State of Oregon
Department of Environmental Quality Memorandum

Date: July 9, 2020

To: Environmental Quality Commission

From: Richard Whitman, Director
Colin McConnaha, Manager, Office of Greenhouse Gas Programs

Subject: Item E: Greenhouse Gas Reduction Programs - Update (Informational)
July 16-17, 2020, EQC meeting

Purposes of this agenda item

DEQ provided a report to the commission at its May 2020 meeting regarding Executive Order 20-04 and the establishment of a new Office of Greenhouse Gas Programs. Since that time, DEQ has submitted reports to the Governor outlining the work required to implement EO 20-04.

The purposes of this report and discussion are: (1) to provide the commission with an overview of what programs the State of Oregon is already implementing to reduce GHG emissions; (2) to provide further information about the *new* programs the Governor has directed DEQ and other agencies to develop; (3) to describe *some* of the key policy issues and choices that likely will come before the commission as part of this new program development; and (4) to discuss with the commission how it wants to be involved in intermediate steps along the path to program development.

Background

Oregon began developing programs to reduce GHG emissions back in the early 1990s, beginning with its adoption of the nation's first GHG standard for new electric generation facilities. Since then, the Oregon Legislature, Oregon governors, and many federal, state and local agencies have taken steps to reduce GHG emissions. Nevertheless, it is clear that Oregon has fallen off the trajectory needed for the state to be doing its part to reduce GHG emissions. We will miss the legislature's target for 2020, a ten percent reduction in GHG emissions from 1990 levels, and the gap between future targets is growing, particularly in the arena of transportation.

In 2007, the Oregon Legislature established climate change goals for the state through House Bill 3543, the bill that created the Oregon Global Warming Commission. The goals in HB 3543 are for Oregon to:

- Arrest the growth and begin reducing GHG emissions by 2010
- Reduce GHG emissions by 10 percent below 1990 levels by 2020

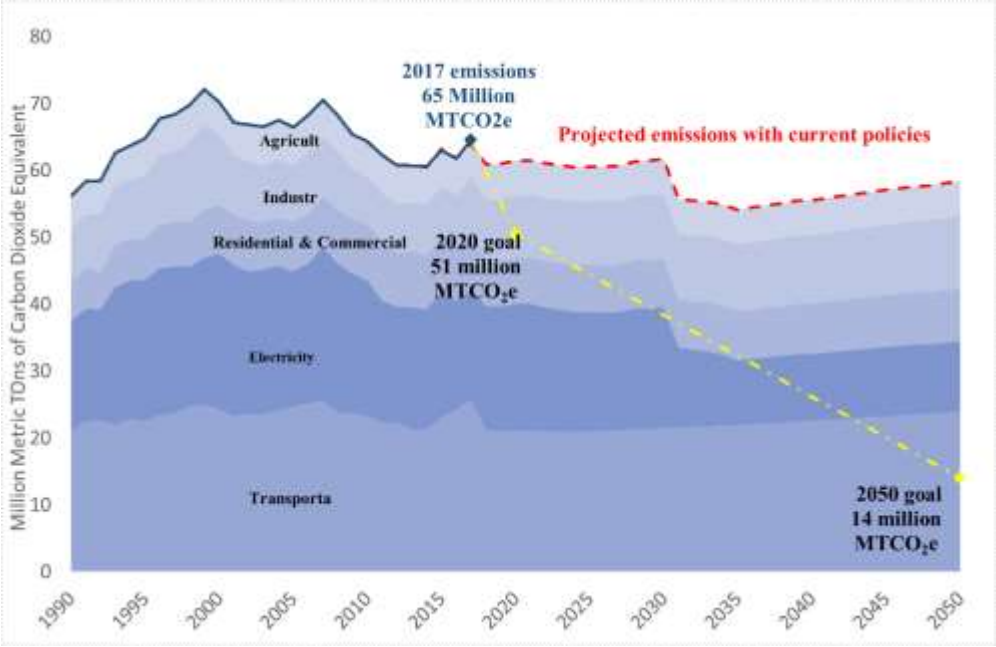
- Reduce GHG emissions by at least 75 percent below 1990 levels by 2050

Since 2007, Oregon has developed, and is implementing, many programs to reduce greenhouse gas emissions. These programs are listed in Attachment A to this staff report. In addition to state actions, local governments and the private sector also have begun to act to reduce GHG emissions. Some of the local actions also are listed in Attachment A.

The Governor's March 2020 executive order (EO 20-04) updates the 2007 legislative goals with new targets tied to the most recent science regarding what is needed to avoid the worst effects of climate change:

- Reduce GHG emissions by at least 45 percent below 1990 levels by 2035; and
- Reduce GHG emissions by at least 80 percent below 1990 levels by 2050.

Oregon has succeeded in stopping the growth of GHG emissions, but we are not yet bringing emissions down relative to 1990. DEQ produced the following chart showing how Oregon is doing in reducing GHG emissions:

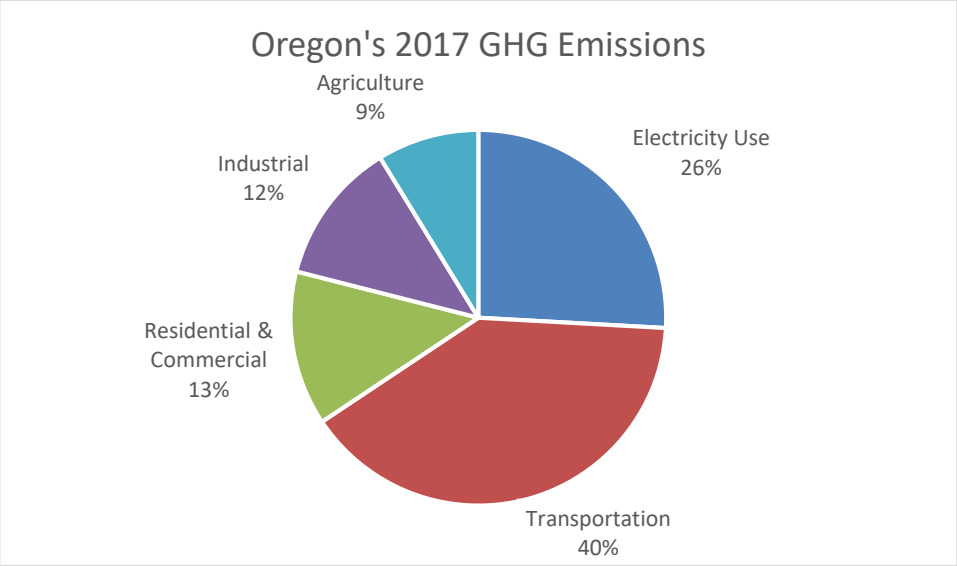


Executive Order 20-04 is designed to move Oregon onto the path of reductions established by the legislature and the governor by directing state agencies to develop and implement a suite of new programs. For DEQ, the main focus is

on programs designed to reduce GHG emissions in certain sectors: transportation, industrial, residential and commercial, and natural gas use. Together, these sectors make up about two-thirds of the total GHG emissions in Oregon.

Reductions in GHG emissions in another important sector - electricity - are addressed in other actions, programs and policies, including the upcoming closure of the Boardman coal plant, Oregon's renewable portfolio standard and "Coal to Clean" legislation, among others. Reducing the carbon-intensity of Oregon's energy usage is an important part of reducing GHG emissions in other sectors where electrification of energy use is critical to success.

The following chart shows the relative share of GHG emissions, by sector, in Oregon.



Climate, Equity and Environmental Justice

The most serious climate risk that Oregon identified in its last Climate Adaptation Framework (2010) is the health effects of extreme heat events, particularly on vulnerable populations. Heat waves in Oregon and elsewhere over the past ten years have had documented impacts on mortality. These impacts are most concerning in communities that are not able to avoid extreme heat – through the combination of relative lack of vegetation in many urban lower-income communities, relatively absence of good insulation in lower income housing, and the affordability and relative absence of air conditioning. Relatedly, higher temperatures combined with the loss of snow relative to rain

means that our forests are drying out, and that wildfire is becoming more prevalent and more severe. Increasing frequency and severity of wildfire smoke is a rapidly-emerging public health concern and, again, lower income communities are less able to avoid or otherwise cope with periods of smoke.

As the state develops new programs and expands others to reduce GHG emissions, it needs to work with communities that have been disproportionately affected by pollution and environmental degradation. These communities typically have experienced a public health burden that is greater than the general population. Recognizing this, and working to design and implement programs in ways that avoid and reduce this burden, is an important part of the Governor's directive in EO 20-04.

DEQ/EQC responsibilities under EO-20-04

Executive Order 20-04 directs multiple state agencies to take further actions designed to reduce GHG emissions in Oregon. Attachment A to this report summarizes existing GHG reduction programs in Oregon, along with the new efforts required by EO 20-04.

The order generally directs state agencies to implement their actions at or before the beginning of 2022. To meet the deadlines given to the EQC, DEQ has assembled and organized teams to support this work, including the new Office of Greenhouse Gas Programs.

Under Executive Order 20-04, DEQ and the EQC will focus on five key areas for reducing greenhouse gas emissions:

- Extending the Clean Fuels Program to increase the use of low-carbon transportation fuels through 2035;
- Establishing greenhouse gas emission limits across key sectors of Oregon's economy, including large industrial emitters, transportation fuels, and other fossil fuels such as natural gas; and reducing those limits over time through a cap-and-reduce mechanism;
- Developing and implementing a series of programs in cooperation with ODOT, ODOE and DLCD to reduce transportation GHG emissions and implement the Statewide Transportation Strategy; and
- Increasing measures to reduce methane emissions at landfills, including both methane capture and programs to prevent and reduce food waste disposal in landfills; and
- Developing a strategic plan to reduce the proportion of food that is wasted in Oregon.

These new program efforts are described in a series of reports provided to Governor Brown at the end of June, four of which are attached to this report.

- Attachment B – Work Plan to Expand the Clean Fuels Program
- Attachment C – Work Plan for Cap and Reduce Programs
- Attachment D – Multi-Agency Implementation Work Plan for the Statewide Transportation Strategy
- Attachment E – Work Plan for Landfill Methane Reduction

Clean Fuels Program expansion

EO 20-04 provides two directives to EQC and DEQ related to the Clean Fuels Program: 1) expand the program to ultimately achieve a 25 percent reduction in the average carbon-intensity of Oregon's transportation fuels by 2035, and 2) make program changes to advance methods of accelerating transportation electrification.

In 2009, the Oregon Legislature passed House Bill 2186 authorizing EQC to adopt a low carbon fuel standard to reduce the carbon intensity, or lifecycle greenhouse gas emissions per unit of energy, of Oregon's transportation fuels. Under the CFP, all parts of a fuel's lifecycle – extracting/growing, transporting, bio/refining, distributing, and combusting – are accounted for in a fuel's carbon intensity – creating multiple opportunities to reduce GHG emissions. Common strategies to lower the average carbon intensity of transportation fuels in Oregon include: blending higher levels of biofuels into petroleum fuels, developing new feedstocks and technologies to make new lower carbon fuels, making existing technologies more efficient, and increasing the number of alternative fuel vehicles available, including electric vehicles.

As currently adopted, the CFP will reduce the carbon intensity of Oregon's transportation fuels by 10 percent in 2025, measured from a 2015 baseline. This 10 percent reduction is being phased in gradually over the 10-year period. This makes the first directive – to reduce the carbon intensity by 25 percent over the following 10 years – an ambitious expansion of the program. But with the program already scoped through 2025, it also means DEQ and EQC have time to work with stakeholders and communities to evaluate thoroughly the program changes needed to meet this requirement.

While DEQ expects that it will require two or more years to complete a thorough evaluation, scoping and rulemaking, the agency plans to address the second CFP directive regarding electrification more swiftly. This will allow the program to include enhanced incentives for electrification of transportation sooner and begin accelerating that important transition more quickly.

DEQ has already begun meeting with utilities, charging operators, and other stakeholders in the electricity sector to solicit and explore ideas for how the program can further credit activities and investments that hasten electrification of transportation modes. The current plan is to establish a rulemaking advisory committee later this summer, evaluate proposals in this summer and fall, and ultimately propose rules for potential EQC adoption in March 2021.

To support the longer-term process of expanding the program through 2035, DEQ plans a robust program evaluation and modelling prior to beginning rulemaking. This will first take the form of contracting for experts to conduct two studies. These contracts are designed to provide foundational information for EQC and participants in the rulemaking process to help evaluate how Oregon's fuels market can continue to develop in ways consistent with the targets established in EO 20-04.

These studies will develop multiple scenarios that describe ways that Oregon's fuels market could achieve the targets in EO 20-04 and assess the impacts of these scenarios on tailpipe emissions and associated changes in social and health costs including in vulnerable communities. These studies are planned to occur throughout the fall of 2020 and winter of 2021. There will be multiple opportunities for stakeholders to review and provide suggestions on the methods and data sources used in the studies.

