

UPDATED INFORMATIVE DIGEST

Adoption of Amendments to the Zero Emission Bus Regulation

Sections Affected: Amendments were made to title 13, California Code of Regulations (CCR), sections 2023.1, 2023.3, and 2023.4.

Background

In February 2000, the California Air Resources Board (ARB or the Board) confirmed its continued commitment toward improving emissions from public transportation by establishing a new fleet rule for transit agencies which included the zero emission bus (ZBus) regulation. Each transit agency was required to select a compliance path – either the “diesel” path or the “alternative fuel” path – by January 1, 2001. Path selection set the fuel type for new urban bus acquisitions through model year 2015. Transit agencies on either path were required to achieve fleet reduction requirements for NO_x and PM emissions. The zero emission bus portion of the rule promoted advanced technologies by adopting ZBus demonstrations, applicable to diesel path agencies, and ZBus acquisition requirements applicable to transit agencies on both fuel paths.

Recognizing the long-term nature of the regulations, the Board required staff to report back regularly on implementation progress. Staff worked closely with transit agencies to encourage compliance and reported back to the Board at its September 20, 2001 and March 21, 2002 public meetings. The ARB staff closely monitored activities relating to ZBus demonstrations and found that demonstrations were significantly behind schedule. Staff determined that this delay was beyond the transit agencies' control.

In June 2004, the staff brought to the Board proposed amendments to the demonstration project requirements. After reviewing the status of technology and meeting with bus manufacturers and transit agencies, staff concluded that an adequate number of ZBuses, particularly fuel cell buses, were not available. The Board amended the demonstration project requirements by reducing the number of buses required to three per demonstration project, instead of three per transit agency. This brought the cost of the demonstration project back in line with cost projections from the original rulemaking. The Board also extended the date that demonstration buses were to be in operation to the end of February 2006.

After reviewing the status of technology and bus availability again, staff saw a need to revise the start date of the ZBus purchase requirements due to high bus costs and unproven durability, reliability, and ability to produce the number of buses required by the regulation. Staff provided amendments to the Board for consideration on October 19, 2006. The intent of these amendments were to keep the momentum moving forward, encourage fuel cell manufacturers to increase their production numbers, show that integration of a larger ZBus fleet is possible, and prove that the costs can be decreased.

Adopted Amendments

On October 19, 2006, the Board conducted a public hearing to consider the following amendments to the ZBus regulation:

- (1) requiring an Advanced Demonstration for diesel path transit agencies who operate over 200 urban buses,
- (2) delay the purchase requirement to 2011 for transit agencies on the diesel path, and to 2012 for transit agencies on the alternative fuel path,
- (3) extending the purchase requirement period to 2026 for both fuel paths,
- (4) requiring a technology review in 2009, and
- (5) modifying the reporting requirements for transit agencies participating in the Advanced Demonstration.

The amendments were described in detail in the Staff Report (Initial Statement of Reasons for Proposed Rulemaking) released on September 1, 2006, as well as in the "Notice of Public Availability of Modified Text" released on July 27, 2007. The notice also included additional conforming modifications as authorized in the Board's Resolution 06-28. The notice documents all modifications and provides the rationale behind each one. The Board adopted the originally proposed amendments with additional modifications.

Affected Transit Agencies

All amendments affect transit agencies on the diesel path that operate more than 200 urban buses as of January 1, 2007, and transit agencies on the alternative fuel path that operate more than 200 urban buses as of January 1, 2009.

Advanced Demonstration for Diesel Path Transit Agencies

The ZBus regulation requires large transit agencies on the diesel fuel path to participate in an Advanced Demonstration. Transit agencies may choose to participate in a single or joint agency demonstration. If the transit agency chooses to conduct a single demonstration, six buses are required to be demonstrated for a minimum of 12 months. For transit agencies choosing a joint agency option, a minimum of twelve ZBuses must be demonstrated. Joint agencies consisting of more than four transit agencies must demonstrate a minimum of three ZBuses per agency.

A ZBus demonstrated during the initial demonstration may count towards the Advanced Demonstration if the bus is updated with the most advanced technology available.

Purchase Requirement

For affected transit agencies, 15 percent of all new purchases and leases are to be ZBuses. For transit agencies on the diesel path, the purchase requirement period

begins in model year 2011 and runs through model year 2026. On the alternative fuel path, the purchase requirement period begins in model year 2012 and runs through model year 2026.

Smaller transit agencies that reach large transit agency status after January 1, 2007, are allowed a three-year transition period to prepare for the ZBus purchase requirement. The three-year period will begin on January 1 of the year the transit agency exceeds the 200 urban bus mark.

Technology Review

In Resolution 06-28 approving the amendments, the Board directed staff to conduct a technology review of all ZBus technologies and present it to the Board by July 2009. Using the implementation criteria outlined in the table below and other relevant data, staff is to evaluate available technologies and provide suggestions to the Board in regards to the purchase requirement.

	Implementation Criteria
Purchase Cost Fuel Cell vs. Electric Trolley Bus	1.25 : 1
Fuel Cell Durability or Warranty	20,000 hours
Reliability (Miles between Propulsion Related Road Calls)	10,000 miles

Reporting Requirements

Transit agencies participating in the Advanced Demonstration are required to submit qualitative monthly reports and quantitative quarterly reports to ARB staff. The monthly reports are to begin one month after the first bus is delivered, and are to include detailed information on bus operation, down time, and outreach events. The quantitative quarterly reports are to begin two months after the delivery of the first bus and shall include information on bus reliability, associated costs, maintenance conducted, warranty issues, bus availability, safety issues, fuel economy, and other relevant data.

Preliminary and final reports required at the end of each Advanced Demonstration are now required to include a comparison with conventional buses on the following parameters: bus revenue service miles, bus reliability, bus availability, fuel economy, detailed information on associated bus costs, warranty information, bus down time, safety incidents, training conducted, and bus maintenance.

Comparable Federal Laws

Currently there are no federal emission standards or requirements for ZBuses.