considered the status of the ZEV program leading to more proposed modifications. The challenge at that 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 the following mix of vehicles.

Requirement	Category	Description
2% Gold	Pure ZEVs	Battery EVs or hydrogen fuel cells; zero tailpipe emissions.
2% Silver	Advanced technology PZEVs (AT PZEVs)	These vehicles have extremely low (PZEV) emission levels and also employ ZEV-enabling technologies such as electric drive.
6% Bronze	Partial Zero Emission Vehicles (PZEVs)	These vehicles meet the most stringent tailpipe emission standards and come with a 15 year / 150,000 mile emissions warranty.

In June 2002, due to a lawsuit filed against the ARB, a federal district judge issued a preliminary injunction that prohibited the ARB from enforcing the 2001 ZEV amendments with respect to the sale of new motor vehicles in model years 2003 or 2004. The lawsuit was focused on the assertion that AT PZEV provisions pertaining to the fuel economy of hybrid electric vehicles were preempted by the Energy Policy and Conservation Act of 1975 - the law directing the National Highway Traffic Safety Administration to establish corporate average fuel economy (CAFE) standards. Since adopting the 2003 Amendments to the ZEV regulation, the parties to the lawsuits have agreed to end the litigation.

Although some may question the benefits or success of the ZEV regulation - it has been a huge success for California's air quality. The major automakers placed over 4,000 battery-powered ZEVs in California's between 1998 and 2003. Consumers quickly bought these highly functional vehicles and called for more. The regulation also spurred advances in natural gas and other alternative fueled vehicles, super-clean gasoline vehicles, fuel-efficient hybrids that are powered by a combination of electric motors and internal combustion engines, and fuel cell vehicles powered by electricity created from pollution-free hydrogen. We are seeing large numbers of PZEVs on the road and expect many more PZEVs and AT PZEVs in the years to come.

### 2003 Modifications

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. After hearing extensive testimony and public comment, the Board adopted changes to the ZEV program on April 24, 2003. Here are the significant features of the April 2003 changes to the ZEV regulation:



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- The ZEV percentage requirements will restart in the 2005 model year, while allowing manufacturers to earn and bank credits for vehicles produced prior to the 2005 model year.
- The way that credits from ZEVs are calculated is revised to remove the efficiency multiplier and specify the number of credits earned each model year by each of the following five “types” of pure ZEVs.

Vehicle Type	Example
NEVs	Low speed "Neighborhood Electric Vehicles"
Type 0	Utility low-range battery electric vehicles
Type I	Mid-range “city electric vehicles”
Type II	Full function battery electric vehicles
Type III	Fuel cell vehicles

- The ATPZEV calculation methods are amended to remove all references to fuel economy or efficiency. In addition, the criteria for determining if a hybrid electric vehicle (HEV) earns advanced ZEV componentry allowances were changed so that a hybrid-electric PZEV would have to exhibit traction drive boost, regenerative braking and idle start/stop in order to qualify at one of the three levels described in the table below.

Level	Description	AT PZEV Credits
Level 1: Low voltage, low power	Less than 60 volts and at least four kilowatt (kW) motor power	0.2 credits through model-year 2008
Level 2: High voltage	60 volts or more and minimum 10 kW motor power	0.4 credits, reduced in stages in the 2012 and 2015 model years to 0.25
Level 3: High voltage, high power	60 volts or more and minimum 50 kW motor power	0.5 credits, reduced in stages in the 2012 and 2015 model years to 0.35

- Large volume manufacturers will be allowed to comply with either a “base compliance path” using percentage ZEV requirements structured like those in the 2001 ZEV amendments, or with an “alternative compliance path.” The "alternative compliance path" allows AT PZEVs to be used to meet pure ZEV obligations, provided that the manufacturer meets the requirements specified in the table below.

Model Years	Manufacturer's Market Share of
2001-2008	250 fuel cell vehicles
2009-2011	2,500 fuel cell vehicles
2012-2014	25,000 fuel cell vehicles
2015-2017	50,000 fuel cell vehicles

- An independent expert review panel will be established to advise the Board on technology advances made in pure ZEV and AT PZEV technologies, in order for the Board to consider changes to the requirements for the 2009 and subsequent model years.

## Where can I get more information?

Please contact the ARB toll-free at (800) END-SMOG/(800) 363-7664 (California only) or (800) 272-4572. For information on the ARB's ZEV Program, visit [www.DriveClean.ca.gov](http://www.DriveClean.ca.gov) or [www.arb.ca.gov](http://www.arb.ca.gov). You may obtain this document in an alternative format by contacting ARB’s Americans with Disabilities Act Coordinator at (916) 322-4505 (voice); (916) 324-9531 (TDD, Sacramento only); or (800) 700-8326 (TDD, outside Sacramento).