In addition, DEQ will conduct a thorough review of the existing program and how it is performing before beginning the rulemaking process for expanding the program. This program review is a requirement of House Bill 2017 (2017), requiring DEQ to evaluate the following:

- Progress towards achieving 10 percent below 2010 levels by the year 2025
- Environmental, economic, health and other benefits realized
- Projected availability of low carbon fuels and credits through the year 2025
- Additional mechanisms that may be necessary to manage and contain the costs of compliance with the low carbon fuel standards
- Whether adjustments to the low carbon fuel standards are necessary
- The effects of the maximum price for credits in the credit clearance market
- Adjustments that could serve to strengthen and enhance the low carbon fuel standards

Although this requirement is not expressly connected to EO 20-04, DEQ plans to conduct this review as a step in designing the program to achieve the 2030 and 2035 target reductions, so that both the agency and the public are informed of results of the review before going into the rulemaking process to expand the program.

Following the program review, the formal rulemaking to expand the CFP will begin. This process will likely include at least three meetings of a rules advisory committee, with consideration by the EQC tentatively targeted for July 2022 and a Jan. 1, 2023, effective date. The scope of the rulemaking will include at least the following issues:

- A set of proposed program options to support reductions of 20 percent by 2030 and 25 percent by 2035, informed by the results of the studies and the program review.
- Options for the "slope of the reduction curve" and how annual standards will be set from 2023 through 2035.
- The fiscal, economic, health and social impacts of the proposed program expansion.

Cap and Reduce Programs

EO 20-04 directs EQC and DEQ to "cap and reduce" GHG emissions in three large sectors of Oregon's economy. This directive is meant to establish overall GHG emission limits across much of Oregon's economy, including large industrial emitters, transportation fuels, and other fossil fuels such as natural gas; these limits are often referred to as "caps". Gradually reducing these caps assures these key sectors help Oregon make progress toward the previously described statewide GHG emission reduction goals, and leads to the term "cap and reduce".

Pursuant to this directive, DEQ has already submitted two reports to the Governor's office. The first was a preliminary report submitted on May 15, outlining the following topics related to the cap and reduce directive:

1. DEQ's understanding of the EQC's legal authority to regulate GHG emissions;
2. A proposed process for public and stakeholder engagement in multiple phases leading up to adoption of rules for the program in time for implementation beginning Jan. 1, 2022; and
3. Initial observations of key program elements where public and stakeholder attention is expected to focus as the agency develops proposals for the EQC to consider.

Following publication of the draft report for the Governor, DEQ solicited public input, with particular interest in feedback on the proposed public engagement process. The agency held three public listening sessions in the following weeks and received 33 written comment letters containing several dozen different comments. In response to this feedback, DEQ made revisions to the report and submitted a final version to the Governor's office on June 30.

With the submittal of the report on June 30, DEQ is beginning a second phase as outlined in the process section of that report. This second phase is a scoping process designed to engage the public and stakeholders on key elements of programs to cap and reduce GHG emissions. This engagement will help apprise DEQ of how the programs can be designed and inform proposals the agency makes during the subsequent rulemaking phase. This scoping phase is intended to last throughout the summer and fall.

DEQ has a variety of public meetings planned over the next few months to support the scoping process. The first will be a public kickoff meeting, tentatively planned for July 29. That meeting will solicit public input on the policy options DEQ should evaluate, as well as economic, environmental, equity and public health factors to consider.

Following the public kickoff meeting, DEQ is planning several workshops to begin detailed discussion about specific aspects of the cap and reduce programs. Currently, DEQ is planning workshops on the following topics:

- **Program scope**: Which greenhouse gasses should the programs cover? What emissions sources should be regulated? What entities are responsible for those regulated emissions?
- **Stringency**: Should the cap be absolute tonnage of emissions or intensity-based? How quickly should the cap decline/strengthen?
- **Impacted communities**: How can the program protect impacted communities? What strategies are needed to prevent negative impacts to impacted communities? How does the program incorporate concerns and priorities of environmental justice communities?
- **Demonstrating compliance:** How should the program allow/permit emissions and how should those permits be issued? How can the program avoid or prevent emissions leakage (the movement of emissions sources out of Oregon to avoid regulation)? What other factors should the program consider when distributing permits? (e.g. sectoral differences, disruptions to existing market dynamics, etc.)
- **Alternative compliance options:** Should the program allow for alternative ways of complying with the GHG limits aside from agency-

issued permits? Should the program accept/recognize permits from other greenhouse gas regulatory programs? Should the program award additional credits or permits to certain actions or investments that reduce GHG emissions? How and when should the use of alternatives be allowed?

- **Cost effectiveness:** How should the program account for sectoral differences when designing the program? Should the program allow for trading of permits? Under what circumstances? What strategies exist to reduce economic burden on impacted communities and small businesses?

After conducting technical workshops on these topics, DEQ is planning to hold town-hall style public meetings to have broad discussions cutting across these topics to inform overall program design proposals. DEQ will then work with EQC to initiate the rulemaking process and establish a rules advisory committee before the end of this year. That rulemaking is planned to conclude near the end of next year to allow the cap and reduce programs to commence in 2022.

Statewide Transportation Strategy

The Statewide Transportation Strategy was developed by the Oregon Department of Transportation in close partnership with the Department of Land Conservation and Development, Oregon Department of Energy, and DEQ. The agencies completed the Strategy in 2013 after a three-year process of extensive engagement and technical analysis, including modeling, by agency staff.

Transportation GHG emissions are providing particularly difficult to reduce. Modeling by ODOT indicates that GHG emissions from both cars and trucks will continue to rise without some form of intervention. The projected (and actual to date) increase in emissions from trucks is particularly large.

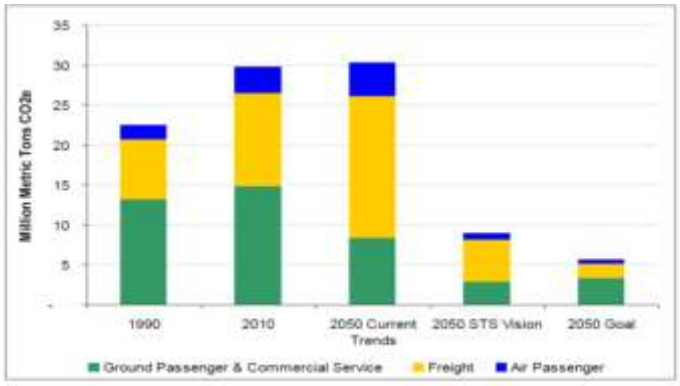
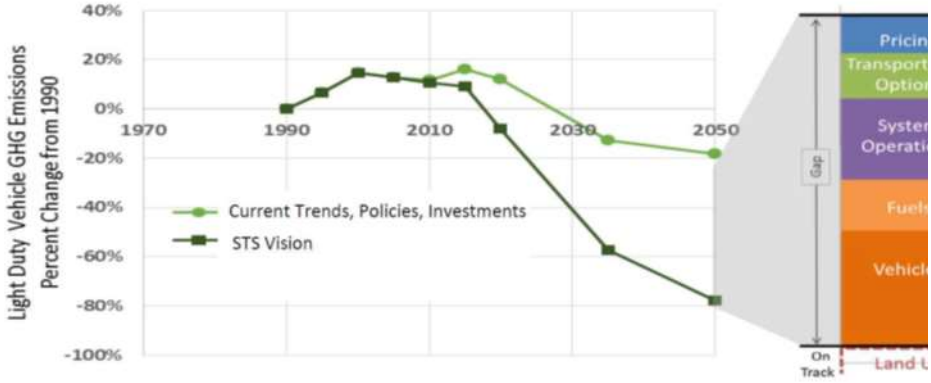


Figure 1: Projected Statewide Transportation Sector GHG Emissions (*STS 2013*)

The Statewide Transportation Strategy includes five categories of action for greenhouse gas emissions reduction:

- **Vehicles and Fuels:** Promoting a transition to more fuel-efficient vehicles, improvements in engine technologies, and reductions in the carbon intensity of fuels are some of the most important means to reduce transportation GHG emissions based on analysis by ODOT (summarized in the chart below). DEQ and the EQC will have a leading role in this aspect of the STS, through the Zero Emission Vehicle and Low Emissions Vehicle standards. The commission has adopted California vehicles standards in the past, and DEQ expects to propose that the EQC adopt new medium and heavy-duty truck standards recently approved by California, as well. Incentives and infrastructure to accelerate the shift to cleaner vehicles also are an important part of this element, including Clean Fuels, EV rebates and programs to increase EV charging infrastructure.



- **Systems and Operations:** Addressing intelligent transportation systems and other innovative approaches to improving the flow of traffic and providing people with real-time information about road conditions are aspects of the STS that ODOT and the Oregon Transportation Commission are leading.
- **Transportation Options:** Supporting lower-emission ways of travel through investments in public transportation, bicycle and pedestrian, and transportation demand management programs. Example elements include providing park-and-ride facilities, promoting ride-matching services, adding biking and walking infrastructure, enhancing passenger rail services, and increased public transportation service. DEQ and EQC will have a role in this arena, through proposed changes in the Employee Commute Option Program.
- **Land Use:** Altering land use patterns through both regulatory changes and investments is a long-term effort, but one that can be very

important in reducing the amount that people drive by bringing homes, work and community centers together in closer proximity and along corridors where transit investments can be focused. Infill and mixed-use development in urban areas can reduce demand for vehicle travel and expand non-auto travel choices.

- **Pricing and Markets:** Addressing the true costs of using the transportation system and mechanisms such as congestion pricing, can encourage less automobile travel and also can be used to encourage the use of energy efficient modes. A cap and reduce program for transportation fuels also can send price signals that push people to travel by means that use less fuel.

The two specific elements to the STS that DEQ and the EQC are leads on that are not covered above are:

- Statewide Trip Reduction Policy – expanded Employee Commute Option Program (EQC rule amendment); and
- Adopt California ZEV and low NOx standards for medium and heavy duty trucks (EQC rule adoption).

DEQ's work plan currently anticipates beginning rulemaking on the California Low NOx and ZEV standards for new medium and heavy-duty trucks later this year. Executive Order 17-21 directs DEQ and EQC to maintain consistency with California's zero emissions vehicle regulation. Issues likely to arise in this rulemaking include the cost of the new requirements relative to the emissions reductions achieved, both in terms of GHG emissions, and in terms of NOx, particulate and ozone pollution reductions and the public health benefits of those reductions.

The workplan for expansion of the employee commute program identifies a period of 12 to18 months. Rulemaking on this effort is expected to begin in late 2020. Issues likely to arise in this rulemaking are the geographic scope of the program and the corresponding level of access to single-occupancy vehicle alternatives, the size of employers subject to the program, and the mix of education, incentives and regulation.

EQC involvement and public engagement

DEQ will discuss the planned public engagement effort with the commission, including engagement with environmental justice communities and organizations. DEQ will also seek guidance from EQC regarding the commission's desires for involvement in the development of analyses and policy options.

Attachments

A. Greenhouse Gas Emissions Reduction Programs
B. Work Plan to Expand Oregon's Clean Fuels Program
C. Work Plan for Cap and Reduce Programs
D. Statewide Transportation Strategy Multi-Agency Implementation Work Plan
E. Work Plan for Landfill Methane Rulemaking

State of Oregon Greenhouse Gas Emissions Reduction Programs			
Existing Programs in Implementation Phase	**Lead Agency**	**Emissions Sector**	**Major Objectives and Timeline for Implementation/Development**
ZEV/LEV (zero emission vehicles and low emission vehicle) standards	ODEQ/EQC	Transportation	Oregon adopts California low-emission and zero emission vehicle standards (as allowed by the federal Clean Air Act) for light-duty vehicles sold for use in Oregon. Reduces ghg emissions from new light-duty vehicles by roughly 5% per year between 2015 and 2025.
Clean Vehicle Rebate Program	ODEQ/EQC	Transportation	Provides roughly $12 million per year in rebates for purchase/lease in Oregon of qualifying electric vehicles.
Clean Fuels Standard (thru 2025)	ODEQ/EQC	Transportation	10% reduction in the carbon intensity of transportation fuels sold for use in Oregon by 2025.
Employee Commute Option (ECO) Program	ODEQ/EQC	Transportation	Component of the Portland metro area ozone maintenance program (not primarily/currently focused on GHG emissions, but likely has GHG co-benefit by reducing VMT). Employers in the Portland metro area with more than 100 employees must provide commute options to employees, designed to reduce vehicle miles traveled to and from work by ten percent.
Transportation and Land Use Scenario Planning	DLCD/ODOT	Transportation	Designed to reduce ghg emissions by reducing total vehicle miles traveled, with a focus on Portland Metro. Portland Metro target
GHG Standard for New Energy Facilities	ODOE/EFSC	Electricity	Requires new fossil-fueled energy generating facilities to meet a CO2 standard that is 17% below the best available technology.
RPS (Renewable Portfolio Standard)	OPUC	Electricity	50% of electricity sold to retail customers in Oregon by large utilities must be generated from renewable energy sources by 2040. Smaller percentages for smaller utilities.
Coal to Clean	ODOE/OPUC	Electricity	Electricity provided to customers of Pacific Power and Portland General Electric will be coal-free by 2030 (minor exception for PGE/Colstrip to 2035)
GHG Reporting	DEQ	Electricity, Transportation Fuels, Natural Gas, Industrial/ Commercial	Foundational requirement for reporting of annual GHG emissions forcertain facilities, including industrial facilities with air quality permits, wastewater treatment facilities, fuel distributors, electricity suppliers and large landfills.

