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Multi-State ZEV Action Plan

MARAMA Science Meeting

Richmond, VA

July 30, 2015

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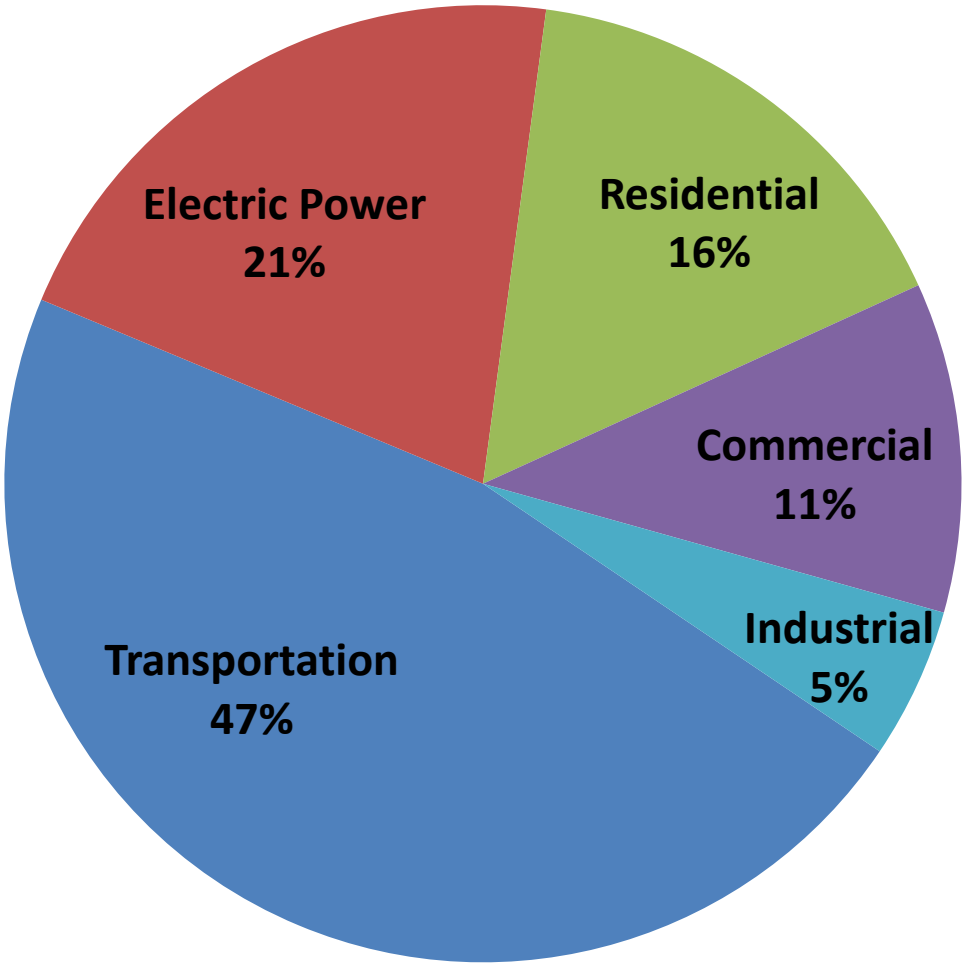
2011 CO_2 Emissions by Sector §177 ZEV States



Source: Source: EIA, "State CO2 Emissions"
(http://www.eia.gov/environment/emissions/state/state_emissions.cfm)

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ZEV MOU: Eight-State Collaborative

- Only ZEV Mandate states
- MOU signed October 2013
- Goal: deploy 3.3 million ZEVs by 2025
- Action Plan finalized May 2014

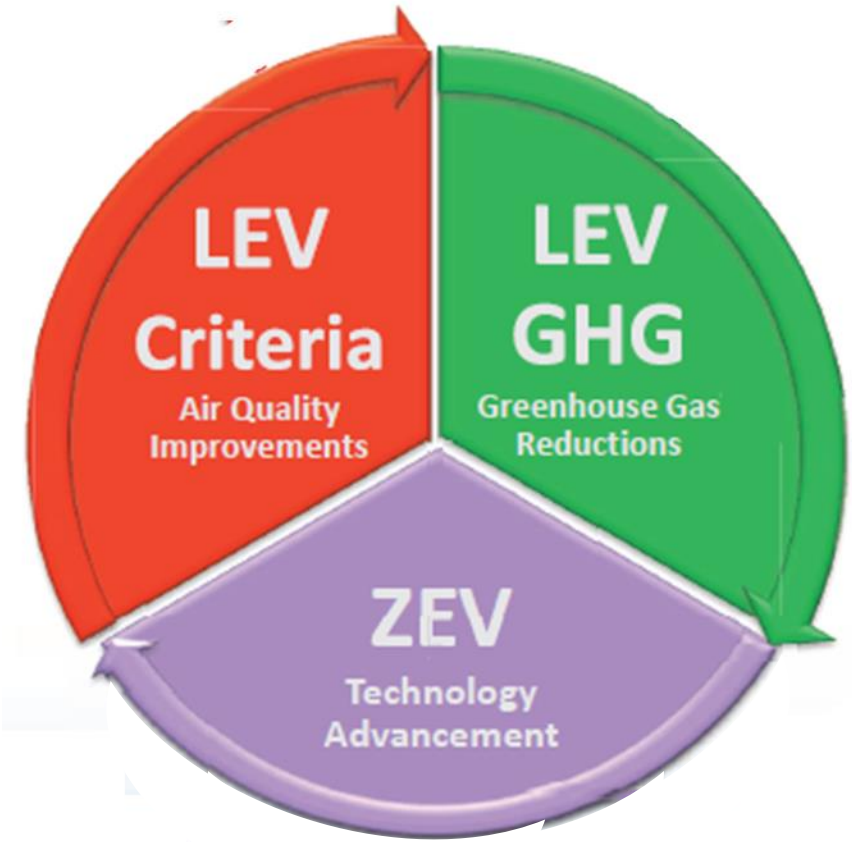
The Zev Regulation

- CAA §209 preempts all states, except for California, from establishing their own motor vehicle emission standards.

