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Transportation Demand Scenarios

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Main Approach for 2050 Scenarios

- Timeframe: 2022-2050
- Three scenarios
  1. Reference Scenario
     - ➢ Existing policies understood as the current “floor”
  2. Policy-Compliance Scenario
     - ➢ Outcomes from likely policies in development
  3. Mitigation Scenario
     - ➢ Aggressive, more speculative policies and outcomes
- CEC will assess annual vehicle stock, annual vehicle miles traveled, and vehicle energy across scenarios
- E3 will take CEC’s results and determine GHG impacts

Reference Scenario Framework

- A baseline scenario with a CEC adopted, managed demand forecast, extended to 2050
- Builds from 2021 mid-case vehicle energy demand forecast
  - Same vehicle attributes and VMT assumptions, extended to 2050
  - Example existing regulations and incentives:
    - Hybrid and Zero-Emission Truck and Bus Voucher Program
    - Clean Vehicle Rebate Program
    - Advanced Clean Trucks
    - Advanced Clean Cars I

Policy-Compliance Scenario Framework

- Reference scenario adjusted by energy demand associated with an increasing ZEV stock aligned to recent policy proposals
- ZEV stock adjusted to comply with CARB's proposed standards
  - Advanced Clean Cars II (ACC II) sales requirements
  - 100% new LD ZEV sales in 2035
    - 12.4% sales in 2021
  - Advanced Clean Fleets (ACF) requirements
    - Multiple ZEV targets depending on vehicle class, approaching 100% sales in different years

Mitigation Scenario Framework

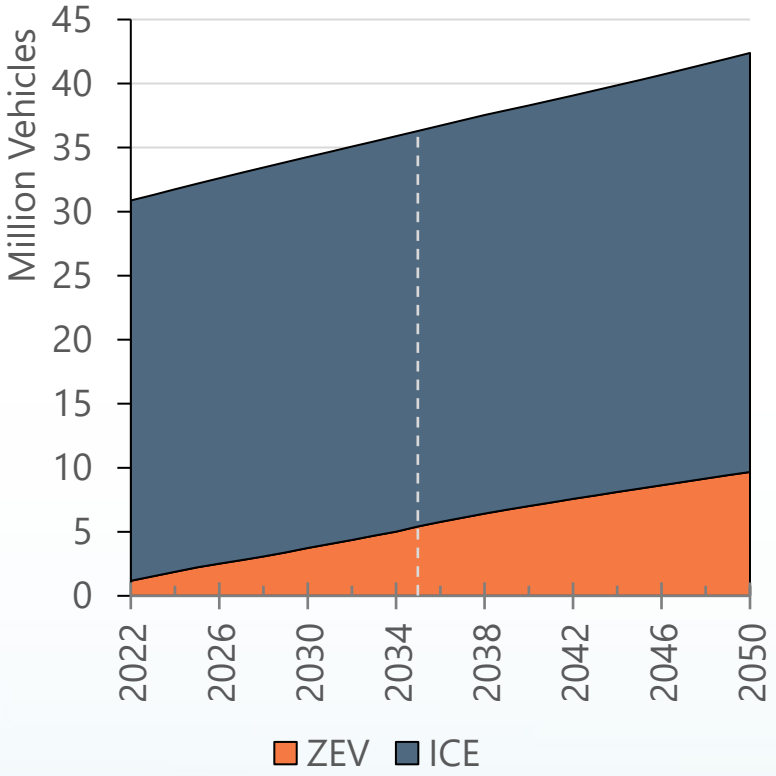
- Reference scenario adjusted by energy demand associated with a highly accelerated ZEV stock
- ZEV stock adjusted to comply with more aggressive CARB scenarios
  - 2020 Mobile Source Strategy (2020 MSS) for light-duty vehicles
    - More aggressive early-stage ZEV adoption rates
  - 100% new LD ZEV sales in 2035
  - 2020 MSS for medium- and heavy-duty

Policy Considerations

- Less clarity on light-duty policy needs
  - Likely continued needs for incentives
  - Some uncertainty due to a rapidly shifting market and consumer preferences
- MDHD
  - Additional need for incentives
  - Accelerated vehicle retirements
- Aviation fuel remains a GHG concern