New Programs (in Development)	Lead Agency	Emissions Sector	Major Objectives and Timeline for Implementation/Development
Extend & Expand the Clean Fuels Program	DEQ/EQC	Transportation	Reduce the carbon intensity of transportation fuels used in Oregon by 20% by 2030 and by 25% by 2035 (increase from 10% by 2025).
Cap and Reduce Programs			
• **Large Stationary Sources of GHG**	DEQ/EQC	Industrial and Commercial	Cap emissions from these sources, and reduce those emissions over time to meet a 45% reduction by 2035, and an 80% reduction by 2050.
• **Transportation Fuels**	DEQ/EQC	Transportation	Cap emissions from transportation fuels in Oregon, and reduce those emissions over time to meet a 45% reduction by 2035, and an 80% reduction by 2050.
• **Natural Gas and Other Fuels**	DEQ/EQC	Industrial, Commercial and Residential	Cap emissions resulting from other liquid and gaseous fuels in Oregon, and reduce those emissions over time to a 45% reduction by 2035, and an 80% reduction by 2050 (from 1990 levels).
Statewide Transportation Strategy			
•	DEQ/ODOT	Transportation	Statewide Trip Reduction Policy – expanded employee commute option program (EQC rule amendment).
•	DLCD/LCDC/ ODOT	Transportation	Parking Management (LCDC Transportation Planning Rule amendment)
•	DLCD/LCDC	Transportation	Metropolitan Planning Areas scenario planning for GHG reduction and equity/accessibility (Transportation Planning Rule amendment)
•	ODOE/ODOT/DEQ	Transportation	Interagency ZEV Action Plan. Ties together agency actions around electrification. ODOT lead for implementation.
•	ODOT/ODOE	Transportation	Transportation Electrification Needs Analysis. Funded via DEQ.
•	DEQ/EQC/ ODOE	Transportation	Clean Fuels Program expansion. See above. ODOE lead on state agency fuels.
•	DEQ/ODOT/ ODOE	Transportation	Alternative fuels study for trucks.
•	DEQ/EQC	Transportation	Adopt California Low NOx and ZEV standards for medium and heavy duty trucks.
Reduce Methane Emissions from Landfills	DEQ/EQC	Stationary Sources	Adopt standards for methane reduction commensurate with the most stringent standard(s) of adjacent states.

Local Actions to Reduce GHG Emissions (from the 2018 ODOE Biennial Energy Report)

Table 2.1: Jurisdictions in Oregon Taking Climate Change Actions

✓ = complete → = in progress	GHG Inventory	GHG Mitigation Goal	Climate Adaptation Goal	Focus Areas for GHG Mitigation				
				Renewable Energy	Transportation & Land Use	Buildings	Materials Management	Carbon Sequestration
Ashland	✓	✓	✓	✓	✓	✓	✓	
Beaverton	✓	Carbon neutral by 2050; 1.5°C goal	→	✓	✓	✓	✓	
Bend	✓	✓	→	→	→	→	→	
Clackamas County	✓	80% reduction by 2050		✓	✓	✓	✓	
Corvallis	✓	✓	✓	✓	✓	✓	✓	
Eugene	✓	Carbon budget for city residents consistent with 350 ppm in atmosphere by 2100, requiring an annual average emission reduction of 7.6%		✓	✓	✓	✓	
Forest Grove					✓	✓	✓	
Gresham	✓	→					✓	
Hillsboro	✓	✓		✓	✓	✓		
Hood River County	✓	Replace 30%, 50%, and 80% of fossil fuel power with renewable energy by 2030, 2040, and 2050 compared to 2016	✓	✓	✓			
Lake Oswego	✓		→	✓	✓	✓	✓	
Milwaukie	✓	Carbon neutral by 2050	✓	✓	✓	✓	✓	✓
Portland and Multnomah County	✓	80% reduction from 1990 levels by 2050	✓	✓	✓	✓	✓	✓
Salem	→	✓			✓	✓		
Washington County	✓			✓	✓	✓	✓	

State of Oregon Department of Environmental Quality

Preliminary Work Plan to Expand the Oregon Clean Fuels Program

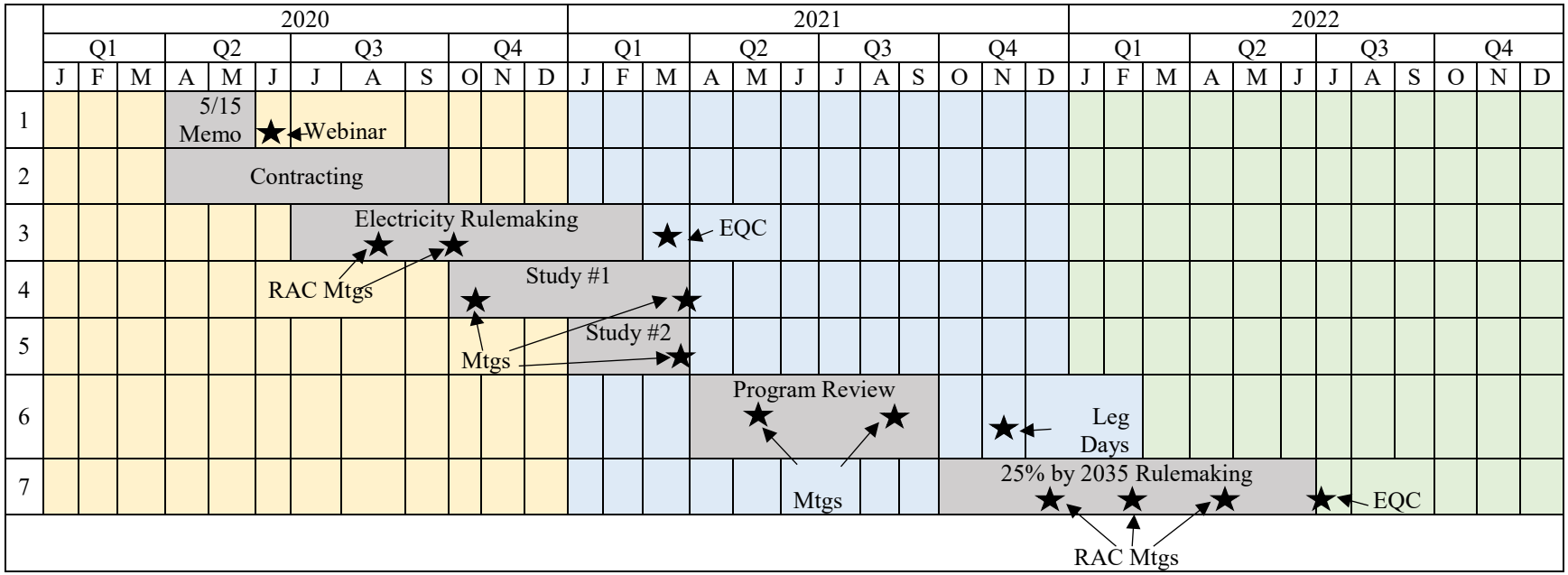
May 15, 2020

Contact: Cory-Ann Wind
wind.cory@deq.state.or.us

Background: In 2009 the Oregon Legislature passed HB 2186 authorizing the Environmental Quality Commission (EQC) to adopt a low carbon fuel standard to reduce the carbon intensity, or lifecycle greenhouse gas emissions per unit of energy, of Oregon's transportation fuels. HB 2186 contained a sunset provision, however, and this together with legal challenges to the program delayed implementation of the Clean Fuels Program until 2016. Under the CFP, all parts of a fuel's lifecycle – extracting/growing, transporting, bio/refining, distributing, and combusting – are accounted for in a fuel's carbon score – creating multiple opportunities to reduce carbon emissions. Common strategies to lower the average carbon intensity of transportation fuels in Oregon include: blending higher levels of biofuels into petroleum fuels, developing new feedstocks and technologies to make new lower carbon fuels, making existing technologies more efficient, and increasing the number of alternative fuel vehicles available. The current CFP is designed to reduce the average carbon intensity of transportation fuels used in Oregon by at least 10% below 2015 levels by 2025. The CFP is in its fourth year and the program has been successful in creating new supplies of low carbon fuels in Oregon, bringing new jobs to the state while also reducing greenhouse gas emissions.

Executive Order: Governor Brown issued Executive Order 20-04 on March 10, 2020 that directs DEQ and the EQC to expand the CFP to achieve reductions in average carbon intensity of transportation fuels used in Oregon of at least 20% (relative to 2015) by 2030, and of at least 25% by 2035. EO 20-04 also directs DEQ and the EQC to "advance methods [for] accelerating the generation and aggregation of clean fuels credits by utilities that can advance the transportation electrification goals set forth in Senate Bill 1044 (2019). The goals set forth in SB 1044 include having at least 50% of the new motor vehicles sold in the state by 2030 be zero-emission vehicles, and at least 90% by 2035.

Work Plan: The following work plan describes the steps necessary to carry out this expansion of the Clean Fuels Program, along with a high-level summary of some of the key policy issues that will be addressed leading up to and including rulemakings by the EQC. The work plan is summarized in the following chart, and then described in more detail on the following page.



1. **Report to the Governor's Office establishing a timeline for clean fuels rulemaking:** This document provides a high-level summary and proposed timeline for the steps that will be taken to expand the Clean Fuels Program as directed by EO 20-04. DEQ will hold a webinar on May 22, 2020 to talk through the elements of the timeline and process, including what is in scope and the opportunities for public engagement.

2. **Develop contracts for technical analyses:** These contracts are designed to provide foundational information for the EQC and participants in the rulemaking process to help evaluate how Oregon's fuels market could continue to develop in ways consistent with the targets established in EO 20-04. The analyses will include: 1) multiple scenarios that describe ways that the fuels market could achieve the targets in EO 20-04; 2) evaluating potential areas of new credit generation; and 3) assessing the impacts of these scenarios on tailpipe emissions and associated changes in social and health costs.

3. **Electricity Rulemaking**: EO 20-04 also directs DEQ and the EQC to advance methods of accelerating the generation and aggregation of clean fuels credits by utilities that can advance the transportation electrification goals set forth in Senate Bill 1044 (2019). The preliminary work plan anticipates that this aspect of the program development will begin in July 2020, followed by the work of a rules advisory committee in the second half of the year, and consideration of proposed rules by the EQC in March of 2021. DEQ recognizes that this is a relatively short period, in order to make it possible to speed increased credit generation in 2021. To accommodate this condensed timeline, DEQ and the EQC will need to focus work on a narrower set of issues where there are higher levels of consensus - leaving other issues for future resolution.

4. **Study #1 – Expanding the Clean Fuels Program:** This study will focus on the first two items described in item 2, above. DEQ expects to hold two meetings related to this effort: one to receive input on the design of the illustrative scenarios for how Oregon's fuels market could change to meet the expanded targets outlined in EO 20-04; and a second meeting to receive feedback on the initial results of the consultant report.

5. **Study #2 – Health and Social Impacts of the Clean Fuels Program:** This study will focus on the third item described in item 2, above (evaluation of changes in tailpipe emissions under each of the scenarios developed in the first study). DEQ expects to hold at least one meeting to receive input on a draft of this study.

6. **Program Review to Legislature:** HB 2017 (2017) requires DEQ to submit a Clean Fuels Program Review to the Oregon legislature by Feb. 1, 2022 that reviews the following:

- Progress towards achieving 10% below 2010 levels by the year 2025
- Environmental, economic, health and other benefits realized
- Projected availability of low carbon fuels and credits through the year 2025
- Additional mechanisms that may be necessary to manage and contain the costs of compliance with the low carbon fuel standards
- Whether adjustments to the low carbon fuel standards are necessary
- The effects of the maximum price for credits in the credit clearance market
- Adjustments that could serve to strengthen and enhance the low carbon fuel standards

Although this requirement is not expressly connected to EO 20-04, DEQ plans to conduct this review as a step in designing the program to achieve the 2030 and 2035 target reductions, so that both the agency and the public are informed of results of the review before going into the rulemaking process to expand the program. DEQ expects to hold two public meetings to discuss and provide input on the items listed above. Results of the program review may be presented at the September 2021 legislative days, and subsequently to relevant committees in the 2022 legislative session.

