



# Transportation Electrification Investment Framework UM 2165

Welcome to Public Workshop 4  
Statewide Programs and Initiatives  
August 9, 2021



# Operating Agreements

1. Be energy efficient: (Allow room for multiple perspectives. Leave time for everyone.)
2. Stay engaged (connected) without tripping the circuit breaker: (Don't overheat.)
3. Consider environmental conditions: (Mute when not speaking.)
4. Seek understanding: (Listen to understand, not to respond.)
5. Group Norms: (suggestions from participants)



# Who's Who

## Hosts (OPUC)

Eric Shierman, Senior Utility Analyst

Ezell Watson, Director of Diversity, Equity, and Inclusion

## Facilitator

David Farnsworth, Principal, Regulatory Assistance Project

## Presenters

Cory Ann Wind, Oregon Clean Fuels Program Manager, DEQ

Kelly Yearick, Senior Program Manager, Forth

Mary Brazell, Transportation Electrification Program  
Manager, ODOT

Jessica Reichers, Technology and Policy Manager, ODOE



# Who's Who

Please introduce yourselves in chat.

Name, Organization, and the one thing you are most curious about in this workshop.



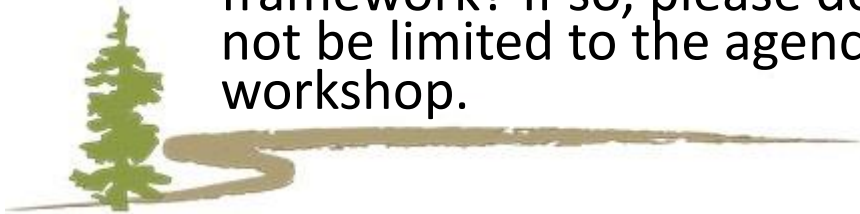
# Today's Meeting

Section	Time
<b>Welcome and Operating Agreements</b> <ul style="list-style-type: none"> <li>– Eric Shierman, Senior Utility Analyst, OPUC</li> <li>– Ezell Watson, Director of Diversity, Equity and Inclusion, OPUC</li> </ul>	2:00 – 2:15
<b>Oregon Clean Fuels Program</b> <ul style="list-style-type: none"> <li>– Cory Ann Wind, Oregon Clean Fuels Program Manager, DEQ</li> </ul>	2:15 – 2:25
<b>Forth, Oregon Clean Fuels Program Backstop Aggregator</b> <ul style="list-style-type: none"> <li>– Kelly Yearick, Senior Program Manager, Forth</li> </ul>	2:25 – 2:35
<b>Transportation Electrification Infrastructure Needs Analysis (TEINA)</b> <ul style="list-style-type: none"> <li>– Mary Brazell, Transportation Electrification Program Manager, ODOT</li> </ul>	2:35 – 2:45
<b>EV Reporting</b> <ul style="list-style-type: none"> <li>– Jessica Reichers, Technology and Policy Manager, ODOE</li> </ul>	2:45 – 2:55
<b>Discussion</b> <ul style="list-style-type: none"> <li>– Facilitator: David Farnsworth, Principal, Regulatory Assistance Project</li> </ul>	2:55 – 3:55
<b>Next Steps and Closing</b>	3:55 – 4:00



# Discussion Questions to Ponder

1. Based on the workshop presentations, do you see any gaps in Oregon state agency planning for electric vehicles?
2. How could Oregon state agencies better coordinate or leverage respective TE resources and programs?
3. How might utilities better coordinate their Clean Fuels Program plans with the Clean Fuels Program's Backstop Aggregator? This is DEQ's contractor that receives unclaimed Clean Fuels Program credits.
4. How should utility plans for the Clean Fuels Program coordinate with ratepayer-funded programs?
5. Is there a program at another state agency that has a direct impact on the PUC's efforts to develop a TE investment framework? If so, please describe that impact. Answers need not be limited to the agencies that are speaking at this workshop.





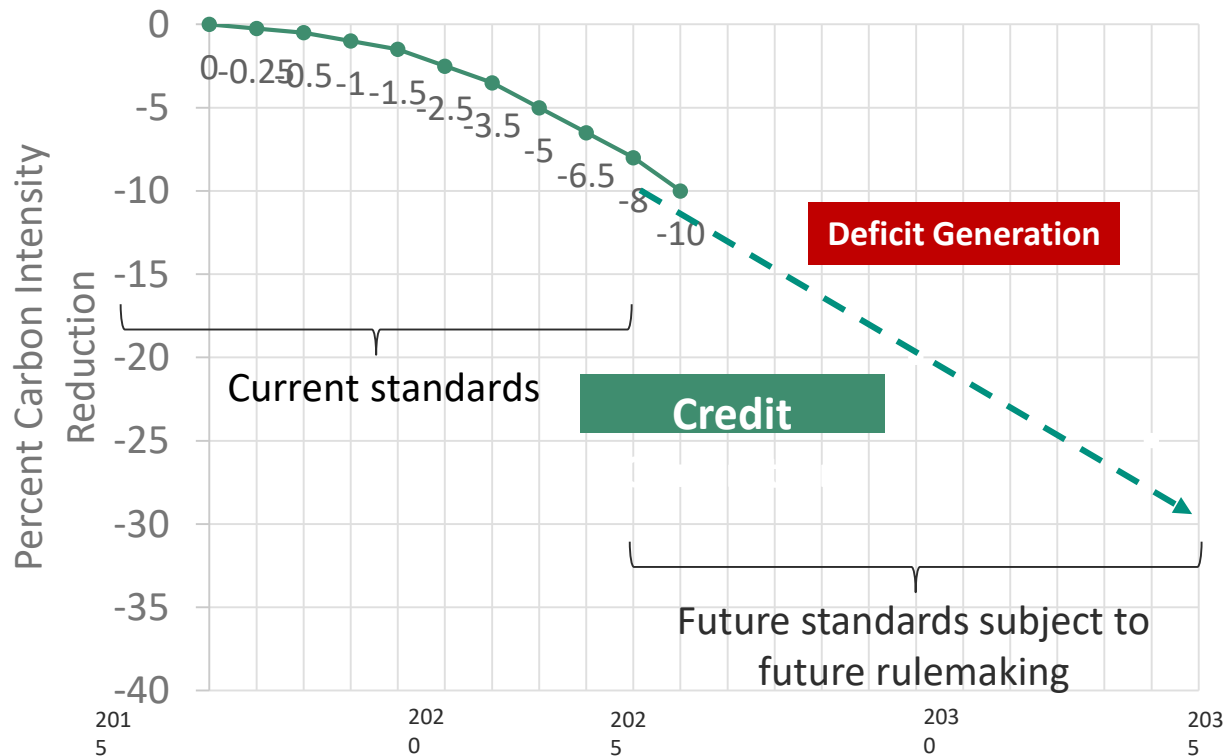
# Overview of the Clean Fuels Program **OPUC Transportation Electrification Workshop**

