Securing Funding for ZEBs

Alison Smyth
Lead Engineering Consultant
Center for Transportation & the Environment
About CTE

WHO WE ARE
501(c)(3) nonprofit engineering and planning firm

OUR MISSION
Improve the health of our climate and communities by bringing people together to develop and commercialize clean, efficient, and sustainable transportation technologies

PORTFOLIO
$800+ million
• Research, demonstration, deployment
• 96 Active Projects totaling over $302 million

OUR FOCUS
Zero-Emission Transportation Technologies

NATIONAL PRESENCE
Atlanta, Berkeley, Los Angeles, St. Paul
Our Four Service Areas

Prototype Development & Demonstration
We support technology providers through technology research, development, and demonstration.

Smart Deployment
We support early adopters by providing the best technical solutions for initial deployments.

Fleet Transition
We help fleet operators implement strategic plans for full electrification.

Education & Outreach
We help organizations of all shapes and sizes stay ahead of the technology curve.
Proposal and Grant Writing

We respond to federal and state opportunities to advance the zero-emission vehicle industry. Supported over 50 transit agencies in requesting funding from the FTA’s Low-No program in 2022.

- CTE wrote proposals for and managed multiple FTA funded National Fuel Cell Bus Program projects to develop and commercialize fuel cell electric buses in the United States.
- CTE has applied for and been awarded funding under CARB, CEC, DOD, DOE, DOI, EPA, and FTA programs.
- CTE and its project partners have secured over $800 million dollars in public funding for zero-emission bus projects.
Plan your project early

- Developing a zero-emission vehicle deployment strategy takes time
- Many funding opportunities are announced before the solicitation is released
ZEB Planning

- Understand vehicle capabilities
  - Power requirements and limitations
  - Energy consumption under different topography, speed, and weather conditions
- Commuter bus and cutaway markets are not as far along the commercialization pathway as low-floor transit buses and cars
- Know infrastructure requirements
CARB Innovative Clean Transit Regulation

100% ZEB Fleet by 2040 is not a mandate, but a goal
There is only a *purchasing* mandate:

<table>
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<tr>
<th>Starting January 1</th>
<th>ZEB Percentage of Total New Bus Purchases</th>
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<tbody>
<tr>
<td>2026</td>
<td>25%</td>
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<tr>
<td>2027</td>
<td>25%</td>
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<tr>
<td>2028</td>
<td>25%</td>
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<tr>
<td>2029</td>
<td>100%</td>
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- Small CA Transit Agencies (<100 buses) are required to submit a board-approved ZEB Rollout Plan by **July 1, 2023**.
- Agencies may request exemption from ZEB purchase requirements
- Cutaway buses, motor coaches, and articulated buses will be excluded until January 1, 2026 or the applicable bus type has passed and obtained a Altoona bus testing report
Transition Planning

- ICT rule implementation
- Required for applying for Low-No funds
- Nine months to develop comprehensive plan
- Planning is critical for understanding costs and funding needs
ZEB Transition Analysis

- Total Cost of Ownership (TCO) summarizes lifecycle costs of major capital and operating cost components on an annualized basis over the transition period.
- Includes bus procurements, fuel, maintenance, and equipment, infrastructure, facility upgrades, and design, construction and installation services.
Funding opportunities

- **Block Grants**
  - CEC EnergIlIZE program

- **Capital programs**
  - FTA’s Low or No Emission Vehicle Program

- **Rebates**
  - PG&E EV Fleet Program

- **Voucher programs**
  - HVIP
Thank You!

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