7. **25% by 2035 Rulemaking:** After all of the steps above are completed, the formal rulemaking to expand the CFP will begin. This process will likely include at least three meetings of the rules advisory committee, with consideration by the EQC tentatively targeted for July 2022 with a Jan. 1, 2023 effective date. The scope of the rulemaking will include at least the following issues:

a. A set of proposed program options to support reductions of twenty % by 2030 and twenty-five % by 2035, informed by the results of the studies and the program review.
b. Options for the "slope of the reduction curve" and how annual standards will be set from 2023 through 2035.
c. The fiscal, economic, health and social impacts of the proposed program expansion.

Alternative formats

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.state.or.us.

Program Options to Cap and Reduce Greenhouse Gas Emissions

Final Report

Submitted to: The Office of Governor Kate Brown
By: Oregon Department of Environmental Quality
June 2020

Department of Environmental Quality

Office of Greenhouse Gas Programs
700 NE Multnomah St.
Suite 600
Portland, OR 97232
Phone: 503-229-5696
800-452-4011
Fax: 503-229-6124

www.oregon.gov/DEQ

DEQ is a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water.

State of Oregon Department of Environmental Quality

This report prepared by:

Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, OR 97232
1-800-452-4011
www.oregon.gov/deq

Contact:
Lauren Slawsky
Slawsky.Lauren@deq.state.or.us

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Introduction

On March 10, 2020, Governor Brown signed Executive Order 20-04, directing state agencies to take actions to reduce greenhouse gas emissions and consider climate change in agency planning. The executive order established science-based greenhouse gas emissions reduction goals for Oregon of at least 45 percent below 1990 levels by 2035 and at least 80 percent below 1990 levels by 2050. The order contains several directives to the Environmental Quality Commission and the Department of Environmental Quality to take action consistent with existing legal authority to reduce emissions toward meeting the science-based goals. One of the specific directives is for the EQC and DEQ to "cap and reduce" greenhouse gas emissions from three sectors including large stationary sources, transportation fuels, and liquid and gaseous fuels, including natural gas. In accordance with directive 4.F.(2) of the executive order, DEQ submitted a preliminary report to the Governor by May 15, 2020, and this final report June 30, 2020 regarding program options to cap and reduce emissions from the three sectors. DEQ is also directed to develop programs on this topic that commence no later than January 1, 2022.

While the Executive Order included broad directives regarding climate planning for many state agencies, this report is specific to the cap and reduce directive and is focused on the process and desired outcomes of DEQ's development of a cap and reduce program or programs. DEQ will consider the cap and reduce program design in the context of other state GHG reduction programs both within DEQ and in other state agencies and continue to coordinate with other state agencies on this specific effort. However, this report and the proposed process are not intended to describe DEQ's comprehensive GHG strategy or the overall state response to climate change.

Following delivery of the preliminary report to the Governor on May 15, DEQ held a comment period until June 15 in order to receive input on the preliminary report to inform the final report. This allows for public and stakeholder input into the program development from the onset of this effort. During that comment period, DEQ also held three webinars to describe the preliminary report, take clarifying questions from the public participants, and to describe how to submit written comments for consideration in the final report.

DEQ received 33 written comments on the preliminary report from a wide range of members of the public and stakeholder organizations. All comments have been made available on the cap and reduce webpage at www.oregon.gov/deq/ghgp/Pages/ghg-cap-and-reduce.aspx

Commenters generally expressed support for DEQ's proposed process, including the proposal for a program scoping phase to occur before a formal rulemaking process. Many comments also supported DEQ's inclusive approach to developing a cap and reduce program or programs, action on climate, and the need to reduce greenhouse gas emissions. Some key issues raised in comments aligned with those DEQ presents in Section 3, including the need for considerations relating to program costs, avoiding making emission reductions in Oregon simply by shifting those sources to other jurisdictions, and the importance of equity and inclusion. This final report reflects changes to the preliminary report throughout as informed by the comments received. A high-level summary of DEQ's response to comment as included in this final report includes:

- Clarification of the term 'impacted communities';
- Clarification of DEQ's intention for cross-program and cross-agency coordination;
- Bolstering of DEQ's commitment to making meetings and information accessible and understandable, including a note that the agency has contracted with a firm to provide meeting facilitation and other external engagement and communication support;
- Clarification of how DEQ will engage the public and stakeholders and receive input;

- Agreement with the need to provide funding to ensure underrepresented communities are fully engaged in the rulemaking process;
- Broadening the scope of potential workshop topics;
- Broadening the scope and representation of potential rulemaking advisory committee members;
- Clarification of the purpose and opportunities to provide input on DEQ's contracted analyses; and
- Clarification of DEQ's interest in program design that takes sectoral differences into account, and considers potential risks to trade-exposed industries.

This report is organized in four sections. Section 1 briefly describes the agency's understanding of the EQC's existing legal authority to cap and reduce greenhouse gas emissions in specific covered sectors, after consulting with the Oregon Department of Justice. This section identifies the broad legal authorities of the EQC to regulate emissions and identifies limits to that authority that may also narrow program design options. This is not meant to be an exhaustive analysis of all potential legal points, but to serve as a general guide to the EQC's program development options within existing authority.

Section 2 sets out DEQ's proposed process to engage the public and stakeholders in gathering input into program design options. This work includes a consistent emphasis of engaging impacted communities, such as underrepresented populations, rural communities, and Oregonians that may disproportionately experience the impacts of climate change, to assure that decision-makers fully understand the consequences of options, along with the interests and concerns of communities that could be affected. In this section, DEQ outlines a pre-rulemaking process over summer and fall 2020, which will include workshops oriented around particular program design topics, as well as consultation with key communities, partners, and stakeholder groups. This scoping process will help define program options to then be considered in the more traditional rulemaking process, which will begin in late 2020 and extend through 2021.

Section 3 provides a preview of policy considerations and initial core program design elements consistent with the legal parameters described in Section 1. This section is meant as a preliminary identification of important elements and options that will define the contours and nature of a DEQ cap and reduce program. These elements and options include general policy considerations such as the scope of greenhouse gas emissions and regulated entities covered under the program, the distribution of compliance instruments, and cost containment considerations. Program design and policy options will be explored further throughout the process described in Section 2. DEQ is not recommending a particular program design or set of options in this report. Those elements will come later, following the scoping process, and following input from rules advisory committees.

Finally, Section 4 describes how the public and stakeholders can stay informed on this topic. This final report will act as a guide for DEQ throughout the subsequent program development process. Some core values for DEQ throughout this process that are embedded through this report include:

- Offering a transparent and robust process that engages a wide range of interests and results in a cap and reduce proposal that is responsive to input received;
- Recognizing and actively addressing the need for equity in access and involvement in the decision-making process; and
- Acknowledging prior work in Oregon on initiatives to reduce greenhouse gas emissions while recognizing this regulatory process is different than past legislative efforts and the Environmental Quality Commission is the decision-maker in this process.

1. Existing Authorities to Regulate Greenhouse Gas Emissions

The following section of this report reflects DEQ's understanding of the EQC's existing authority granted by the Oregon legislature. Much of that authority stems from long-standing direction from the legislature to the EQC and DEQ to control air pollution in order to protect public health and the environment. This includes direction both predating the federal Clean Air Act, and broad authorizations that are contemporaneous with federal enactments.

1.1. The EQC's Authority to Regulate Air Pollution, Emissions of Air Contaminants, and to Require Permits

The Oregon legislature has established both broad policy and specific direction to DEQ and the EQC with regard to the control of air pollution in Oregon. The legislature's overriding policy for Oregon, as stated in ORS 468A.010, is "[t]o restore and maintain the quality of the air resources of the state in a condition as free from air pollution as is practicable, consistent with the overall public welfare of the state. To carry out this policy, the EQC is authorized, under ORS 468A.025, 468A.040 and 468A.045, to set standards for air purity in Oregon, to set emissions limitations on air contamination sources, and then to regulate air contaminant emissions in order to meet those standards. Further, ORS 468A.025(3) specifically authorizes the commission to "set forth the maximum amount of air pollution permissible" and to distinguish between air contaminants and air contamination sources when setting such standards.

The legislature defined the terms "air pollution," "air contaminant," and "air contamination source" in ORS 468A.005 in ways that demonstrate the scope of authority it intended to grant to the EQC under ORS chapter 468A. First, "air pollution" is defined in ORS 468A.005(5) as:

> [T]the presence in the outdoor atmosphere of one or more air contaminants, or any combination thereof, in sufficient quantities and of such characteristics and of a duration as are or are likely to be injurious to public welfare, to the health of human, plant or animal life or to property or to interfere unreasonably with enjoyment of life and property throughout such area of the state as shall be affected thereby.

In turn, "air contaminant" is defined in ORS 468A.005(2) to mean a "a dust, fume, gas, mist, odor, smoke, vapor, pollen, soot, carbon, acid or particulate matter or any combination thereof.[1] In other words, the presence of carbon and other gases in the atmosphere in quantities that endanger public health or the environment is air pollution under Oregon law.

And, finally, the legislature defines "air contamination sources" as meaning "any source at, from, or by reason of which there is emitted into the atmosphere any air contaminant, regardless of who the person may be who owns or operates the building, premises or other property in, at or on which such source is located, or the facility, equipment or other property by which the emission is caused or from which the

[1] The term "greenhouse gas" is defined in ORS 468A.210 to include "any gas that contributes to anthropogenic global warming including, but not limited to, carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride."

emission comes." In other words, the legislature expected the EQC to address as air contamination sources both specific buildings and premises that emit air pollution, *and* facilities, equipment or other property that cause air pollution.

As has been documented by the legislature (as codified in ORS 468A.200), by the U.S. Environmental Protection Agency[2], and as referenced in Executive Order 20-04, current levels of greenhouse gas emissions in Oregon are injurious to the public welfare and to human, animal and plant life and thus meet the definition of air pollution. The increased and increasing concentration of these emissions in the atmosphere is forcing fundamental changes to the climate in Oregon, such as increasing average temperatures, increasing severity of storms, rising sea levels, ocean acidification and altered seasonal and hydrological cycles. These changes are injuring the public welfare, human health, the environment and property, and are significantly harming the "enjoyment of life and property" in Oregon. Thus, the EQC has authority to set greenhouse gas emissions-related air quality and emissions standards applicable both to buildings and premises that emit and to other facilities, equipment or property that cause such emissions to occur.

The EQC currently implements its authority to regulate air quality by requiring air contamination sources, including certain indirect sources such as large parking facilities, hospitals, and educational facilities that cause large volumes of traffic (and resulting mobile source emissions), to obtain permits under ORS 468A.040.

The process and authority for the DEQ to issue permits is provided in ORS 468.065. It applies to all environmental permits issued by DEQ, including air quality permits issued under the authority of ORS chapter 468A. Along with the authority to issue permits, section (1) of the statute requires the EQC to include conditions in such permits to ensure that air contamination sources comply with applicable standards adopted by the EQC. Aside from some statutes applicable to particular types of conditions[3], there are no statutes that limit the Commission's authority in terms of the types of permit conditions it may impose. Its authority to develop permit conditions is limited only by whether a condition is necessary to ensure compliance with the standards it has adopted.

These are the standard authorizing statutes for the air quality permitting program adopted by the EQC and administered by DEQ, in Oregon Administrative Rules chapter 340, divisions 216 and 218.[4] Under that program, DEQ has issued and administers thousands of air quality permits issued to specified industrial and commercial sources of air contaminant emissions in Oregon. It follows, then, that the EQC could require any such source, currently subject to a requirement to obtain a permit under those programs, to also be required to obtain a permit, or be subject to additional permit conditions, based on its emissions. Certain limitations with respect to some sources are discussed further below.

1.2. The EQC's Authority to Regulate Sources that Emit Air Contaminants

As discussed above, the EQC has authority to regulate greenhouse gas emissions from "air contaminant sources or classes thereof . . ." Whether a person, business or facility can be regulated depends on

[2] Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed Reg 66,496 (2009).
[3] For example, ORS 468A.025(4) applies to conditions that are related specifically to requiring stationary sources to maintain "the highest and best practicable treatment and control of emissions."
[4] ORS 468A.310 through 468A345 also authorize the federal air quality permitting program, OAR ch. 340, div. 218, that DEQ is delegated to implement under the Clean Air Act, by EPA.

whether it falls within the definition of "air contamination source." As noted above, ORS 468A.005(4) defines that term as follows:

> [A]ny source at, from, or by reason of which there is emitted into the atmosphere any air contaminant, regardless of who the person may be who owns or operates the building, premises or other property in, at or on which such source is located, or the facility, equipment or other property by which the emission is caused or from which the emission comes.

Under this definition, the EQC is authorized to regulate the person, business or facility in Oregon "at" or "from" which emissions of air contaminants come. Such sources can be referred to as "direct" sources, where the emissions occur directly from a person, business or facility. But the definition of "source" does not stop there, it also includes facilities and other property that cause emissions that occur elsewhere. These "indirect" sources, particularly activities that cause large volumes of traffic and resulting mobile source emissions, have long been regulated in Oregon through indirect source permits.

