

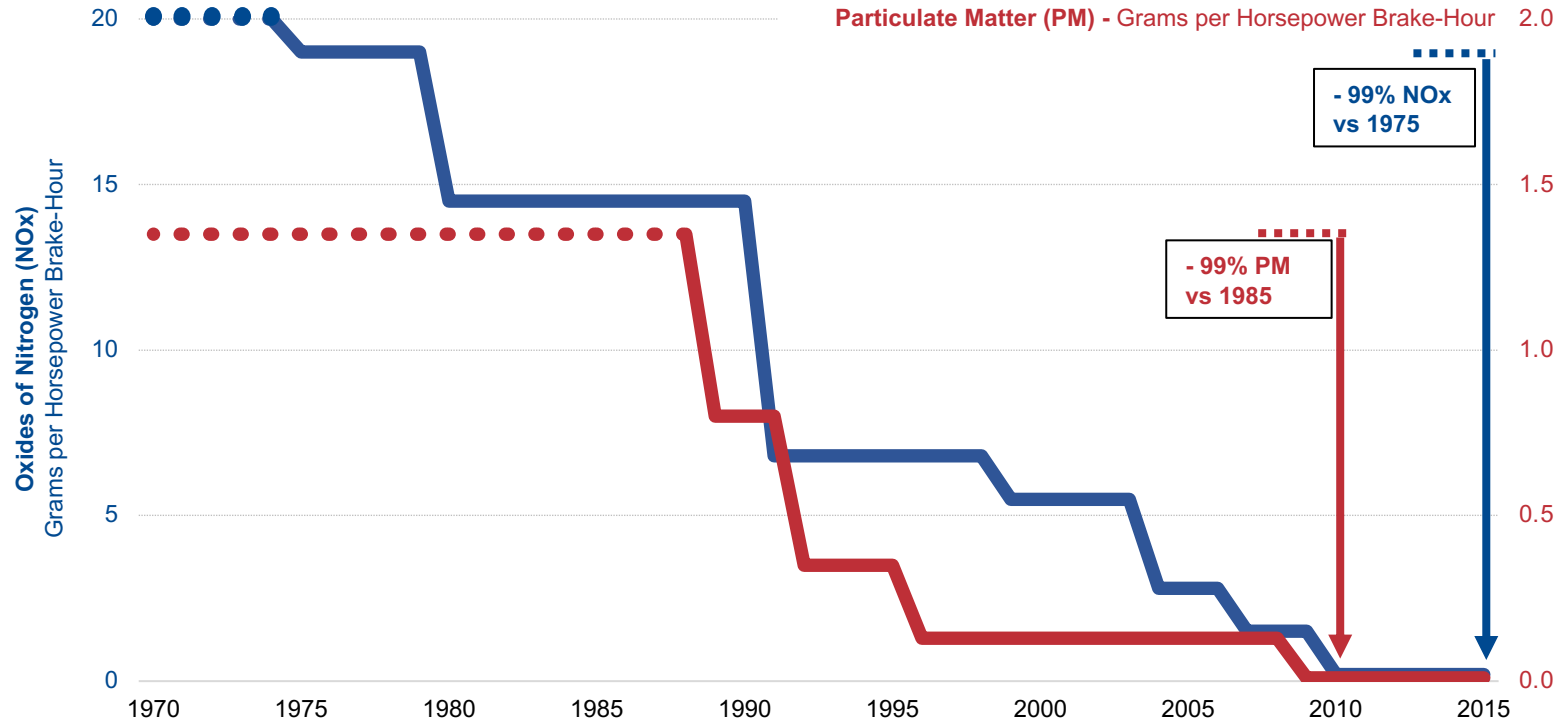
Uniformity and Pace: A Trucking Industry Perspective

Paul Ruiz

Director, Energy and Environment
American Trucking Associations



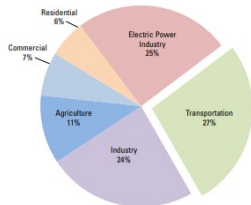
U.S. On-Highway Emissions Standards



Source: ATA analysis of EPA emissions regulations.