Webinar

August 9, 2021

**Cory-Ann Wind**, Clean Fuels Program Manager

# Clean Fuels Program in a Nutshell



## Mandatory Fuels

- Gasoline
- Diesel
- Ethanol
- Biodiesel
- Renewable diesel

## Voluntary Fuels

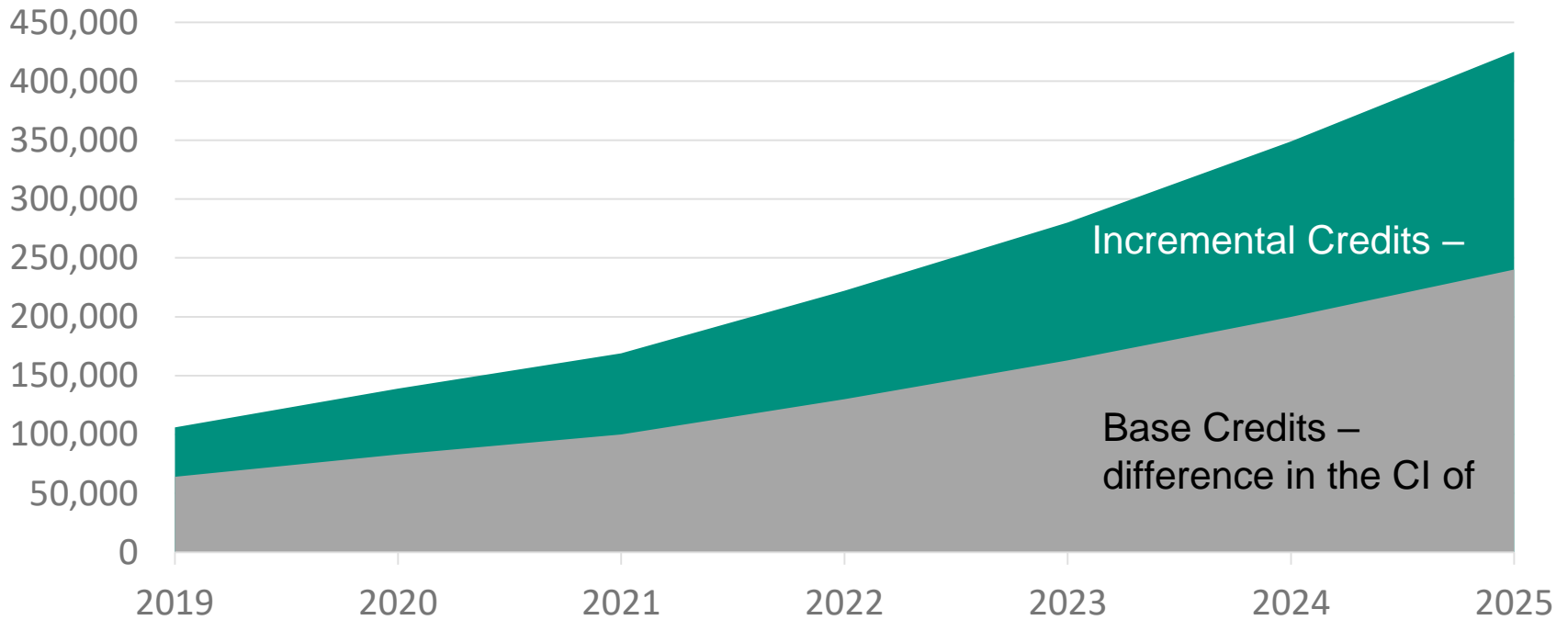
- Fossil and renewable CNG
- Fossil and renewable LNG
- Fossil and renewable LPG
- Sustainable aviation fuel
- Electricity
- Hydrogen



# Credit Generators for Electricity

Type of Charging	Base Credits
Public, workplaces, fleets, and multi-unit dwellings	Owner/operator of the charger
Transit vehicles	Transit agency
Forklifts, transportation refrigeration units, cargo handling equipment, ocean-going vessel shorepower	Owner/operator/service provider
Residential	Electric utility
	Backstop Aggregator

# Renewable Electricity for Electric Vehicles



# Credit Generators for Electricity

Type of Charging	Base Credits	Incremental Credits
Public, workplaces, fleets, and multi-unit dwellings	Owner/operator of the charger	Owner/operator of the charger
Transit vehicles	Transit agency	Transit agency
Forklifts, transportation refrigeration units, cargo handling equipment, ocean-going vessel shorepower	Owner/operator/service provider	Owner/operator/service provider
Residential	Electric utility	Electric utility
	Backstop Aggregator	Incremental Aggregator

# Incremental Aggregator

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- DEQ issues an RFP to solicit for interested entities
- Both parties enter into a contract that lays out the responsibilities of the Incremental Aggregator, to:
  - purchase & retire RECs
  - sell the incremental credits
  - develop & implement an annual work plan of programs & projects
  - submit annual report & financial audit
- Incremental credits can be generated from residential & non-residential charging that is unclaimed

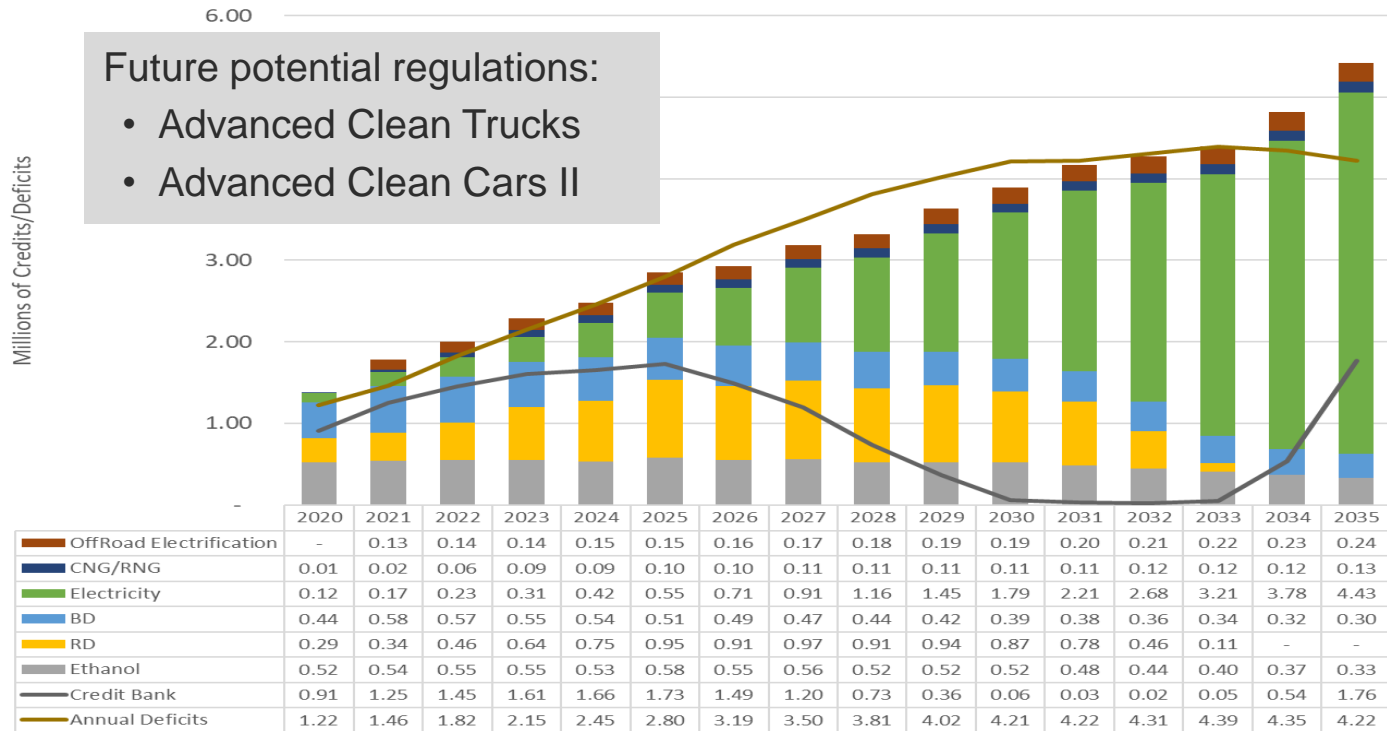
# CFP Equity Advisory Committee

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The committee will work with DEQ and the Incremental Aggregator to prioritize investments that equitably distribute benefits and address the needs and interests of Environmental Justice Communities that are the most vulnerable to the adverse effects of air pollution and climate change.