There are three key parts of the definition of "air contamination source." They are, first and second, the words "source" and "by reason of which," and, third, the modifying clauses that follow the initial statutory definition. The word "source" is not separately defined in statute, but its dictionary definition includes meanings that are applicable to the direct and indirect source concepts described above. The first relevant dictionary definition of "source" is as "a point of origin or procurement" or "a point of emanation." That definition fits the concept of a direct source. The second relevant dictionary definition of "source" is "a generative force or stimulus; cause, instigator." Coupling that definition with the phrase "by reason of which," describes indirect sources—a business or operation that does not itself emit air pollution, but that causes air pollution to occur.

DEQ has long regulated large-scale uses that cause mobile source (mainly vehicle) emissions. The same reasoning applies to suppliers of liquid and gaseous fuels that are used in Oregon, including suppliers of transportation fuels as well as suppliers of other fuels such as natural gas. Such suppliers are the generative force, stimulus and cause of the emissions that result from use of the products they supply, notwithstanding that the air pollution is emitted from locations not owned or controlled by such suppliers, and from equipment owned and operated by others (e.g., motor vehicles). Such suppliers are therefore "air contamination sources" under the definition in ORS 468A.005(4), and the EQC may regulate them in order to meet standards for air purity to protect the public health, welfare and the environment.

There are limits to the EQC's authority, however. First, it is likely that the EQC does not have authority to regulate air emissions that occur wholly outside of Oregon. ORS 468A.025(3) grants the EQC authority to set air quality and emissions standards "for the entire state or an area of the state." As described above, the EQC has authority to regulate indirect sources of emissions, where the emissions come from equipment or a facility not owned or controlled by the permitted entity. However, the statutory language authorizing the setting of emissions standards references regulation only "for the . . . state," which DEQ interprets to mean the emissions must occur in the state. This is particularly relevant to companies that provide electricity for use in Oregon, but where the electricity is generated outside of Oregon and the emissions that result from that generation occur outside of Oregon. In sum, DEQ believes that the EQC likely does not have authority to regulate air emissions that occur outside of Oregon.

Second, there are a series of exemptions to the EQC's authority to regulate air quality, in ORS 468A.020. Those exemptions include, in section (1) of the statute, the regulation of air quality from most agricultural operations and residential barbecue equipment, and from certain residential heating equipment and fires for firefighting instruction. They also include an exemption, in section (3) of the statute, of "carbon dioxide emissions from the combustion or decomposition of biomass," as further defined in the statute.

Therefore, DEQ recommends that any greenhouse gas emissions regulations that the EQC adopts not regulate any activities exempted by the legislature under these provisions.

1.3. The EQC's Authority to Set Greenhouse Gas Emissions Caps

1.3.1. Setting Emissions Caps

Part of the EQC's authority under ORS 468A.025(3), as described above, is the authority to establish "air quality standards including emissions standards" that "set forth the maximum amount of air pollution permissible" from particular "air contamination sources or classes of sources." This statute authorizes the EQC to set greenhouse gas emissions caps—to establish the permissible limit of emissions that may come from a class of sources, as identified by the EQC, and from any individual source. The EQC has broad discretion to determine the appropriate levels of such emissions caps, within the overall air quality policy established in ORS 468A.010, "[t]o restore and maintain the quality of the air resources of the state in a condition as free from air pollution as is practicable, consistent with the overall public welfare of the state." And the EQC has authority to adjust the cap over time, and in fact is legislatively directed in ORS 468A.010(2) to implement its air quality program "in a progressive manner . . ." Thus, the EQC may establish initial caps and then slowly reduce those emissions caps over time, if it determines that approach is appropriate.

The EQC would implement its emissions cap[s] by requiring sources to obtain permits from DEQ that authorized emissions of specified amounts of greenhouse gases. And the EQC could then authorize DEQ to include any conditions in such a permit to achieve the air quality benefits that were the purpose of setting the overall and facility-specific caps.

As with stationary sources currently operating under permits with DEQ, violation of an emissions limit in a permit will be subject to the imposition of civil penalties by DEQ, under ORS 468.140. In adopting the emissions standards, the EQC also could set the amounts of such civil penalties, under ORS 468.130.

1.3.2. Trading and Alternative Compliance Pathways

Once the EQC has established GHG emissions caps for individual air contamination sources, by including the caps in permits issued to the sources, in addition to having authority to enforce those limits against any source that emits GHGs above that limit, it could allow individual permittees that emit less GHGs than their limit to trade the unused portion of their emissions authority to other permittees. This reflects the structure of the Oregon statutes that speak in terms of first setting air purity standards to protect public health and welfare, and then setting emissions standards to meet those standards. Similar approaches have been used in other air quality regulation, including regulation of sulfur dioxide and the Oregon Clean Fuels Program. Trading, however, can raise a range of practical and policy issues that would need to be described, evaluated and (ultimately) considered and decided by the EQC.

A related concept to trading is allowing sources to choose alternative means of complying with an emissions limit, such as contracting with a third party to deliver reductions in emissions by actions at other locations. Again, DEQ believes that there is not a legal prohibition on the EQC allowing, by rule, for facilities to elect such alternatives to technological or operational controls. Such alternatives can raise complex practical and policy issues, but DEQ believes they could be considered by the EQC as part of the program the commission adopts.

1.3.3. The EQC May Assess Permit Fees, but May Not Sell or Auction Greenhouse Gas Emissions Rights

A state agency may assess fees or otherwise collect revenues only if authorized to do so by statute or other law approved by the legislature. The EQC has authority, under ORS 468.065(2) to assess fees for permits, but that authority is limited to an amount of fees necessary to cover the costs to administer the permits. The statute specifically authorizes fees for, as relevant here, "the anticipated cost of filing and investigating the [permit] application . . . of issuing or denying the requested permit, and of an inspection program to determine compliance or noncompliance with the permit." In addition, DEQ notes that any fees that the EQC approves to pay for the program must be ratified by the legislature at the next regular legislative session after adoption of such fees, under ORS 291.055.

Prior legislative consideration of greenhouse gas regulation has included the programmatic aspect of an auction of compliance instruments. DEQ does not believe that the EQC has the authority to auction or otherwise sell rights to emit greenhouse gases. A further complication is that DEQ has no authority to receive or spend auction proceeds. As a result, one of the main differences between programs that the EQC may adopt under existing authorities, and programs previously considered by the Oregon legislature is that DEQ believes the EQC may not develop a program that is designed to generate revenues or proceeds to the state for investment in programs to speed reductions of emissions. Similarly, DEQ believes that the EQC also lacks authority to distribute compliance instruments (rights to emit greenhouse gases) to a non-profit, third-party, and then authorize or direct the third-party to sell the compliance instruments at auction, using the auction proceeds to fund greenhouse gas emissions reduction programs.

2. Program Development and Stakeholder Engagement Process

2.1. Overview

A critical aspect of establishing programs to cap and reduce greenhouse gas emissions in Oregon is strong public engagement in the program development process, particularly by communities that may be most affected by such policies. Comments received after the submission of the preliminary report demonstrated a widespread understanding of the importance of engaging these communities. DEQ will ensure there are meaningful opportunities for public and stakeholder engagement and input throughout the new emissions cap and reduce program development process. As part of this engagement, DEQ is evaluating how best to support communities of color and other groups that have traditionally been under-represented in policy-making concerning air pollution and public health. Relatedly, DEQ is participating in an inter-agency workgroup considering the effects of climate change on communities of color and other vulnerable communities.

For this effort, DEQ envisions three key phases:

- Phase 1 (spring 2020): process engagement
- Phase 2 (summer and fall 2020): policy and program scoping
- Phase 3 (fall 2020 through 2021): Rulemaking Advisory Committee work and EQC consideration of recommendations

This section provides an overview of DEQ's proposed roadmap for developing a new cap and reduce program or programs, and a description of each phase of development.

Related to this development process, the executive order also directs DEQ to expand the existing Clean Fuels Program with the goal of reducing the average amount of greenhouse emissions per unit of fuel energy by 20 percent below 2015 levels by 2030, and 25 percent below 2015 levels by 2035. There is also a directive to four state agencies, including DEQ to implement the Statewide Transportation Strategy. DEQ recognizes the potential interplay between new emissions cap and reduce programs, the expansion of the clean fuels program, and the development of other state and local programs to reduce greenhouse gas emissions. DEQ is coordinating across the full range of programs it is developing, as well as participating in coordinating efforts across agencies. DEQ is also involved in discussions with local and private sector entities that are leading work to reduce emissions as part of its overall engagement work.

DEQ is especially sensitive to the limited availability and resources of those representing impacted communities, and their challenges to engage in multiple different state agency processes on similar topics. DEQ will be conscious of such competing requests and endeavor to coordinate requests for their involvement across various state processes.

In response to the evolving COVID-19 situation, it will be necessary to use virtual meeting technologies for large groups, and (at least in the near-term) small groups, as well. DEQ has held a number of public hearings using these technologies, and continues to evaluate which systems work best for different types of groups and meetings. DEQ is particularly concerned about access to technologies for communities with limited or no internet access and will continue to provide alternative means of participation to meetings, such as options to join by phone. DEQ does not anticipate hosting any public meetings in-person in any areas of the state remaining under restrictions on group gatherings. DEQ recognizes that conditions

concerning meetings, distancing, access, and interest are likely to vary around the state, and will do its utmost to reflect those differences in its engagement processes.

2.2. Phase 1: Engagement on Process

This subsection outlines DEQ's proposed approach to the initial process development phase between May 15, 2020, when the preliminary report was submitted to the Governor and June 30, 2020, when this final version of the report is submitted. This phase was designed to gather input on how subsequent phases can best engage the public, stakeholders and impacted communities during the development of options and recommendations for the EQC, and that ultimately results in policy decisions by the EQC that are well-informed and that help meet the outcomes set out in EO 20-04.

2.2.1. Purpose

- Solicit input from the public, stakeholders and, impacted communities on the proposed development process described in this report for input to inform the final report due to the Governor by June 30, 2020.
- Inform the public and stakeholders of opportunities to engage in the program development process.
- Identify stakeholders and groups interested in or affected by a new cap and reduce program, or programs.
- Provide early and meaningful engagement opportunities for communities disproportionately impacted by climate change.

2.2.2. Goals

DEQ identified the following goals for Phase 1:

- Learn which engagement opportunities are most likely to be effective and meaningful in receiving input from different perspectives.
- Understand the important engagement opportunities and mechanisms for engagement with impacted communities.
- Develop a clear shared understanding between DEQ and interested stakeholders of how DEQ will proceed in scoping issues and developing options for consideration by rulemaking advisory committees and, ultimately, the EQC.
- Provide opportunities for stakeholders and the public to meaningfully inform the agency's policy development process.
- Provide clear and transparent communications regarding the cap and reduce program development process.

2.2.3. DEQ Commitment

While DEQ was not in a formal rulemaking process during Phase 1, DEQ followed many of the same underlying principles, such as advanced public notice and invitations to meetings, web-based posting of meeting materials, summaries, and comments received, and other means to make information fully accessible.

2.2.4. Strategies

DEQ publicized the preliminary report and posted it to DEQ's webpage and the Governor's webpage. DEQ hosted a webinar shortly after the May 15, 2020 submittal. The webinar described all reports related

to the Executive Order submitted to the Governor by DEQ, including the options for a cap and reduce program, but also the Clean Fuels Program expansion, and other directives to the EQC and DEQ.

DEQ sought input on the process proposed in Section 2 of the preliminary report through a variety of means, including but not limited to:

1. Written comments: DEQ held a comment period to accept written comments on the preliminary report from May 15 to June 15, and received 33 comments.
2. Listening sessions: DEQ hosted three identical listening sessions on May 26, June 1, and June 8 at varying times to encourage participation by all to present the preliminary report, seek feedback, and to allow for questions. Over 200 participants joined one or more of the listening sessions, which were open to the public, advertised through DEQ GovDelivery, and webinar and call-in participation information was made available on DEQ's cap and reduce webpage.
3. Environmental Justice Engagement: DEQ has begun outreach to key environmental justice organizations, including conversations with individuals representing the Environmental Justice Task Force, to seek input on the development of a meaningful stakeholder engagement process toward the development of a cap and reduce program for Oregon. In the coming months, DEQ will continue broad outreach, including but not limited to, participation in the Interagency Working Group on Impacted Communities led by the Governor's Office, to ensure environmental justice principals are fully incorporated into the scoping and program development and community leaders representing environmental justice and impacted communities are part of the decision making process.
4. Tribal Engagement: DEQ formally notified all nine of Oregon's federally recognized tribes of this report and the proposed policy development process. The agency requested an opportunity to brief the Natural Resources Cluster of the Legislative Commission on Indian Services on the report and solicit other direct engagement between the department, tribal councils and tribal staff. Additional tribal consultation is expected during the coming months.

This final report is informed by input received during the initial engagement process. DEQ will publicize the final report and post it to DEQ's webpage, the Governor's webpage, and send it out via DEQ GovDelivery.

