Oregon Department of **ENERGY**

Electrification of Medium- and Heavy-Duty Vehicles

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Progress on EV Adoption Targets

Oregon's EV Adoption Targets

- By 2020, 50,000 registered motor vehicles will be zero-emission vehicles;
- By 2025, at least 250,000 registered motor vehicles will be zero-emission vehicles;
- By 2030, at least 25 percent of registered motor vehicles, and at least 50 percent of new motor vehicles sold annually, will be zero-emission vehicles; and
- By 2035, at least 90 percent of new motor vehicles sold annually will be zero-emission vehicles.

As of July 2023, Oregon has over 74,000 registered electric vehicles across all 36 counties

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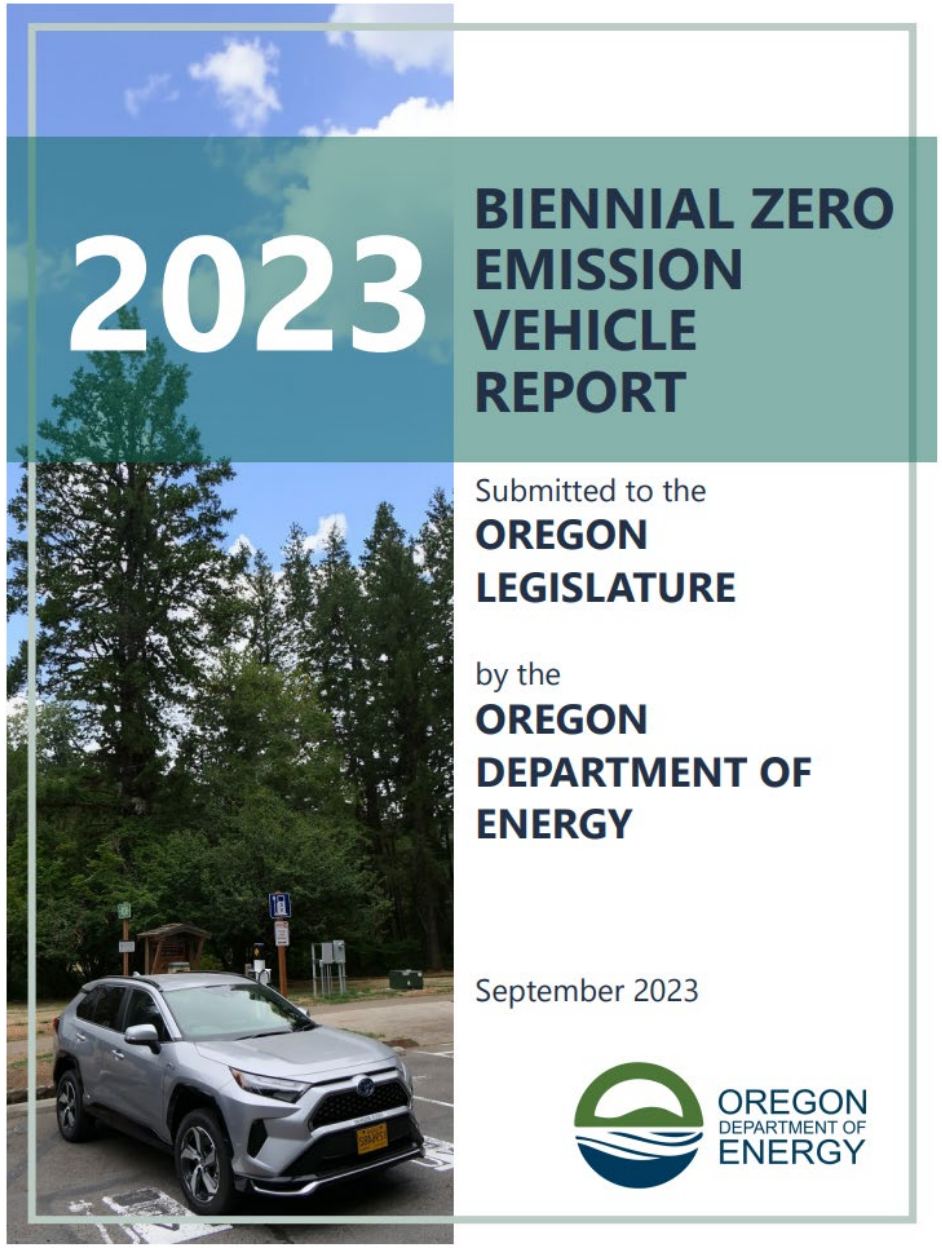
Agency Coordination