Environmental Justice Communities are defined as: “communities of color, communities experiencing lower incomes, tribal communities, rural communities, coastal communities, communities with limited infrastructure and other communities traditionally underrepresented in public processes and adversely harmed by environmental and health hazards, including but not limited to seniors, youth and persons with disabilities.”

# The Potential Impact of Future ZEV Regulations



# Questions?

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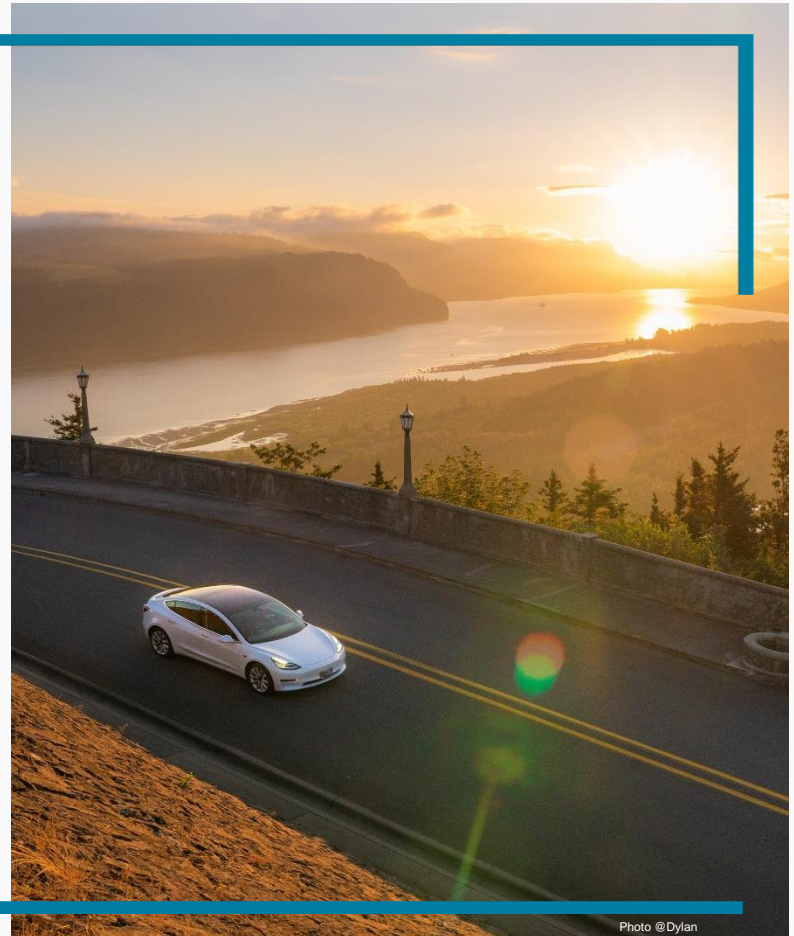
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# Forth Mobility Fund: Backstop Aggregator

*Oregon Clean Fuels Program*

August 9, 2021

Kelly Yearick  
Senior Program Manager





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# Forth Is Changing the Way We Get Around

## We are active in Four Main Areas

**Strengthening the Industry Network** - We bring together businesses, utilities and communities to support growth, create living-wage jobs and strengthen our economy.

**Advancing Transportation Policy** - We advocate for smart laws and policies that strengthen emerging mobility solutions and ensure cutting-edge technologies benefit us all.

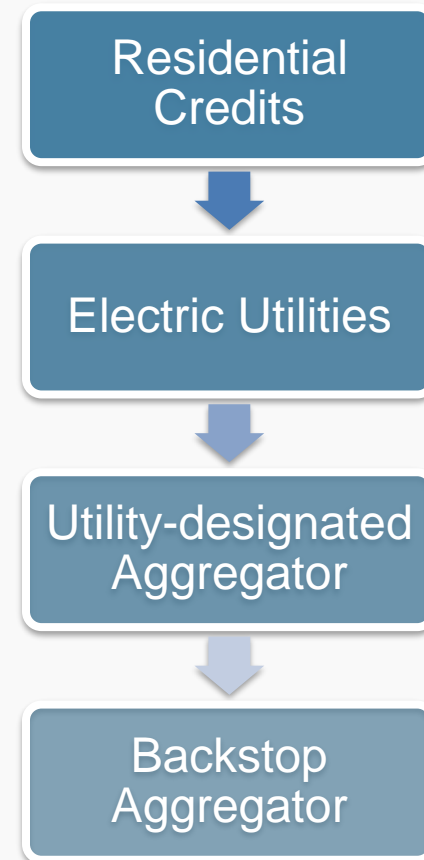
**Demonstrating Smart Transportation** - We bring partners together to demonstrate new technologies in real-world projects that help improve our lives and expand mobility options.

**Accelerating Market Adoption** - We organize events and test drives to showcase the latest technologies and bring the fun, efficiency and money-saving benefits of electric and smart transportation to the public.

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## Quick Background

- Forth Mobility Fund selected as Backstop Aggregator in 2018 after responding to RFP
- Work is divided into four major focus areas:
  - Statewide Consumer Engagement
  - Focused Local Programs
  - Utility Engagement
  - Program Administration
- Workplans are developed in coordination with DEQ annually



## Credits Received + Revenue to Date

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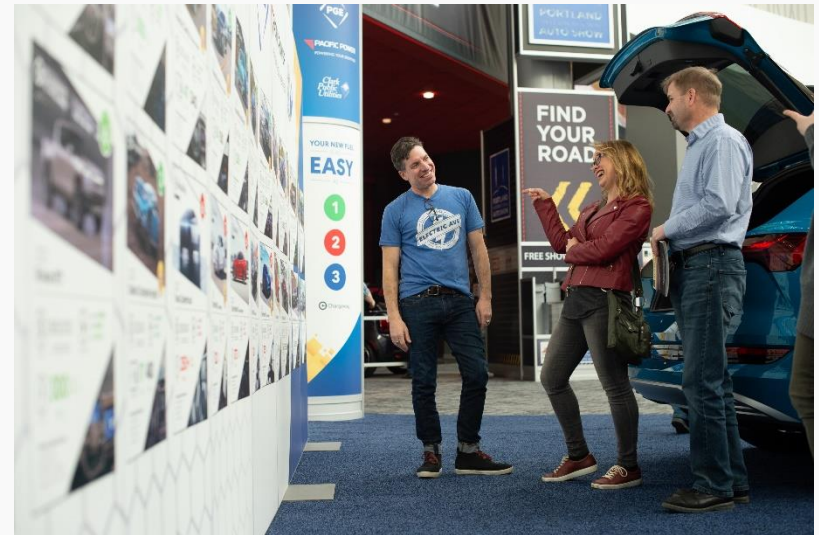
- Forth Mobility Fund receives credits from DEQ in spring
- Forth Mobility Fund monetizes credits through third-party subcontractor
- Forth Mobility Fund notifies DEQ of these transactions

Year Received	Credits Received	Revenue Generated
2018	7,223	\$780,711.08
2019	5,109	\$789,340.50
2020	2,445	\$273,840.00
2021	660	TBD

