

Innovative Clean Transit Draft Proposed Regulation Summary

June 11, 2018

The California Air Resources Board (CARB or Board) is developing strategies to transition the heavy-duty mobile source sector to zero and near-zero emission technologies to meet air quality, climate, and public health protection goals. The long-term vision of the Innovative Clean Transit (ICT) effort is to achieve a zero-emission transit system by 2040 as a key step in that transition. Transit agencies have been leaders in addressing air quality through their role in providing sustainable transportation options for the public, especially for their service to low-income and disadvantaged community residents. Transit agencies have also been at the forefront in the adoption of new technology to reduce emissions and in addressing barriers to their implementation.

The proposed ICT regulation includes a transition to zero-emission technologies while enhancing transit services. The proposal seeks to implement a long-term vision to achieve a zero-emission transit system. It is structured to allow transit agencies to take advantage of incentive programs by acting early. The proposal is intended to provide flexibility and to encourage transit agencies to implement plans that are best suited for their own situation. Key elements of the proposal include the following:

- Transit agencies develop individual plans to transition to a zero-emission bus (ZEB) fleet by 2040.
- ZEB purchase minimums at the time new bus purchases are made.
- A waiver of the initial ZEB purchase requirements for transit agencies if statewide progress toward zero-emissions meets certain targets.
- An option to implement innovative zero-emission mobility programs in lieu of ZEB purchases as well as other flexibility options.
- Purchase of renewable fuels when diesel or natural gas contracts are renewed.
- Purchase of low NOx engines if available for conventional bus purchases.

Staff are also interested in comments regarding how to encourage early zero emission bus infrastructure investments and expanding bicycle programs as part of the zero emission mobility option. The following is a summary of the current proposed ICT regulation that highlights key aspects of the proposal. All interested parties may [submit comments](#) on this draft summary by July 23, 2018.

Scope of Regulation and Key Definitions

Scope and Applicability

- This regulation affects all buses with gross vehicle weight rating (GVWR) greater than 14,000 lbs., but does not include trolleybuses.
- This regulation applies to all California public transit agencies that own, operate, lease, or rent affected buses, or contract out their operation with another entity.

Large vs. Small Transit Agency

- The compliance requirements differ based on a transit agency's fleet size (defined as the total number of active buses in a fleet as of December 31, 2017).
- A large transit agency has fleet size of 100 or more buses and a small transit agency has fewer than 100 buses.

Purchase Definition

- Zero-emission bus (ZEB) purchase requirements apply to purchase of a new bus. A purchase is initiated with issuance of a Notice to Proceed (NTP) to a bus manufacturer to start with production of a bus under a previously-entered purchase contract, or to execute a contract option. A signed lease contract for a new bus with minimum duration of three years is also considered a new bus purchase.
- Purchased buses must be delivered within 2 years after the initial date of the Notice to Proceed. If the Notice to Proceed, purchase contract, or lease is cancelled before the bus is delivered, the purchase is not considered valid.

Zero-Emission Bus Requirements

Zero-Emission Bus (ZEB) Rollout Plan

Each transit agency is required to submit a transit board approved ZEB Rollout Plan. The ZEB Rollout Plan shall comprise all of the following:

- Goal of full transition to zero-emission technologies by 2040 or earlier.
- Identify the type(s) of zero-emission technology(ies) a transit agency is planning to deploy.
- Describe how a transit agency will build out charging and fueling infrastructure to accommodate the deployment of ZEBs.
- Identify the planned schedule for purchase or lease of zero-emission and conventional buses.
- Describe the training schedule for zero-emission bus operators and maintenance and repair staff.
- Identify needed funding and potential funding sources.

The ZEB Rollout Plan must be submitted to the Executive Officer of CARB by July 1, 2020 for a large transit agency and July 1, 2023 for a small transit agency.

ZEB Purchase Requirements

A transit agency must meet the ZEB purchase requirements shown below, determined as a percentage of total applicable new bus purchases made in that calendar year.