Light-Duty Stock Results

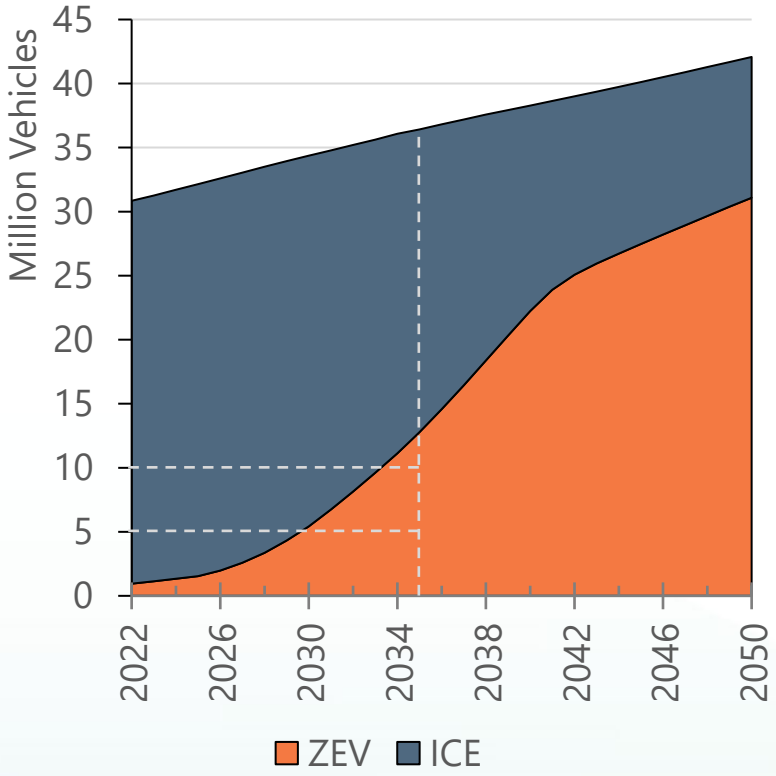
Reference Scenario



ZEV Stock

2035	5.4M
2050	9.7M

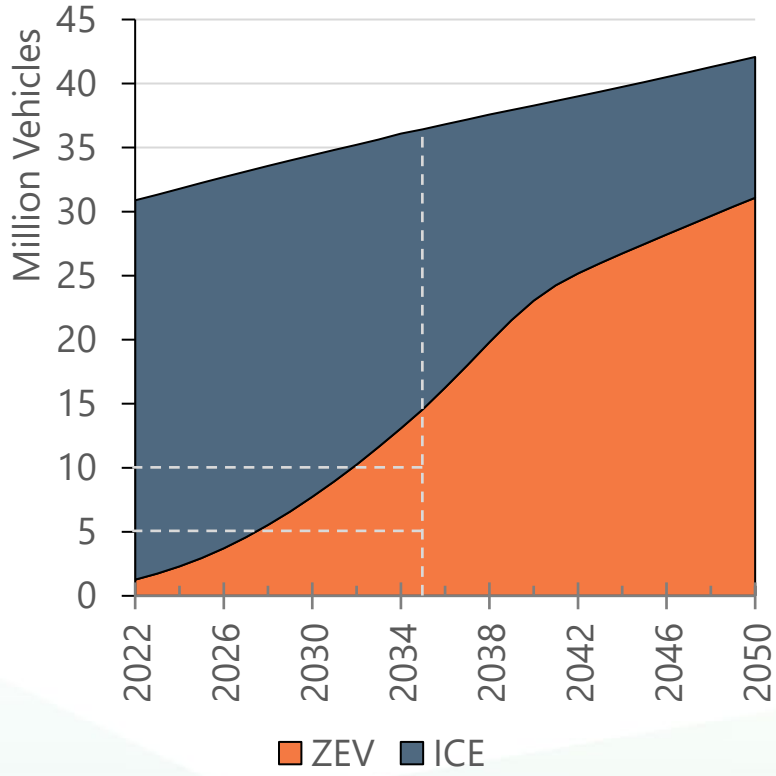
Policy-Compliance Scenario



ZEV Stock