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# Highlights of Accomplishments

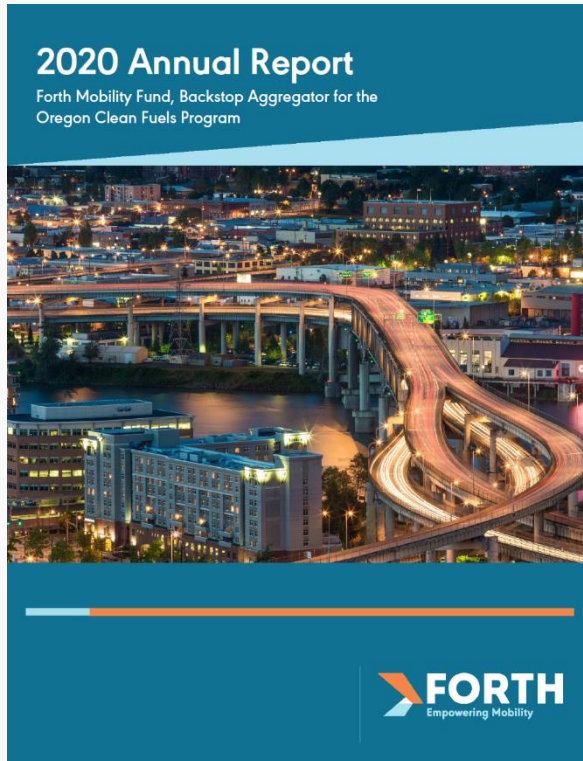
- Partnerships created with CBOs, municipalities, and utilities from across Oregon creating greater awareness for the Clean Fuels Program and transportation electrification and ensuring locally-informed programming
- From 2018-2020, Forth Mobility Fund:
  - Engaged over 10,000 individuals
  - Conducted over 2,000 test drives
  - Connected with 27 Oregon utilities
  - Leveraged over \$1M in additional investment to increase impact



Forth

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# Accountability + Transparency



- Workplans submitted by December 31 of each calendar year for approval by DEQ
- Annual Report of activities submitted by March 31 of the year following the reporting period
- These are publicly available
- Forth Mobility Fund also provides an audit of its financial systems along with each Annual Report

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# Questions?

Kelly Yearick

[kellyy@forthmobility.org](mailto:kellyy@forthmobility.org)

[www.forthmobility.org](http://www.forthmobility.org)



Photo © Dylan VanWeelden

Forth

# UM 1826: Clean Fuels Program

- Better coordinate with DEQ.
- Better coordinate with ratepayer-funded programs.





# DRIVING TRANSPORTATION ELECTRIFICATION FORWARD

Oregon PUC Docket No. UM 2165  
Transportation Electrification Investment  
Framework

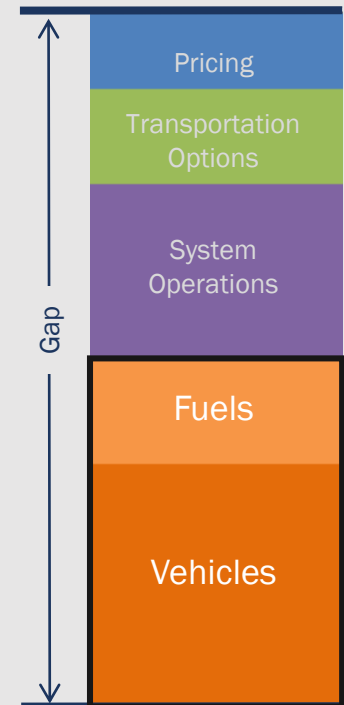
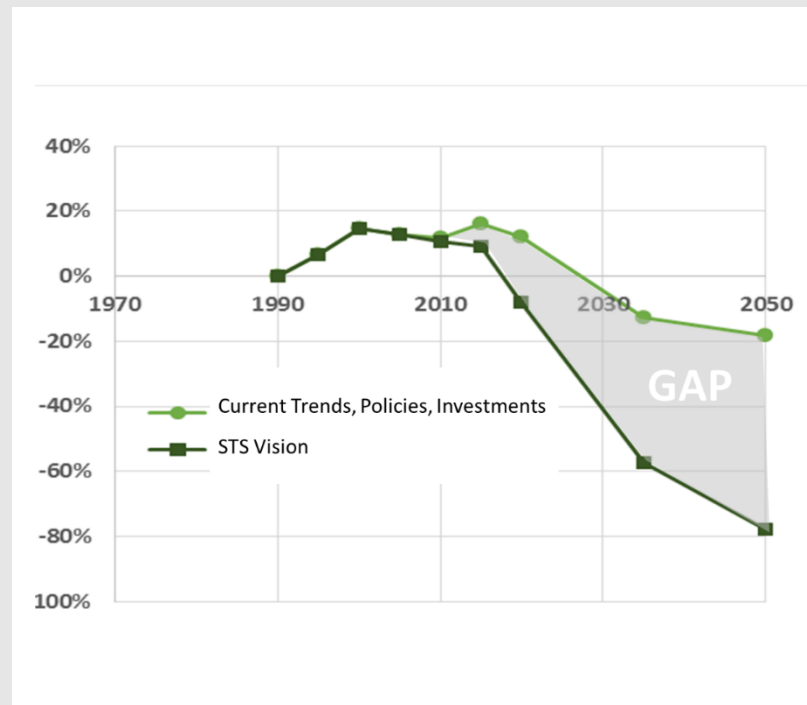
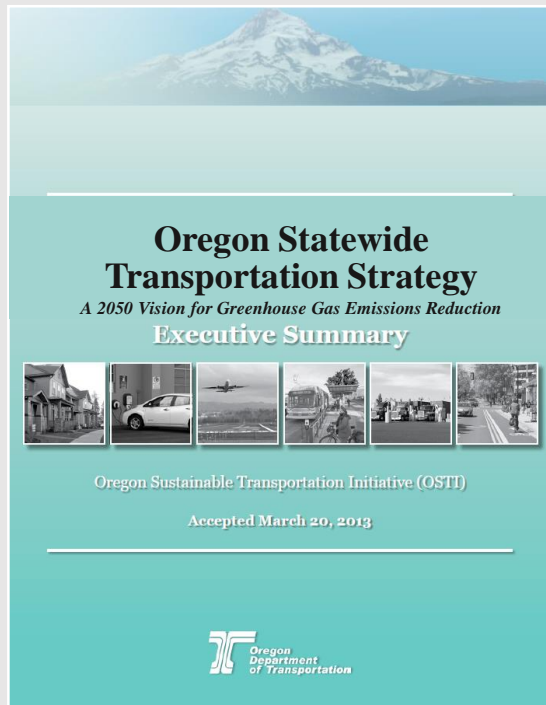
August 9, 2021

Mary Brazell,  
ODOT Climate Office  
Transportation Electrification Program Manager





