

UPDATED INFORMATIVE DIGEST

ZERO EMISSION VEHICLE REGULATION AMENDMENTS

Sections Affected:

This action amends California Code of Regulations, title 13, sections 1962.1 and 1962.2 (re-numbered to 1962.3), which incorporate by reference “California exhaust emission standards and test procedures for 2009 through 2017 model zero-emission vehicles and hybrid electric vehicles, in the passenger car, light-duty truck, and medium-duty vehicle classes”, as adopted December 17, 2008, and last amended December 2, 2009, and adopts California Code of Regulations, title 13, section 1962.2, which incorporate by reference “California exhaust emission standards and test procedures for 2018 and subsequent model zero-emission vehicles and hybrid electric vehicles, in the passenger car, light-duty truck, and medium-duty vehicle classes.”

Background:

In 1990, the California Air Resources Board (ARB or the Board) adopted an ambitious program to dramatically reduce the environmental impact of light-duty vehicles (LDV) through the gradual introduction of zero emission vehicles (ZEV) into the California fleet. The ZEV program, which affects passenger cars and light-duty trucks, has been adjusted five times since its inception, in 1996, 1998, 2001, 2003, and 2008, to reflect the development of new technologies such as hybrid electric vehicles, natural gas vehicles, longer range battery electric vehicles, and fuel cell vehicles. Through these adjustments the fundamental goal of the program has not changed the commercialization of ZEV technologies.

At the March 2008 hearing, the Board directed staff to redesign the 2015 and beyond requirements for ZEV program by strengthening its requirements and focusing primarily on the zero emission drive. Battery electric vehicle (BEV), fuel cell vehicle (FCV), and plug-in hybrid electric vehicle (PHEV) technologies are included. California would continue to be the central location for advanced, low greenhouse gas (GHG) technology vehicles as they move from the demonstration phase to commercialization.

In 2009, staff undertook an assessment of pathways to meet California’s long term 2050 GHG reduction goals in LDV subsector. It included a review of ZEV technology and a review of current and possible future complementary policies that would be needed to aid in infrastructure development, and a review of market pull policies for ZEVs. Based on the United States Department of Energy vision model, staff developed a California specific model for LDV subsector, and concluded that nearly all new vehicle sales by the 2040 model year need to be ZEVs and PHEVs in order to achieve the needed long term emission reductions. The Board directed staff in Resolution 09-66 to prepare amendments to the regulations considering the following:

- Shift focus from only criteria pollutant emission reductions to both GHG and criteria pollutant emission reductions;

- Focus on commercializing low-carbon emitting technologies, such as ZEVs and PHEVs, in a timeframe sufficient to meet the 2050 target of an 80 percent reduction in GHG emissions compared to 1990 levels;
- Take into consideration new low emission vehicle (LEV) III GHG fleet standards and revise ZEV regulatory structure, credit values, and stringency of the current requirements accordingly.

Description of Regulatory Action:

The ZEV regulation is the most technology-forcing piece of the advanced clean car package. Amendments to the ZEV regulation focus on advanced technologies, simplifying the program where needed, and increasing stringency for 2018 model year and beyond to help meet long term goals.

Amendments Affecting 2009 through 2017 Model Years

The Board adopted minor mid-course corrections and clarifications to the current regulation (through the 2017 model year) that help ensure successful compliance with more stringent 2018 and subsequent model year requirements. The amendments include:

- A. *Provide Compliance Flexibility:* Remove carry forward credit limitations for ZEVs, allowing manufacturers to bank ZEV credits indefinitely for use in later years. Slightly reduce the 2015 through 2017 credit requirement for intermediate volume manufacturers (IVM, less than 60,000 vehicles produced each year) to allow them to prepare for requirements in 2018. Extend the provision that allows ZEVs placed in any state that has adopted the California ZEV regulation to count towards the ZEV requirement through 2017 (i.e. extending the “travel provision” for BEVs through 2017).
- B. *Adjust Credits and Allowances:* Increase credits for a Type V (300 mile FCV) ZEV to appropriately incentivize this emerging technology.
- C. *Add New Vehicle Category:* Add Type I.5x and Type IIx vehicles as a compliance option for manufacturers to meet up to half of their minimum ZEV requirement. These vehicles are closer to a BEV than to a PHEV because they are designed with primarily zero emission operation. The small non ZEV fuel auxiliary power unit is specified with limited performance and fuel capacity for limited range extension.

