California Environmental Protection Agency

Air Resources Board

Public Hearing to Consider 2014 Amendments to the Zero Emission Vehicle Regulation

Diamond Bar, California

October 23, 2014

Agenda

- The ZEV Regulation
  - The Need for Emissions Reductions
  - How the Regulation Works
- The 2012 Amendments
- Understanding IVM Needs
- Proposed Amendments
- Amendment Impacts

ZEVs – An Important Part of California's Clean Air and Climate Protection Strategy

- ZEVs are necessary to reduce air pollution from cars
  - California needs very deep NOx reductions to meet ambient air quality standards for ozone
- California also needs carbon reductions to meet 2050 climate goal
  - Light-duty vehicles account for almost 30% of all transportation GHG emissions
- ZEVs reduce GHG emissions
- ZEVs mitigate personal exposure to traffic exhaust toxic emissions

How The Current Regulation Works

Requires large volume automobile manufacturers to produce zero emitting passenger vehicles

Battery Electric Vehicles (BEV)

Hydrogen Fuel Cell

May substitute some with near-zero emission vehicles

Plug-in Hybrid Electric Vehicles (PHEV)

The 2012 Amendments

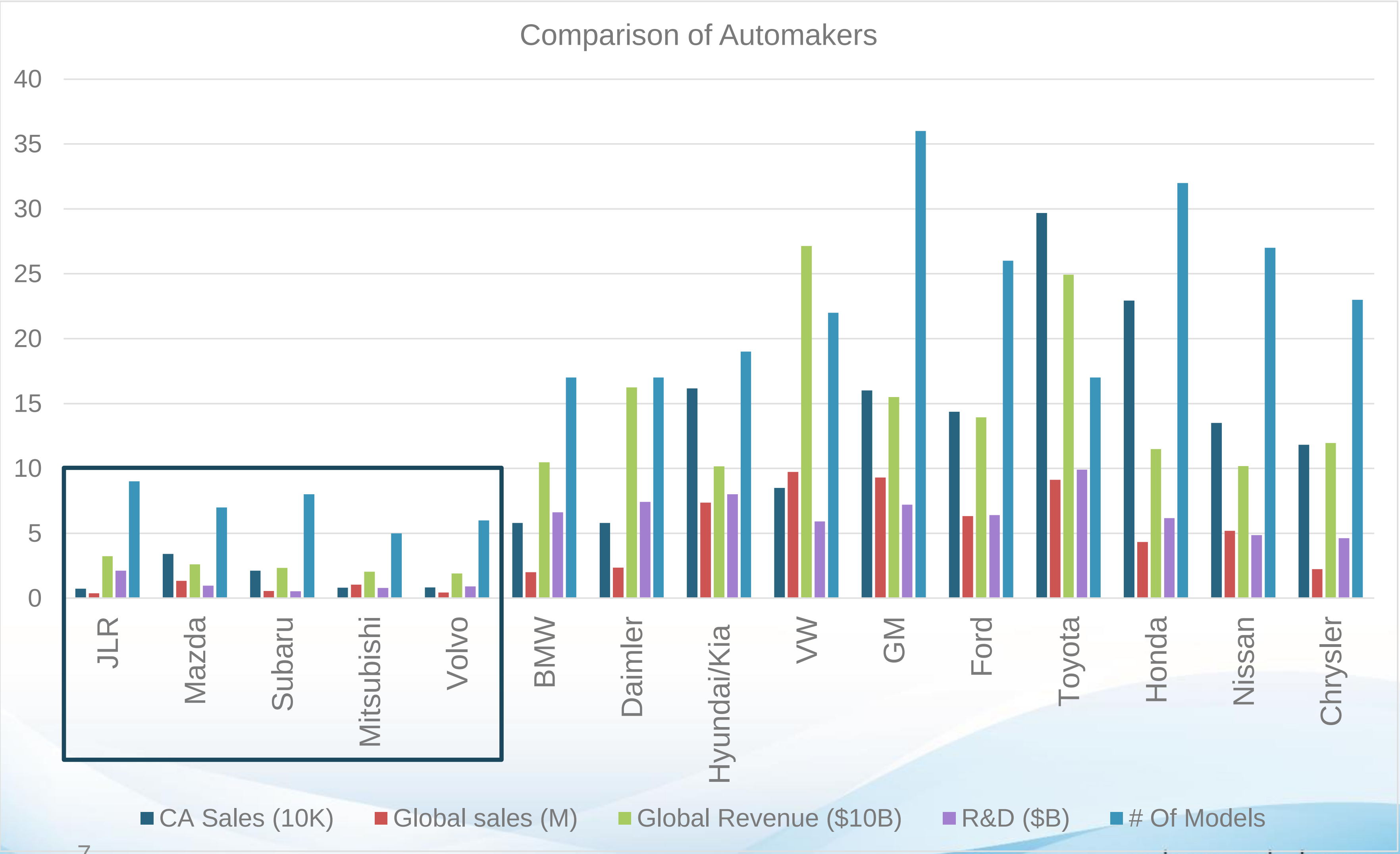
- Strengthened ZEV Regulation
- Changed Large Volume Manufacturer (LVM) definition from 60,000 to 20,000
- Board direction – monitor transition
- *Who is affected? The IVMs are*

