2018 American Zero Emission Bus Conference

INNOVATIVE CLEAN TRANSIT
PROPOSED REGULATION

Los Angeles
September 10\textsuperscript{th} & 11\textsuperscript{th}
General Considerations of Staff Proposal

- Achieve zero emission transit system by 2040
- Partner with transit agencies on long-term strategy
- Encourage early action with opportunities for funding
- Maintain consistency with existing purchase patterns
- Enhance transit services and encourage innovative mobility options
- Provide environmental benefits, especially in disadvantaged communities
- Ensure requirements are technologically and financially feasible
Summary of Current Proposal

- Regulatory documents are available for public review

- Applicability
  - Zero emission bus (ZEB) rollout plan
  - ZEB purchase requirement
    - Waiver of initial requirements if early ZEB purchases
    - Zero emission mobility option
    - Bonus credits for early action
    - Provisions for deferral of ZEB purchases
    - Zero emission bus joint group option

- Use of low NOx engines and renewable fuels
- Annual Reporting
Applicability and Fleet Size

- The proposed ICT would apply to
  - A California public transit agency that owns, operates, leases, rents, or contracts with another entity to operate affected buses in California
  - A bus with a GVWR of over 14,000 lbs., but does not include trolleybuses

- Does not include
  - School buses, trolleybuses, and vehicles operates on rail
  - Caltrans, Caltrain, Amtrak
  - Airports, colleges or universities, national parks, private entities

- Requirements differ based on fleet size
  - Fleet size is total active & affected buses in the fleet on December 31, 2017
  - Large fleet has 100 or more active buses
  - Small fleet has less than 100 buses
ZEB Rollout Plan

- Each transit agency would submit a transit board approved ZEB purchase and deployment plan
  - June 30, 2020 for large transit agencies
  - June 30, 2023 for a small transit agencies

- Key plan elements
  - Goal of full transition to zero-emission technologies by 2040 or earlier
  - Identify the type of zero-emission technology
  - Identify the planned schedule for bus purchases & buildout of required infrastructure
  - Describe the training schedule for zero-emission bus operators and technicians
  - How to deploy ZEB in Disadvantaged Communities (DAC)
  - Identify potential funding sources
ZEB Purchase Requirements

- Applies to annual purchase of new buses
  - Purchase begins with the date a Notice to Proceed (NTP) is issued to the bus manufacturer to begin production and is completed upon delivery of the bus
  - All buses must be delivered within 2 years after the issuance of NTP

- Cutaway buses, double decker, motor coaches, and articulated buses will be excluded until January 1, 2026 and will continue to be excluded until
  - The applicable bus type has passed and obtained a Altoona bus testing report
  - If purchased before the requirements kick in, ZEB will still be counted towards compliance

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>ZEB Percentage of New Bus Purchases</th>
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<tbody>
<tr>
<td></td>
<td>Large Transit Agency</td>
</tr>
<tr>
<td>2023*</td>
<td>25%</td>
</tr>
<tr>
<td>2024*</td>
<td>25%</td>
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<tr>
<td>2025</td>
<td>25%</td>
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<tr>
<td>2026</td>
<td>50%</td>
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<tr>
<td>2027</td>
<td>50%</td>
</tr>
<tr>
<td>2028</td>
<td>50%</td>
</tr>
<tr>
<td>2029 and after</td>
<td>100%</td>
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</tbody>
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* Potential waiver for early compliance
Waiver for Early Compliance

- Encourage early compliance and utilization of funding
- Waive 2023 ZEB purchase requirement if transit agencies collectively purchase 1000 or more ZEBs by December 31, 2020
- Waive 2024 ZEB purchase requirement for a second time if transit agencies collectively purchase 1,150 or more ZEBs by December 31, 2021
- Gathering additional information from transit agencies and negotiating with CTA
- Number of ZEBs in California as of August 2018
  - 153 in service
  - 433 on order
  - 729 awarded or planned
  - New purchases expected with available funding
Zero Emission Mobility Program Option

- May be used in lieu of ZEB purchases
- Bicycles or other zero emission vehicles with GVWR of 14,000 lbs. or less
  - Bike sharing, car sharing, vanpool or micro transit
  - Must be operated directly or through a contractor with the transit
  - Transit must track and record the annual zero-emission passenger miles for each vehicle
- Zero emission passenger miles equivalent to having one ZEB in the fleet
  - 320,000 zero emission passenger miles/year for a large transit
  - 180,000 zero emission passenger miles/year for a small transit
ZEB Bonus Credits

