Oregon's Clean Truck Rules Update

- Heavy Duty Low NOx Omnibus Rule

- Advanced Clean Trucks Rule

Rachel Sakata, Eric Feeley, Gerik Kransky, Jillian DiMedio

May 8, 2025

Environmental Quality Commission

State of Oregon
DEQ Department of Environmental Quality

Overview

- Heavy Duty Low NOx Omnibus
  - Anticipated Engine Availability
- Advanced Clean Trucks
  - Oregon Medium and Heavy-Duty Vehicle Fleet Composition
  - Current Battery Electric Vehicle Technology
  - Charging Needs to Support Fleet Electrification
  - Current Charging Infrastructure in Oregon
  - Battery Electric Vehicle Pricing and Total Cost of Ownership
  - Oregon Energy Strategy Information on Economy-wide Impacts
- Update on Current Rulemaking

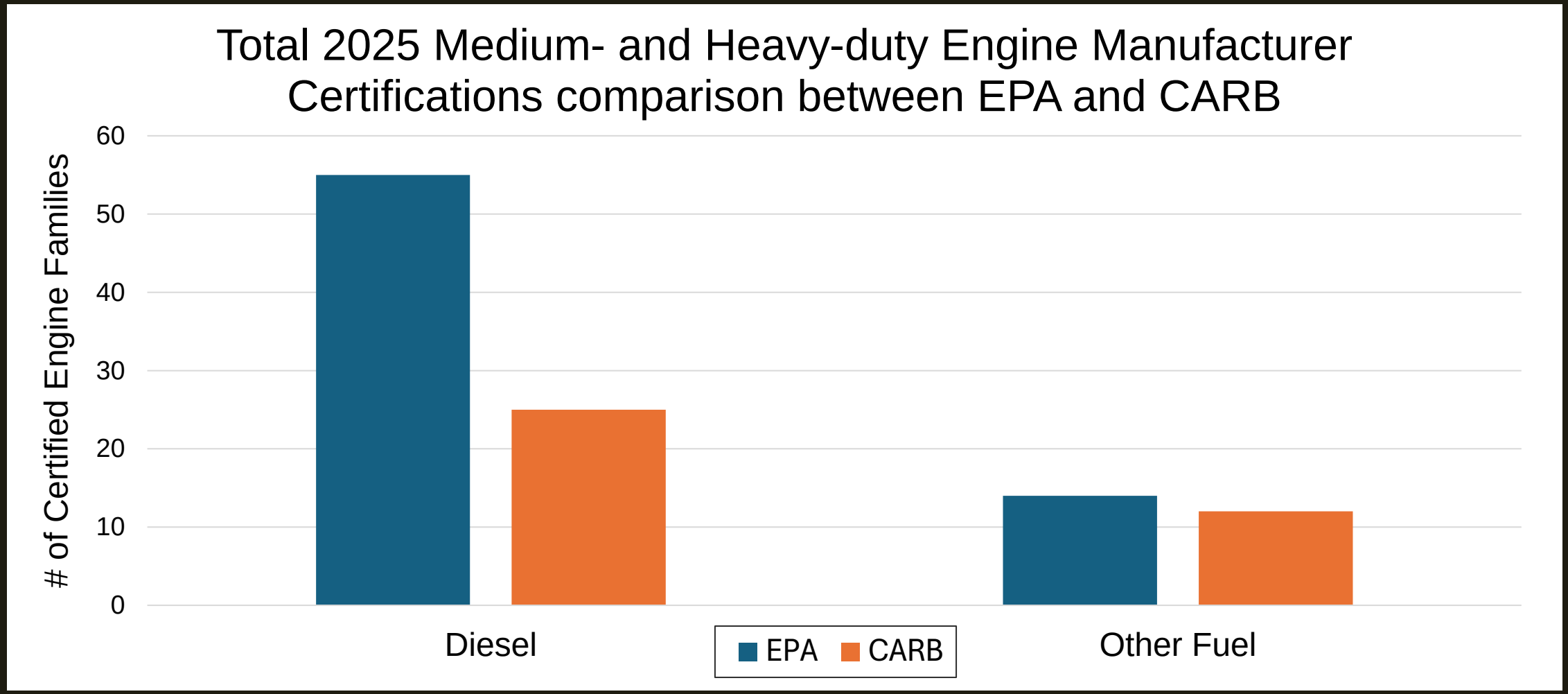
Background – Heavy-Duty Low NOx Omnibus

- Omnibus Program Elements
  - Lower NOx and $PM_{2.5}$
  - New Low Load Standard
  - Longer Useful Life and Warranty Periods
  - In Use Testing
  - Exemptions

HD Omnibus Engine and Vehicle Availability

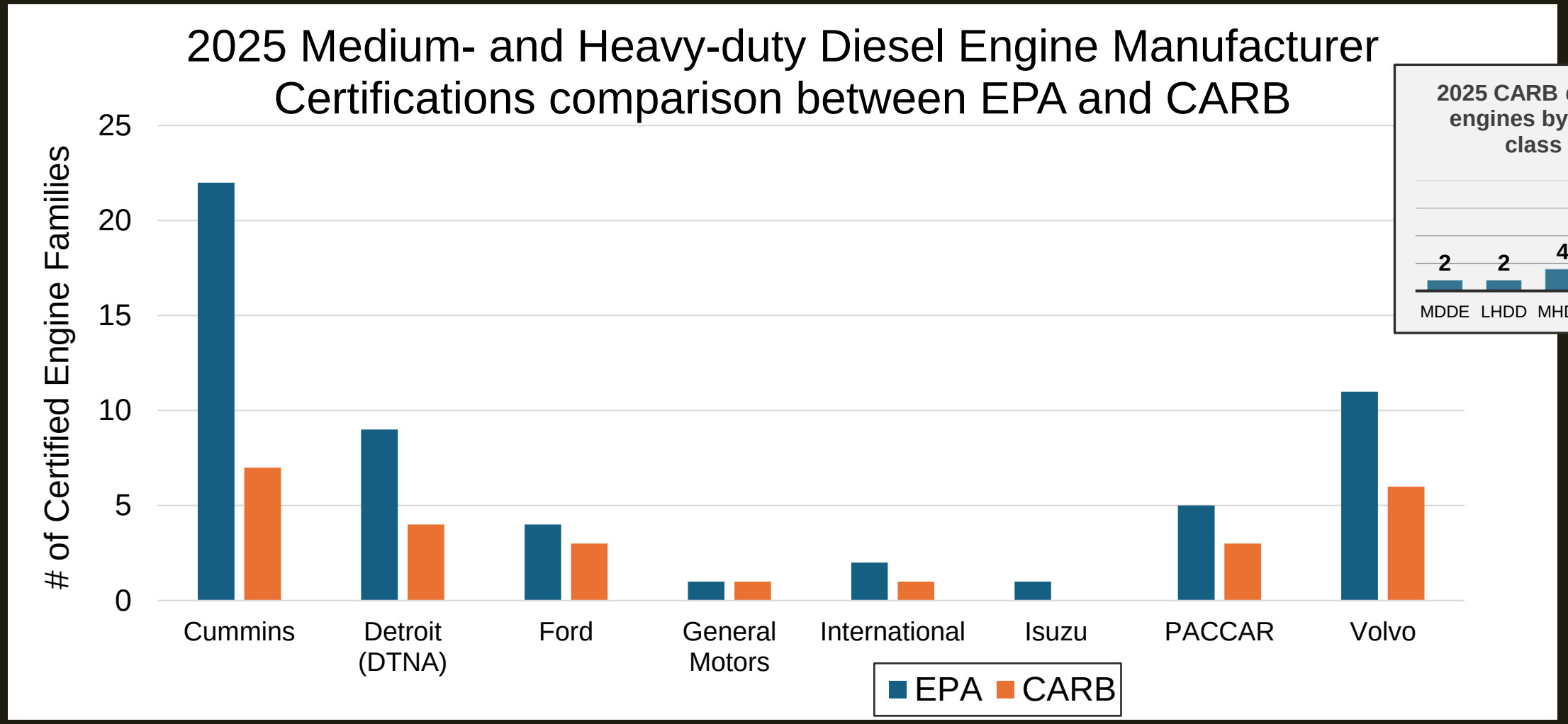
- Will HD Omnibus compliant internal combustion engine-powered vehicles be available for purchase in Oregon in 2026?
  - ICE powered vehicles will be available on the market in 2026
  - DEQ does not expect engine and vehicle products in all market segments
- DEQ based its determination on:
  - Engine certification data from EPA and CARB
  - Manufacturer marketing materials
  - Manufacturer and dealer internal communications
  - Industry media coverage