2.3. Phase 2: Policy and Program Scoping

The following subsection outlines DEQ's initial concepts for scoping potential program elements and options, seeking input from the public, stakeholders and impacted communities in order to develop an appropriate range of options and questions for subsequent consideration in Phase 3 by rules advisory committees and, ultimately, the EQC in late 2021.

2.3.1. Purpose

- Introduce and frame key policy constructs and issues prior to the commencement of a formal rulemaking.
- Identify priority issues likely to need more time and specific attention during the formal rulemaking of Phase 3.
- Receive input on perspectives and representation needed for members that will comprise the Rulemaking Advisory Committee.
- Continue to engage stakeholders and the public on policy options in order to continue to inform DEQ's development of policy scenarios that will ultimately inform the formal rulemaking.

2.3.2. Goals

- Common understanding between DEQ and stakeholders of priority issues and concerns.
- Appropriate consideration of equity issues associated with major program options.
- Common understanding between DEQ and stakeholders of high-level program and policy considerations and parameters, including but not limited to legal constraints and potential policy mechanisms.
- Allow opportunity for the public and stakeholders to inform the design and direction of the formal rulemaking of Phase 3.

2.3.3. DEQ Commitment

Similar to the Phase 1 commitment, while DEQ will not be in a formal rulemaking process during Phase 2, DEQ will follow many of the same underlying principles such as advanced public notice and invitations to meetings, web-based posting of meeting materials, summaries, and comments received, and other means to make information fully accessible. DEQ will accept input through a number of means including verbally, written comment submitted during meetings through forms, as well as through web-based surveys. DEQ will also compile a scoping report summarizing the input and information received during this Phase 2. DEQ will also make an effort to provide information and materials in ways that may be understood by all, regardless of level of expertise on the topics at hand.

2.3.4. Strategies

Public Outreach and Engagement

DEQ will host three to five public meetings or listening sessions during summer and fall of 2020 focused on introducing key concepts and soliciting feedback and concerns from the public, with meetings times and venues set to encourage participation by the public. The intent of these meetings is to elicit values and priorities that Oregonians expect the agency and policy-makers to consider in the course of developing and implementing a cap and reduce program.

These public meetings are intended to be accessible to the general public and to generate feedback that represents the geographic, political, economic, and environmental diversity of the state. A high-level agenda for these public meetings will include an overview of the Executive Order, Oregon's greenhouse gas emissions status and trends, key outcomes that programs are to be designed to accomplish, and early ideas around key policy choices on how to achieve those outcomes.

DEQ has engaged Kearns & West to assist in the design, planning, and implementation of stakeholder and public engagement activities in order to elicit broad feedback and ensure far-reaching participation. This firm will help DEQ develop agendas and meeting materials that are accessible and understandable. DEQ believes the addition of a third-party facilitator will result in more robust, informative, and productive policy conversations during the program scoping phase.

Stakeholder Engagement

DEQ will host topic-specific workshops throughout the summer and fall of 2020 to collect input on key outcomes that a cap and reduce program should be designed to achieve, and alternative choices on how to achieve those outcomes. The workshops will be designed to help the agency identify and catalogue specific interests and considerations to be addressed in the formal rulemaking in Phase 3. In addition to topic-specific meetings, DEQ may host additional public meetings or meetings for invited stakeholders to address specific issues raised. Some workshop topics are expected to raise issues requiring coordination with other state agencies, particularly the Oregon Department of Transportation with regard to transportation fuels, and the Public Utilities Commission with regard to other fuels including natural gas.

DEQ also recognizes there are stakeholders with technical and sector-specific expertise and intends to rely on this knowledge to help inform program development.

Topic-specific workshops will allow all participants to hear the same information and perspectives at the same time in an inclusive setting that is transparent, and that will allow for a more meaningful dialogue. DEQ believes a topic-specific structure is the best approach that will enable more robust conversation through participation by the general public and non-industry groups together, as well as encourage discussion across sectors in order to ensure a more holistic approach to program design. Topic areas for workshops may include:

- Program scope: the emissions that may be covered by the program and the entities that may be regulated;
- Program design options: the emissions reductions over time, mechanisms to allow or facilities trading of compliance instruments, alternative compliance mechanisms, tools for avoiding or minimizing the counterproductive outcome of shifting emissions out of Oregon without making true reductions, potential impacts of design options, interactions between regulated entities and those indirectly impacted, etc.;
- Cost containment: approaches to address external market disruptions, ways to lower overall compliance costs, costs to small businesses, safety mechanisms to improve predictability in the operation of the program; and
- Impacted communities: approaches for reducing or avoiding impacts to vulnerable communities, options for improving the resilience of impacted communities to program impacts.
- Additional topic areas for workshops may include those that are of particular interest to tribes, impacted communities, potentially regulated businesses, and the general public.

Environmental Justice Engagement

DEQ has requested an opportunity to brief the Environmental Justice Task Force and other representatives from underrepresented and impacted communities, and to listen to experts from those communities about important potential impacts of cap and reduce policies, along with ideas for avoiding or minimizing negative impacts. This will include ensuring adequate environmental justice organization participation in issue-specific stakeholder meetings and creating opportunities to specifically address issues of environmental justice. These consultations will be important sources of input for incorporating environmental justice principles into the policy scoping and development processes, including the rulemaking of Phase 3.

Tribal Engagement

DEQ will provide regular updates to the Natural Resources, and Economic Development and Community Services Tribal Clusters of the Legislative Commission on Indian Services. DEQ also will confer with leadership in each of the nine federally recognized tribes of Oregon in the scoping phase.

Environmental Quality Commission Engagement

DEQ will provide an informational briefing to the EQC at its July meeting. The briefing will introduce key policy constructs and issues that may be expected to be discussed during the summer 2020 public meetings and stakeholder workshops of this Phase 2. DEQ will follow-up with an informational briefing to the EQC in fall 2020 to review the feedback and results of the Phase 2 scoping activities.

Legislative Engagement

DEQ will also provide regular updates on the development to the Legislature. This will include written updates, sharing the final report from Phase 2, and providing informational briefings to relevant policy committees on the cap and reduce program development process and key issues.

2.4. Phase 3: EQC Formal Rulemaking

The following subsection outlines DEQ's initial concepts for rulemaking for the three specific areas of cap and reduce programs identified in the executive order. The formal rulemaking work is expected to begin with the appointment of a rules advisory committee in late 2020, then continuing for the next nine months to the fall of 2021. DEQ expects the rules advisory committee may include several subcommittees to advance consideration of sector-specific program elements and options for consideration by the EQC beginning in October or November of 2021.

2.4.1. Purpose

- Formal rulemaking process to consider options for each key program element and develop recommendations for the EQC, in compliance with the Oregon Administrative Procedures Act requirements.
- Provide enhanced opportunities for stakeholders and the public to engage.
- Develop a fiscal impact statement that considers the impacts on affected entities and communities, the impact to Oregon's economy, and expected environmental and health effects of the program(s).

2.4.2. Goals

- Establish and implement a formal rulemaking process allowing for a robust and transparent process that allows for debate and consideration of key policy issues.
- Stakeholders and the public inform and help shape recommendations to the EQC.
- Stakeholders and the public understand the rationale behind key policy decisions.
- Impacted communities are effectively represented in developing recommendations to the EQC.
- Recommendations to the EQC reflect broad input and are designed with a high likelihood of meeting the emissions reduction outcomes established in the executive order.

2.4.3. DEQ Commitment

DEQ will establish a formal rulemaking process that includes many opportunities for engagement and feedback, beyond the minimum Oregon Administrative Procedures Act requirements. This will include advanced public notice and invitation to meetings, and web-based posting of meeting materials, summaries, and comments received, as well as agency response, where appropriate. Rulemaking Advisory Committee (RAC) meetings are intended to receive feedback from invited committee members. However, DEQ will open all of these meetings to public attendance and will allow for public comment at the meetings. DEQ will make an effort to provide committee members with meeting materials at least two weeks prior to each meeting.

Throughout the rulemaking process, DEQ will engage the tribes, representatives of impacted communities, stakeholder interest groups, businesses, the potentially regulated community, and the general public. DEQ understands and appreciates the value of providing funding to support the participation and engagement of underrepresented communities. DEQ will commit resources to this work and is currently evaluating the ways such support can be most effective over the course of policy development. One particular aspect of this will be to provide key materials in plain language translation.

2.4.4. Rulemaking

Tentative Rulemaking Schedule to meet a Program Start-Date of January 1, 2022

- Fall 2020: the EQC will appoint RAC members.

- Winter/Spring 2021: DEQ will host RAC meetings and any additional public or invited stakeholder meetings.
- Summer/Fall 2021: Public Notice of Rulemaking packet and public comment period.
- Fall 2021: DEQ provides rulemaking packet to the EQC including staff report, response to comment, proposed new rules, and any proposed rule amendments, and recommends adoption.

Rulemaking Advisory Committee Members

Once the EQC opens a formal rulemaking to establish a cap and reduce program, the EQC will appoint the RAC and send convening letters to members. This is required as part of the formal rulemaking process. DEQ will recommend to the EQC that membership of the RAC reflect the social and geographic diversity of Oregon, as well as the communities and businesses that may be directly or indirectly affected by a cap and reduce program or programs. These interests should include at least the following:

- Potentially regulated sectors (large stationary sources, fuel suppliers, including natural gas suppliers, and major categories of fuel consumers);
- Environmental and public health advocates;
- Representatives of impacted communities;
- Consumer advocate groups;
- Trade associations;
- Technical and/or climate change experts; and
- Tribal representatives.

Given the broad scope of the rulemaking and diverse interests, DEQ is considering using an application process for RAC membership. By receiving input and nominations from the many different groups, this approach may help ensure fair representation and equal voices needing to be heard on the RAC. In the fall of 2020, DEQ will release additional detail about the application process and selection criteria.

Tribal Engagement

DEQ will send formal tribal consultation letters to tribal chairs providing notification of the formal rulemaking and the opportunity for consultation.

Rulemaking Meetings

Topics to be discussed will include scope of rulemaking, rulemaking timeline, background, policy options, technical concerns, drafts of proposed rules, and the fiscal impacts analysis, which is required as part of the formal rulemaking process.

In addition to the RAC meetings, DEQ may host additional public meetings or meetings for invited stakeholders only to address specific issues raised during the scoping and rulemaking phases,

Contracted Analyses

Given the significance of a new greenhouse gas emissions cap and reduce program, DEQ is procuring contracts with independent experts to assist with several aspects of the proposed program. This will include conducting thorough analyses evaluating the societal, public health, and economic effects of cap and reduce program options, including but not limited to program effectiveness in reducing emissions and the economic effects on potentially regulated businesses, small businesses, communities, the general public, and Oregon's broader economy. The analyses and program options evaluated will be developed in consultation with DEQ and stakeholders. DEQ intends to use the results of the contracted analysis to inform the program design and the fiscal impacts analysis that the EQC will consider as part of any formal rulemaking. The full results of the contracted analyses will be made available to the RAC, the public, and the EQC.

Public Notice and Public Comment Period

DEQ will post the public notice to DEQ's rulemaking webpage, including proposed rules, and open the formal public comment period on the proposed rules that will last no less than 60 days (double the minimum required by the Oregon Administrative Procedures Act). After the close of the comment period, DEQ will post comments received and its responses to comment. Finally, the agency will prepare a staff report for the EQC with any DEQ recommendations for proposed rule adoptions and any other proposed actions.

During the public comment period, DEQ will host at least three Public Hearing to receive verbal comments on the proposed rules. DEQ will set meetings times and venues to encourage participation by the public and community representatives. DEQ may recommend that one of the public hearings be held before the EQC.

DEQ Recommendation to the EQC

DEQ will deliver its staff report, responses to comment, and proposed rules to the EQC ahead of the EQC meeting(s) where the commission will act on the recommendations. DEQ expects to make its recommendations so that the EQC may act prior to January 1, 2022.

3. Key Policy Considerations and Options

3.1. Overview

In this section of the report, DEQ presents an initial listing of key policy considerations and potential program options that it expects to be raised, discussed and refined during the scoping phase described in Section 2 of this report (beginning in July of this year). The policy considerations are legal, practical, economic and social concerns that decision-makers may take into account as they review proposed rules and program options. The key program options reflect DEQ's initial listing of some of the main choices to be considered in terms of *how* to achieve legal and other program goals and objectives.

These listings are presented to spur engagement in scoping. They do not reflect recommendations from DEQ, let alone any position of the EQC.

3.2. Policy Considerations

DEQ has identified many high-level policy considerations that could be taken into account as part of the work of developing recommendations to the EQC for cap and reduce programs. DEQ notes that some of these considerations were addressed in earlier legislative work related to Senate Bill 1530 (2020) and/or House Bill 2020 (2019). However, interested parties should understand that the EQC's authority and resources for cap and reduce programs are constrained in important ways. As a result, those following this policy development effort should not assume that tentative decisions reached in prior legislative efforts around greenhouse gas emissions reduction will necessarily be possible or advisable for the EQC. DEQ will work to fairly represent prior information and analyses developed in connection with these legislative processes, but parties should not assume that the EQC will reach the same conclusions. The EQC will make its own decisions, applying existing legislative authorities and the direction provided by the executive order.

