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Asst. Director – Product Planning



Regulatory Agencies



Environment and
Climate Change Canada



CALIFORNIA
AIR RESOURCES BOARD

Internal Combustion Engine Emissions

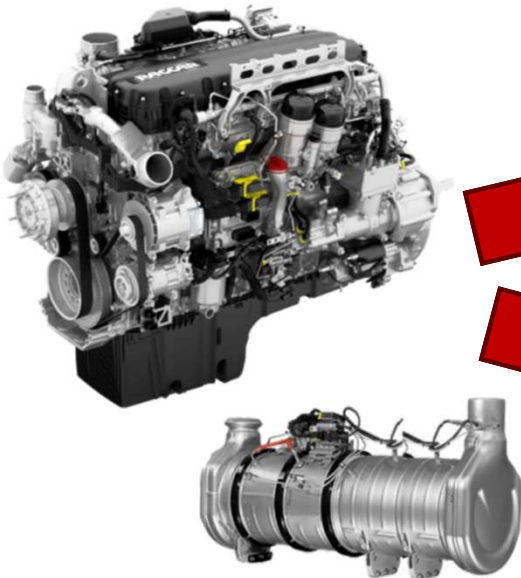
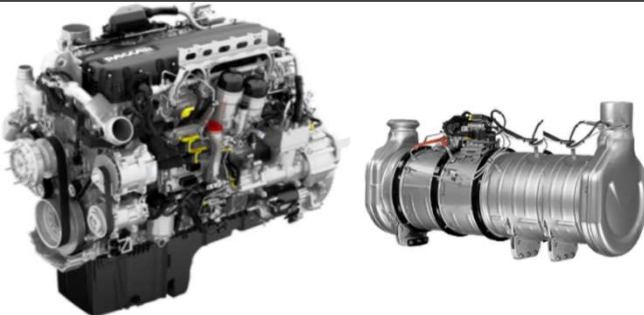
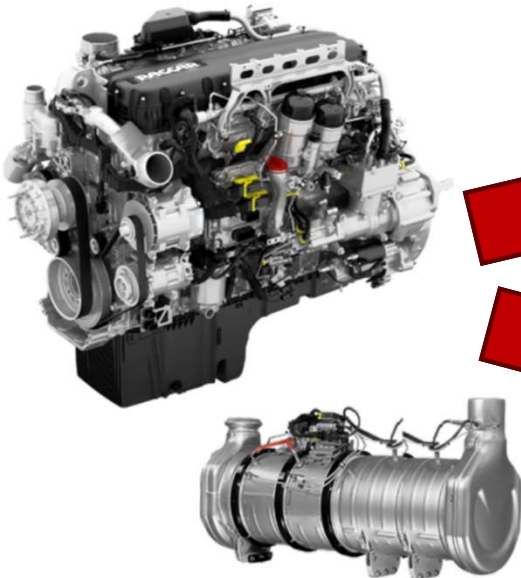
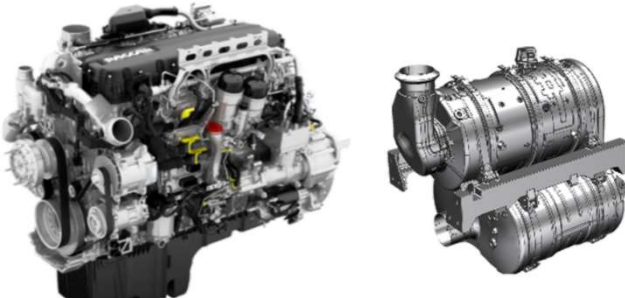
- Heavy-Duty Omnibus Regulation (Low NO_x)
- Extended Emissions Warranty