# The Importance of Transportation Electrification in Oregon



# Oregon Department of Transportation

## Implementation of Executive Order 20-04 on Climate

EO 20-04

ODOT



Requirements

Integrate climate into ODOT business

Add a GHG reduction lens to \$ decisions

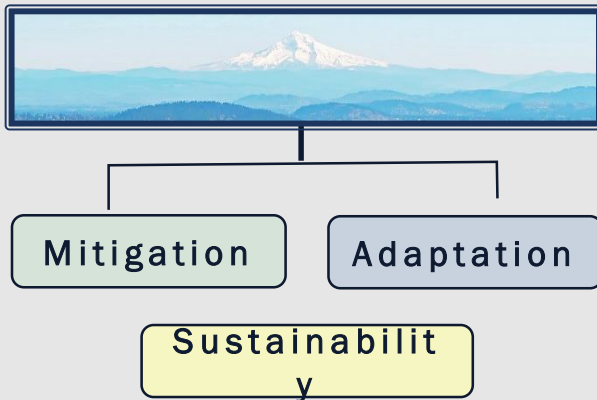
Study EV infrastructure charging needs

Collaborate with state agencies Statewide Transportation Strategy implementation

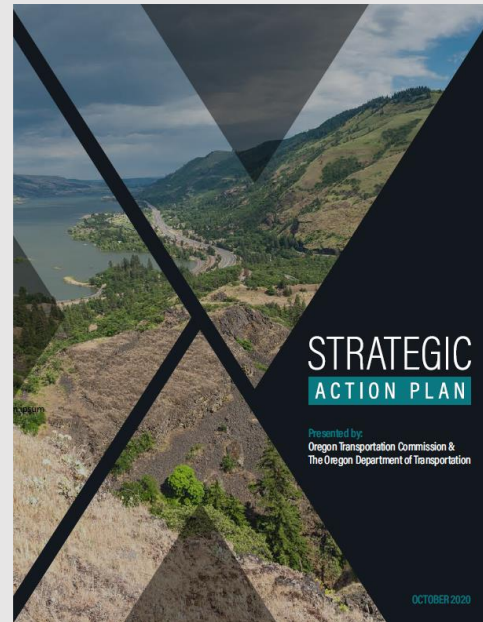


# Integrate Climate into ODOT Business

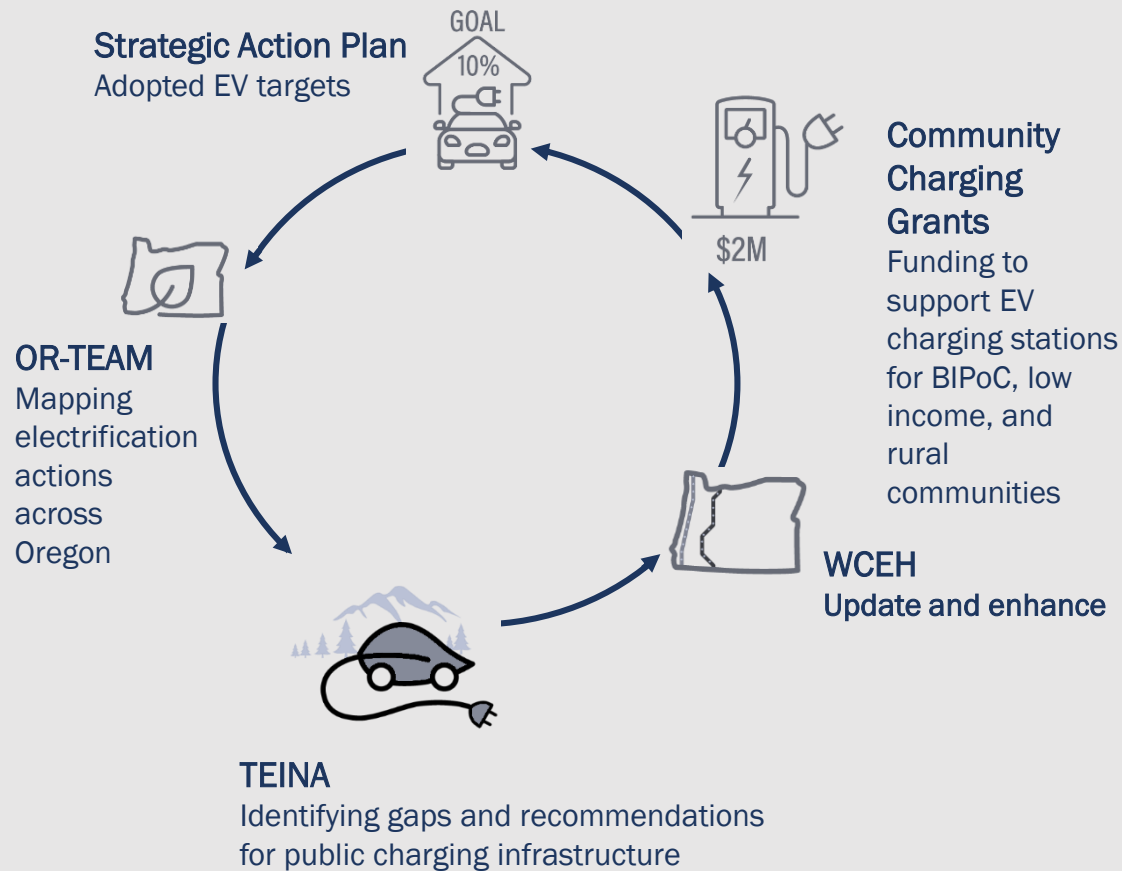
Created the ODOT Climate Office



Incorporated Climate into our Strategic Action Plan








# ODOT Transportation Electrification Efforts



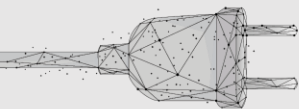
**Partnerships**  
Convene and collaborate with other state agencies, utilities, and private sector to enable TE

- Awareness
- Incentives
- Infrastructure
- Policies

# Transportation Electrification Actions

Action	Barriers	Opportunities
Infrastructure 	<ul style="list-style-type: none"> <li>Availability / accessibility</li> </ul>	<ul style="list-style-type: none"> <li>Increase public charging to reduce range anxiety</li> <li>Address significant gaps, especially in low-income, BIPOC and rural communities</li> <li>Expand building code requirements for charging</li> <li><b>Continue and expand Oregon’s Clean Fuels Program</b></li> </ul>
Awareness 	<ul style="list-style-type: none"> <li>Most people are still hesitant to buy an EV</li> <li>Fleet owners wary about transition to electric buses and trucks</li> </ul>	<ul style="list-style-type: none"> <li>Consistent and cooperative messaging</li> <li>Shared information resources for the public</li> </ul>
Cost 	<ul style="list-style-type: none"> <li>EVs still have a higher sticker price than gasoline vehicles</li> <li>Low-income households are likely priced out of the market</li> </ul>	<ul style="list-style-type: none"> <li>Continue and enhance rebate programs for new and used vehicles to buy down initial purchase costs</li> <li>Support investments that further equity</li> </ul>
Equity 	<ul style="list-style-type: none"> <li>High upfront cost of vehicles</li> <li>Lack of infrastructure in low-income, BIPOC and rural communities</li> </ul>	<ul style="list-style-type: none"> <li>Work with and target investments to BIPOC and low income communities</li> <li>Consider geographic balance and more charging infrastructure in rural areas</li> </ul>
		