- CAA §177 permits other states to adopt and enforce emission standards as long as they are identical to California's.

California's Advanced Clean Cars Program

- LEV and GHG rules are harmonized with Federal GHG/CAFE and Tier 3 through 2025
- LEV and GHG rules set fleet-average emission targets
- ZEV requires vehicle sales based on each manufacturer's total volume



Source: California Air Resources Board

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Definitions

Regulatory Term	Definition	Example Vehicles
ZEV	**Zero-Emission Vehicle**	**BEV (Battery-Electric) FCV (Fuel Cell Vehicle)**
TZEV	**Transitional ZEV**	**PHEV (Plug-in Hybrid)**
PZEV	Partial ZEV	Conventional vehicles with advanced emission controls
AT-PZEV	Advanced Technology PZEV	Traditional, non-plug hybrids like original Prius

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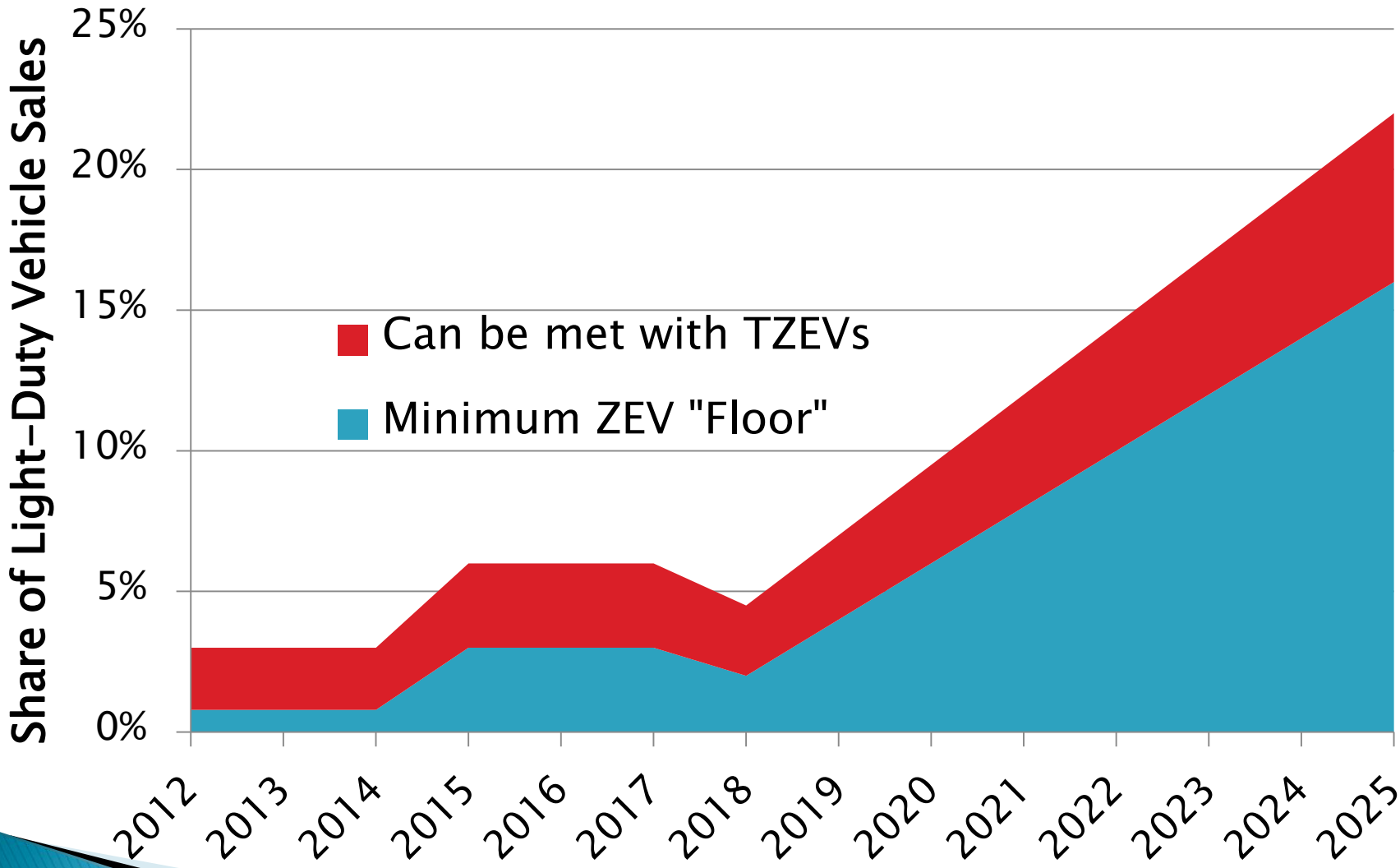
ZEV Credit Requirements