JAGUAR LAND ROVER mazda MITSUBISHI MOTORS SUBARU VOLVO

IVM 5 Proposal

- October 2013 Board hearing presentation
- IVMs ask for:
  1. Very small demo quantities of ZEVs through 2025
  2. Large credit multipliers for ZEVs produced
  3. Travel and pooling for ZEVs and TZEVs
  4. Extended Service Credits
     (extra credits if offered for sale or extended lease)
  5. 3 year credit deficit make-up period
- Board directed staff to review and return to the Board in 2014

Assessing IVM/LVM Differences



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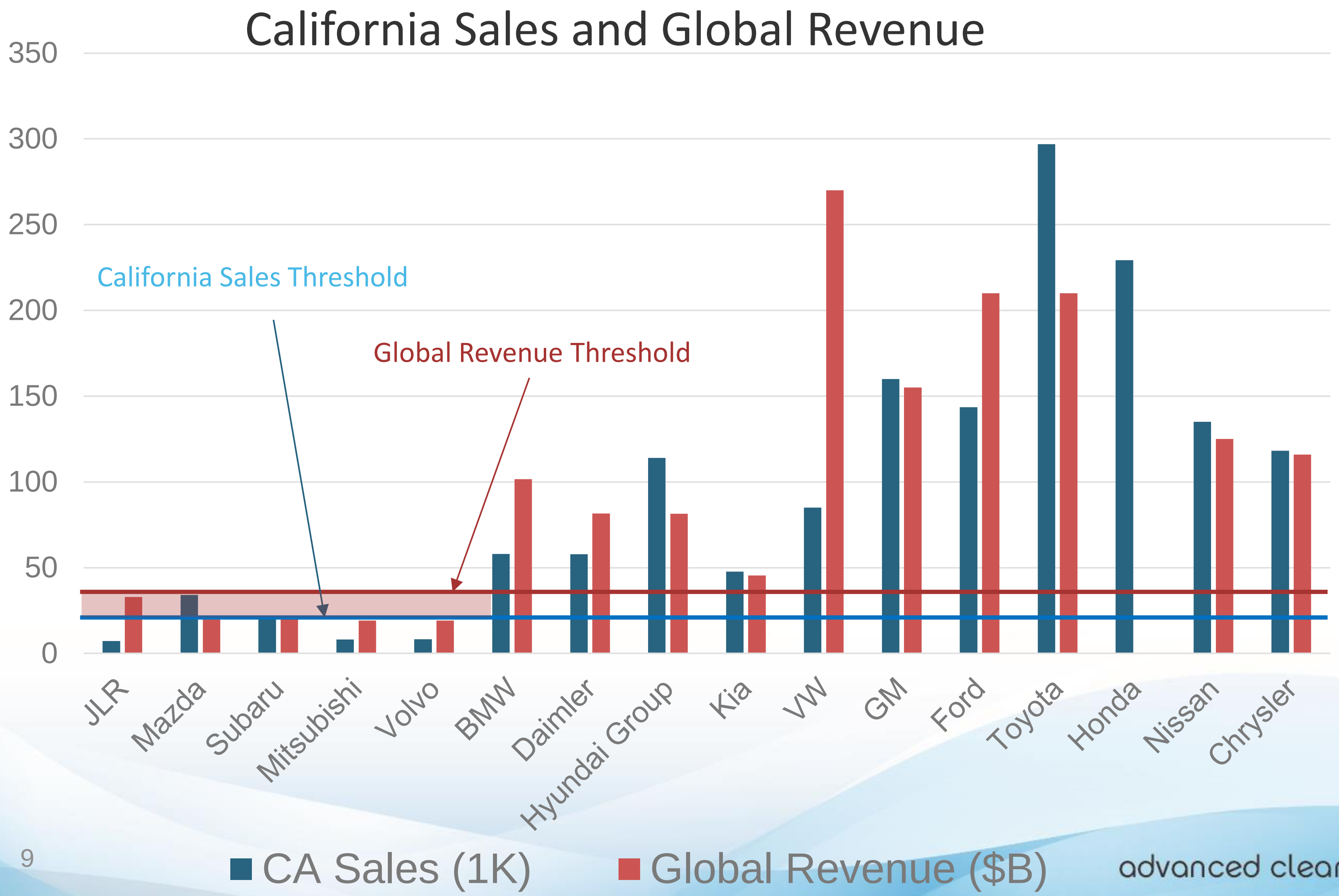
Overview of Proposed Regulatory Amendments