# Oregon's Transportation Electrification Infrastructure Needs Analysis

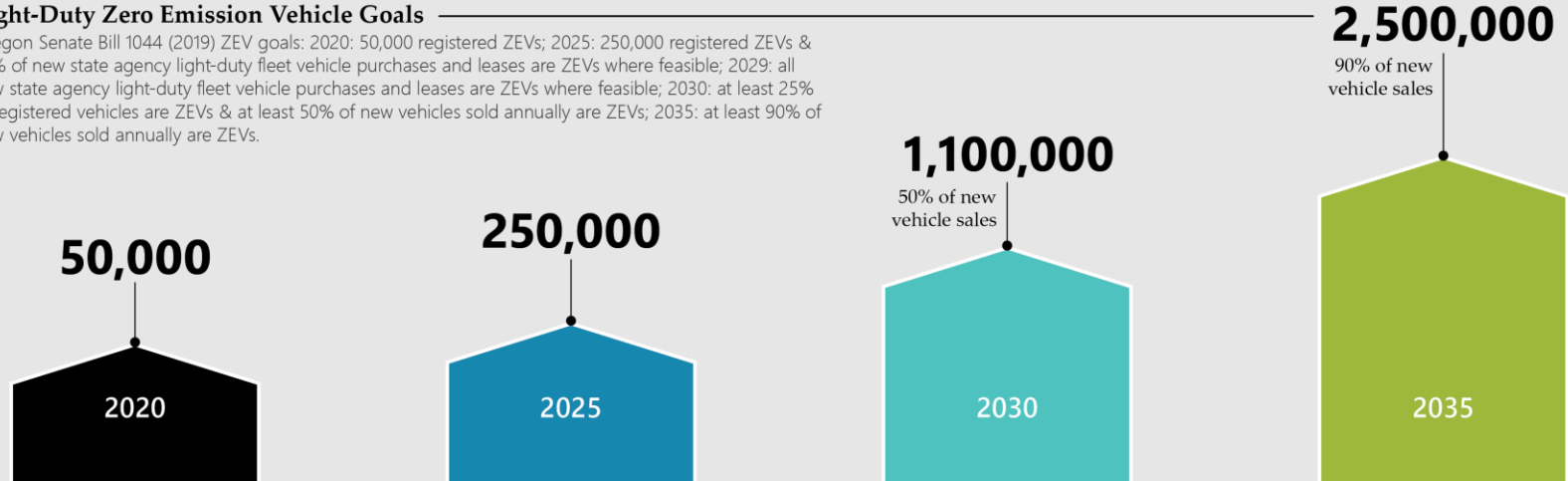


Evaluate future charging infrastructure needs of light-duty vehicles and other modes of electric transportation.

Recommend policies and implementation priorities to accelerate charging infrastructure.

## Light-Duty Zero Emission Vehicle Goals

Oregon Senate Bill 1044 (2019) ZEV goals: 2020: 50,000 registered ZEVs; 2025: 250,000 registered ZEVs & 25% of new state agency light-duty fleet vehicle purchases and leases are ZEVs where feasible; 2029: all new state agency light-duty fleet vehicle purchases and leases are ZEVs where feasible; 2030: at least 25% of registered vehicles are ZEVs & at least 50% of new vehicles sold annually are ZEVs; 2035: at least 90% of new vehicles sold annually are ZEVs.



# TEINA Modeling Results for All Nine Use Cases

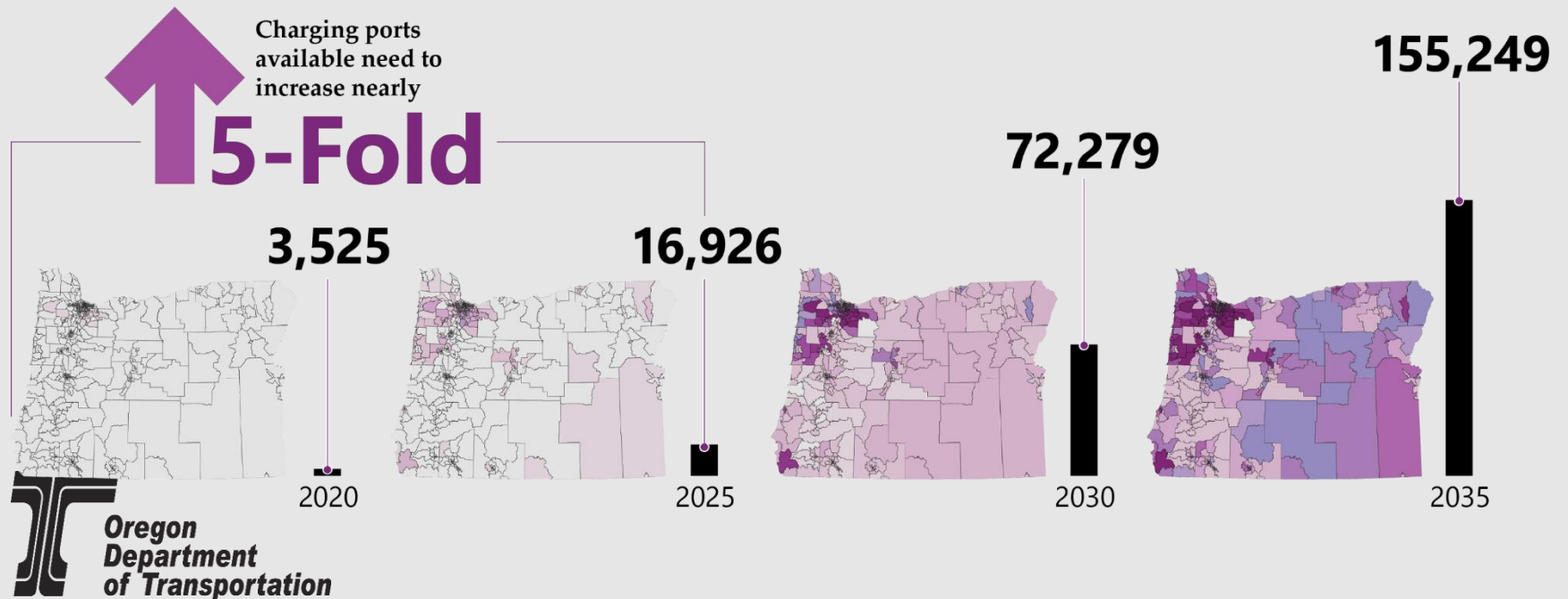
## Light Duty Vehicle Highlight

**Growth in public charging ports needed over the next 15 years to meet Oregon's 2035 goal.**

Note: Modeling assumes 50,000 electric vehicles in 2020.

Light-Duty Vehicle Charging Ports Needed by Type of Charging Port (Business as Usual Scenario)			
	2025	2030	2035
Workplace Level 2	7,022	32,405	70,429
Public Level 2	4,472	20,611	44,785
Public Direct Current Fast Charge (DCFC)	4,411	14,875	29,639

Note: LDV includes the Urban, Rural, Corridor, TNC, and Disadvantaged Communities Use Cases



# Key Take-Aways

- There are Rural and Urban Charging Deserts
  - Equity needs to be a top consideration, with a focus on BIPOC and Low-Income
  - There is some private sector hesitancy, so public sector investment is needed
  - Infrastructure precedes EVs
  - Home charging is key overall; and public charging is critical to mainstream EVs
- **It Takes a Village (especially Utilities)**





# West Coast Electric Highway



## West Coast Electric Highway

A network of charging stations located every 25 to 50 miles along Interstate 5, Hwy 101, and major roadways in BC, WA, OR, and CA

- ODOT public-private partnership to initiate updates and enhancements to Fast Charging and Level 2 charging at all 44 sites in Oregon
- Stations upgrades expected to begin in 2021

## FHWA Alternative Fuel Corridors – EV Ready and EV Pending

- Oregon has seven designated EV corridors: I-5, I-84, US 26, US 97, US 101, US 20, and I-82
- Oregon has I-5 as a Hydrogen FCEV corridor
- Potential for federal funding that prioritizes these corridors





## ODOT Fleet:

HB 2027 (2021)

All new state light-duty fleet vehicle purchases/ leases to be ZEVs, where feasible, starting in 2025