2035	12.8M
2050	31.1M

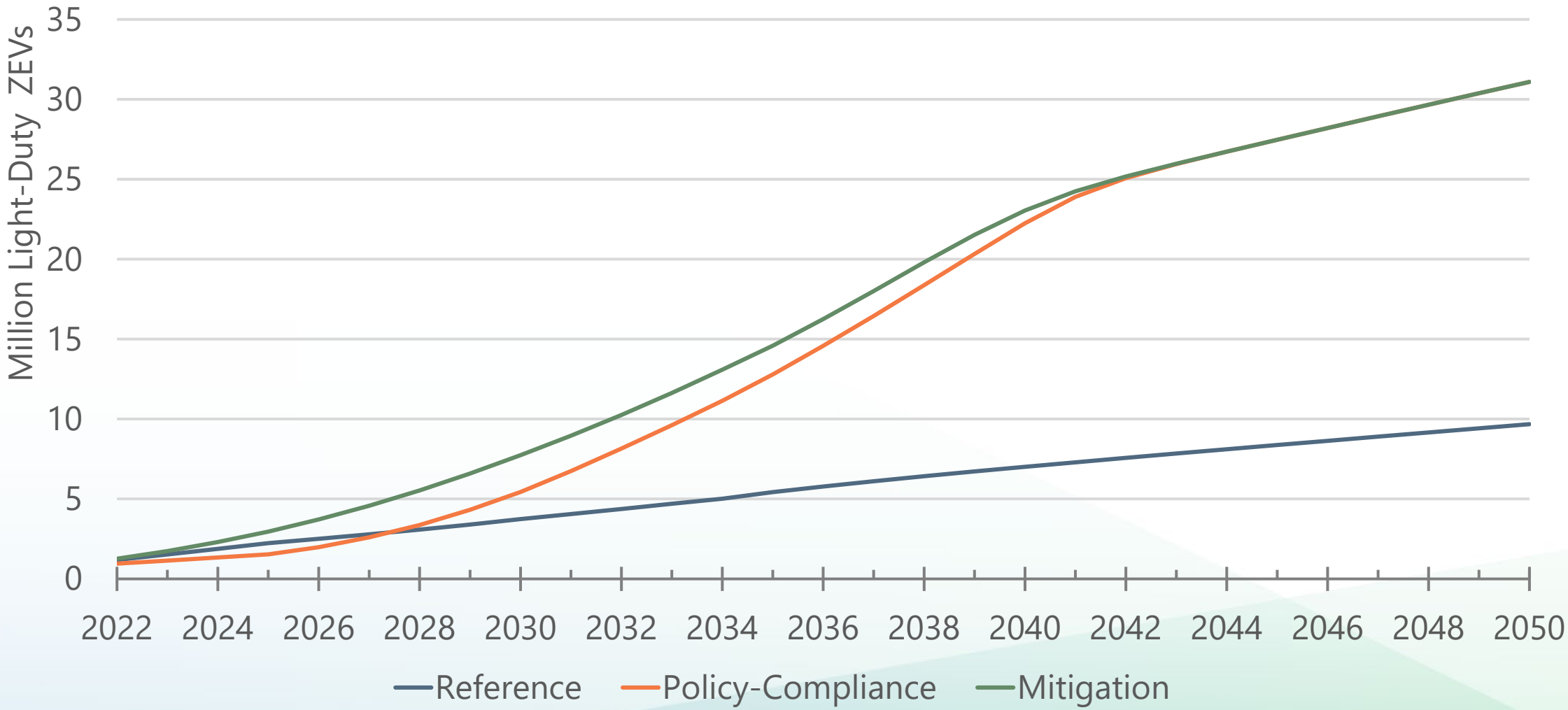
Mitigation Scenario



ZEV Stock

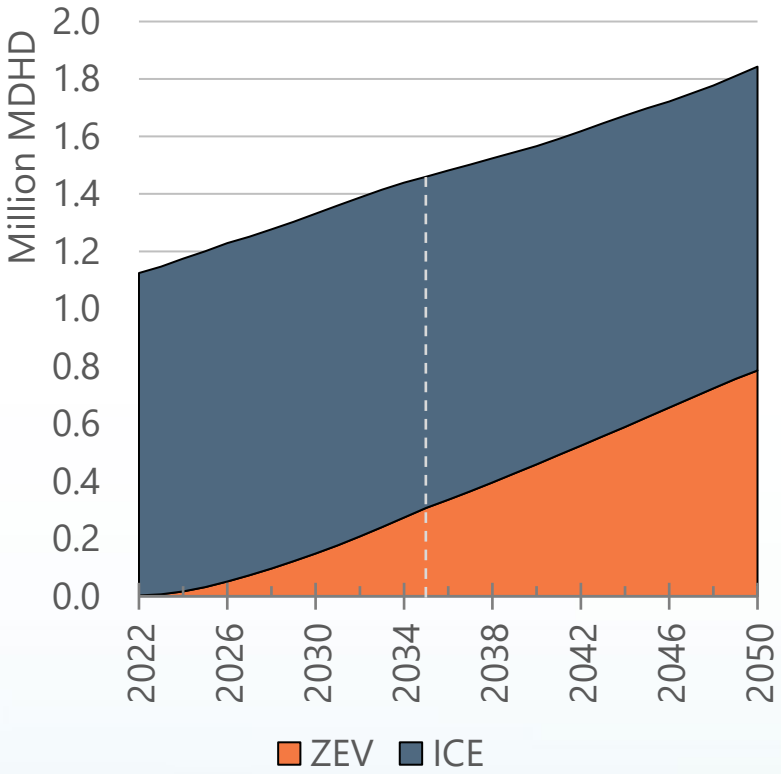
2035	14.6M
2050	31.1M

Scenario Comparison for ZEVs