HD Omnibus – Total Engine Certifications



State of Oregon
DEQ Department of Environmental Quality

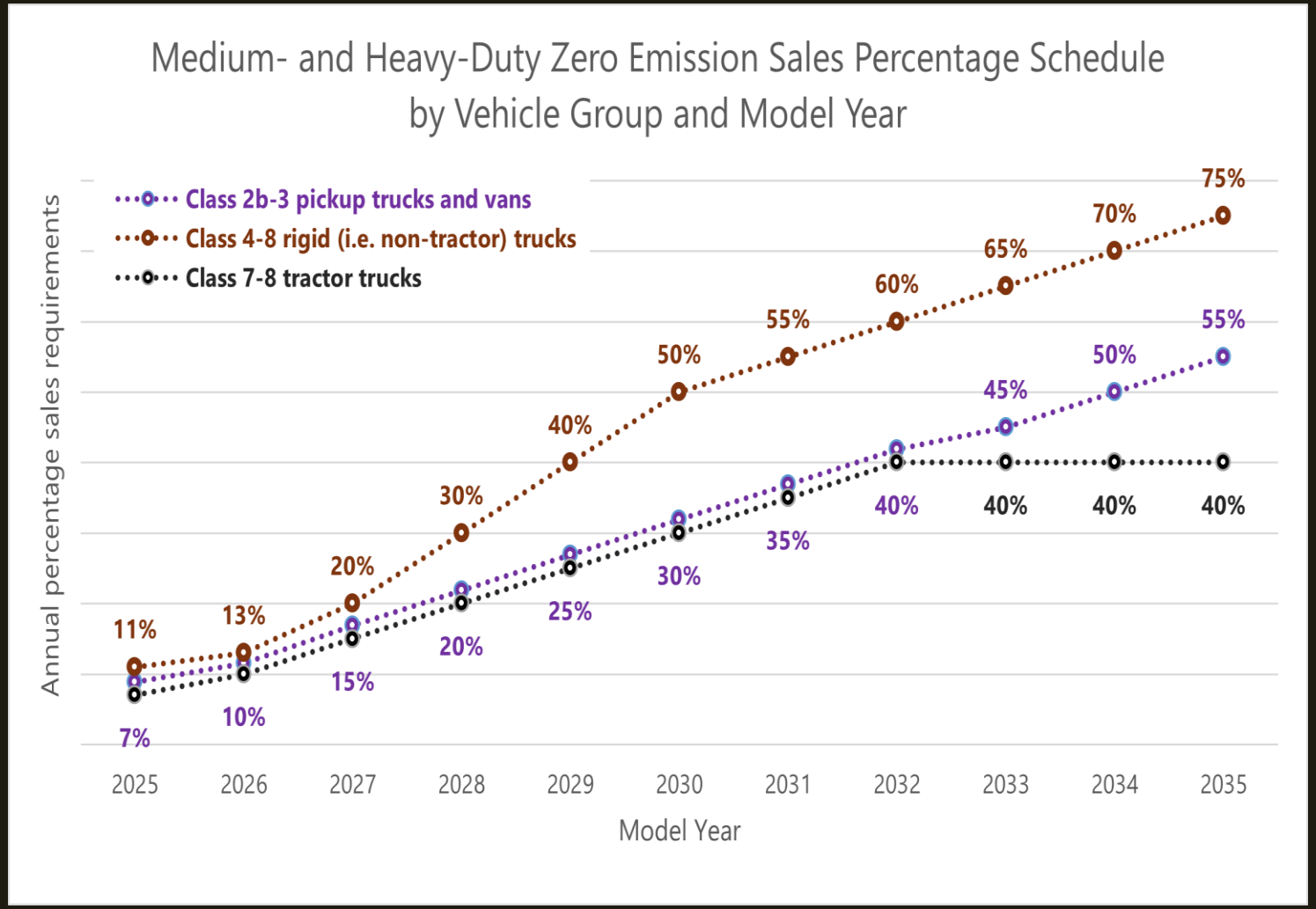
HD Omnibus – Diesel Engine Certifications



State of Oregon DEQ Department of Environmental Quality

Background – Advanced Clean Trucks Rule

- Manufacturer sales requirement
  - Must sell new plug-in hybrid emission/zero-emission trucks as a percentage of their overall sales
- Rule begins with 2025 model year
- The rule does not ever ban diesel trucks or sales of diesel trucks