# Next Steps

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- **ZEV Charging Infrastructure Deployment Strategy**
  - Implementation plan over the next 2-5 years
- **Secure Funding and Make Investments**
  - Community Charging Grants
  - RAISE Grant *Plugging in Oregon – Ensuring Equity in EV Charging*
  - Supporting other grant applications (e.g. DOE)
- **Coordination with Utilities, State Agencies, and Other Stakeholders**
- **Lead by example (fleet, workplace charging)**
- **Supplemental Analyses for:**
  - Hydrogen refueling infrastructure
  - Barriers to electric micro-mobility (eScooters and eBikes)
  - Continued Stakeholder Planning

# Websites

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- **ODOT Climate Office:**
  - <https://www.oregon.gov/odot/Programs/Pages/Climate-Office.aspx>
- **ODOT TEINA:**
  - <https://www.oregon.gov/odot/Programs/Pages/TEINA.aspx>
- **Every Mile Counts:**
  - <https://www.oregon.gov/odot/Programs/Pages/Every-Mile-Counts.aspx>
- **ODOT Climate Action Plan:**
  - <https://www.oregon.gov/odot/Programs/Pages/Climate-Action-Plan.aspx>



**Mary Brazell**

Transportation Electrification Program Manager  
Climate Office

Oregon Department of Transportation  
[Mary.Brazell@odot.state.or.us](mailto:Mary.Brazell@odot.state.or.us)



OREGON  
DEPARTMENT OF  
ENERGY

# Oregon Department of Energy Zero Emission Vehicle Activities

UM 2165 Workshop

August 9, 2021



SB 1044  
BiZEV  
Report

On or before September 15 of each odd-numbered year, ODOE shall submit to the Governor and Legislature a report on the adoption of ZEVs in Oregon and the progress the state is making to reduce GHG emissions in the transportation sector.

The report shall provide:

- Section 2(1)(a) – a review, using existing studies market report, polling data or other publicly available information, of the market in this state for ZEVs and any barriers to adopting ZEVs in this state.
- Section 2(1)(b) – an assessment of the state’s *progress* in promoting the following goals:
  - Transformation of the motor vehicle market must occur no later than 2035.
  - Programs and support must be provided to accelerate Oregonians’ purchase and use of ZEVs until GHG emissions from vehicles are declining at a rate consistent with state GHG emissions reduction goals.
  - The adoption and use of ZEVs must be evaluated regularly to determine whether the rate of the adoption and use of ZEVs will put the state on course to meet its GHG emissions reduction goals.
- Section 2(1)(c) – the date on which the state is predicted to meet the goals set forth in Section 2(1)(b).

A dark blue circle containing the text "SB 1044 BiZEV Report" in white.

SB 1044  
BiZEV  
Report

Establishes aspirational goals for the state on ZEV adoption:

- 50,000 registered ZEVs by 2020
- 250,000 registered ZEVs by 2025
- At least 25% of registered vehicles and at least 50% of new vehicles by 2030
- At least 90% of new vehicles

- ODOE shall assess the state's progress on these ZEV adoption goals.
- To the extent possible the assessment must focus on
  - commercially available, or near-commercially available, ZEV technology, and
  - rely on existing studies, data, and analysis
- The legislation directs ODOE to evaluate 11 specific reporting requirements in the report.
- If ODOE determines the state is not on course to meet the ZEV adoption goals, then ODOE shall make recommendations in the report, including for legislation.



## ZEV Interagency Action Plan

- ZEVIWG-led Development
- Product for *Every Mile Counts*
- Short-term workplan for agency collaborations

State of Oregon Zero Emission Vehicle Interagency Action Plan Progress Table			
Action	Lead Agency	Status	Progress/Milestone Reached
<b>Strategy 1 - Leading by Example</b>			
<i>Support rapid adoption of ZEVs and charging infrastructure in state fleets.</i>	DAS		
<i>Hold ride-and-drive events (when appropriate) for state agency employees.</i>	DAS		
<i>Add Electric medium- and heavy-duty vehicle options to statewide price agreements.</i>	DAS		
<b>Strategy 2 - Increasing Oregonians' Awareness of Zero Emission Vehicles</b>			
<i>Explore opportunities to expand ZEV rebate programs.</i>	DEQ		
<i>Support utility investments in underserved communities to increase access to EVs.</i>	PUC		

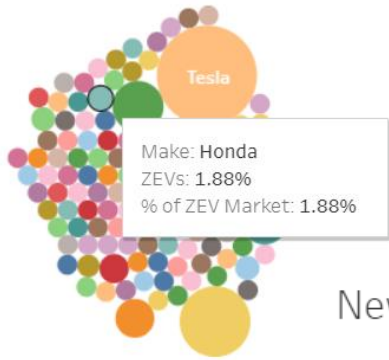
## ZEV Interagency Action Plan

- Annual Workplan
- [ZEVIWG Webpage](#)
- Monthly [updates](#) on action plan

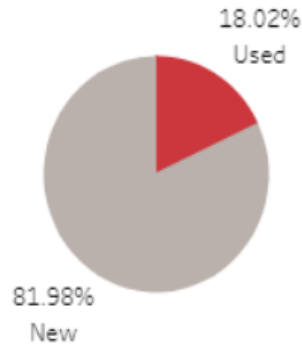
Strategy 3 - Increasing Oregonians' Access to EV Charging Infrastructure			
<i>Conduct a statewide EV charging infrastructure needs analysis.</i>	ODOT		
<i>Assess EV signage needs in Oregon.</i>	ODOT		
<i>Explore opportunities to increase EV charging infrastructure at state parks.</i>	ODOT		
<i>Support investments in and reduce regulatory barriers to EV charging infrastructure.</i>	PUC		
Strategy 4 - Increasing Oregonians' Awareness of ZEV Goals, Benefits, and Use			
<i>Develop EV guidebook for local governments.</i>	ODOT		
<i>Develop EV charging infrastructure guidebook for multi-unit dwelling owners and residents.</i>	ODOT		
<i>Develop EV guidebook for auto dealerships.</i>	DEQ		
<i>Update EV dashboard with additional EV information.</i>	ODOE		
<i>Conduct study on local air quality impacts associated with ZEV adoption.</i>	DEQ		
<i>Develop a stakeholder advisory group to inform updates to the <a href="http://goelectric.oregon.gov">goelectric.oregon.gov</a> webpage.</i>	ODOT & ODOE		

# Overall Draft Recommendations

## ZEVs by Make



## New/Used ZEVs



## Oregon Electric Vehicle Dashboard

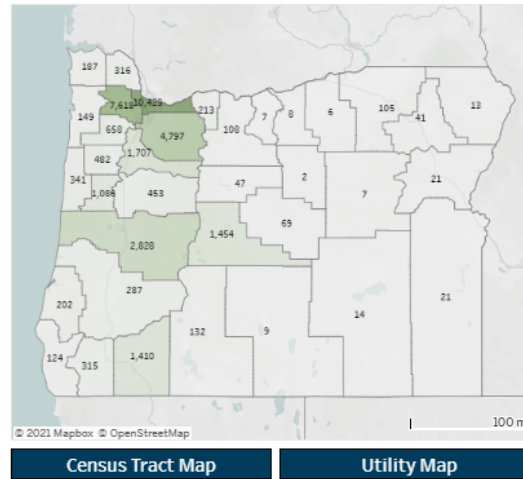
The Electric Vehicle Dashboard was developed to share information about Oregon electric vehicle adoption rates, most popular EV models, charging information, and more. Latest data update (July 16, 2021) includes EV registration data through March 2021.