Zero Emissions

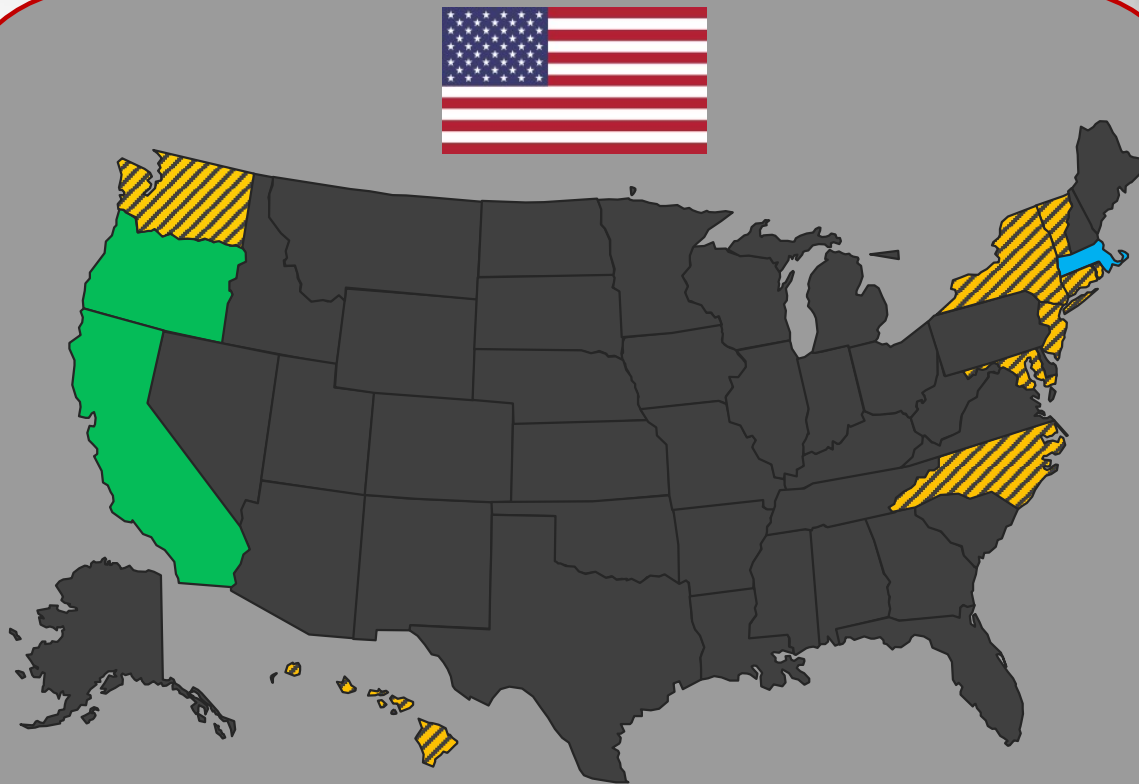
- Advanced Clean Truck Regulation “ACT Mandate”
 - OEM Sales Requirement
 - Published Requirements
- Advanced Clean Fleet Regulation
 - Fleet Purchase Requirement
 - In Development



2024 Emissions

		2023	2024
EPA CARB	EPA	NOx Level: Current Warranty: 5yr / 100,000 Mile 	NOx Level: Current Warranty: 5yr / 100,000 Mile 
	CARB	NOx Level: Current Warranty: 5yr / 350,000 Mile 	NOx Level: 75% Reduction Warranty: 5yr / 350,000 Mile 

CARB Low NOx Adoption



2024 Adoption

2025 Adoption

2026 Adoption

- Solid Color → Approved Legislation
- Crosshatch → Estimated

Heavy Duty Engine Impacts

Engine	Availability	Limitations	Price Estimate
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Heavy Duty Engine Impacts

Engine	Availability	Limitations	Price Estimate
MX-13 	Yes	No Volume Restrictions 455 hp & 510 hp Only	\$\$

Heavy Duty Engine Impacts

Engine	Availability	Limitations	Price Estimate
MX-13	 Yes	No Volume Restrictions 455 hp & 510 hp Only	\$\$
MX-11	 No	-	-

Heavy Duty Engine Impacts

Engine	Availability	Limitations	Price Estimate
MX-13 	Yes	No Volume Restrictions 455 hp & 510 hp Only	\$\$
MX-11 	No	-	-
X15 Performance (525HP +) 	Yes	High Horsepower Exemption	\$\$

Heavy Duty Engine Impacts

Engine		Availability	Limitations	Price Estimate
MX-13		Yes	No Volume Restrictions 455 hp & 510 hp Only	\$\$
MX-11		No	-	-
X15 Performance (525HP +)		Yes	High Horsepower Exemption	\$\$
X15 Efficiency (≤ 500HP)		Yes	Legacy Engine Provision Not Available 2026+	\$\$\$

Heavy Duty Engine Impacts

Engine	Availability	Limitations	Price Estimate	
MX-13		Yes	No Volume Restrictions 455 hp & 510 hp Only	\$\$
MX-11		No	-	-
X15 Performance (525HP +)		Yes	High Horsepower Exemption	\$\$
X15 Efficiency (≤ 500HP)		Yes	Legacy Engine Provision Not Available 2026+	\$\$\$
X15N		Yes	No Volume Restrictions	\$\$\$\$

CARB HD Competitive Landscape



WESTERN STAR

DD16 → High Horsepower

DD15 → No CARB Solution

DD13 → Mixed Information



S13 → No CARB Solution

A26 → Obsolete 2024



No Information Available

Primary Focus on Electrification

Medium Duty Engine Impacts

Engine	Availability	Limitations	Price Estimate
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Medium Duty Engine Impacts