State of Oregon
DEQ Department of Environmental Quality

Oregon’s Medium and Heavy-Duty Vehicle Fleet

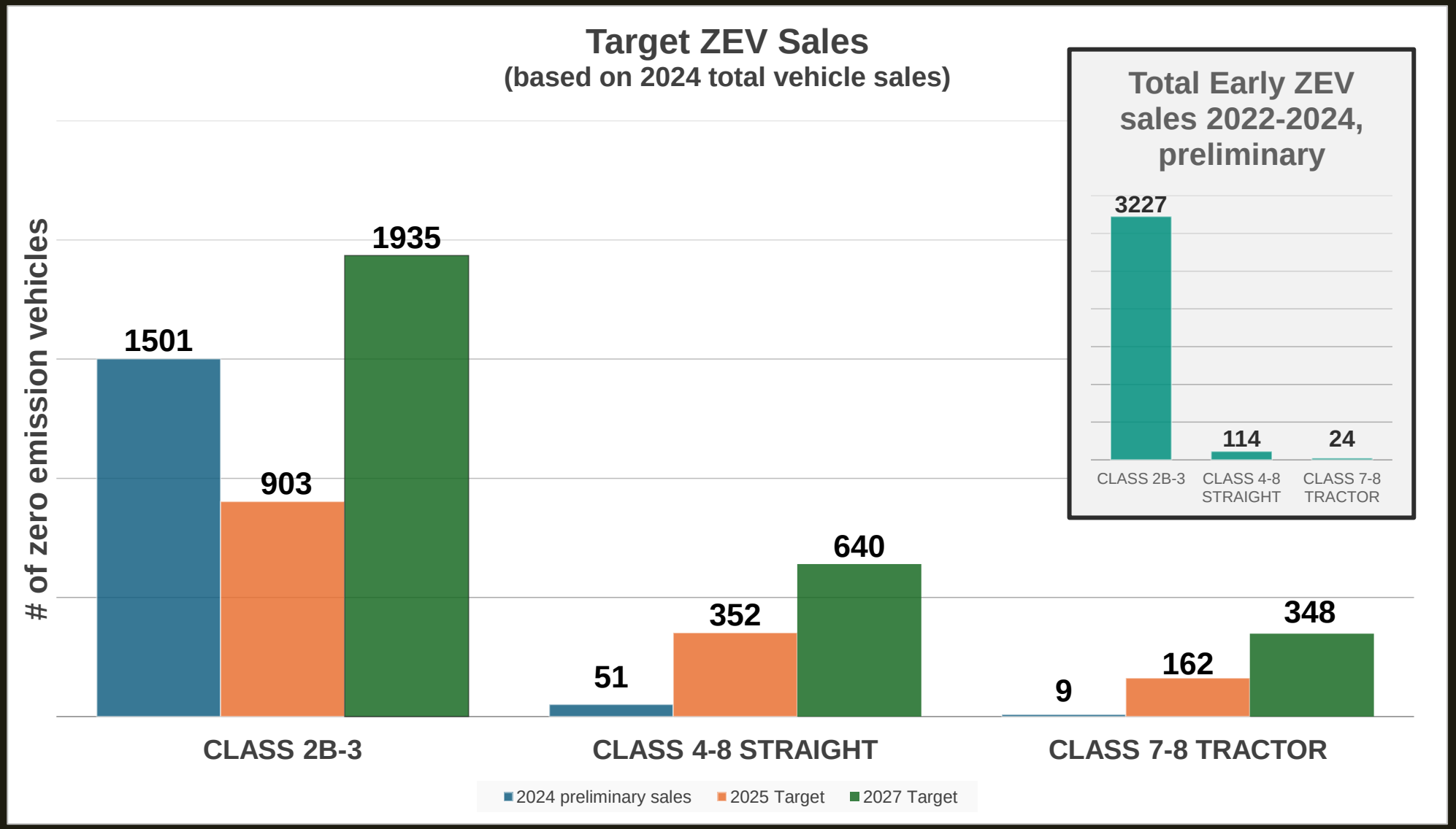
Where are the opportunities for Medium and Heavy Duty Zero Emissions Vehicle deployments in Oregon?

- Review Oregon's existing fleet
- Estimate ACT ZEV sales targets relative to Oregon fleet information
- Consider average mileage of Oregon's fleet relative to current battery electric vehicle technology

Oregon's MHD Vehicle Fleet Totals

Oregon Truck Registrations as Total Vehicle Count	Vehicle Class	2017	2018	2019	2020	2021	2022	2023	2024
PICKUP	2b-3	10,555	10,004	9,824	8,586	7,313	11,976	5,540	9,979
VAN CARGO	2b-3	2,657	2,759	3,049	3,600	3,728	4,036	5,180	1,644
VAN PASSENGER	2b-3	717	642	1,313	447	412	166	348	258
CAB CHASSIS	4-8	1,648	1,030	1,917	1,531	1,283	1,966	1,155	1,031
STRAIGHT TRUCK	4-8	812	1,738	1,886	2,068	1,275	1,447	1,802	1,913
CUTAWAY	4-8	1,217	679	1,043	309	712	649	657	490
TRACTOR TRUCK	7-8	478	1,565	1,871	1,973	1,420	2,112	2,990	2,320

Example Oregon ZEV Targets



State of Oregon
DEQ Department of Environmental Quality

Oregon's Medium and Heavy-Duty Vehicle Fleet – VMT

Vehicle Type	Estimated Miles Per Day (5 days per week)	**Median Battery Electric Vehicle Technology Range**	**Sector Ready to Electrify Today**
Other Buses	153.3	184	Yes
Transit Bus	209	195	Some
School Bus	73.2	125	Yes
Refuse Truck	135.6	125	Some
Single Unit Short-haul Truck	78.9	150	Yes
Single Unit Long-haul Truck	120.5	150	Yes
Motor Home	26	n/a	n/a
Combination Short-haul Truck	118.3	150	Yes
Combination Long-haul Truck	331.5	150	Not yet

Charging Infrastructure

- How much do we have in Oregon?
- What do we need to support ACT?

- Oregon DEQ is working with the US Climate Alliance to assess Oregon's readiness and next steps to develop electric grid and charging infrastructure to meet the needs of ACT