Interagency Actions Addressing Barriers to Zero Emission Vehicle Adoption

About the Report

- Established in 2019 by Senate Bill 1044
- Covers electric vehicle adoption and related progress on Oregon's greenhouse gas emissions in the transportation sector
- Focus on commercially available or near-commercially available vehicles
- Use existing studies, market reports, polling data, or other publicly available information
- 11 specific reporting requirements



https://tinyurl.com/2023BIZEV

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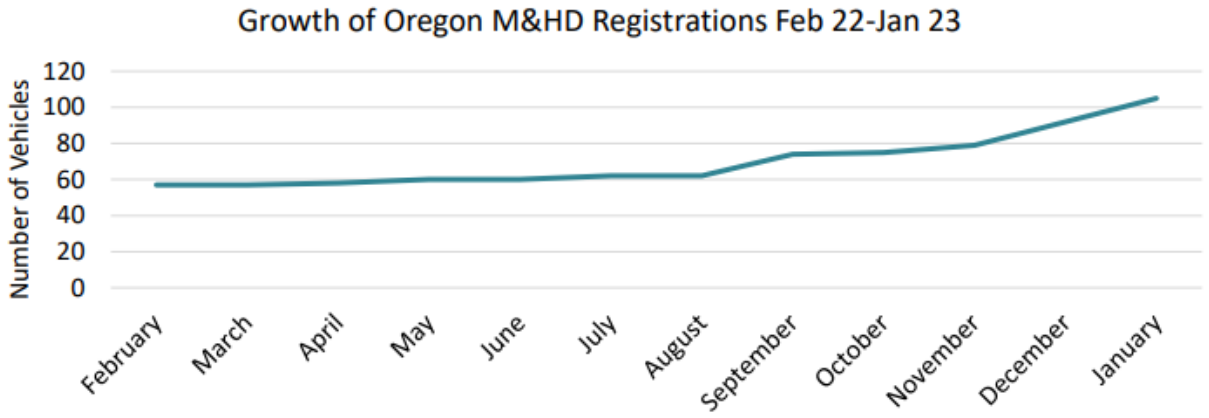
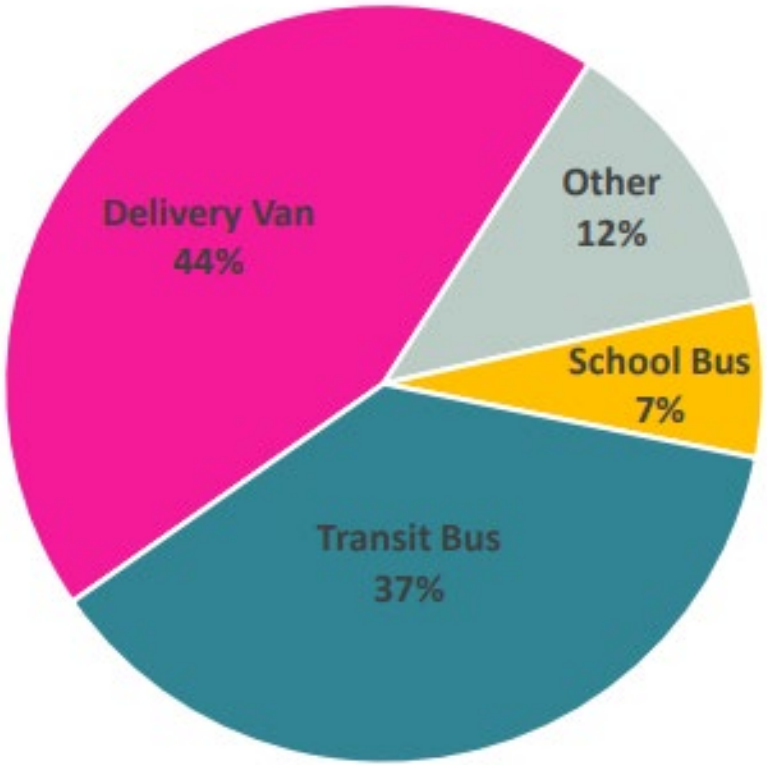
Electric Medium- and Heavy-Duty Vehicles

