

FREQUENTLY ASKED QUESTIONS

The California Zero Emission Vehicle Regulation

Advancing vehicle technology while reducing emissions

What is the Zero Emission Vehicle (ZEV) regulation?

The California Air Resources Board (ARB or the Board) first adopted the Zero Emission Vehicle (ZEV) requirement in 1990 as part of the Low Emission Vehicle regulation. Although it has been modified several times over the years, it remains an important regulation for meeting California's air quality and greenhouse gas (GHG) reduction goals and has spurred many new technologies that are being driven on California's roads today. The Board's motivation has always been to have zero emission technologies available on a commercial scale as quickly as possible.

Manufacturers are required to produce a number of ZEV and ZEV-enabling technologies each year. Below are the types of technologies manufacturers produce in compliance with the regulation.

Vehicle Type	Acronym	Technology
Zero Emission Vehicle	ZEV	Battery electric or hydrogen fuel cell vehicle
Enhanced Advanced Technology Partial Zero Emission Vehicle	Enhanced AT PZEV	An AT PZEV using a ZEV fuel such as electricity or hydrogen. Examples include plug-in hybrids or hydrogen internal combustion engine vehicles
Advanced Technology Partial Zero Emission Vehicle	AT PZEV	Hybrid, compressed natural gas, methanol fuel cell with near zero emissions and extended emissions system warranty
Partial Zero Emission Vehicle	PZEV	Extremely clean conventional vehicle with 150,000 mile extended warranty for the emissions system and zero evaporative emissions

Is the ZEV regulation working?

ZEV technology has come a long way since the regulation's adoption in 1990. Not only have PZEVs and AT PZEVs become commercially viable, but manufacturers have made public commitments to new emerging ZEV enabling and ZEV technologies.

Fuel cell vehicles have overcome numerous technical hurdles, but are still faced with the challenge of higher costs and the need for new infrastructure. While early commercial demonstrations of fuel cell vehicles are currently underway with growing numbers of vehicles expected in the near term, ARB believes, as well as many manufacturers, that fuel cell vehicles will be commercially viable in the 2015 to 2020 timeframe. Battery electric vehicles are progressing quickly with new improvements in lithium battery technology. Many manufacturers plan to meet and even exceed California's ZEV requirements in the near term by producing battery electric vehicles. The following table represents the number of vehicles placed in California through 2010.

Vehicle	Type	Quantity
ZEV	Fuel Cell	330
	Battery Electric	5,200
	Neighborhood Electric	28,800
AT PZEV	Hybrid or Compressed Natural Gas	380,000
PZEV	Conventional Gas	1,750,000

Why is staff considering changes to the ZEV regulation?

The ZEV regulation has been based on reducing criteria pollutant emissions. However, Assembly Bill 32 and Governor Schwarzenegger's 2050 GHG goals for California have made us look at the ZEV regulation in terms of the role it can play in reducing climate change emissions in the light duty vehicle sector. Based on emissions modeling results for the light duty vehicle sector in 2050, and a review of ZEV technologies, ZEVs are necessary for meeting California's long term air quality and GHG emission reduction goals. Staff is working now on adjustments to the regulation to focus on plug-in hybrids and pure ZEVs in order to incubate these technologies for large scale market penetration.

What's next for the ZEV Regulation?

Based on Board direction at the December 2009 hearing, staff has begun regulatory development and will release proposed modifications in 2011 as part of Advanced Clean Cars. Staff is considering increasing future requirements, modifying ZEV credit values, and modifying the travel provision. For more information regarding regulatory development, please contact Anna Wong, lead staff for the ZEV regulation at awong@arb.ca.gov.

For More Information

For questions regarding the ZEV Regulation, please contact: Elise Keddie, ARB's ZEV Implementation Section Manager at ekeddie@arb.ca.gov, or visit the ZEV program website: www.arb.ca.gov/zev.

If you would like to do your part and find out what clean cars are available today, go to: www.DriveClean.ca.gov.

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