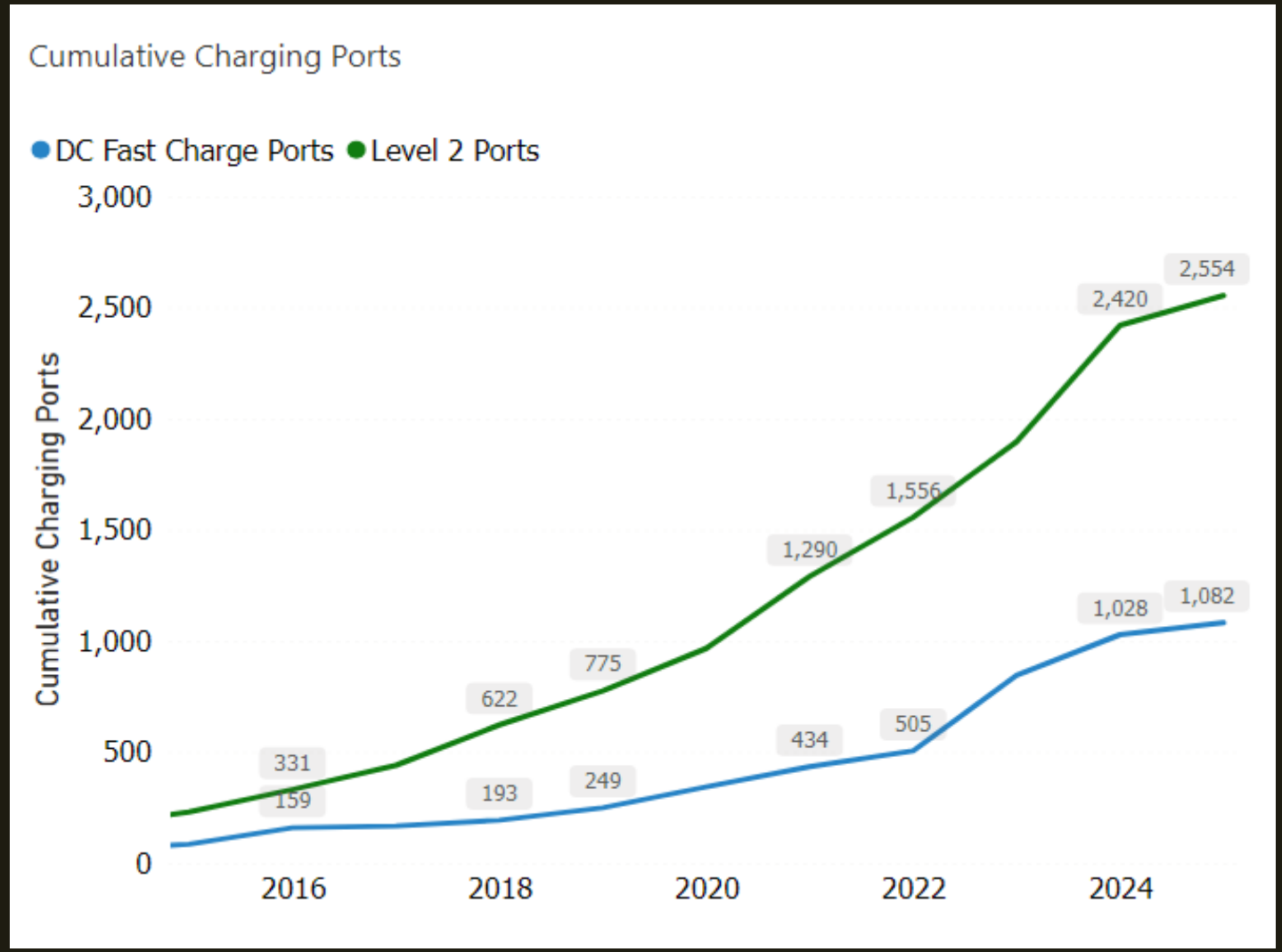
- Oregon Department of Energy to provide their research regarding the impact of Advanced Clean Trucks rules in Oregon on the economy-wide costs of decarbonization

Charging Infrastructure

Total Charging in Oregon

- Atlas: 3,628 Total Ports
  - 2,554 Level 2 Ports
  - 1,082 DC Fast Charge Ports

- NREL 4,090 Total Ports
  - 2,930 Level 2 Ports
  - 1,087 DC Fast Charge Ports



EValuateOR by Atlas Public Policy
Data as of 4/20/25

State of Oregon
DEQ Department of Environmental Quality

Charging Infrastructure

Charging Needs by Market Segment

Home Base, Level 2	Home Base, Level 3 (DC Fast Charge)	Public, En Route
Pickup and Van	Pickup	Heavy-Duty, Long-Haul Tractor
School Bus	Regional Haul Tractor	Regional Haul Tractor
Delivery Van	Transit Bus	Box Truck (Class 6-7)
Service Van	Shuttle Bus	Box Truck (Class 8)
Box Truck (Class 3-5)	Box Truck (Class 6-7)	
Flatbed Truck (Class 3-5)	Box Truck (Class 8)	
Flatbed Truck (Class 6-7)	Dump Truck	

Pricing

How much do these trucks cost and what is the total cost of ownership relative to ICE technology?

- 2024 Battery Electric (Class 8 truck – day cab): $435,839
- 2021-22 Battery Electric (Class 8 truck – day cab): $349,328
- Diesel Truck Prices (Class 8 truck - day cab): $155,902
- Average incremental cost of ZEV over Diesel: $279,937

- Charging Infrastructure:
  - Level 2 Charger: $10,000
  - DC Fast Charger: $100,000

Pricing

2024
- Freightliner EM106 = $287,366

2026
- Freightliner EM106 = $405,544

"These all-electric trucks reduce our energy cost per mile by over 50%, compared to conventional diesel trucks."

State of Oregon
DEQ Department of Environmental Quality

OREGON DEPARTMENT OF ENERGY

Leading Oregon to a safe, equitable, clean, and sustainable energy future.

Our Mission

The Oregon Department of Energy helps Oregonians make informed decisions and maintain a resilient and affordable energy system. We advance solutions to shape an equitable clean energy transition, protect the environment and public health, and responsibly balance energy needs and impacts for current and future generations.