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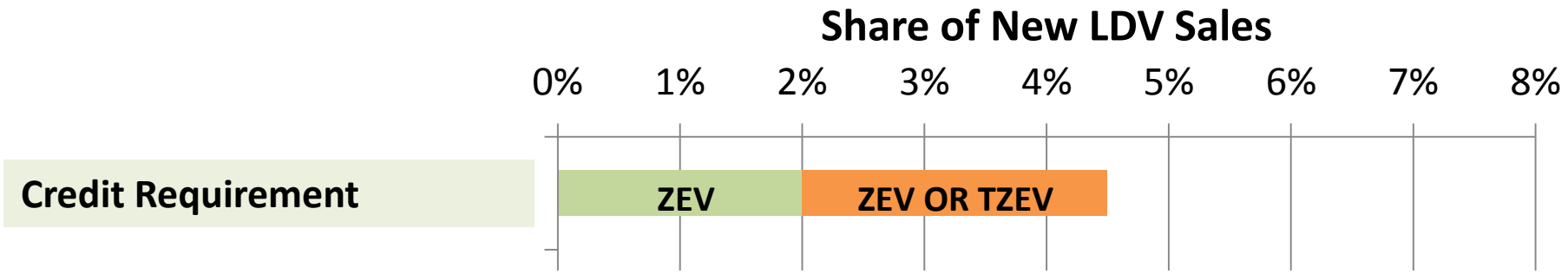
Credit Requirements are not the same as Vehicles Sold: 2018 Example