Regulatory Factors

Environmental



Government Funding

Infrastructure
Investment and Jobs
Act 2021



Inflation Reduction Act

Regulations

CARB



EPA



EU

Industry



VOLVO

NAVISTAR

DAIMLER TRUCK



Walmart



amazon.com



Dynamic Regulatory Landscape

Omnibus Low NOx

New tailpipe standards for heavy-duty trucks, expanded warranty requirements, new test procedures and durability testing requirements for MYs 2024-2027

Heavy-Duty Vehicle Inspection and Maintenance

Operator requirement to test tailpipe emissions to ensure compliance with emission standards. Will be tied to vehicle registration

Transport Refrigeration Unit (TRU) Rule

Transition diesel powered TRUs to zero emission with particulate matter requirement

Advanced Clean Trucks

Zero Emission Vehicle percentage sales requirement for truck manufacturers to be 100% by 2040

Advanced Clean Fleets

Truck fleet purchase requirement of zero emission vehicles to accompany the ACT regulation

GHG 2 MY 2027

Adjusting fuel efficiency standards for select vehicle classifications to capture today's electric vehicle penetration

Clean Trucks Plan (NOx)

National NOx standard incorporating changes to testing procedures and warranty requirements starting MY 2027

GHG 3 MY 2030 and beyond

New fuel efficiency standards that drive electric vehicle penetration in the marketplace

Renewable Fuel Standard

Renewable fuel obligations for 2023-2025

ESG Reporting Requirements

Scopes 1, 2 and 3 reporting requirements for publicly traded companies.

Beginning next year, there will be two NOx standards with alignment in 2027

Emissions Standards Milestones

g/bhp-hr	CARB 24	CARB/ EPA 27
Federal Test Procedure / Supplemental Emissions Test	0.05 (EPA 24 – 0.2)	0.035
Low-Load Cycle (low-load conditions)	0.2	0.050
Idle (g/hr)	10.0	10.0

- California will align with EPA's 2027 NOx standard as part of the deal with CARB and the OEMs
- Limited engines availability in the California market due to CARB NOx standards
- CARB's 2024 standard will remain in effect-enforcement beginning 1/1/2024
- Diesel credit using engines will be in compliance under a "Legacy Provision"

Beginning next year, there will be two NOx standards with alignment in 2027

What CARB Gets - *OEMs commit to ...*

- Meet CARB's ACT regulation and 2036 100% ZEV sales mandate.
- Remain neutral in response to any state considering adopting ACT.
- Sell as many HD ZEVs as possible irrespective of litigation.

What OEMs Get – *Allowances for ...*

- More EPA-compliant trucks to be sold in CA, at a price.
- CARB and EPA NOx standards beginning in 2027.
- Product lead time and stability requirements with federal Clean Air Act requirements.

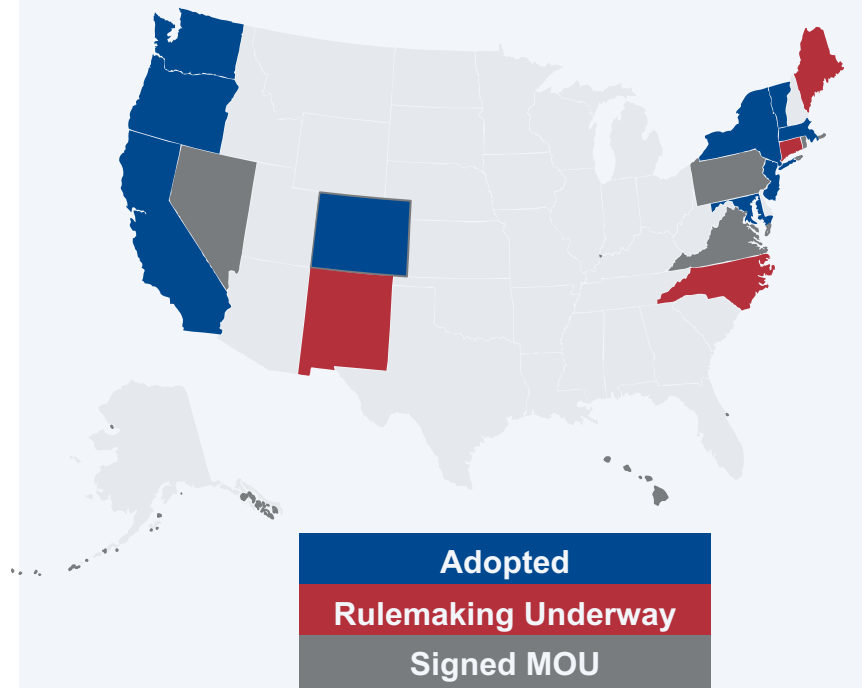
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California's drive to electrification:

Advanced Clean Trucks (ACT) Regulation ZEV Sales Milestones

MY	Class 2b-3	Class 4-8	Class 7-8 Tractors
2024	5	9	5
2025	7	11	7
2026	10	13	10
2027	15	20	15
2028	20	30	20
2029	25	40	25
2030	30	50	30
2031	35	55	35
2032	40	60	40
2033	45	65	40
2034	50	70	40
2035	55	75	40