Table 1. ZEB Purchase Schedule

| Calendar Year | ZEB Percentage of New Bus Purchases | |
|----------------|-------------------------------------|----------------------|
| | Large Transit Agency | Small Transit Agency |
| 2023* | 25% | - |
| 2024* | 25% | - |
| 2025 | 25% | - |
| 2026 | 50% | 25% |
| 2027 | 50% | 25% |
| 2028 | 50% | 25% |
| 2029 and after | 100% | 100% |

*See Waiver for Early Compliance section below.

Waiver for Early Compliance

- The ZEB purchase requirements for 2023 would be waived if California transit agencies collectively have purchased 1,000 or more ZEBs statewide by December 31, 2020.
- The ZEB purchase requirements for 2024 would be waived a second time if California transit agencies collectively have purchased 1,150 or more ZEBs statewide by December 31, 2021.

Zero-Emission Mobility Option

The optional zero-emission mobility programs can be used in lieu of ZEB purchase requirements, if meeting the following criteria:

The transit services must be provided by utilizing bicycles or any zero-emission vehicles with a GVWR of 14,000 pounds or less. The services must be operated directly by the transit agency or operated by a contractor to the transit agency, and the transit agency must be able to track and record the annual zero-emission passenger miles for each vehicle.

- For a large transit agency, every 320,000 zero-emission passenger miles per year is equivalent to having one ZEB in the fleet.
- For a small transit agency, every 180,000 zero-emission passenger miles per year is equivalent to having one ZEB in the fleet.

Fractional values will be rounded to the nearest whole number to determine the number of ZEB equivalent credits. In the event that the transit agency deferred ZEB purchases in one year, but the Zero-Emission Mobility program is downsized or terminated, the transit agency shall make up the ZEB purchase in the immediate next bus purchase.

ZEB Bonus Credits

A transit agency is eligible to receive bonus credits for each zero-emission bus placed in revenue service under the following conditions:

- Two bonus credits for each fuel-cell electric bus placed in service on or before December 31, 2017 and remained in service as of January 1, 2018.
- One bonus credit for each fuel-cell electric bus placed in service between January 1, 2018 and January 1, 2023.
- One bonus credit for each battery-electric bus placed in service on or before December 31, 2017 and remained in service as of January 1, 2018.

ZEB Bonus Credits cannot be used toward the waiver for early compliance and cannot be transferred to another transit agency. If a transit agency owning bonus credits participates in a Joint Group, this transit agency may choose to use its bonus credits to meet the compliance obligation for the Joint Group. All bonus credits expire on January 1, 2029 when the 100% ZEB purchase requirement begins.

Compliance Determination

By December 31 of each year, a transit agency shall achieve the ZEB purchase requirements by counting any of the following:

- New ZEB purchase, as previously defined.
- ZEBs that are in the fleet (including used buses and conversions).
- ZEB bonus credits.
- Credits from an optional zero-emission mobility program.

Excluded Buses

Cutaway buses, over-the-road buses (motor coaches) and articulated buses are excluded from the zero-emission bus purchase requirements until January 1, 2026. These bus types will continue to be excluded until the applicable ZEB type has passed and obtained an Altoona bus testing report.

Requirement to Retain ZEBs

A transit agency must retain the same number of ZEBs as was required to purchase. A retired or decommissioned ZEB must be replaced with a ZEB when the next purchase is made.

Deferral from ZEB Purchase Requirements

A transit agency may defer a ZEB purchase for reasons that are beyond its control. A Request for Extension or Request for Exemption must be submitted to the Executive Officer of CARB along with explanation of reasons and supporting documentation. A transit agency may request a deferral for any of the following conditions:

- *Delay in the bus delivery is caused by the bus manufacturer.*
- *Delay in bus delivery is caused by setback of infrastructure construction schedule.* A transit agency may request for extension, if it cannot finalize the

required ZEB infrastructure in time to operate the purchased ZEBs after their expected delivery. Possible reasons for infrastructure delay include power supply issue with utilities, permitting issues, change of general contractor, natural disaster, or other reasons beyond the control of the transit agency.