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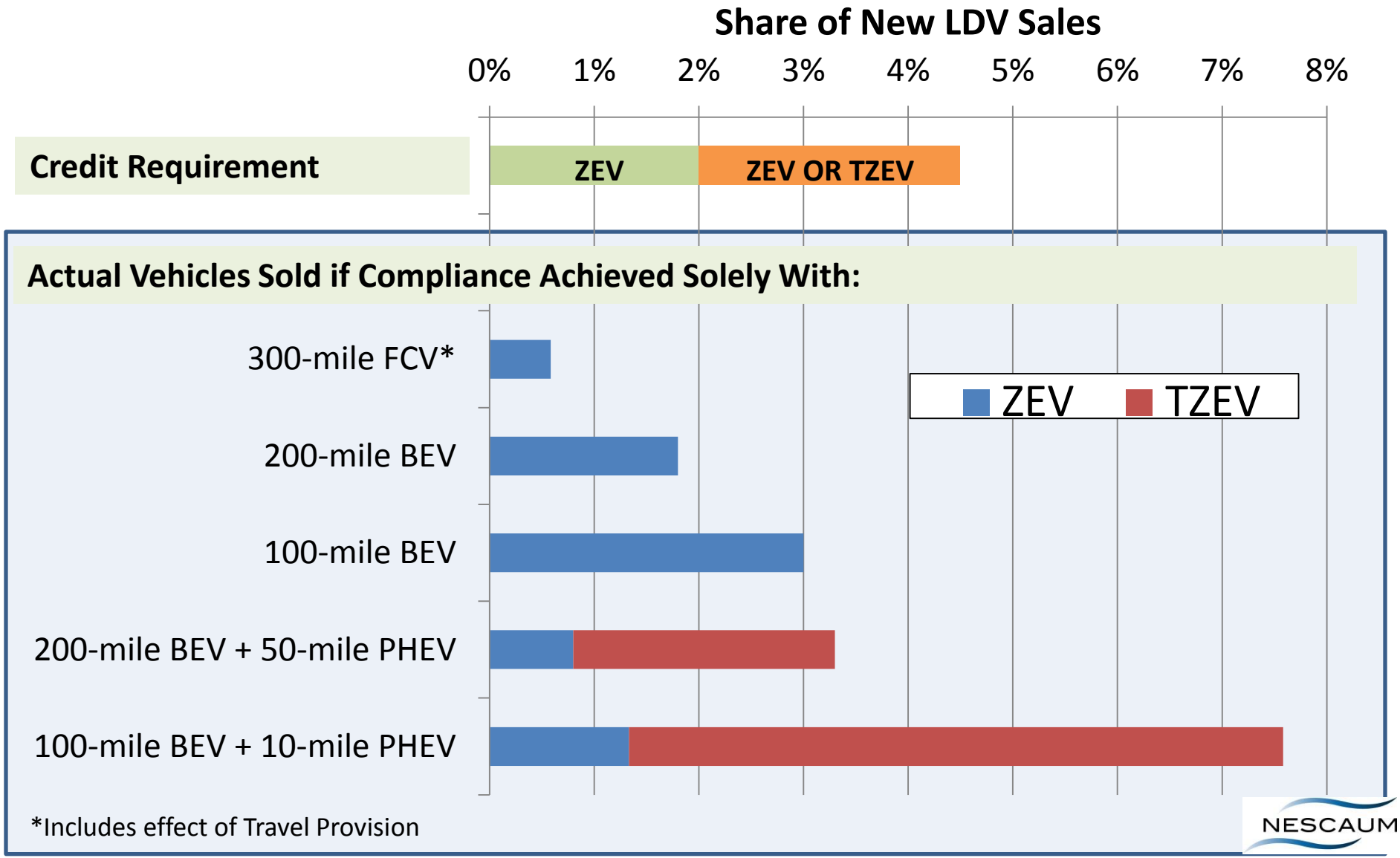
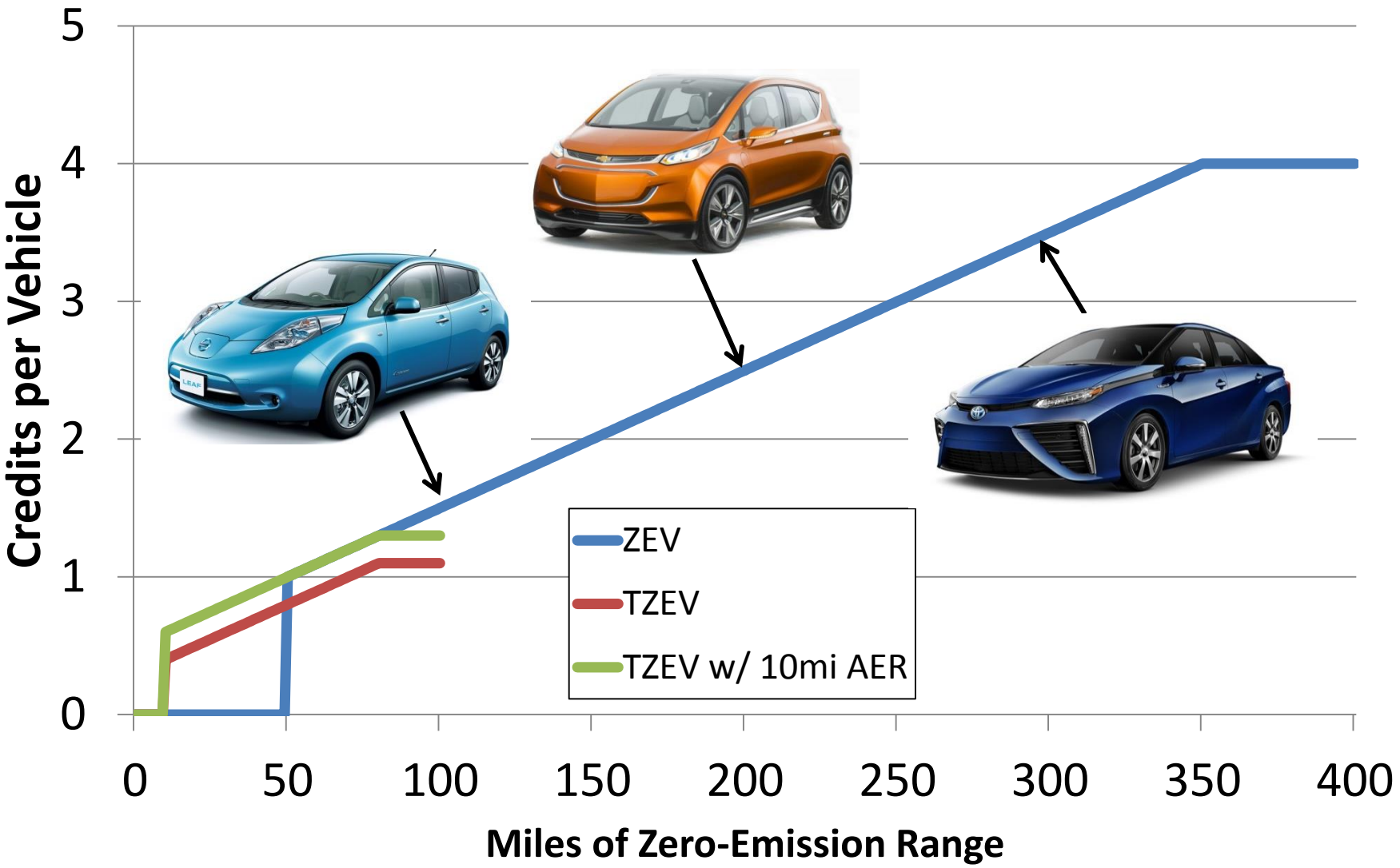