What We Do

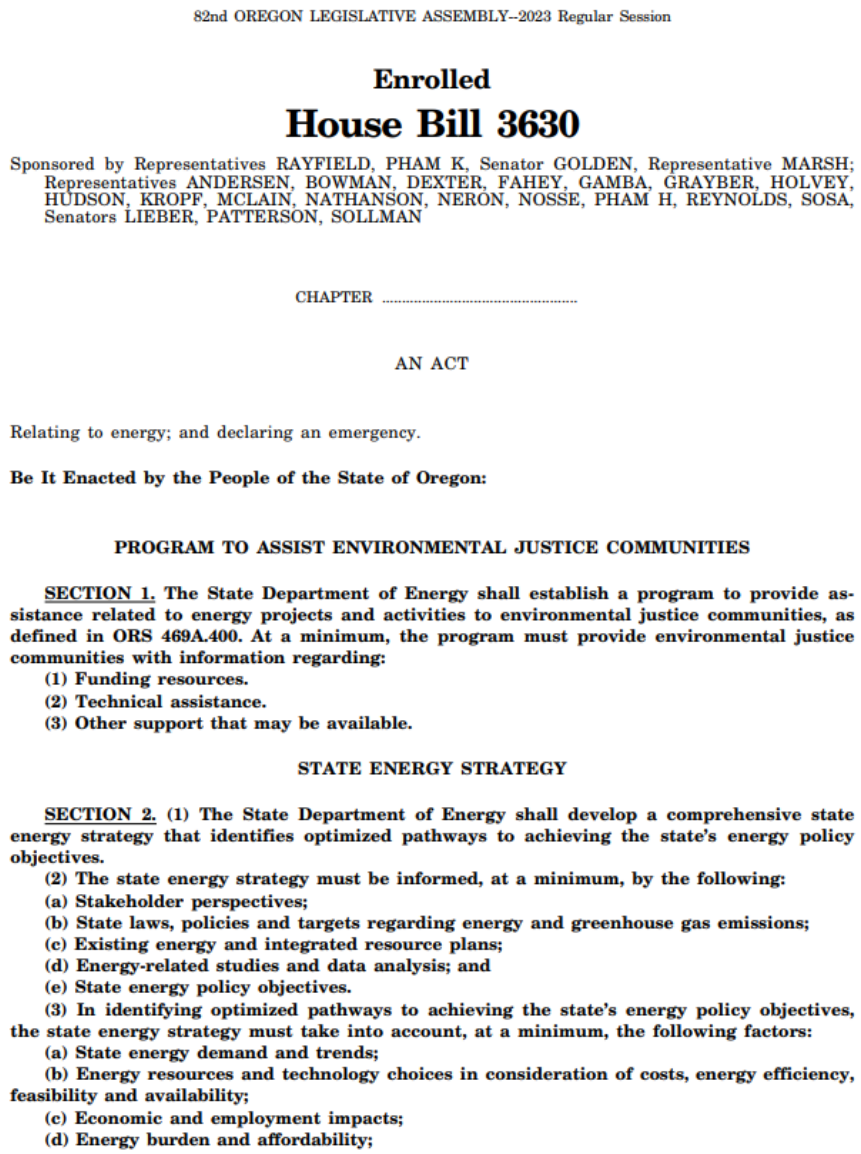
On behalf of Oregonians across the state, the Oregon Department of Energy achieves its mission by providing:

- A Central Repository of Energy Data, Information, and Analysis
- A Venue for Problem-Solving Oregon's Energy Challenges
- Energy Education and Technical Assistance
- Regulation and Oversight
- Energy Programs and Activities

OREGON STATE ENERGY STRATEGY

House Bill 3630 (2023) Section 2

"The State Department of Energy shall develop a comprehensive state energy strategy that identifies optimized pathways to achieving the state's energy policy objectives."



82nd OREGON LEGISLATIVE ASSEMBLY--2023 Regular Session

Enrolled

House Bill 3630

Sponsored by Representatives RAYFIELD, PHAM K, Senator GOLDEN, Representative MARSH; Representatives ANDERSEN, BOWMAN, DEXTER, FAHEY, GAMBA, GRAYBER, HOLVEY, HUDSON, KROPF, MCLAIN, NATHANSON, NERON, NOSSE, PHAM H, REYNOLDS, SOSA, Senators LIEBER, PATTERSON, SOLLMAN

CHAPTER .....

AN ACT

Relating to energy; and declaring an emergency.

Be It Enacted by the People of the State of Oregon:

PROGRAM TO ASSIST ENVIRONMENTAL JUSTICE COMMUNITIES

SECTION 1. The State Department of Energy shall establish a program to provide assistance related to energy projects and activities to environmental justice communities, as defined in ORS 469A.400. At a minimum, the program must provide environmental justice communities with information regarding:

(1) Funding resources.

(2) Technical assistance.

(3) Other support that may be available.

STATE ENERGY STRATEGY

SECTION 2. (1) The State Department of Energy shall develop a comprehensive state energy strategy that identifies optimized pathways to achieving the state's energy policy objectives.

(2) The state energy strategy must be informed, at a minimum, by the following:

(a) Stakeholder perspectives;

(b) State laws, policies and targets regarding energy and greenhouse gas emissions;

(c) Existing energy and integrated resource plans;

(d) Energy-related studies and data analysis; and

(e) State energy policy objectives.

(3) In identifying optimized pathways to achieving the state's energy policy objectives, the state energy strategy must take into account, at a minimum, the following factors:

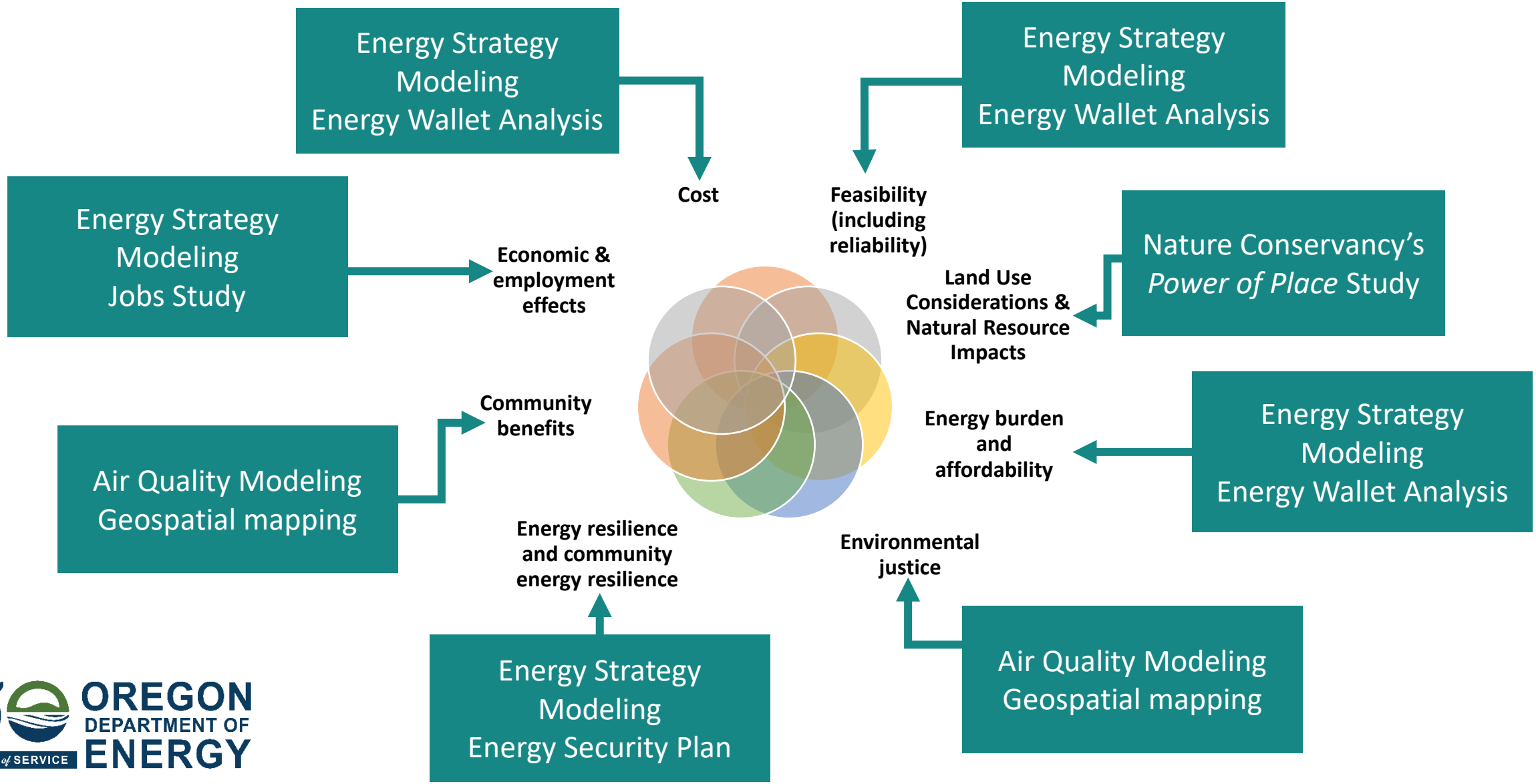
(a) State energy demand and trends;