- *When a required ZEB type is not available for purchase.* A ZEB is considered unavailable for purchase, if it is not eligible to be purchased with federal funds, or cannot be configured to meet the requirements of Americans with Disabilities ACT (ADA). Executive Officer may grant an exemption from purchase of this type of ZEB until the next purchase cycle and the transit agency may purchase a conventional bus instead.
- *When available ZEBs cannot meet a transit agency's daily mileage needs.* A transit agency that uses depot charging for battery-electric buses may request an extension if the transit agency can show that a given bus type cannot reasonably meet the transit agency's daily mileage needs for any similar bus in the existing active fleet. The claim can be substantiated with a monthly mileage report for the bus type to show past daily usage for similar buses in the fleet. If the transit agency required daily range is higher than 80% of the tested range, the transit agency will be granted an extension until the next purchase. The tested range will be based on the Orange County Bus (OC BUS) test cycle to determine the bus energy use per mile. Additional data or information would be required to substantiate claims due other factors such as terrain or climate.

Optional Joint Zero-Emission Bus Group

Two or more transit agencies may pool their resources together and form a Joint Zero-Emission Bus Group to comply with zero-emission bus purchase requirement collectively. These transit agencies must share the same Metropolitan Planning Organization (MPO) or Transportation Planning Agency, or be located within the same Air Basin.

Interested transit agencies may submit a notification to the Executive Officer and include a list of all participating transit agencies, the reason they are qualified for this option, a statement of intent, and the proposed start year and the end date (if known). Members of a Joint Group may submit one ZEB Rollout Plan that is approved by each participating transit agency's governing board in lieu of submitting individual plans.

Participating transit agencies must collectively purchase and operate at least the same total number of ZEBs annually as they would if complying individually. Members of a Joint Group that are requesting a deferral from ZEB purchase requirements must show that compliance requirements cannot be met by any member of the joint group.

Use of Low NOx Engines

Starting January 1, 2020, small and large transit agencies must purchase low NOx engines when new conventional bus purchases are made:

- The requirement applies to engines that have been commercially available for at least two years.
- The engine must be certified to the lowest level of NOx emissions that is suitable for the bus and fuel type being purchased.

- The requirement does not apply to buses that are dispatched from areas defined as NOx exempt areas¹.
- Any early low NOx engine purchases will count towards compliance with the low NOx engine requirement.

Use of Renewable Fuels

Starting January 1, 2020, large transit agencies will be required to use renewable fuels for diesel and compressed natural gas (CNG) buses when fuel contracts are renewed to support existing programs.

Transit agencies' use of RD and RNG will not produce additional emission reduction outside of the LCFS program. However, such requirement will help stimulate the LCFS market. The proposed ICT regulation does not claim any emission reduction benefits from the use of renewable fuels since the proposed ICT is not the primary driver for this fuel production.

Reporting and Record Keeping Requirements

- Each year starting in March 31, 2021, all transit agencies will be required to report their fleet information for the prior compliance year and will need to meet record keeping requirements.
- For the initial report, transit agencies will need to report information on all active buses in the fleet as of December 31, 2017 that are in the scope of the regulation with a GVWR greater than 14,000 lbs. to determine fleet size.
- All transit agencies are required to report bus type, engine, powertrain information, number of bus purchases, leases, conversion, and dates that buses are added or retired from the active fleet.
- Large transit agencies will also need to report purchases of renewable fuels.
- A transit agency that is operating a zero-emission mobility program must report the total accumulated annual zero-emission passenger miles.
- Each transit agency must maintain records of documents that support the information reported, including every fuel contract and every bus that is purchased, leased, rented, or converted from a conventional engine to zero-emission technologies for purpose of demonstrating compliance. Each transit agency must maintain records until seven years after an affected vehicle is retired or seven years after a fuel contract ends.

¹ "NOx Exempt Areas" means the following counties: Alpine, Amador, Butte, Calaveras, Colusa, Del Norte, Eastern Kern (portion of Kern County within the Eastern Kern Air Pollution Control District), Glenn, Humboldt, Inyo, Lake, Lassen, Mariposa, Mendocino, Modoc, Mono, Monterey, Nevada, Northern Sonoma, Plumas, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz, Shasta, Sierra, Siskiyou, Northern Sutter (portion of Sutter County that is north of the line that extends from the south east corner of Colusa County to the southwest corner of Yuba County), the portion of El Dorado that is within the Lake Tahoe Air Basin, the portion of Placer that is East of Highway 89 or within the Lake Tahoe Air Basin, Trinity, Tehama, Tuolumne, and Yuba.