Credits Increase with Range



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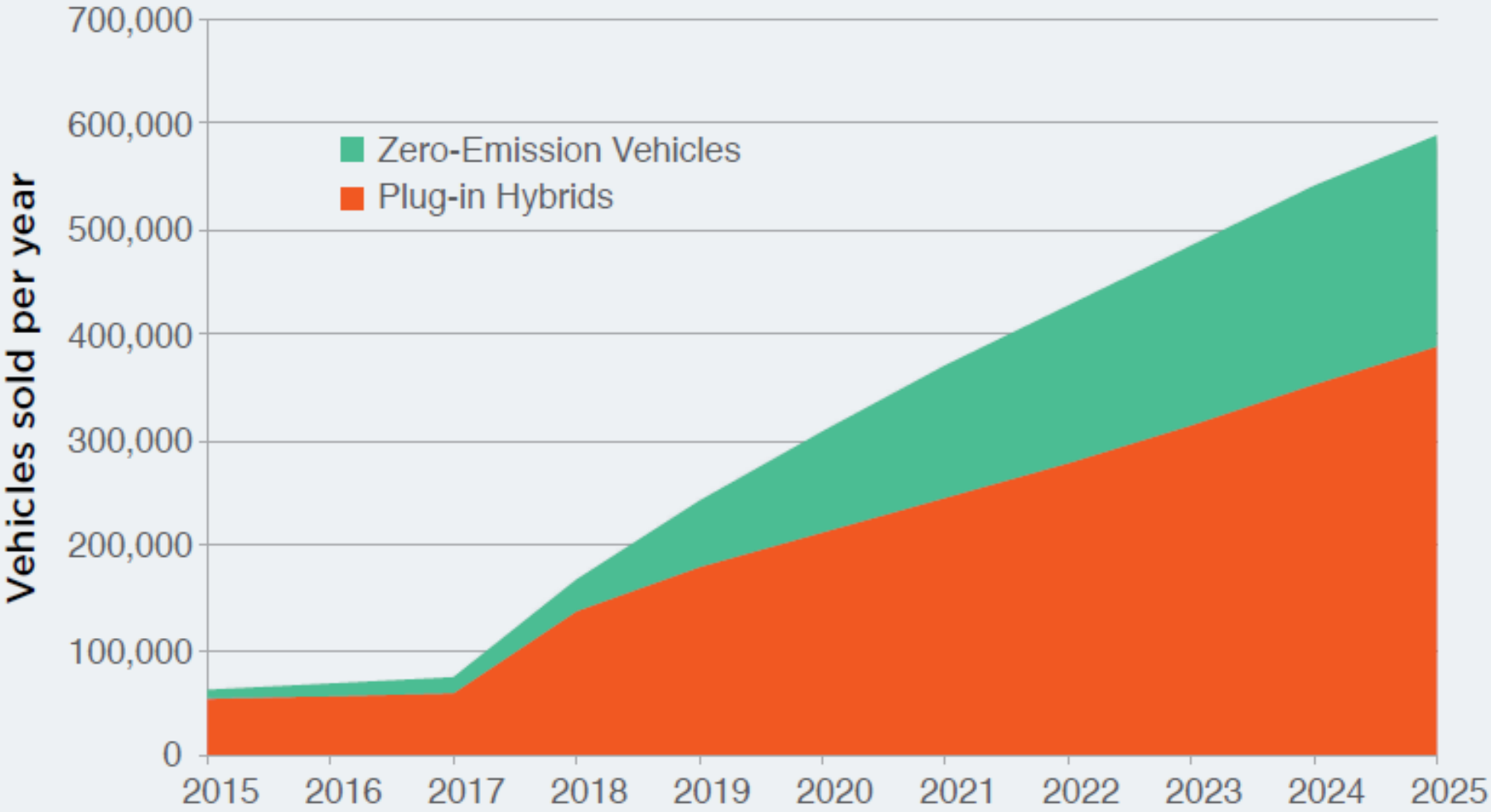
Projected ZEV Compliance Scenario for the MOU States



Source: Multi-State ZEV Action Plan

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Banking, Trading and Pooling

- Manufacturers may trade credits within each state
- Manufacturers may bank credits – some older credits may expire or lose value
- **"Optional Compliance Path"** introduced in 2012 enables manufacturers to "pool" credits among the eastern 177 states
  - Contingent on placement of additional ZEVs in MY 2016 and 2017
  - Reduces overall ZEV volume requirements in 2018-2020 and TZEV requirements in 2015-2018.

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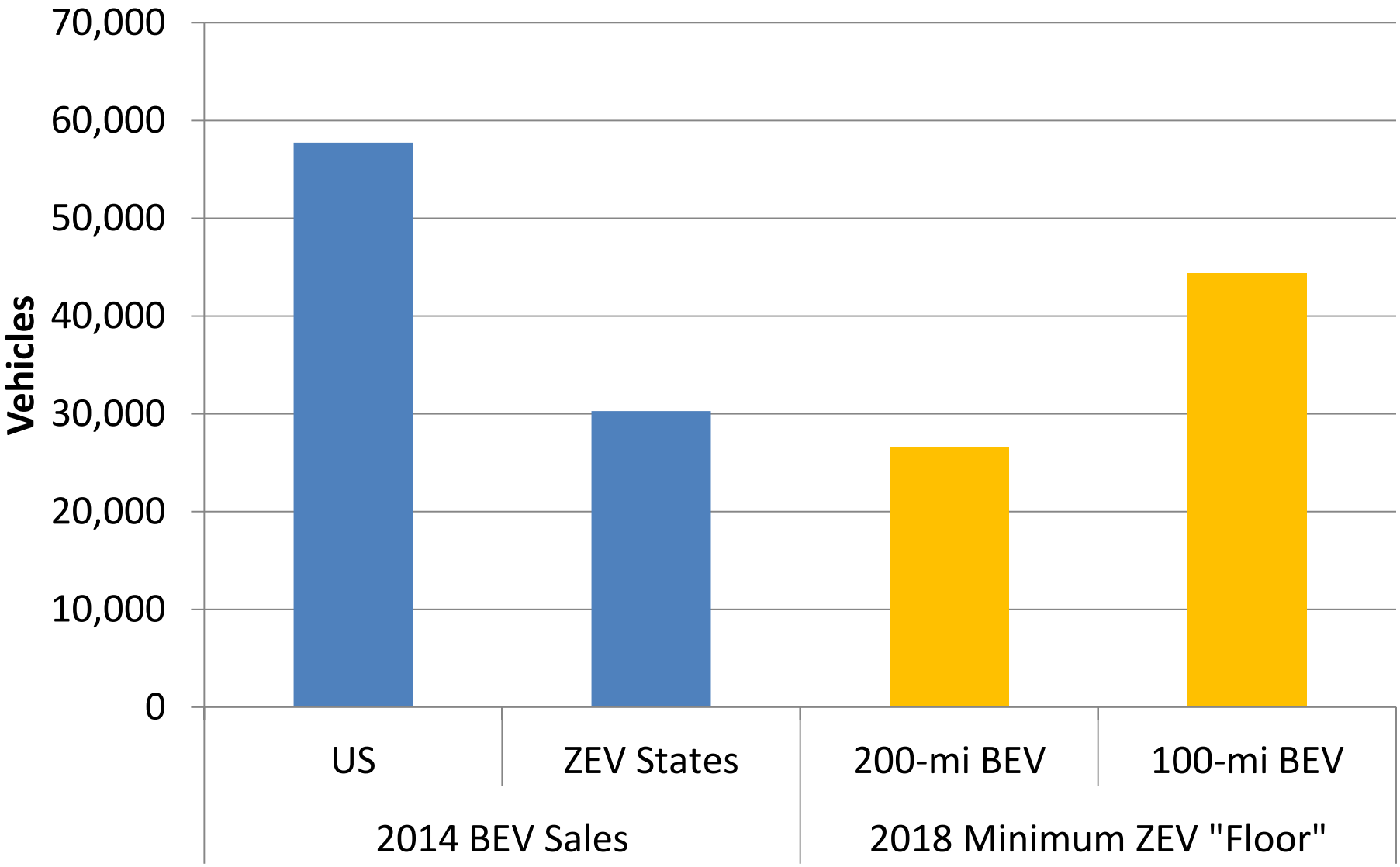
2014 Sales vs. 2018 Requirements



