

**State of California  
Air Resources Board  
Board Item Summary**

**Item # 22-12-2: Public Meeting to Hear the Innovative Clean  
Transit Program Update and Comprehensive  
Review on 2023 Program Readiness**

**Staff Recommendation:**

This item will include an informational update on the Innovative Clean Transit (ICT) regulation and comprehensive review of program readiness for 2023 as directed by Resolution 18-60. This item is informational only and thus no Board action is necessary.

**Discussion:**

In December 2018, the Board adopted the ICT regulation that requires transit agencies to phase in zero-emission buses (ZEB) with a goal of a full transition to ZEBs by 2040.

The ICT regulation is part of California Air Resources Board's (CARB) effort to transform the State's transportation sector to support California's climate protection and air quality goals. The deployment of ZEBs ensures affordable zero-emission technologies are immediately available to all, especially riders in low-income and disadvantaged communities. The ICT regulation is the first regulation in the United States that requires a vocational application to completely transition to zero-emission technologies over time. Zero-emission transit buses lead the transition and will accelerate adoption across the entire medium- and heavy-duty vehicle applications. Experience from using zero-emission technologies in buses and demonstrating their viability will benefit the market for the same technologies to be used in other heavy-duty vehicle applications, such as school buses, drayage, yard, and delivery trucks.

State funding has been an integral part of accelerating the transition to cleaner transportation and specifically supporting transit. The California State Transportation Agency, the California Department of Transportation, and the California Energy Commission, along with CARB, have been and continue to make significant investment to support transit system improvements and support the transition to zero-emission technologies.

Per Resolution 18-60, staff will provide the Board with a comprehensive review of program readiness before the initiation of any ZEB purchase requirements under the ICT regulation. The comprehensive review will address: (1) capital, and operating and maintenance costs of vehicles and infrastructure, California incentive funding programs, and performance and reliability of ZEBs; (2) infrastructure needs and potential issues and barriers to operate and maintain ZEBs; (3) assessing the existing workforce retraining, job creation, and training programs for employment in manufacturing, maintaining, and operating ZEB technologies;

(4) the deployment status of ZEBs and related technologies; and (5) the availability of different types of ZEBs and other barriers to deploying them.

### **Summary and Impacts:**

Since the adoption of the ICT regulation, the transit community has made significant progress in planning deployment and phasing in ZEBs, despite the pandemic. More than 50 transit agencies have made ZEB purchases in California, and 3 transit agencies have fully converted to zero-emission: Antelope Valley Transit Authority, City of Artesia, and City of South Pasadena. CARB applauds the agencies that have begun the transition to providing zero-emission transit. Under the ICT regulation, this shift accelerates. The first ZEB purchase requirements will begin to apply in 2023. Beginning January 1, 2023, 25 percent of new bus purchases by large transit agencies, as defined, in each calendar year, must be ZEBs. The purchase requirement will increase over the course of the decade, and will begin to apply to small transit agencies, as defined, beginning in 2026 (see Cal. Code of Regs., tit. 13, § 2023.1).

CARB has contracted with the National Renewable Energy Laboratory (NREL) and University of California Berkeley to conduct the comprehensive review. This contract uses NREL's expertise in zero-emission technologies and bus fleets operation and will further expand CARB's understanding of ZEB performance. It focuses on standard buses, large transit agencies, and an assessment of meeting the first ICT regulation purchase requirements.

NREL concludes that the California transit industry is well-positioned to proceed with the 2023 requirement of 25 percent of new bus purchases being ZEBs for large transit agencies. This is supported by large transit agencies' ZEB Rollout Plans, momentum developed from over a decade of ZEB demonstrations and deployments, continued product development and refinement lead by the transit industry, support environment as listed above, and successful partnership and collaboration of California transit agencies, vehicle manufacturers, charging and fuel equipment suppliers, utility providers, and others. NREL further identifies for large deployment, more coordination, focus, and resources may be necessary for these areas:

- Sustained progress from the vehicle, equipment, and infrastructure manufacturers to continue driving down costs, improving reliability and optimizing performance.
- Coordination among transit agencies, electrical utilities, and infrastructure developers to expand charging and fueling infrastructure.
- Comprehensive and standardized training programs to develop a highly skilled workforce to improve the efficiency and cost of maintaining ZEB equipment while creating new jobs and ensuring safety.
- Financial support for purchasing ZEBs and installing the related fueling/charging equipment, especially in the early years.

Staff are also working closely with transit agencies, the California Transit Association, and the California Association for Coordinated Transportation to support transit agencies' efforts in complying with the ICT regulation. Transit agencies have always and will continue to play an important role in benefiting local communities, improving the State's air quality, and

mitigating climate change through deploying the cleanest technologies. The knowledge and experience gained from installing necessary infrastructure, developing training programs, and troubleshooting are enabling market expansion into other heavy-duty vehicle applications, such as school buses, delivery trucks, airport shuttles, yard trucks, and drayage trucks. CARB staff will continue to engage with the transit community, bus manufacturers, zero-emission technology providers, and sister agencies to advance the deployment of ZEBs and ensure successful implementation of the ICT regulation.

CARB has reviewed this update and concluded it is not a project under CEQA.