MDHD Stock Results

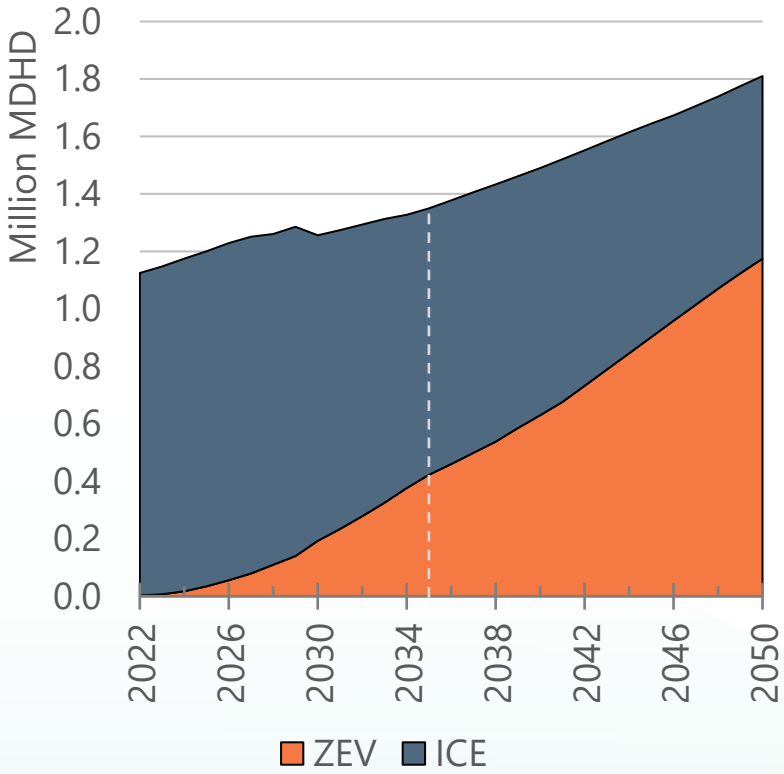
Reference Scenario



ZEV Stock

2035	307k
2050	786k

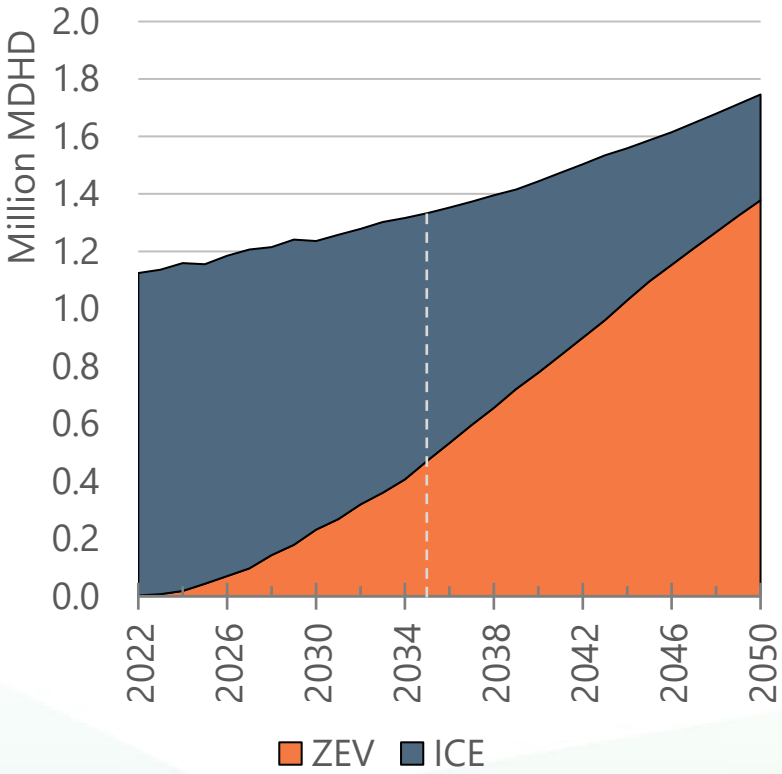
Policy-Compliance Scenario



ZEV Stock

2035	423k