Source: RL Polk, California Air Resources Board

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The Action Plan: Eight Implementation Workgroups

- Incentives
- Dealers
- Fleets
- Hydrogen
- Infrastructure – Planning
- Infrastructure – Regulatory
- Outreach
- Workplace Charging

State Progress on Incentives

- Remains high priority item for automakers
- Five states offering ZEV purchase incentives (CA, CT, MD, MA, VT)
- Legislation establishing purchase incentives proposed in three states in 2015 (CT, OR, RI)
- Five states offered purchase incentives for EVSE in 2014 (MD, NY, OR, MA, CT)

Dealerships

- Developing guidelines for a model dealer recognition program
- Highlighting EV champion dealerships on ZEV State websites for states with recognition programs
- Exploring sales incentives
- Training/education on consumer incentives

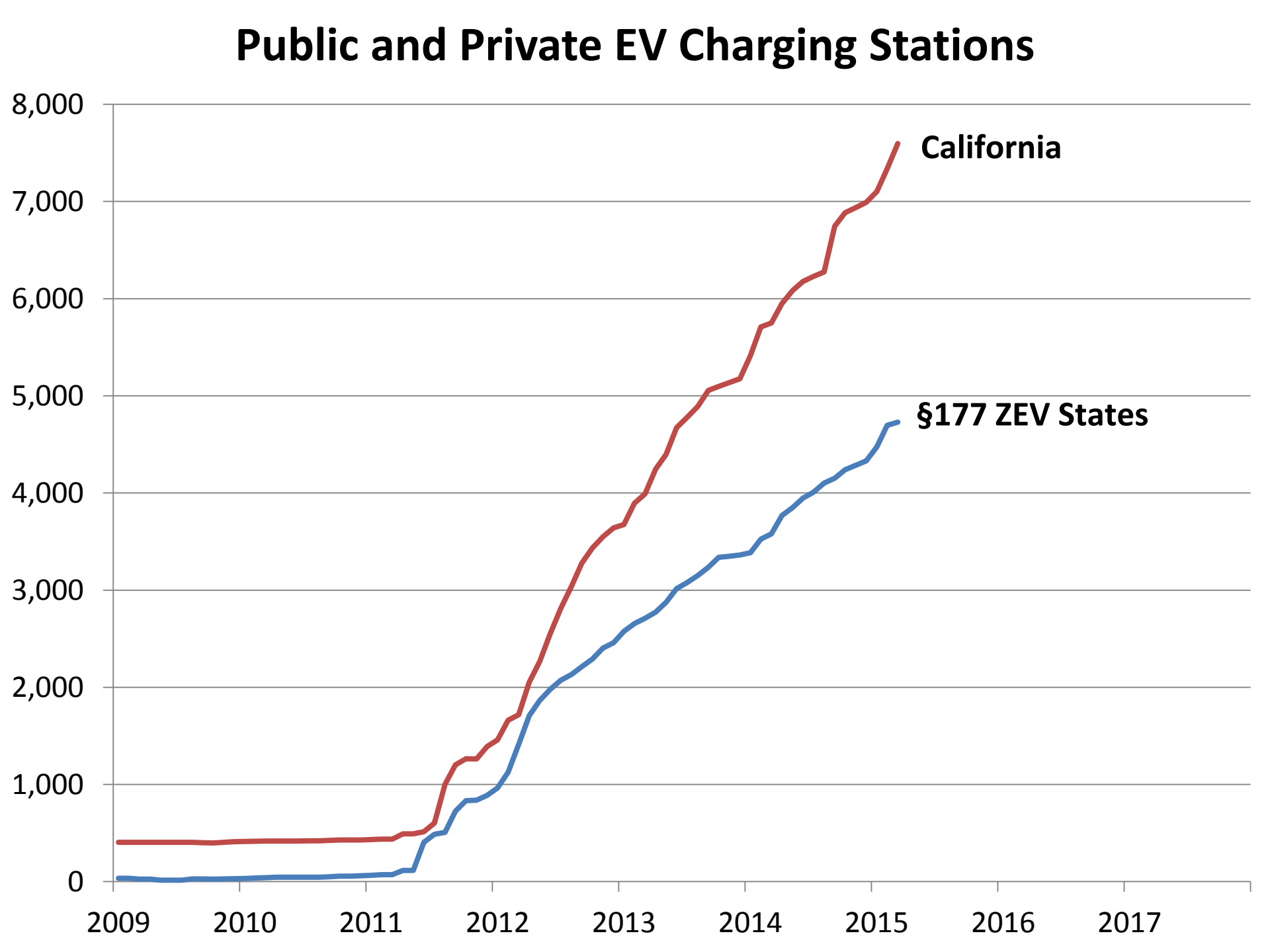
State Progress on Fleets

Transitioning public fleets to ZEVs important state lead-by-example initiative:

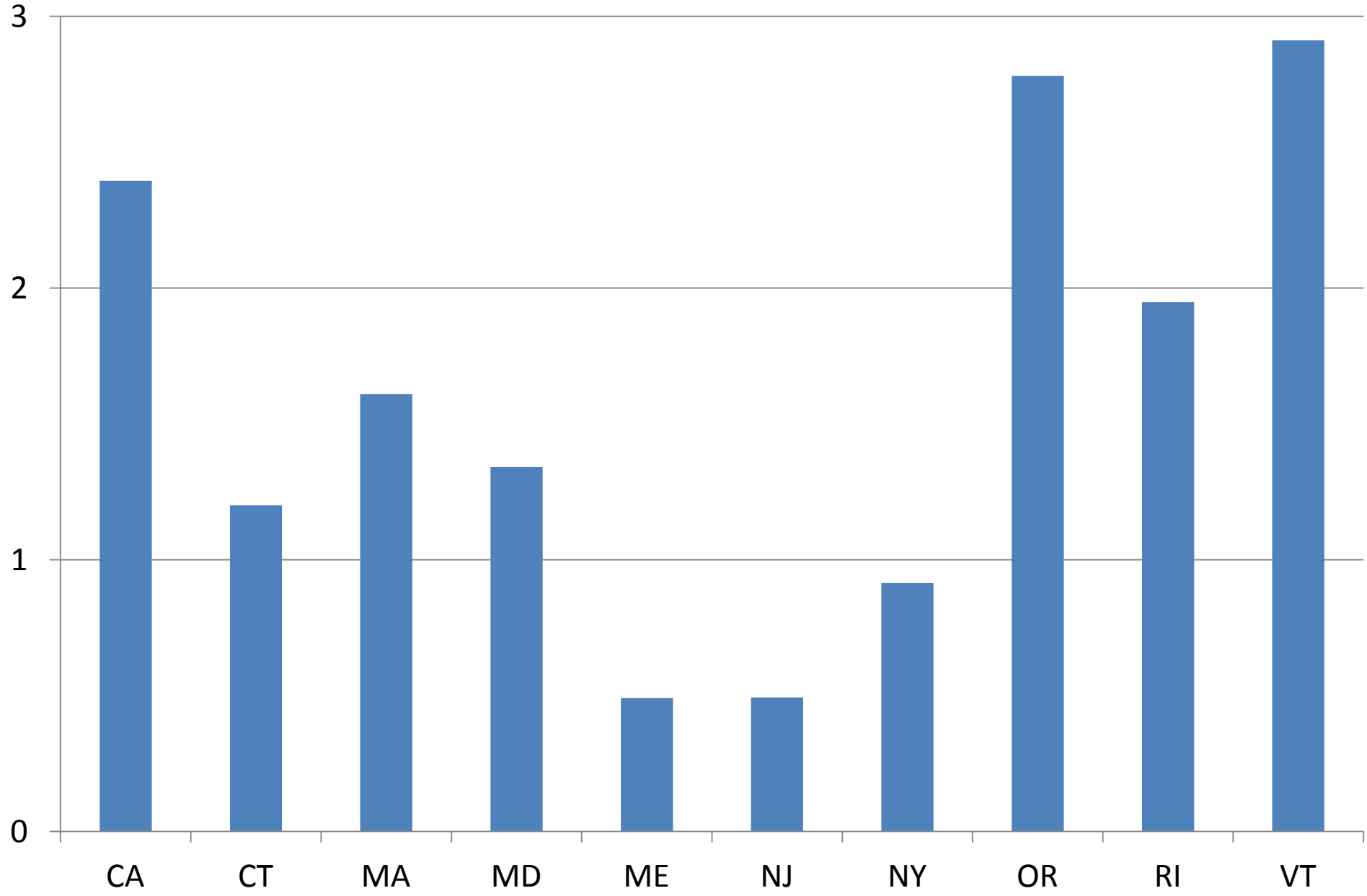
- Working on TCO tools for state fleet operators
- Establishing state fleet purchase targets
- Adding ZEVs to state fleet procurement lists
- Acquiring PEVs
- Installing charging stations
- Offering incentives to add PEVs to fleets

Infrastructure Planning

- Letter to FHWA seeking legal interpretation regarding EV charging on federal highways
- Engaging FHWA to ensure consistent EV signage
- Developed Recommended Practices for charging signage
- Adding DC fast chargers
- Installing EVSE at park and rides and mass transit locations
- Establishing charging corridors

