Innovative Clean Transit (ICT) Regulation
December 14, 2018
Overview

• Transits lead the way
• Regulation summary
• Proposed 15-Day changes
• Available incentives
• Emissions reductions and other benefits
• Staff recommendations and next steps
Transit Agencies Lead the Way

- Transit agencies are partners in introducing new technologies
- Play a vital role in providing sustainable transportation
  - Reduce light-duty vehicle miles travelled
  - Enhance connectivity and mobility
- Key to accomplishing transportation and air quality goals
- More than 50 transit agencies making ZEB purchases
- 16 transit agencies committed to full transition to ZEBs
- ZEBs acting as beachhead in heavy-duty vehicle sectors
Broad Support for ZEB Deployment

- Wide range of buses and multiple manufacturers
- California Department of General Services streamlining ZEB purchases
- SAE published heavy-duty battery electric plug-in standard
- Large liquid hydrogen plant for West US will be built
- CPUC approved heavy-duty vehicle infrastructure investments
  - PG&E $236 million, SCE: $343 million and new rate schedule
  - SDG&E: $151 million proposed (pending decision)
- Substantial incentives available to encourage early actions
- Continued technology advancement and cost reductions needed
Principles of Staff Proposal

• Achieve zero-emission transit system by 2040
• Partner with transit on long-term strategies and implementation
• Encourage early action
• Provide environmental benefits, especially in disadvantaged communities (DAC)
• Ensure sufficient funding opportunities for successful transition
• Enhance transit services and encourage mobility options
• Ensure requirements are technologically and financially feasible
• Monitor progress and report back to Board annually
Recap of ICT Regulation

- Individual ZEB rollout plan
- ZEB purchase requirements
  - Discharge of initial ZEB purchase requirements
  - Later phase-in for cutaway and other buses
  - Exemptions to safeguard uncertainties
  - Delayed requirements for small fleets
- ZEB bonus credits and innovative zero-emission mobility option
- Joint group compliance
- Low NO\textsubscript{X} engines and renewable fuels
Summary of Proposed 15-Day Changes

- Revised fleet size definition
- Updated thresholds to discharge initial ZEB purchases
- Expanded exemptions to guard against potential adverse service impacts
- Expanded bonus credits to include electric trolley buses
- Clarifications and minor edits
Proposed Changes Heard at September Board Hearing

• Revised fleet size definition consistent with California Transit Association proposal
  • A large transit agency has:
    • Over 65 peak buses in South Coast or San Joaquin Valley, or
    • Over 100 peak buses in areas with over 200,000 population
  • Small transit agency includes all others

• Updated threshold to discharge initial ZEB purchases
  • 2023 requirement discharged if 850 ZEBs purchased by 1/1/2021
  • 2024 requirement discharged if 1,250 ZEBs purchased by 1/1/2022
Expanded Exemptions to Safeguard Transit Service

- Expanded Executive Officer approved exemptions - to ensure no service cuts or fare increases associated with regulation implementation
- Needed ZEB type is not available
- Exemptions based on available depot charging BEBs
  - Daily mileage needs cannot be met
  - Gradeability needs cannot be met
  - Incremental capital costs cannot be offset with funding and financing
  - Higher electricity costs
- Agency declared fiscal emergency
- Delay of infrastructure construction
Comprehensive Review
One Year Before the First ZEB Purchase

• Identify the status of ZEB technology, evaluate over 20 different metrics
• Review described in the resolution
• Complements annual updates to the Board
• Continued coordination with transits, OEMs, utilities, and other state agencies
• Evaluate transit agencies experience and identify issues
• Help formulate appropriate policies and funding strategies
Economic Analysis

• Overall cost reductions from 2020 to 2050
  • Includes LCFS credits
  • Excludes other incentives

• Significant upfront capital costs for bus purchases and infrastructure; operational savings

• Funding opportunities and financing options eliminate early incremental costs
## Significant Incentives Available

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
<th>FY 17-18</th>
<th>FY 18-19</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HVIP</strong></td>
<td>Low NO\textsubscript{x} engines, ZEVs, advanced technology, &amp; infrastructure</td>
<td>$125M</td>
<td>$130M</td>
<td>$255M</td>
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<td><strong>VW</strong></td>
<td>Zero-emission transit, school, &amp; shuttle bus replacements</td>
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<td>$130M</td>
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<tr>
<td><strong>Carl Moyer</strong></td>
<td>Cleaner engines &amp; ZEVs up to $80,000/bus plus fueling infrastructure</td>
<td>FY 18-19</td>
<td>$79M</td>
<td>$79M</td>
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<td><strong>AB 617</strong></td>
<td>Engine replacement &amp; infrastructure in DAC</td>
<td>FY 18-19</td>
<td>$245M</td>
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<td><strong>LCTOP</strong></td>
<td>Expanded bus or rail services, &amp; multimodal facilities</td>
<td>$146M*</td>
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<td><strong>TIRCP</strong></td>
<td>Rail, bus, and ferry transit improvements</td>
<td>FY 17-18</td>
<td>$291M*</td>
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<td><strong>Utility Programs</strong></td>
<td>Charging infrastructure service upgrades and electricity rates (SB350)</td>
<td>FY 17-18</td>
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<td>&gt;$575M</td>
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<td><strong>LCFS</strong></td>
<td>Credits for using low carbon transportation fuels</td>
<td></td>
<td></td>
<td>~$10,000/BEB/yr</td>
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* Calculated from cap-and-trade auction proceeds listed at arb.ca.gov/cc/capandtrade/auction/aug-2018/ca_proceeds_report.pdf
NO$_X$ and PM$_{2.5}$ Emissions Benefits

- Reduce statewide NO$_X$ and PM$_{2.5}$ tailpipe emissions ~7,000 tons and ~40 tons respectively from 2020 to 2050
GHG Emissions Benefits

- Reduce GHG emissions by 19 MMT CO$_2$e from 2020 to 2050
Environmental Analysis

• Draft Environmental Analysis (EA) completed
• Released for 45-Day public comment period
  • August 10, 2018 – September 24, 2018
• Written responses to comments published December 4, 2018
• Final EA published December 7, 2018
Benefits of Proposed ICT Regulation

- Health benefits, especially in disadvantaged communities
- Climate benefits
- Expand green jobs and trained workforce
- Reduced energy and petroleum use
- Less dependence on petroleum fuels
- Other societal benefits
- Leads zero-emission technology in other heavy-duty sectors
Staff Recommendations

Approve Proposed Resolution 18-60, which includes the following components:

- Approve written responses to environmental comments,
- Certify the Final EA.
- Approve the Proposed Amendments,
- Commitment to provide the Board with annual updates
- Commitment to conduct a comprehensive review one year before first ZEB purchase requirement
Next Steps

- Monitor status of ZEB technology
- Work with transit agencies to implement the regulation
- Report to the Board annually
- Conduct a comprehensive review