(b) Energy resources and technology choices in consideration of costs, energy efficiency, feasibility and availability;

(c) Economic and employment impacts;

(d) Energy burden and affordability;

ANALYSIS



50 YEARS of SERVICE OREGON DEPARTMENT OF ENERGY

MODELING THE ENERGY SYSTEM

- Economywide model comprising electricity, transportation fuels, and direct use fuels sectors.
- Creates a least-cost portfolio of energy resources to achieve objectives and goals.
- Generates scenarios (pathways) based on different assumptions
- Produces insights into the interactions between sectors and tradeoffs of different pathways.

50 YEARS of SERVICE OREGON DEPARTMENT OF ENERGY

MODELING QUESTIONS: *WHAT IF* SCENARIOS AND SENSITIVITIES

0. Reference: What are the key elements of a least-cost pathway to meeting Oregon's energy policy objectives?

0a. Sensitivity: No Change in VMT (vs. Reference) – what if VMT per capita remains flat to 2050?

0b. 50% Lower Tech Load Growth (vs. Reference) – what if electricity demand for data center growth were 50% lower through 2035?

1. What if energy efficiency and building electrification is delayed by 10 years?

2. Delayed TE – What if full transportation electrification of medium- and heavy-duty vehicles is delayed 10 years, from 2040 to 2050?

2a. Sensitivity: No Advanced Clean Trucks regulation (vs. Delayed TE Alt. Scenario) – what if there were no near-term electrification targets for MHD vehicles?

3. Limited Demand Response – What if there is limited participation in demand response programs?

4. What if there is limited utility-scale electricity generation in Oregon?
5. What if there are higher levels of rooftop solar and behind-the-meter storage and transmission is limited to reconductoring only (no new build)?
6. What might an alternative portfolio of flexible resources for electricity reliability look like?

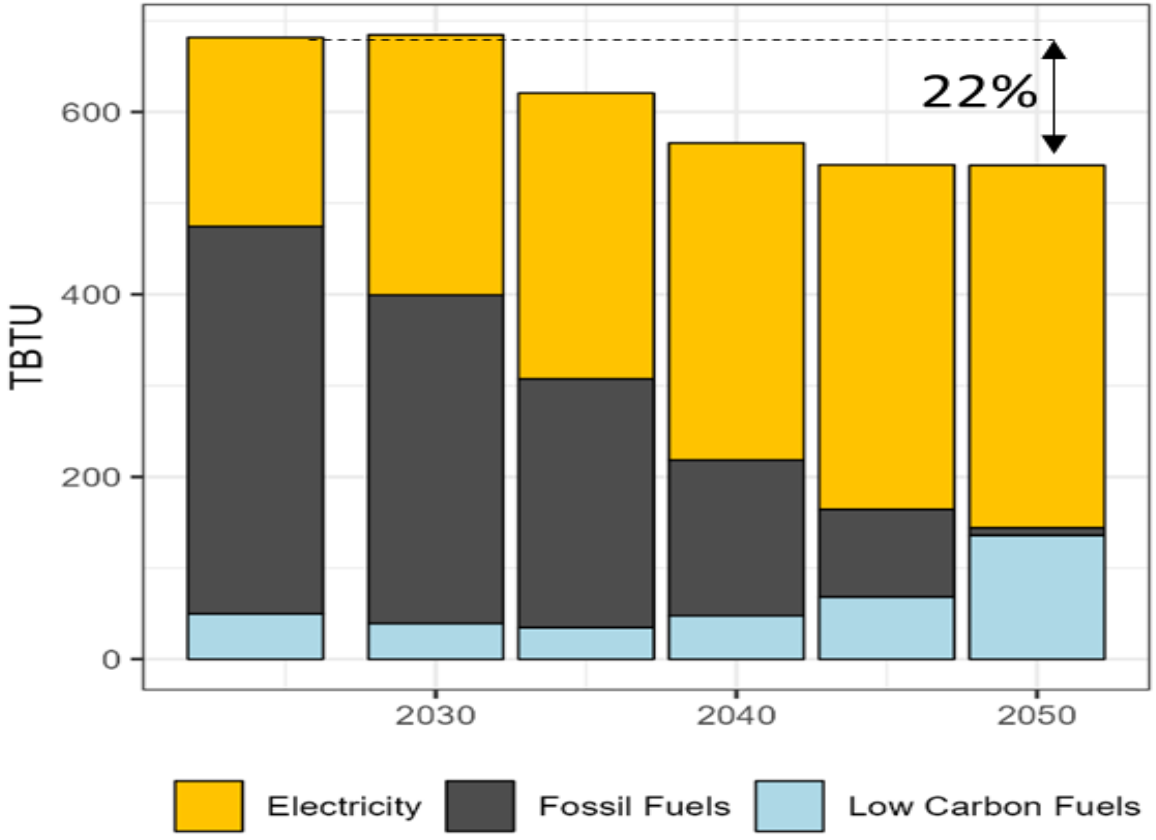
OREGON DEPARTMENT OF ENERGY
50 YEARS of SERVICE

TRANSPORTATION ELECTRIFICATION: KEY TAKEAWAYS FROM MODELING

Key Takeaways

- **Vehicle electrification**: Transportation electrification reduces systemwide energy demand and the cost of decarbonization; and the pace matters.
- **Grid integration**: Transportation electrification will significantly increase electricity demand, but EVs can provide a net benefit to the grid if managed flexibly.