Figure 9: Growth of Medium- and Heavy-Duty EV Registrations in Oregon Feb. 2022 – Jan. 2023[1]

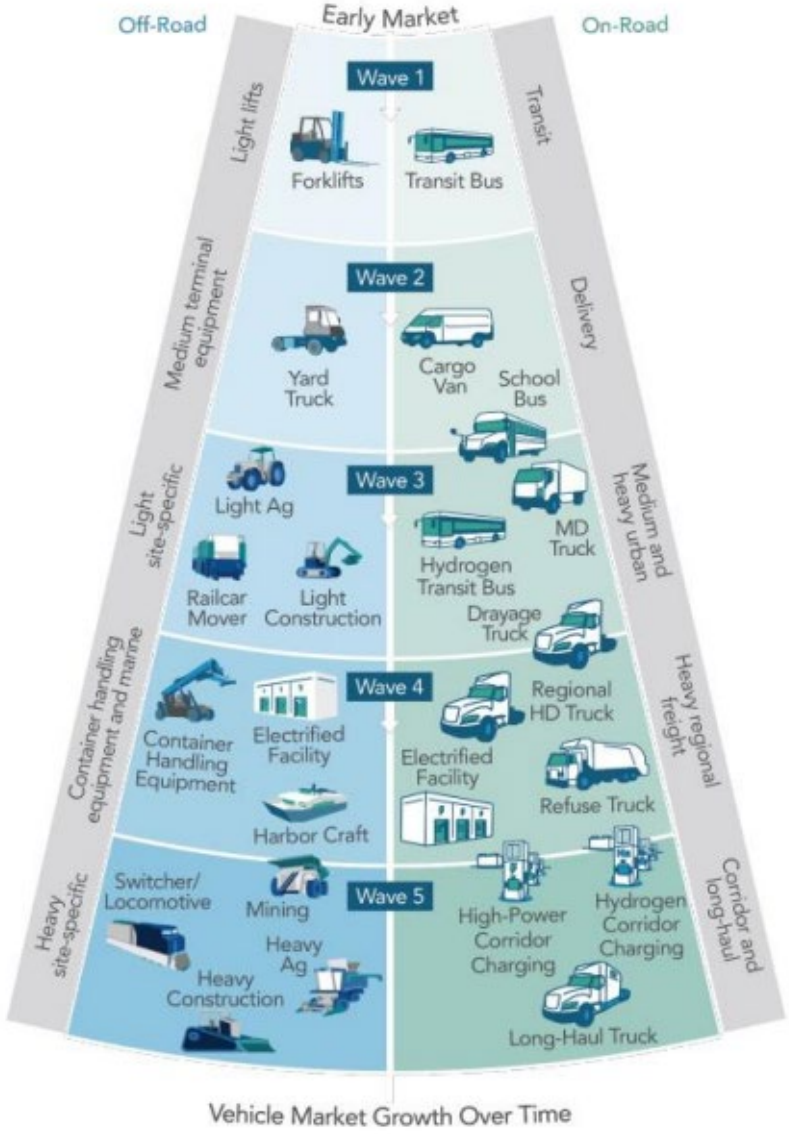


Medium- and heavy-duty vehicle electrification lags light-duty, largely because it is a much more complex vehicle sector, and the barriers to adoption are often more costly and challenging.



EV Platforms Available

There were 209 models of medium- and heavy-duty vehicle models available in the U.S. and Canada in 2022, up from 161 in 2021 – and model availability continues to grow.