- Add Revenue Test to LVM Definition
- Extend Lead Time
- Reduce Percentage ZEV Requirement
- Section 177 State Pooling
- Extend Compliance Time

Proposed addition of second metric to LVM definition



Extend Lead Time for Initial LVM Compliance

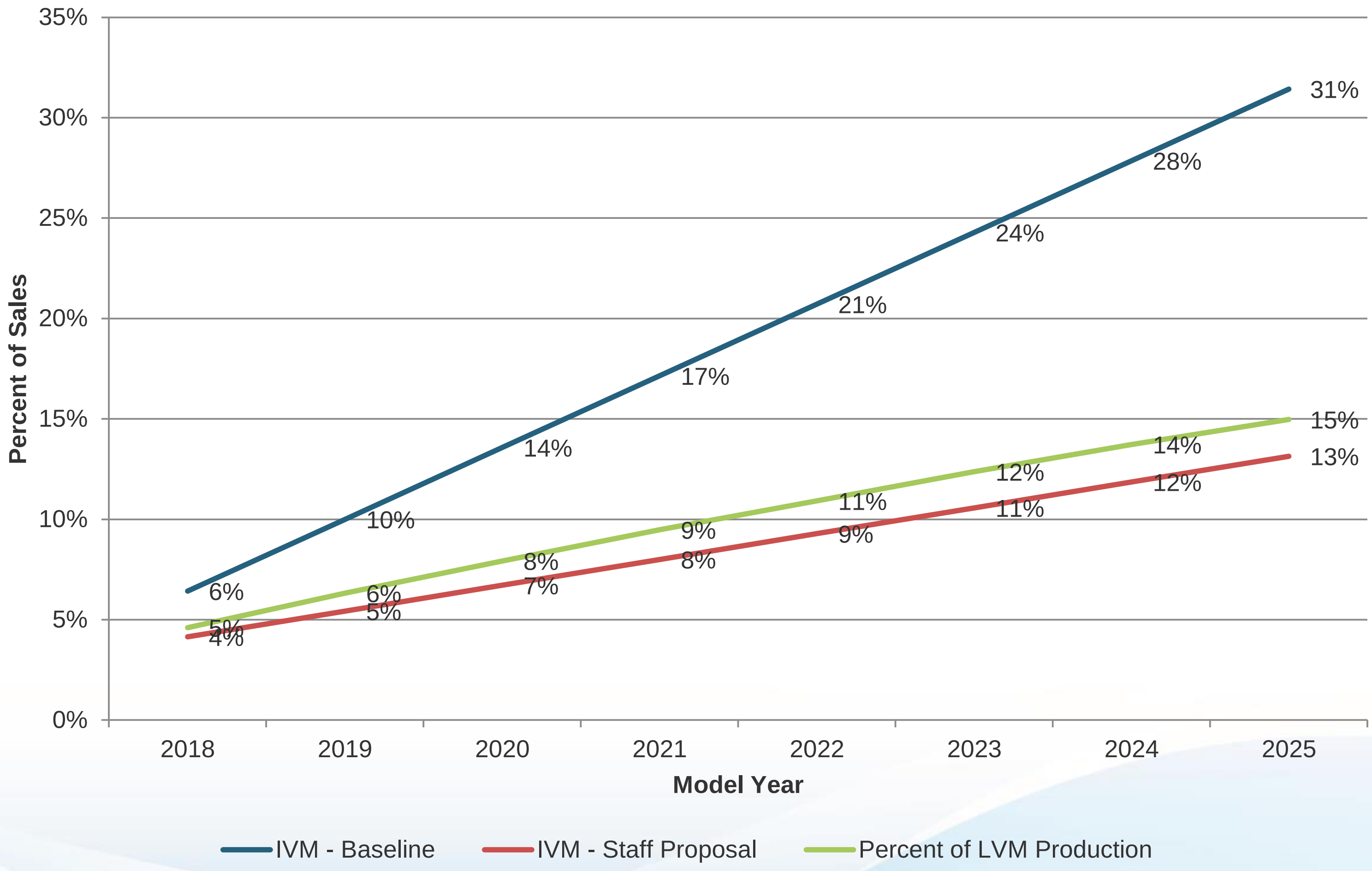
- A 3-year California sales average in excess of 20,000 units initiates IVM transition to LVM requirements
- IVMs are currently provided 3 years lead time
- This proposal provides 5 years of lead time

Reduced Percent ZEV Credit Requirement

	2018	2019	2020	2021	2022	2023	2024	2025
ZEV minimum	2	4	6	8	10	12	14	16
TZEV maximum	2.5	3	3.5	4	4.5	5	5.5	6
Total	4.5	7	9.5	12	14.5	17	19.5	22
Staff Proposal	2.9	3.8	4.7	5.6	6.5	7.4	8.3	9.2

IVMs may meet entire ZEV credit obligation with TZEV credits (calculated as TZEVmax + 1/5 LVM ZEVmin)