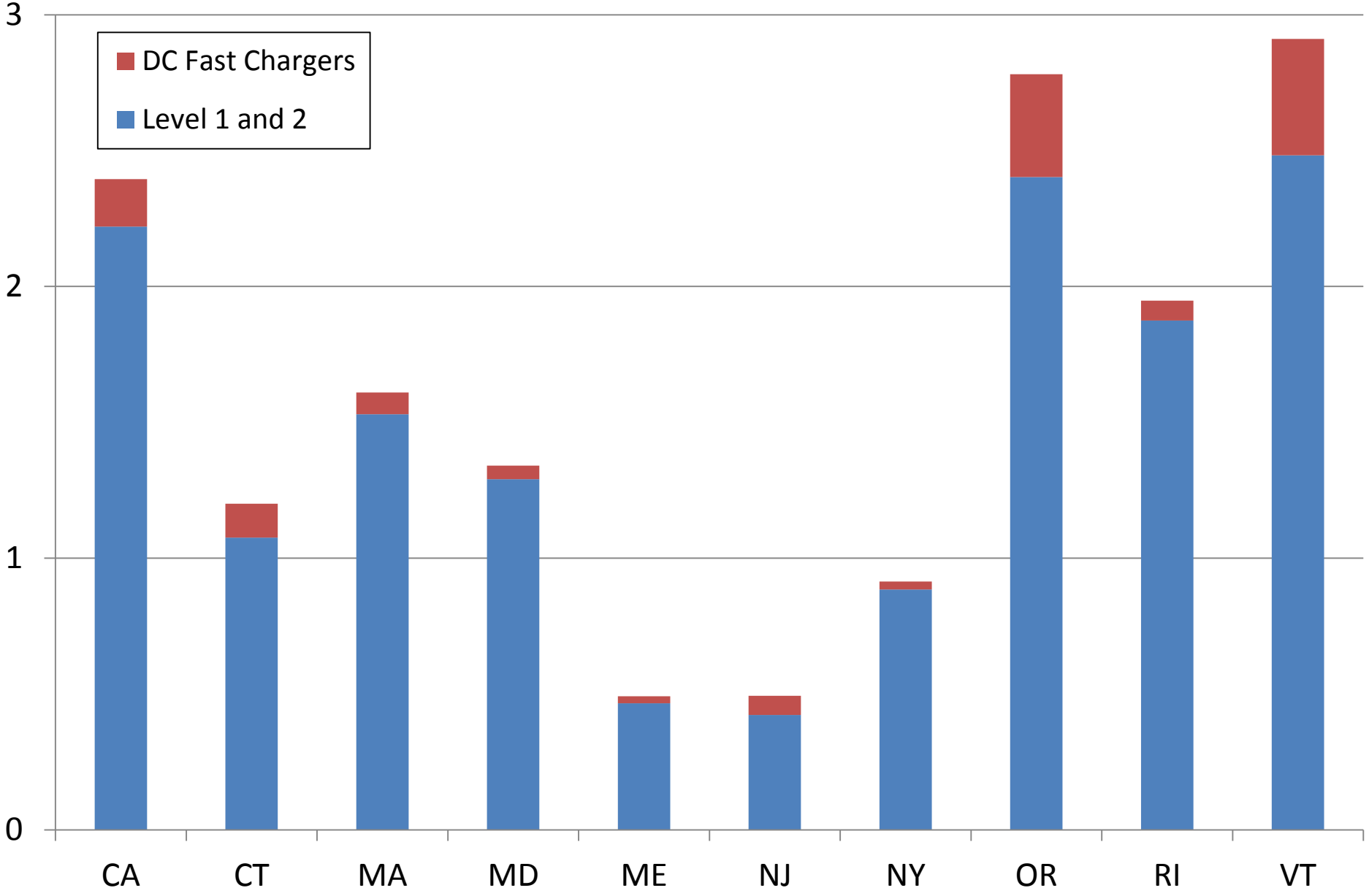

Public and Private EV Charging Stations
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
California
§177 ZEV States

Public EVSE per 10,000 Light-Duty Vehicles, 2015



Source: Alternative Fuels Data Center, National Automobile Dealers Association.

Public EVSE per 10,000 Light-Duty Vehicles, 2015



Source: Alternative Fuels Data Center, National Automobile Dealers Association.

Removing Regulatory Barriers to Deployment of Charging Stations

- EVSE providers exempted from regulation as utilities in six states (CA, CT, MD, MA, NY, OR)
- Six ZEV MOU states have, or are considering offering, TOU rates (CA, CT, MD, MA, NY, OR)
- Two ZEV MOU states have revised building codes to promote EVSE ready buildings (CA, VT)

Workplace Charging

- Focus has been on deployment of public charging
- Need to place much more emphasis on workplace charging
- Surveys show that 85% of charging is done at home and at work
- Workplace charging can be tipping point for consumer purchase decisions
- Effectively doubles the range
- Can provide charging for residents in urban and multi-family unit settings

Outreach and Education

- Website launched to serve as a portal and clearinghouse for key ZEV data and information www.zevstates.us
- Need for nationwide outreach and education campaign
  - National Academy of Sciences – *Overcoming Barriers to Deployment of Plug-in Electric Vehicles* http://www.nap.edu/download.php?record_id=21725
  - Plug-In America – *The Promotion of Electric Vehicles in the United States* http://images.pluginamerica.org/Landscape/The-Promotion-of-Electric-Vehicles-in-the-US-final.pdf

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