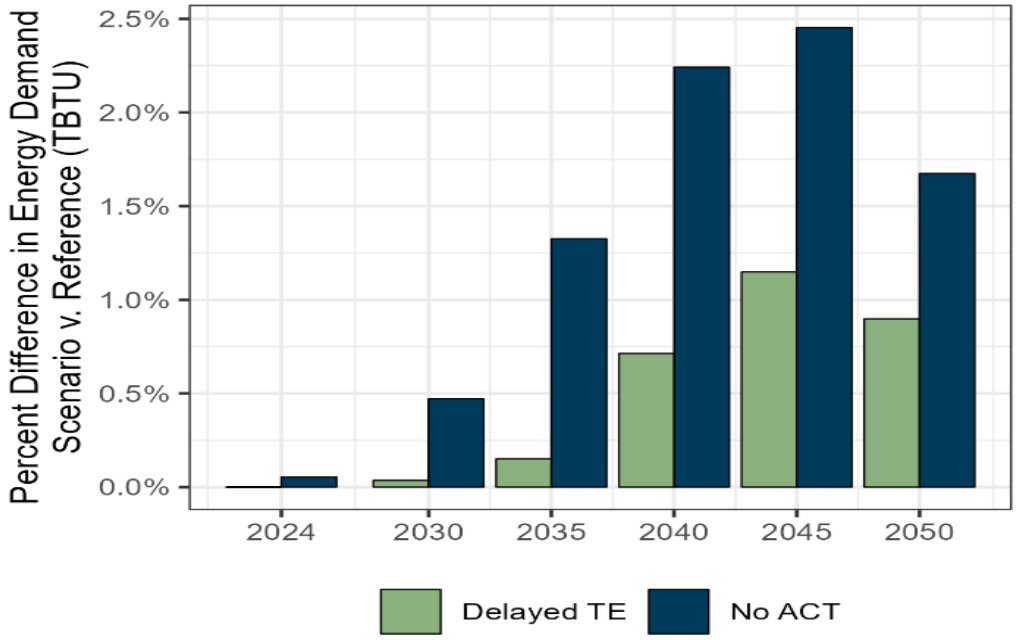
Energy Demand by Fuel in Reference Scenario



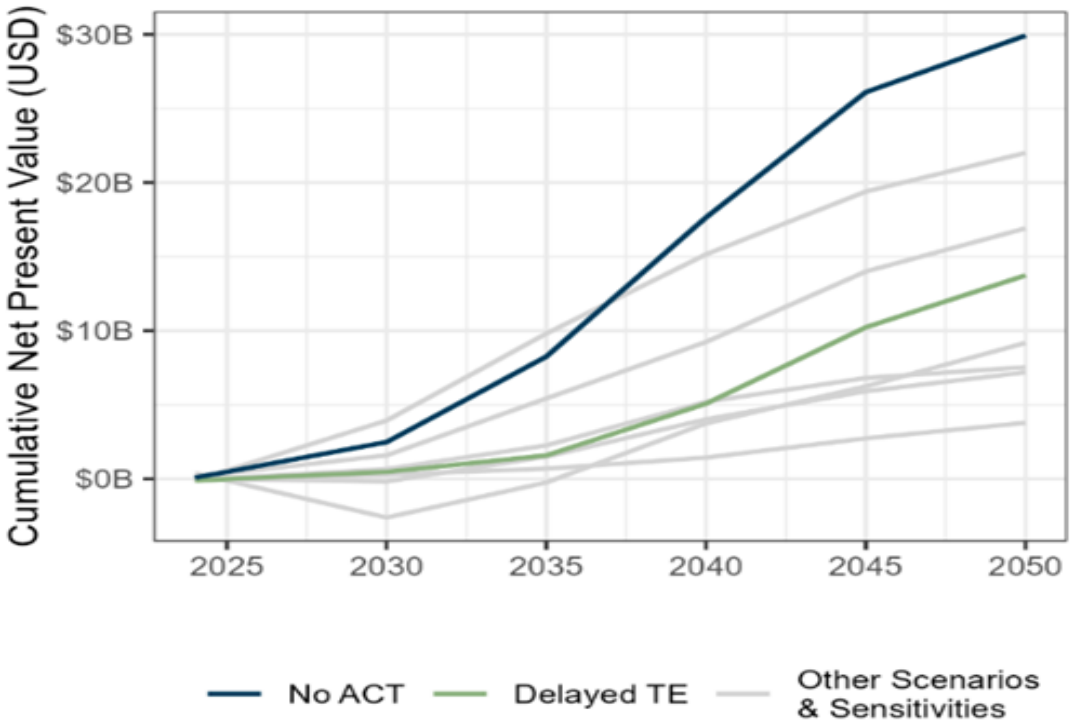
OREGON DEPARTMENT OF ENERGY
50 YEARS of SERVICE

EARLY EV ADOPTION KEY TO COST CONTAINMENT

% Difference in Energy Demand in Delayed TE and No ACT vs. the Reference



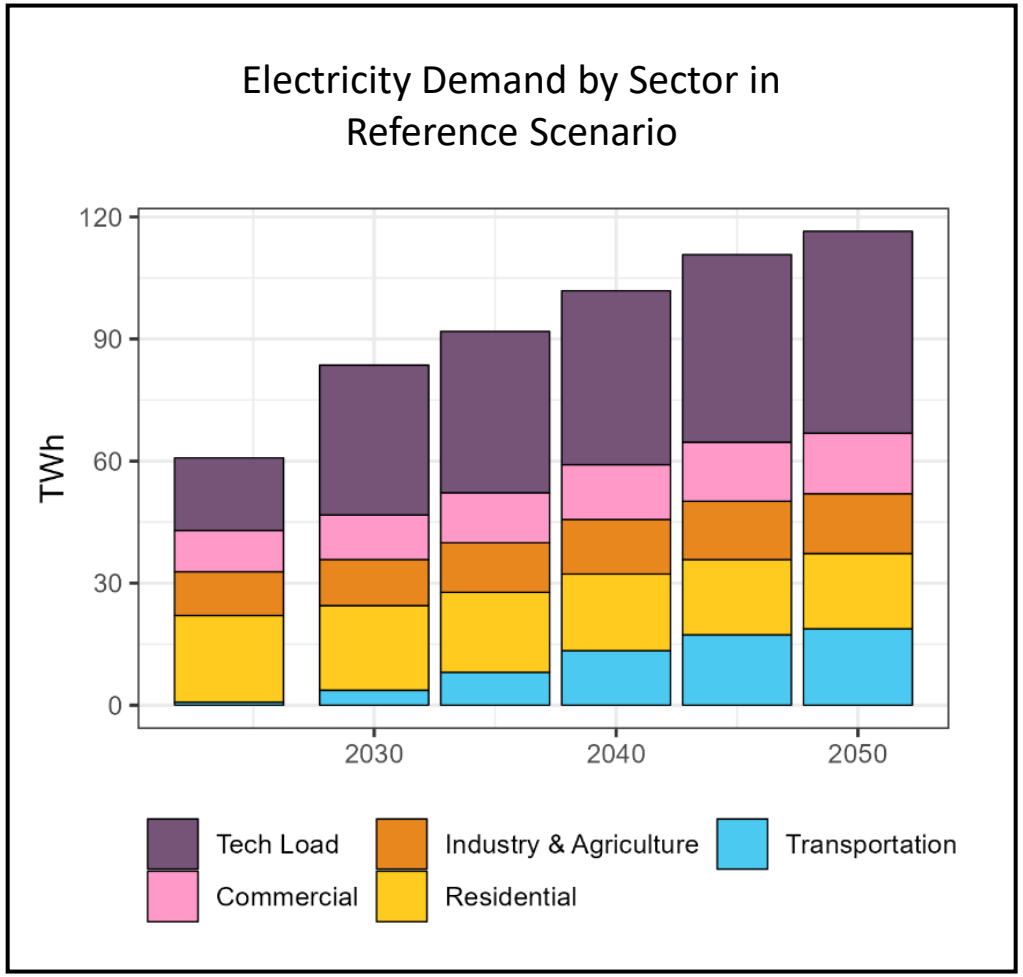
Difference in System-wide Costs in All Scenarios Compared to Reference