2050	1.17M

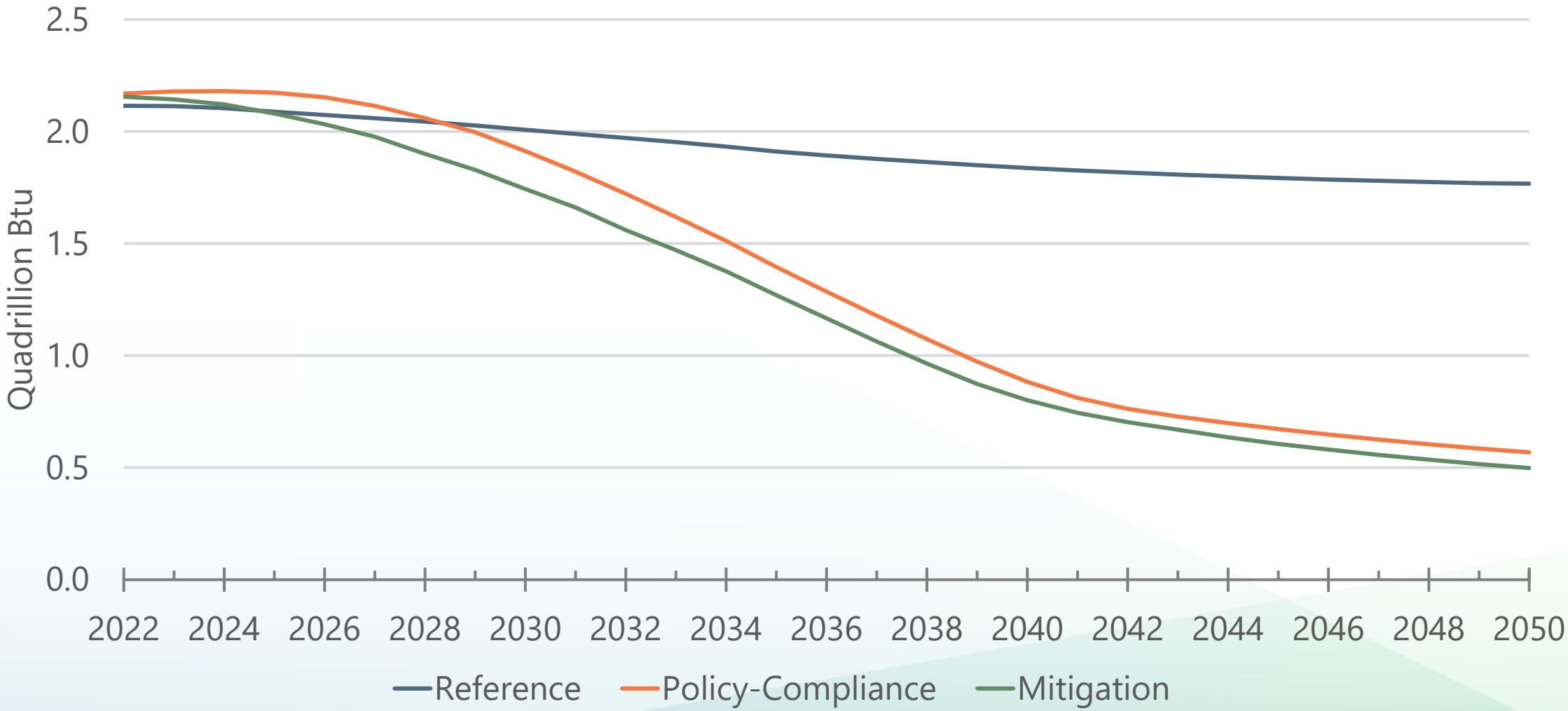
Mitigation Scenario



ZEV Stock

2035	471k
2050	1.38M

Transportation Energy Demand from Combustion Fuels



Transportation Energy Demand from Electricity