



MTI Research Snaps presents

## Zero-Emission Buses in the US: Understanding and Addressing Market and Policy Challenges

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# Introduction



- Longstanding market dynamics cited in 2016 Mineta report on transit bus market still apply
- Now undertaking a once-in-a-generation zero-emission transition; many agencies struggling to meet targets
- This report:
  - Practitioner's perspective on challenges for transit agencies
  - Impacts of relevant policies
  - Potential solutions for accelerating zero-emission transition

# ZEB Landscape



**2000**

Urban & rural public transit agencies

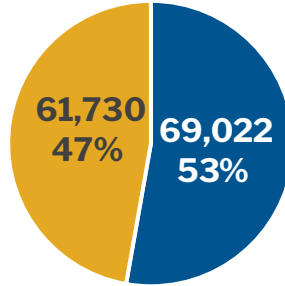
+

**4000**

Non-profit transit providers

## On-Road Transit Vehicles, 2022

NTD, 2024



■ Full-sized on-road transit vehicles



■ Small on-road transit vehicles



**>7k**

**ZEBs Deployed**  
CALSTART, 2024

# ZEB Market

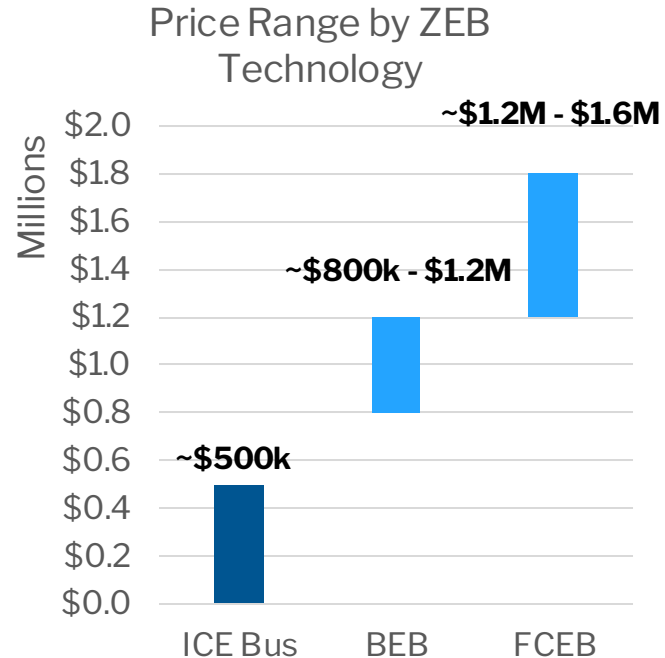


- Market concentration: effective monopoly (FCEB) and duopoly (BEB)
- Disruptive recent events
- Supplier economic & scaling challenges

# ZEB Costs

## Drivers:

- Macroeconomic & inflationary pressures
- Price insensitivity
- Customization
- Policy & regulation
- Relative technological immaturity



# Transition Challenges



- “Missing” ZEB models
- Performance variability and uncertainty
- Scaling from pilot to full fleet
- Required operational changes and specialized knowledge and workforce

# Selected Solution Areas



- Share the savings of lower-cost ZEBs with transit agencies
- Target funding towards the total cost of ownership of ZEBs
- Support critical R&D activities/provide targeted market development support
- Transfer performance risk to vendors/consider alternative delivery/contracting options
- Open-source repository of training materials
- Streamline access to experts

Thank you for joining us for

# Zero-Emission Buses in the US: Understanding and Addressing Market and Policy Challenges

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