As stated above, the following list of policy considerations is intended to spur engagement on how the scoping process is designed, and to begin helping to frame key questions and issues that should be taken into account as we begin to outline the policy development work that will then frame questions for the rules advisory committee(s), and ultimately the EQC.

- The EQC's existing authorities and policy direction from the Oregon legislature;
- The Governor's Executive Order and other relevant policy direction;
- Existing greenhouse gas emissions reduction programs in Oregon, at the federal level, and in other states, and the interplay between those programs and cap and reduce programs;
- The relative effectiveness of policy options in achieving the desired reductions in emissions, including consideration of the potential for programs to shift emissions outside of Oregon;
- Reducing the overall costs of achieving emissions reductions, and avoiding disproportionate cost impacts to particular sectors;
- The design of options that support full compliance;
- The relative economic, social, and public health impacts (positive and negative) of policy options;
- The equity impacts of policy options, and the cumulative environmental and public health impacts of policies on vulnerable communities, and ways to prioritize actions that will help address these impacts (including but not limited to climate impacts;)

- The potential fiscal impacts of policy options to consumers and businesses, including small businesses;
- The potential administrative burden to the agency and to regulated entities;
- The need for a well-designed program with clear expectations for covered entities;
- Limitations created by the responses to the COVID-19 pandemic, including the economic effects of those responses;
- The interplay between cap and reduce programs and other important governmental programs including, but not limited to, transportation management, regulation of utilities, energy facility siting, energy efficiency;
- The role of future innovation and technological developments; and
- The role of Tribes, local governments, communities and other partners in providing ongoing feedback to DEQ and the EQC in adaptively managing programs to reach to policy outcomes established by EO 20-04.

3.3. Initial Key Policy Questions and Options

DEQ will explore and refine policy options with the public and stakeholders prior to the initiation of the agency's formal rulemaking. There will be opportunity for participants to discuss various approaches before DEQ begins drafting options for a rules advisory committee to consider. To begin this dialogue and set up engagement for the scoping phase, however, this report describes an initial summary of key policy options that are likely to be considered in developing an emissions cap and reduce program.

3.3.1. Greenhouse Gas Emissions Reduction Goals, Sectoral Caps, Limits for Particular Entities, and the Trajectory(ies) of Reductions

The Governor's executive order sets out the emissions reduction goals consistent with recent science: Oregon will reduce its emissions at least 45 percent below 1990 levels by 2035 and at least 80 percent below 1990 levels by 2050. The order directs DEQ to establish cap and reduce program programs to reduce emissions consistent with these science-based goals from three sectors: (a) large stationary sources, (b) transportation fuels, including gasoline and diesel fuel, and (c) all other liquid and gaseous fuels, including natural gas. This list does not include all state-wide sectors or sources of greenhouse gas emissions. The cap and reduce efforts will assist in reducing emissions from some of the most significant sources in Oregon, however the cap and reduce program is only one element of multiple reinforcing policies and actions that will be necessary to achieve statewide emissions reduction goals. Actions in other programs may reduce compliance obligations for regulated entities under a cap and reduce program or programs.

One important set of policy questions is whether each of the three sectors specifically identified in EO 20-04 should be expected to achieve the same level of reductions, and whether that level is necessarily the same as the level described in the EO. Another important question is the *rate* of reductions over various time periods, and whether to consider factors such as technological and economic feasibility, the emissions reductions that are expected to be achieved through other complimentary programs, and whether to have a separate cap for each sector, or one overall cap (or some combination of the two).

A related set of issues is how to set limits for individual regulated entities within each sector. A cap or limit could be established either an absolute mass-based amount in tons of emissions, or as an intensity-based measure of tons of emissions per unit of output or activity, such as a quantity goods or delivery of an amount of energy. The first approach provides assurance of achieving overall mass-based emissions reductions, while the latter can more easily account for underlying fluctuations in the sectors of Oregon's economy covered by the program.

3.3.2. The Scope of Program Coverage, Greenhouse Gas Emissions Thresholds, and Regulated Entities

Determining the emissions threshold levels for potentially regulated entities involves a consideration of each sector's total emissions that are covered under the program and the number of entities within the sector that are covered. As threshold levels are lowered, more emissions are covered as more entities become regulated.

The EQC has authority to limit emissions from direct stationary air contamination sources and from indirect sources, such as fuel suppliers, and therefore could include either or both as points of regulation under the program. For example, large stationary sources, such as certain industrial or institutional entities, could be directly regulated for their emissions resulting from on-site fuel combustion as well as their emissions associated with other industrial or manufacturing processes. Under this approach, there would be a larger number of directly regulated entities. However, emissions from smaller sources could still be limited indirectly, through limits applicable to fuel suppliers for the emissions resulting from the fuel they supply to smaller sources (including residential and commercial customers).

Alternatively, all emissions from all fuel use could be regulated through fuel suppliers, leaving only the manufacturing process emissions of a small number of entities to be regulated directly. Placing the point of regulation upstream, with fuel suppliers, reduces the number of entities regulated by the program, simplifying the program in some respects. However, placing all or much of the point of regulation at the level of fuel suppliers raises other issues, including the need to maintain a competitive landscape between and among fuel suppliers.

Another aspect of the scope of cap and reduce programs is options to minimize leakage (shifting emissions, over time, to other jurisdictions where there is no or less stringent control of emissions). DEQ believes that, depending on the business sector and how a program is designed, there are risks that cap and reduce programs can result in transferring activity and emissions out-of-state rather than accomplishing overall emissions reductions. This is particularly the case with emissions from electric generation, where in-state generation can readily be shifted to out-of-state facilities. If an emitting entity under the Oregon cap and reduce program shifts activity and therefore emissions at little or no cost to outside of Oregon, such shifts would undermine the broader goal of Oregon "doing its part" to reduce global emissions in addition to harming Oregon's economy.

As described in Section 1.2, the EQC likely does not have authority to regulate emissions occurring outside the state. This includes emissions from electricity generation outside of Oregon. Oregon obtains a portion of its electricity from imports of power generated from fossil-fuels (coal and natural gas). In fact, about 75% of the greenhouse gas emissions associated with generation of electricity consumed by Oregonians comes from generating facilities located outside the state. The EQC cannot regulate emissions from fossil-fueled electric generation outside of Oregon, even if the electricity is used within Oregon.

Furthermore, if the EQC were to regulate the emissions from electric generation in Oregon, there is a risk that energy suppliers (particularly those with obligations to supply power at least cost) would shift their resource utilization out of state. This form of leakage is a major policy issue in program design, particularly in the electricity sector. As a result, other programmatic approaches may be needed to effectively address greenhouse gas emissions associated with the electricity sector.

Program design elements regarding coverage and thresholds may vary across the program in response to leakage concerns, as well as differing considerations for the potentially regulated entities, trade-exposed industries, and covered sectors.

3.3.3. Distribution of Compliance Instruments

The EQC does not have the authority to charge a price for compliance instruments. Therefore, it is likely that the EQC cannot hold an auction to sell compliance instruments, and will need to consider forms of direct distribution of some level of instruments to regulated entities for their use to demonstrate compliance.

How DEQ distributes compliance instruments to each regulated entity may differ by sector and may depend on whether the emissions limit is an absolute mass-based emissions metric or an intensity metric. In either case, baselines would need to be established to set the level(s) of initial distribution of compliance instruments. Baselines might be set using total emissions or an emissions intensity per quantity of fuel, activity, product, or some other measure. Baselines would also need to be set considering an appropriate historical period, particularly given the recent economic upheaval resulting from the COVID-19 pandemic. On a going-forward basis, the amount of compliance instruments distributed may need to take into account new entrants into regulated sectors, the exit of regulated entities, as well as sectors where market shares are highly dynamic over time.

3.3.4. Cost Effectiveness and Cost Containment

Some regulated entities will have lower marginal costs of reducing emissions and may find it relatively inexpensive to "over-comply" with a cap and reduce program, while other sources will have higher costs. As a result, it may be desirable, in terms of overall cost effectiveness, to allow and even facilitate voluntary market transactions between regulated entities (trading). Program design should consider this while also taking into account risks of market manipulation, the stability of price signals, and transparency to the public of the costs of the program.

Another important design question will be measures to moderate compliance costs so that regulated entities have a stable, predictable pathway for business planning and making investment decisions. There are a number of design elements that could be employed to contain compliance costs. Trading of compliance instruments, as described above, is one of these. To allow for trading, the program would need to be designed so that a compliance instrument for one regulated entity would be equivalent to and tradeable with an instrument held by another entity. If cross-sector trading would be allowed, then instruments would likely need to be equivalent across sectors. Trading of compliance instruments would establish a secondary market for those instruments. If appropriately designed and controlled, such a market could be an efficient means of achieving lower-cost reductions of emissions. Additionally, given the long-term nature of the program, periodic program reviews may be a useful design tool to account for changing economies and technologies over time.

A final program option that DEQ expects to be discussed in the coming months is allowing for the creation of alternative compliance instruments through voluntary actions that create reductions in emissions outside the regulated sectors and sources. To assure that greenhouse gas reduction requirements are met, the program would need to include mechanisms for advance review and approval of alternative compliance instruments for additionality and durability, along with monitoring and verification measures. If properly designed and monitored, alternative compliance instruments could increase the number of total compliance instruments available to regulated entities, which could mitigate the costs of compliance, while simultaneously producing greater overall emissions reductions.

There are well-developed programs that include standards for alternative compliance instruments. These programs include a wide range of emission reduction actions. Oregon's cap and reduce program could potentially utilize established programs, or could consider new programs, which would require a more significant investment of administrative resources. Ultimately, whether or how to include alternative

compliance instruments, including limits on their usage by, or availability for, regulated entities will be an important program design consideration.

3.3.5. Options to Avoid, Minimize and/or Reduce Environmental, Public Health and Adverse Economic Effects on Particular Communities and Economic Interests

Past policy development efforts have considered options to avoid or minimize effects of emissions reduction programs on particular communities (including communities disproportionately affected by climate change and other pollution) and particular economic segments of Oregon's economy (trade-exposed industry and small regulated businesses). More attention also is beginning to focus on cumulative effects of environmental and land use policies on disadvantaged communities as an important baseline that should be considered in developing any new policies. And, policy makers also have considered options to avoid or reduce potential price impacts to lower-income households. Options to achieve these policy outcomes can be complex, and often involve trade-offs between program effectiveness and equity consideration, or shifting of relative impacts to achieve more equitable results. DEQ expects that these issues will be raised during the scoping phase, and that options to address them will be an important part of the policy development process.

4. Next Steps

DEQ has presented a number of key legal and policy considerations and program options in this report, but is not making any design recommendations at this time. After delivery of this final report, DEQ will begin Phase 2 (scoping) with public meetings and workshops over the summer and into the fall of 2020 to discuss policy and program scoping.

Please visit DEQ's webpage specific to this topic of a cap and reduce program for updates and more information: https://www.oregon.gov/deq/ghgp/Pages/ghg-cap-and-reduce.aspx.

Statewide Transportation Strategy: A 2050 Vision for Greenhouse Gas Reduction

Multi-Agency Implementation Work Plan
June 2020 - June 2022

OREGON DEPARTMENT OF TRANSPORTATION, OREGON DEPARTMENT OF LAND CONSERVATION AND DEVELOPMENT, OREGON DEPARTMENT OF ENERGY, OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

PURPOSE

This document represents a collaborative work plan to reduce greenhouse gas (GHG) emissions from transportation. Oregon Governor Kate Brown called for the agencies of Oregon Department of Transportation (ODOT), Department of Land Conservation and Development (DLCD), Department of Environmental Quality (DEQ), and Department of Energy (DOE) to identify implementation actions to reduce GHG emissions. The basis for the work plan is the *Statewide Transportation Strategy: A 2050 Vision for Greenhouse Gas Reduction* (STS). The STS is Oregon's carbon reduction roadmap for transportation and includes strategies for substantially reducing GHG emissions. More information on the STS is provided in the Background section below.

This STS Multi-Agency Implementation Work Plan covers a two year period, from June 2020-June 2022. The four agencies are committed to undertaking the actions and tasks described herein in support of reducing statewide GHG emissions from transportation. The agencies will continue to meet regularly and will revisit the work plan as needed to address unforeseen opportunities and challenges and make necessary adjustments to this document. At the end of the two year period, the agencies will develop a new work plan which is likely to include a continuation of some of the actions but also new and additional actions to reduce transportation's carbon footprint and to demonstrate an ongoing and long-term commitment to addressing Oregon's climate crisis.