States Adopting California's ACT

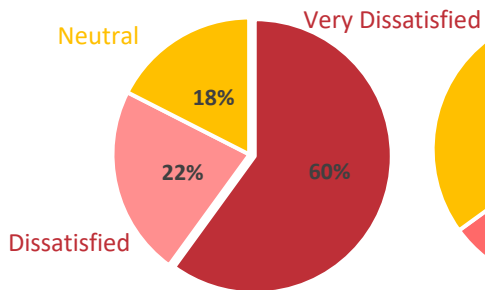


EPA's Greenhouse Gas Phase 3: Proposed ZEV Sales Milestones (*% new ZEV HDV Sales*)

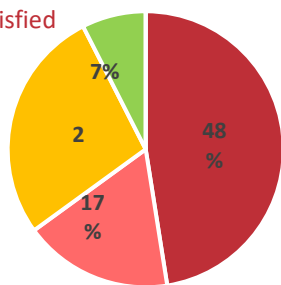
PROPOSED	MY2027	MY2028	MY2029	MY2030	MY2031	MY2032
Vocational	20	25	30	35	40	50
Short-Haul	10	12	15	20	30	35
Long-Haul	0	0	0	10	20	25
ALTERNATIVE						
Vocational	14	20	25	30	35	40
Short-Haul	5	8	10	15	20	25
Long-Haul	0	0	0	10	15	20
CARB – ACT ALIGNED						
Vocational	20	30	40	50	55	60
Tractors	15	20	25	30	35	40

EPA's Greenhouse Gas Phase 3: Fleet Perspectives of Heavy-Duty BEVs

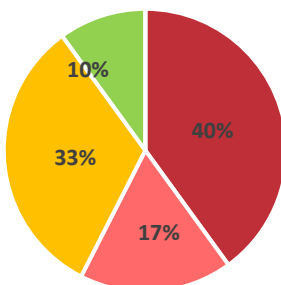
Cost



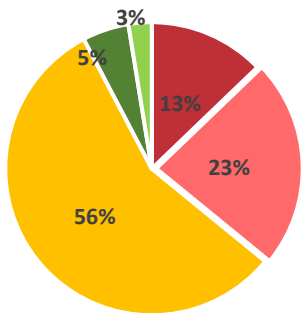
Range



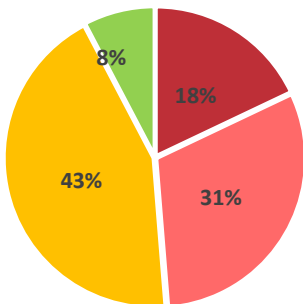
Charge Times



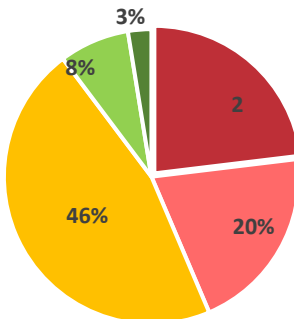
Maintainability



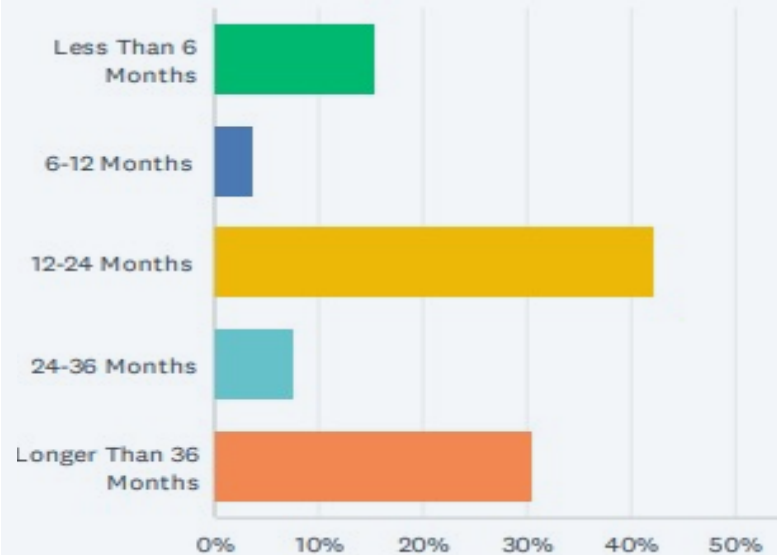
Serviceability



Durability



Quoted Lead Time for Onsite Charging Install



Source: ATA-TMC Survey, June 2023

Paul Ruiz

Director, Energy and Environmental Policy

(703) 838-1703

pruiz@trucking.org

www.trucking.org/E&E