Amendments Affecting 2018 and Subsequent Model Years

The Board adopted amendments for 2018 and subsequent model years to help achieve early commercialization of ZEVs and transitional zero emission vehicles (TZEV, typically a PHEV) through simplifying the regulation and pushing technology to a higher volume production in order to achieve cost reductions. The amendments include:

- A. *Increase Volume Requirement for 2018 and Subsequent Model Years:* Increase requirements that push ZEVs and TZEVs to nearly 15 percent of new sales by 2025. This will help ensure production volumes are at a level sufficient to bring battery and fuel cell technology down the cost curve and reduce ZEV incremental prices, and provide a *greater* choice of vehicle types for potential purchasers.
- B. *Focus Regulation on ZEVs and TZEV:* Move the partial zero emission vehicle (PZEV) and advanced technology partial zero emission vehicle (AT-PZEV) technology categories from the ZEV regulation to the LEV regulation because they have reached commercial volumes and their relevance to further reducing criteria and GHG emissions can be better governed by the emission performance standards in the LEV III regulation. Allow manufacturers to use banked PZEV and AT-PZEV credits earned in 2017 and previous model years in the ZEV program, but discount the credits, and place a cap on usage in 2018 and subsequent model years. Focus the 2018 and subsequent model year requirements on ZEVs and TZEVs.
- C. *Amend Manufacturer Size Definitions, Ownership Requirements, and Transitions:* Amend IVM and large volume manufacturer (LVM) size definitions to bring all but the smallest manufacturers under the full ZEV requirements by model year 2018. Align LEV III and ZEV ownership requirements, so that manufacturers who own more than 33.4 percent of each are considered as the same manufacturer for determination of size. Modify transition periods for manufacturers switching size categories. These changes result in applying the ZEV regulation to manufacturers that represent 97 percent of the LDV market.
- D. *Modify Credit System:* Base credits for ZEVs on range, with 50 mile BEVs earning 1 credit each and 350 mile FCVs earning 4 credits each. Allow longer range BEVs (BEVx) which have a limited combustion engine range extender to meet up to half of a manufacturer's minimum ZEV requirement. The range of credits reflects the utility of the vehicle (i.e. the zero emitting miles it may travel) and its expected timing for commercialization. Simplify and streamline TZEV credits based on the vehicle's zero emission range capability and ability to drive electrically for 10 miles on the more aggressive US 06 drive schedule. In addition to simplifying the program, reduce the spread of credits so that

technologies are more evenly treated with less variation in compliance outcomes (numbers of vehicles produced to meet the regulation requirements).

- E. *Modify Travel Provision:* End the travel provision for BEVs after model year 2017, so that states that have adopted California's ZEV program are more likely to receive a proportionate share of ZEVs. Extend the travel provision for FCVs until sufficient complementary policies are in place in states having adopted the California ZEV regulation. This will allow FCV technology to continue to mature and provide time for section 177 states to build infrastructure.
- F. *Add GHG-ZEV Over-Compliance Credits:* Allow manufacturers who systematically over comply with the proposed LEV III GHG fleet standard to offset a portion of their ZEV requirement in 2018 through 2021 model years only.

Comparable Federal Regulations:

Currently, there are no comparable federal regulations mandating auto manufacturers to produce PZEVs, AT PZEVs, TZEVs and/or ZEVs.

Changes to Underlying Laws:

There have been no changes to the statutory authority governing adoption of this regulation.

Changes to the Effect of the Regulation:

Overall, the revised ZEV regulation will result in more BEVs, FCVs, and PHEVs placed in California through model year 2025. This change could result in increased compliance costs for affected manufacturers. Additionally, more manufacturers will be defined as LVMs, rather than IVMs. This means those newly defined LVMs will be required to make pure ZEVs, meaning BEVs or FCVs, in compliance with the ZEV regulation. This change could have the effect of increasing compliance costs for those manufacturers affected by the definition change.

Changes to the Proposed Regulation Since the Publication of the Notice:

ARB conducted one 15 day change comment period pursuant to Government Code section 11346.8. The 15 day changes modified the regulation to include an optional compliance path in the section 177 states, the ability for PZEVs to certify to LEV II or LEV III exhaust standards in certain model years, modified the Executive Officer discretion which allows manufacturers to use a same year calculation method when determining the amount of vehicles for which the requirement will be applied, modified TZEV credit calculation, and allowed hydrogen internal combustion engine vehicles to earn the full amount of credit under TZEV provisions. Additionally, in response to the Board's direction, the changes modified the date by which manufacturers must apply to use GHG-ZEV over-compliance provision and ensured fair treatment for manufacturers transitioning from one size definition category to another.