EV Cost Differences with Internal Combustion

High up-front costs are likely to remain a barrier to widespread adoption of medium- and heavy-duty EVs through at least 2030, when some analysts are predicting they will reach cost parity for diesel counterparts.

Table 7: Total cost of ownership analysis of four MHDV classes.

	Daily Miles per Vehicle	Days Used per Week	EV Vehicle Price	Gas Diesel Price	Rebates/ Incentives	10 Year TCO Gas	10 Year TCO Electric	Savings/Loss (electrification)
Municipal Bus								
Reference	120	7	$785,000	$400,000	$62,650	**$1,093,623**	**$844,590**	$148,377
Low-cost	120	7	$628,000	$400,000	$62,650	**$1,093,623**	**$687,590**	$406,034
High Usage	144	7	$785,000	$400,000	$62,650	**$1,198,503**	**$837,525**	$360,978
School Bus								
Reference	46	5	$342,500	$100,000	$46,580	**$193,738**	**$322,623**	$(128,885)
Low-cost	46	5	$274,000	$100,000	$46,580	**$193,738**	**$254,123**	$(60,385)
High Usage	55	5	$342,500	$100,000	$46,580	**$206,415**	**$320,463**	$(114,048)
Refuse Truck								
Reference	80	6	$675,000	$350,000	$62,650	**$830,499**	**$804,432**	$26,067
Low-cost	80	6	$540,000	$350,000	$62,650	**$830,499**	**$669,432**	$161,067
High Usage	96	6	$675,000	$350,000	$62,650	**$882,559**	**$805,201**	$77,358
Delivery Van								
Reference	48	5	$65,000	$50,000	$14,080	**$142,526**	**$82,025**	$60,500
Low-cost	48	5	$52,000	$50,000	$14,080	**$142,526**	**$69,025**	$73,500
High Usage	57	5	$65,000	$50,000	$14,080	**$153,372**	**$81,183**	$72,188

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EV Charging Infrastructure

Table 3: Average Costs for Different Types of Commercial EV Chargers[54]

	L1	L2	DCFC - 50 kW	DCFC - 150 kW	DCFC - 350 kW
Equipment Costs	Up to $350	$1,100 to $7,000	$22,000 to $50,000	$80,000 to $120,000	$150,000 to $180,000

Table 2: Medium- and Heavy-Duty Charging Needs by Vehicle Type

Home Base, Level 2	Home Base, Level 3	Public
• Heavy-duty Pickup & Van • School Bus • Delivery Van • Service Van • Service Truck • Box Truck (Class 3 – 5) • Stake Truck (Class 3 – 5) • Stake Truck (Class 6 – 7)	• Heavy-duty Pickup • *Regional Haul Tractor* • Transit Bus • Shuttle Bus • Delivery Truck • Refuse Hauler • *Box Truck (Class 6 – 7)* • *Box Truck (Class 8)* • Dump Truck	• Long Haul Tractor • *Regional Haul Tractor* • *Box Truck (Class 6 – 7)* • *Box Truck (Class 8)*

The cost to install charging is highly uncertain, depending on many variables, including the number of chargers to be sited, the amount of land needed, and power requirements.

Power requirements are the most variable portion of installation costs, depending on the type of charger needed, available electric circuit capacity, distance from the nearest utility interconnection, and the potential for distribution system upgrades.

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EV Charging Availability & Reliability

Federal and state policies supporting EV charger availability

- Federal Inflation Reduction Act Business and Personal Tax Credits for EV Chargers and Installation
- ODOT National Electric Vehicle Infrastructure (NEVI) Formula Program
- ODOT Charging and Fueling Infrastructure Discretionary Grant Program
- ODOT Community Charging Rebates Program
- ODOT Carbon Reduction Program
- DEQ Clean Fuels Program
- DEQ Zero-Emission Fueling Infrastructure Grant Pilot Program
- ODOE Public Purpose Charge Schools Program
- OPRD Charging Infrastructure at Oregon State Parks
- DCBS Building Codes

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Thank You

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