Engine	Availability	Limitations	Price Estimate
PX-9 	Yes	Legacy Engine Provisions Not Available 2026+	\$\$

Medium Duty Engine Impacts

Engine	Availability	Limitations	Price Estimate
PX-9 	Yes	Legacy Engine Provisions Not Available 2026+	\$\$
PX-7 	Yes	Legacy Engine Provision Not Available 2026+	\$\$

Medium Duty Engine Impacts

Engine	Availability	Limitations	Price Estimate
PX-9 	Yes	Legacy Engine Provisions Not Available 2026+	\$\$
PX-7 	Yes	Legacy Engine Provision Not Available 2026+	\$\$
L9N 	Yes	No Volume Restrictions	\$\$\$\$

Medium Duty Engine Impacts

Engine		Availability	Limitations	Price Estimate
PX-9		Yes	Legacy Engine Provisions Not Available 2026+	\$\$
PX-7		Yes	Legacy Engine Provision Not Available 2026+	\$\$
L9N		Yes	No Volume Restrictions	\$\$\$\$
B6.7N		No	-	-

Medium Duty Engine Impacts

Engine	Availability	Limitations	Price Estimate
PX-9 	Yes	Legacy Engine Provisions Not Available 2026+	\$\$
PX-7 	Yes	Legacy Engine Provision Not Available 2026+	\$\$
L9N 	Yes	No Volume Restrictions	\$\$\$\$
B6.7N 	No	-	-
B6.7 Octane 	2025	No Volume Restrictions	\$

Advanced Clean Truck “ACT Mandate”



Advanced Clean Truck “ACT Mandate”

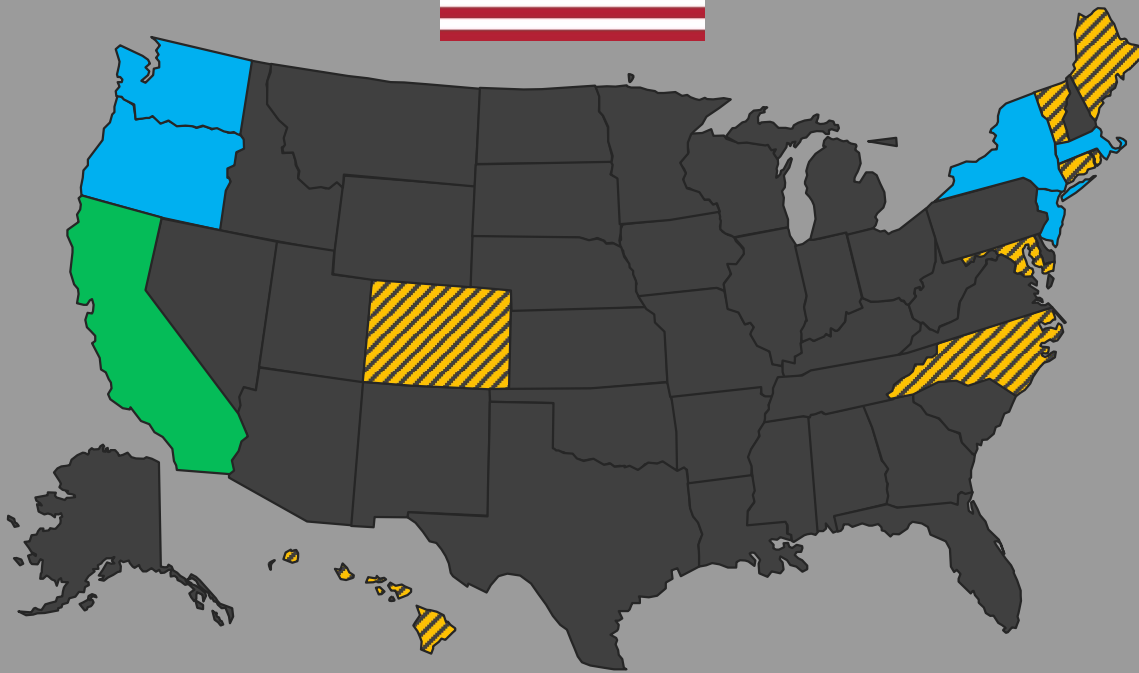


CALIFORNIA
AIR RESOURCES BOARD

Model Year	Class 4-8 Vocational	Class 7-8 Tractors
2024	9%	5%
2025	11%	7%
2026	13%	10%
2027	20%	15%
2028	30%	20%
2029	40%	25%
2030	50%	30%
2035	75%	40%
2040	100%	100%



ACT Mandate Adoption



2024 Adoption

2025 Adoption

2026 Adoption

- Solid Color → Approved Legislation
- Crosshatch → Estimated

Zero Emissions Vehicle Portfolio