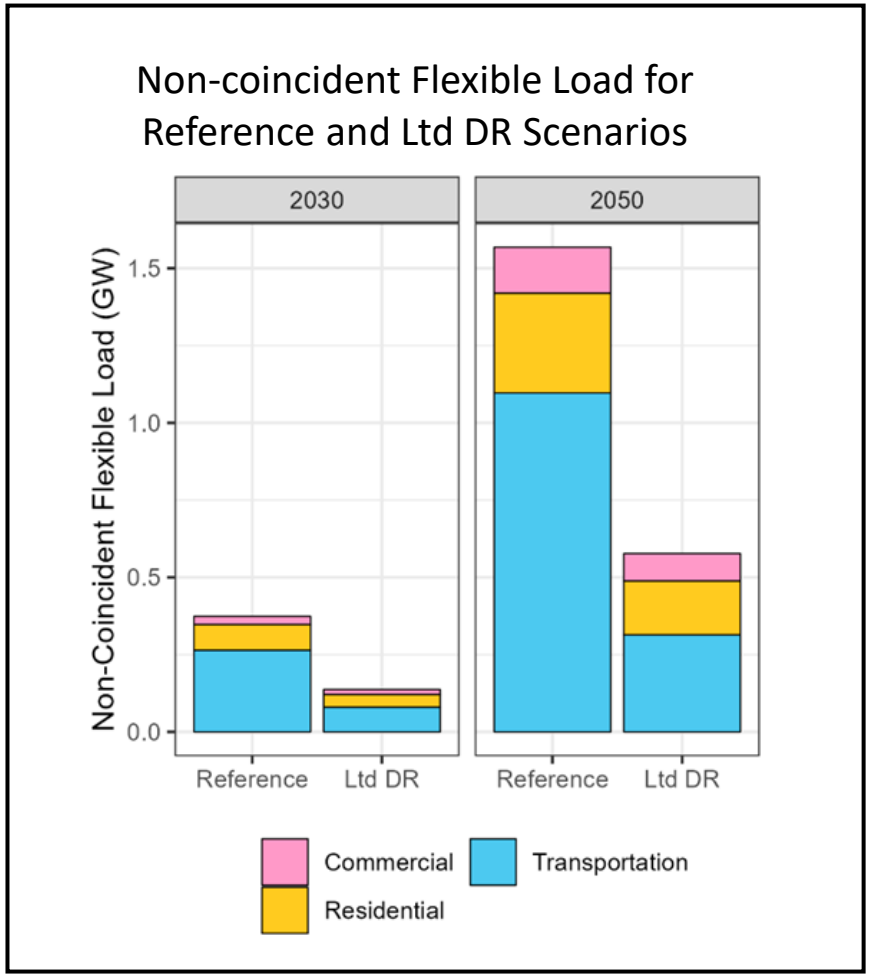


OREGON DEPARTMENT OF ENERGY
50 YEARS of SERVICE

EVS CAN SERVE AS A FLEXIBLE RESOURCE

- Electrifying transportation will require an expansion of the electric grid
- EVs can provide value to the grid by aligning when they charge with periods of low demand





OREGON DEPARTMENT OF ENERGY
50 YEARS of SERVICE

Oregon's Clean Truck Rules Proposal

- Delay **Heavy Duty Low Nox Omnibus** implementation to 2026
- Incorporate **Advanced Clean Truck Rule** changes/flexibilities:
  - Increased deficit makeup period from one model year to three model years
  - Manufacturer compliance to be based on reported sales of vehicles delivered into the state instead of when vehicles reach the ultimate purchaser
  - Incorporation of zero emission powertrain amendments
  - When an OEM produces and delivers a 2026 Omnibus-compliant heavy heavy-duty engine it will not accrue a deficit

Oregon's Clean Truck Rules Proposal

- **Oregon Optional Credit Program**
  - DEQ will issue credits to original equipment manufacturers in 2025 and 2026
  - Manufacturers must commit to put forth their best efforts to make diesel and other internal combustion powered trucks available to Oregon dealerships
  - **Credit allocations** for participating truck manufacturers
    - **Class 7-8 tractor trucks:** Provide credits to cover up to 100% of anticipated deficit obligations
    - **Class 2b-8 straight trucks:** Provide credits to cover up to 50% of anticipated deficit obligations for each truck class

Clean Truck Rules Proposal

Credit: David McNew/ Getty images

- Comment period closed May 7, 2025
- What DEQ has heard:
  - Support for ACT rule
  - Support for Oregon Optional credits but provide different percent of “free credits”

Clean Truck Rules Proposal

- What DEQ has heard (continued)
  - Advanced Clean Trucks rule enforcement discretion in 2025-2026
  - Delay Advanced Clean Trucks and Low NOx Omnibus rule until 2027

Next Steps

- Engage in ongoing conversations with interested parties
  - Discuss Optional Credit Program details
  - Encourage return to normalcy in Oregon's truck market

- Rulemaking process
  - Review and respond to public comments
  - EQC to act in July on proposed amendments to the Clean Truck Rules

- Provide ongoing support for vehicle dealers, fleets, and manufacturers

Questions?

Title VI and Alternative Formats

DEQ does not discriminate on the basis of race, color, national origin, disability, age, sex, religion, sexual orientation, gender identity, or marital status in the administration of its programs and activities.

Visit DEQ's Civil Rights and Environmental Justice page.

Español | 한국어 | 繁體中文 | Русский | Tiếng Việt | العربية
Contact: 800-452-4011 | TTY: 711 | deqinfo@deq.state.or.us

State of Oregon
DEQ Department of Environmental Quality