Use the blue arrows to navigate through the dashboard, and take advantage of the interactivity to view EV locations, trends, and model information.

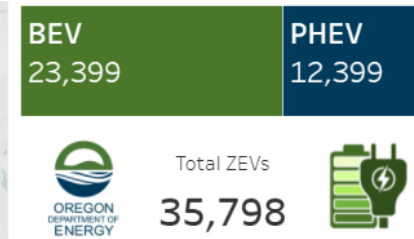
[Questions? Ask Energy](#)

Where Are Oregon's Zero-Emission Vehicles? Start here! → ? ↻

### ZEVs by County



### ZEVs by Type



### ZEVs/1,000 People vs. Income by County



# Draft Table of Contents



## Cover

Letter from the Director and/or Assistant Director

Table of Contents

Executive Summary (*req. i*)

## Introduction

- **Background**
- **Report development process**
- **Report requirements and legislative guidance**

Reporting Requirements (*req. i included throughout*)

## • **Current State of EV Adoption**

- How many EVs are there and who is driving them?
  - EV market and progress on EV adoption targets (*req. b*)
  - distribution of EVs by demographic groups (*req. c*)
  - equitable access to ZEVs
- What EVs exist for people to buy and drive/use?
  - ZEV platforms available in all sectors (*req. f*)
  - Oregonians' awareness of ZEV options and benefits? (*req. g*)

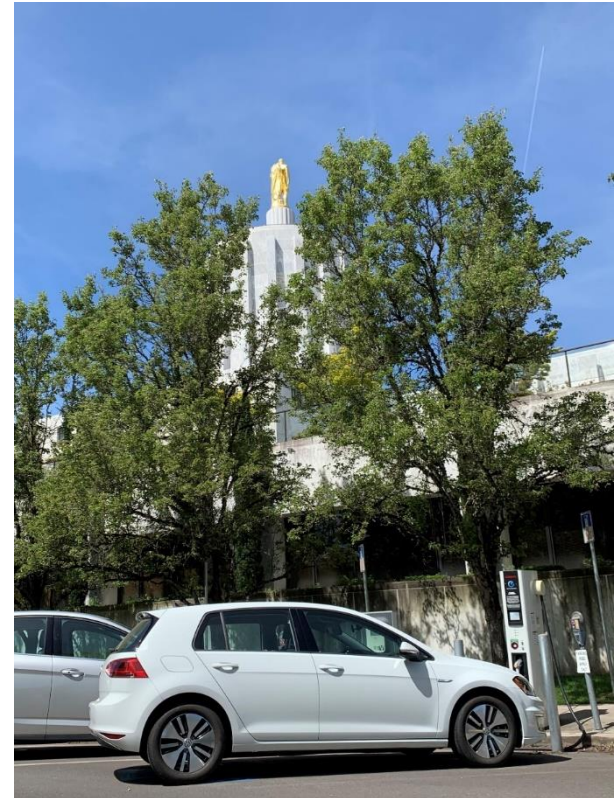
# Draft Table of Contents cont.

## ***Benefits of EV Adoption***

- Short intro on the overarching benefits of EV adoption
- Lower Costs
  - Operational and maintenance costs (*req. e*)
- GHG reductions
  - carbon intensity of transportation emissions (*req. h*)
  - whether the transportation sector is on course to reduce the share of greenhouse gas emissions commensurate with state GHG reduction goals (*req. a*)

## ***Challenges to Increased EV Adoption***

- higher up-front costs for ZEVs (*req. e*)
- availability and reliability of ZEV charging infrastructure (*req. d*)
- opportunities to manage impacts to the electrical grid (*req. j*)
- impacts on revenues to the State Highway Fund (*req. k*)



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# Draft Table of Contents cont.



## **Conclusions** (*req. i*)

- overall assessment of SB 1044 legislative goals and whether the state is on track for the following:
  - transformation of the motor vehicle market by 2035,
  - programs and support necessary to accelerate Oregonians' purchase and use of ZEVs until greenhouse gas emissions from vehicles are declining at a rate consistent with the state GHG emissions reduction goals in ORS 468A.205,
  - regular evaluation of ZEV adoption to determine if current EV adoption and use put the state is on track to meet state GHG emissions reduction goals.

## **Recommendations**

## **References**

## **Glossary**

## **Index**

## **Appendices**

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# BiZEV – NEXT STEPS

## Review Draft Recommendations with Stakeholders

- Weeks August 2 and 9

## Recommendations Drafting

- Week of August 16

## Report Finalization

- Ongoing through early September

## Publication

- September 15

# QUESTIONS?

Jessica Reichers  
Technology & Policy Manager

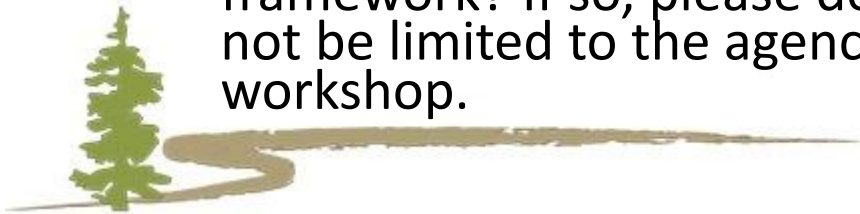
[jessica.reichers@energy.oregon.gov](mailto:jessica.reichers@energy.oregon.gov)





# Discussion Questions

1. Based on the workshop presentations, do you see any gaps in Oregon state agency planning for electric vehicles?
2. How could Oregon state agencies better coordinate or leverage respective TE resources and programs?
3. How might utilities better coordinate their Clean Fuels Program plans with the Clean Fuels Program's Backstop Aggregator? This is DEQ's contractor that receives unclaimed Clean Fuels Program credits.
4. How should utility plans for the Clean Fuels Program coordinate with ratepayer-funded programs?
5. Is there a program at another state agency that has a direct impact on the PUC's efforts to develop a TE investment framework? If so, please describe that impact. Answers need not be limited to the agencies that are speaking at this workshop.



# Next Steps - Share Written Comments

**Please address the discussion questions and any topics from this workshop or investigation. Please submit all comments on workshop topics by August 23.**

- By email – [PUC.FilingCenter@puc.oregon.gov](mailto:PUC.FilingCenter@puc.oregon.gov) Include “COMMENTS – DOCKET NO. UM 2165” in subject line
- By Mail – Oregon Public Utility Commission, Attn: UM 2165 Public Comment, PO Box 1088, Salem, OR 97308-1088
- By Phone – 503-378-6600 or 800-522-2404 or TTY 800-648-3458, weekdays from 8 a.m. - 5 p.m. Pacific Time



# Docket Schedule and Next Steps

**Join the service list for UM 2165. Request by email:**

[puc.hearings@puc.oregon.gov](mailto:puc.hearings@puc.oregon.gov)

**Please join the next workshops!**

Friday, August 27, 2:00 – 4:00 PM – HB 2165 Implementation

Wednesday, September 15, 9:00 – 11:00 AM – Equity

Wednesday, September 29, 9:00 – 11:00 AM

Wednesday, October 20, 9:00 – 11:00 AM

**October** – Draft deliverable for public review

**December** – Staff presentation to Commission

# UM 1826: 2022 CFP Plans

- Circulate draft utility plans September 10
- First workshop September 24
- Second workshop October 15
- File plans November 19
- Public Meeting December 14
- Feedback [eric.shierman@puc.oregon.gov](mailto:eric.shierman@puc.oregon.gov)



# Thank You!

## Staff Contacts

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