Likely Compliance Scenario
Percent of Sales



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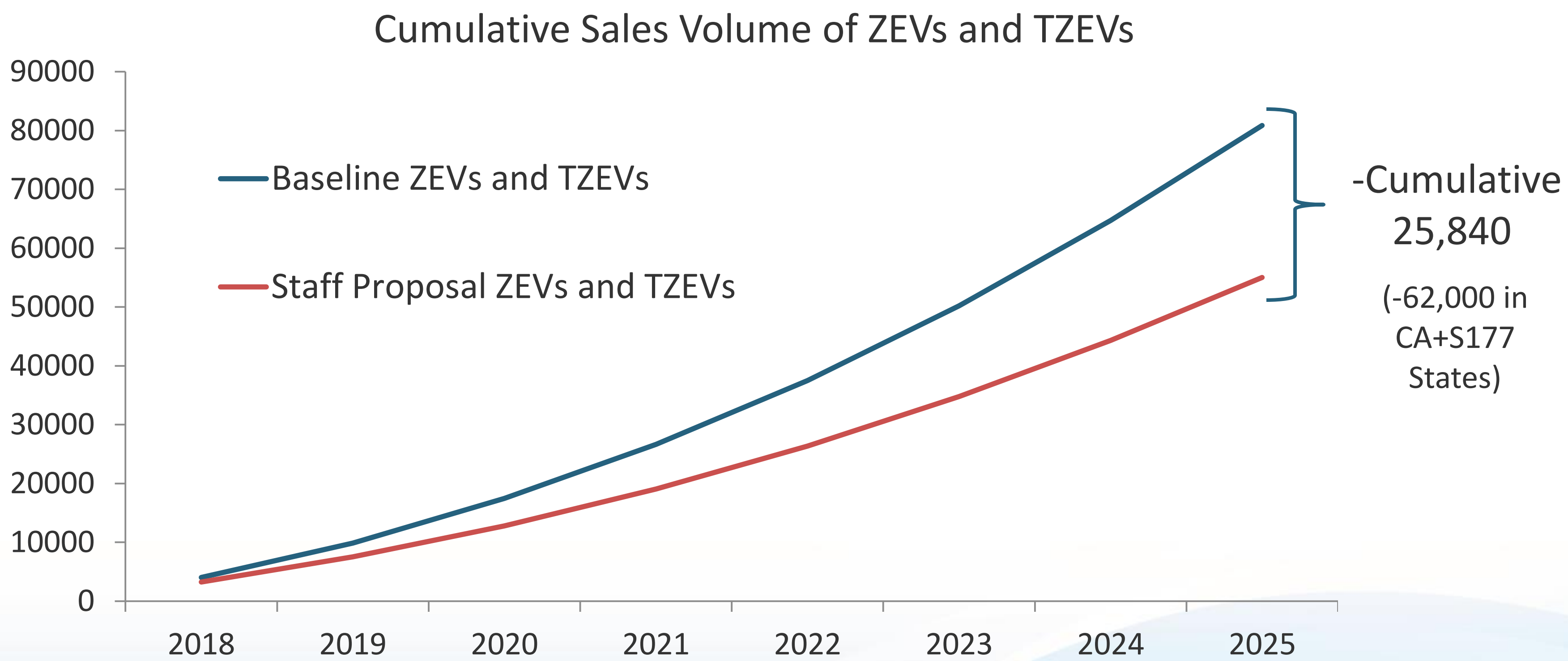
Impact of Proposed Amendments to
(approximately 2% reduction in ZEVs in 2018-2025)



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IVMs may pool compliance in Section 177 States

- IVMs currently are not required to deliver ZEVs
- Under existing regulation they cannot participate in pooling if they do not deliver ZEVs in 2016 and 2017
- Per negotiation with S177 states, IVMs may pool, but must place extra ZEVs before start of LVM requirements
    - 0.75% ZEVs two years prior
    - 1.50% ZEVs one year prior
- Allowed 2 additional years to deliver ZEVs once LVM
- No Reduced TZEVs

More time for compliance

- ZEV Regulation currently provides automakers 1 year to make up compliance deficits
- This may be insufficient time to address a potentially underperforming ZEV technology model
- Consistent with other regulations, extend make-up period for IVMs/LVMs to 3 years upon approval of production plan

Additional Regulatory Cleanup

- Fast Refueling Language
  - clarify that the 12 month qualifying period begins with vehicle placement
- Minor conforming and grammar corrections throughout

Savings without compromising progress

- No loss of emission reductions for meeting standards
  - The ZEV regulation is part of Adv. Clean Cars
  - ACC sets fleet average standards
  - Fleet average remains constant regardless of ZEV component size
- Decreased Manufacturer Costs
  - Expected cost savings of ~ $35 million/year

Conclusion

- Proposed Amendments
  – Maintain IVM Status for impacted automakers
  – Provide appropriate lead time to develop new technologies
  – Provide similar obligation to produce ZEVs
  – Provides additional flexibilities
- Amendments provide a more equitable path for IVMs to comply with the ZEV regulation and succeed in the ZEV market