- Recognize pioneers that took risks with deploying early technologies, worked with manufacturer, State, utilities to overcome barriers
- Counted towards compliance

<table>
<thead>
<tr>
<th>Technology</th>
<th>Placed in Service</th>
<th>Bonus ZEB Credit</th>
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<tbody>
<tr>
<td>FCEB</td>
<td>January 1, 2018 to January 1, 2023</td>
<td>+1</td>
</tr>
<tr>
<td>FCEB</td>
<td>Before January 1, 2018</td>
<td>+2</td>
</tr>
<tr>
<td>BEB</td>
<td>Before January 1, 2018</td>
<td>+1</td>
</tr>
</tbody>
</table>
Optional
Joint Zero Emission Bus Group

- Transit agencies may pool resources to comply with ZEB purchase requirement collectively
  - Share infrastructure
  - Share the same MPO, Transportation Planning Agency, or Air District
  - Located within the same Air Basin

- The total annual ZEB purchased collectively must equal the sum of the total annual ZEBs required to purchased by each participating transit agency

- If the largest transit agency in a group is large, it must meet the same individual requirement

- Provides more flexibility, better land use, air quality benefit, and reduces costs
Deferral of ZEB Purchase

- To ensure transit’s individual circumstances are considered

- Extension
  - Delay in the bus delivery caused by the bus manufacturer
  - Delay due to setback of infrastructure construction
  - When an available ZEB at the end of battery or fuel cell stack warranty period cannot meet a transit agency’s daily mileage needs

- Exemption
  - If a ZEB type is not available
    - Has not passed Altoona bus testing;
    - Cannot meet Americans with Disabilities Act (ADA) requirements; or
    - Physical characteristic of ZEB would result in transit violating a federal, state, or local law
  - Financial hardship
Low NOx Engines & Renewable Fuels

- Both requirements start January 1, 2020

- Low NOx engine
  - Applies to all transit agencies when new conventional bus purchases are made
  - Buses dispatched from NOx exempt areas are exempt
  - Engine certified to the lowest level of NOx and commercially available for at least 2 years
  - Switching fuel types not required

- Purchase renewable diesel or renewable natural gas
  - Would apply to large transit agencies only
  - When fuel contracts are renewed
  - Renewable fuels are commercially available due to
    o Federal renewable fuel standard program
    o California low carbon fuel standard program (LCFS)
  - No additional emission reduction outside of LCFS
Comprehensive Review

- Continue coordination with transit agencies, manufacturers, utilities, and other state agencies for successful implementation

- Board update one year prior to first purchase requirements
  - Help formulate appropriate policies and funding strategies

- Review conclude
  - ZEB capital and operational costs, performance, daily operational range, and reliability
  - Status of technology for cutaway buses and other types of buses
  - Evaluate transit agencies experience
Funding Availability

- **HVIP**— $180M for FY 17-18, $125M for FY 18-19 for bus and infrastructure
- **LCTOP & TIRCP**— 5% & 10% of the annual Cap-and-Trade auction proceeds, respectively
- **VW**— $130M allocated for zero-emission transit, school, and shuttle bus replacements and infrastructure, transit may be eligible for up to $65 M
- **Moyer & AB 923**— $80,000 cap for a ZEB replacement or conversion
- **AB 617**— $250M for FY 17-18 for engine replacement, repower and infrastructure in DAC; $245 additional fund for FY 18-19
- **SB350**— CPUC approved medium- & heavy-duty infrastructure investments
  - $236 million for PG&E
  - $343 million for SCE and new transitional rate schedule
  - Rebates up to 50% of the EVSE costs for transit and school buses
  - $151 million SDG&E proposal to be considered separately
Timeline & Contact Information

- 45-Day Comment Period closes September 24, 2018
  - First hearing: September 27, 2018
  - Second hearing: Winter 2018/2019
  - Anticipated rule effective date: January 1, 2020

- Innovative Clean Transit [https://arb.ca.gov/msprog/ict/ict.htm](https://arb.ca.gov/msprog/ict/ict.htm)
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