BACKGROUND

The *Statewide Transportation Strategy: A 2050 Vision for Greenhouse Gas Reduction* was completed in 2013, following Legislative direction to identify ways to reduce transportation-related GHG emissions. It was developed over a three-year period with extensive stakeholder engagement and technical analysis. Throughout the development process, ODOT worked in close collaboration with sister agencies including: DLCD, DEQ, and DOE. This collaboration was essential to identifying actions that cross agency authorities. In addition, actions that fall under the authority of local jurisdictions, businesses, and the public to

implement were identified and resulted in a comprehensive approach to GHG emission reduction for transportation.

Six categories of strategies and 133 elements were identified in the STS. The categories included:

- **Vehicle and Engine Technology Advancements** – Strategies in this category focus on a transition to more fuel-efficient vehicles, improvements in engine technologies, and other technological advancements. Example elements include Zero Emission Vehicle (ZEV) programs, electric vehicle charging infrastructure, and fleet turnover to a greater share of electric or low carbon fuel vehicles.

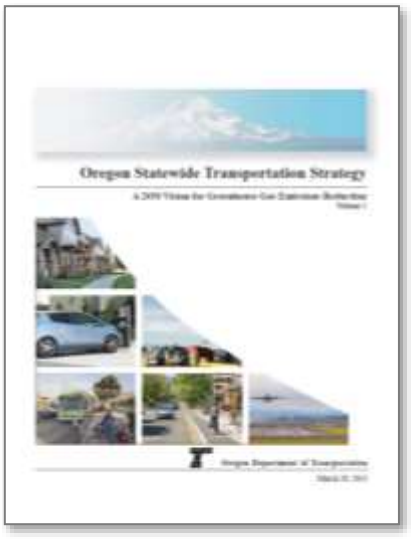
- **Fuel Technology Advancements** – This category focuses on cleaner and less carbon-intensive fuels.

- **Systems and Operations Performance** – Strategies in this category focus on reducing stops, starts and idling through technology, infrastructure investment, and operations management. Example elements include in-car displays that notify the driver of their fuel efficiency as they travel, providing real time information on crashes and delays, promoting vehicle-to-vehicle communications, and supporting autonomous vehicles.

- **Transportation Options** – Strategies in this category focus on managing travel demand and encouraging a shift to transportation modes that produce fewer emissions and provide for the more efficient movement of people and goods. Example elements include providing park-and-ride facilities, promoting ride-matching services, adding biking and walking infrastructure, enhancing passenger rail services, and a significant growth in public transportation service.

- **Efficient Land Use** – Strategies in this category focus on infill and mixed-use development in urban areas to reduce demand for vehicle travel, expand non-auto travel mode choices for Oregonians, and enhance the effectiveness of public transportation and other modal options. Example elements include supporting mixed-use development, limited expansion of urban growth boundaries, and development of urban consolidation centers for freight.

- **Pricing Funding and Markets** – This category addresses the true financial, social, health, and environmental costs of using the transportation system and pricing mechanisms for incentivizing less travel or travel on more energy efficient modes. Example elements include transitioning to a user or mileage based fee, adding a carbon fee, promoting pay-as-you-drive insurance programs, and diversification of Oregon's economy.



Together, implementation of the strategies contained in the STS aid the state in achieving its GHG emission reduction goal. The state goal is to reduce overall emissions by 75 percent below 1990 levels by 2050. The STS vision achieves a 60 percent total reduction by 2050, which equates to around 80 percent per capita (Figure 1).

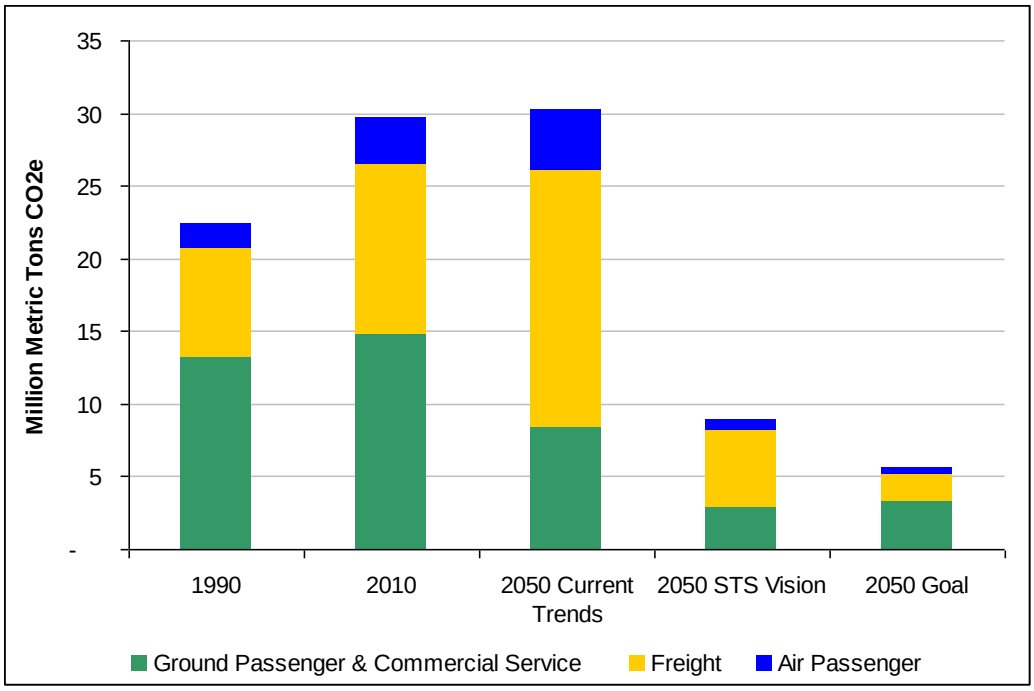


Figure 1: Projected Statewide Transportation Sector GHG Emissions (*STS 2013*)

Following completion of the STS, ODOT developed a Short-Term Implementation Plan (2014), detailing actions in the first five years that ODOT would undertake. In 2018 ODOT documented its progress in implementing the actions and in achieving the STS overall. Although progress was made on several of the actions, overall GHG emissions from transportation have increased in recent years. Longer term, emissions are expected to reduce but there is a significant gap between today's plans and trends and the STS vision in 2050. Thus Oregon is not on the right path to meet Oregon's goals for reducing GHG emissions and the STS vision (Figure 2).

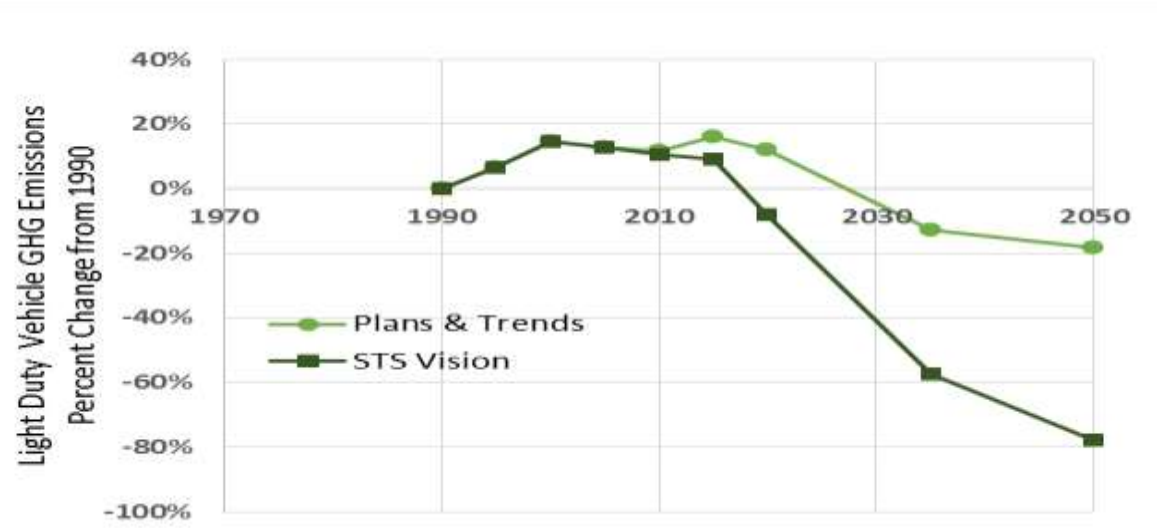


Figure 2: Projected Total GHG emissions of current plans and trends compared to the STS vision.

Although the plans and trends of today do not meet the STS vision, some progress has been made and the gap is achievable. The 2018 STS Monitoring Report found that the STS strategies are still the right actions to help meet Oregon's GHG reduction goals but more work is needed. With continued strong land use policies as well as increased investments and supporting policies in pricing, transportation options, systems and operations, and fuels and vehicles, Oregon can close the gap to meet the STS vision. Figure 3 shows the relative gap for each strategy group. Vehicles and Fuels is around half of the solution, but many other actions are needed to get back on track with the STS vision.

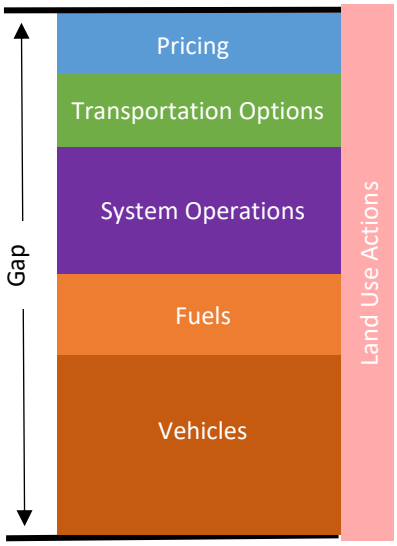


Figure 3: Needed Policies and Investments to Close the Gap between Plans and Trends and the STS Vision

While ODOT, other state agencies, local jurisdictions and more are individually looking at ways to enhance STS implementation efforts, the Governor asked the state agencies of ODOT, DLCD, DEQ, and DOE to identify collaborative STS implementation actions to help get the state back on track with the STS vision. In accordance the four state agencies met and identified actions requiring collaboration of two or more agencies. The actions selected were targeted at meeting the objectives listed below and that were thought to help move the GHG reduction needle, be cost-effective, and support equity and other state goals.

Some of the recommended actions are also included in Governor Brown's *Executive Order 20-04: Directing State Agencies to Take Actions to Reduce and Regulate Greenhouse Gas Emissions*. Also of note, the Executive Order increases the GHG emission reduction goal for 2050 from 75% to 80% below 1990 levels. It also establishes an interim goal of 45% below 1990 GHG emission levels by 2035. In general, the Executive Order covers agencies beyond ODOT, DLCD, DOE, and DEQ, and has actions in addition to those in the STS. Therefore, this document does not reference all requirements in the Executive Order but instead highlights any that relate to the STS and the collaborative work of the four agencies.

OBJECTIVES

The overall objective of the STS multi-agency implementation effort and this work program is for the four state agencies to support realization of the STS vision and to work together cooperatively to help reduce Oregon's GHG emissions from transportation. State agencies can only support a fraction of the work needed to realize the STS vision but can implement key enabling strategies that support broader electrification of vehicles in the state, transition to cleaner fuels, and transportation demand management, to name a few. Thus, the actions identified in this document will not significantly reduce emissions by themselves but are the foundational elements to moving in the right direction.

To move in the right direction of the STS vision, actions should be responsive to achieving the following sub-objectives:

- **Reduce Vehicle Miles Traveled Per Capita**

The predominant mode of transportation in Oregon, like elsewhere in the United States, is driving a vehicle. Vehicle miles traveled (VMT) has increased in recent years with more people moving to the state, but statewide per capita VMT has flattened. This trend varies by geographic area. The current mix of vehicles on Oregon's roadways is fairly dirty, making the emission profile of VMT a significant factor. Strategies that help to reduce VMT will help to in-turn reduce GHG emission, especially in the short-term. VMT can be reduced by strategies that reduce drive-alone trips and support people telecommuting, taking the bus, biking, walking, or similar modes of travel. Supportive land use efforts are needed to develop our urban and suburban communities so that homes, jobs, services and shopping are in close proximity and can therefore be easily accessed on foot, bike, or bus. Carpooling, transit, biking and walking all help reduce emissions by transitioning trips to higher capacity, lower emitting modes.

- **Support Use of Cleaner Vehicles and Fuels**

Even as per capita VMT has flattened out, it should be recognized that those trips need to be made in cleaner vehicles using cleaner fuels. Thus strategies that target lower emissions of vehicles and fuels are essential. This fact is evidenced by the 2018 STS Monitoring Report, which found that over half of the effort needed to achieve the STS vision is under vehicles and fuels. A holistic de-carbonization approach will not be a one-size-fits-all, but rather a combination of a greater proliferation of electric vehicles, hybrids, and low-carbon fuels across all modes of transportation.

- **Consider GHG Emissions in Decision-Making**

The Governor's Executive Order directs State Agencies to consider and integrate climate change impacts and GHG emissions reduction goals into their planning, budgets, investments, and policy making decisions. Accordingly, the four agencies will strive to consider GHG in their decision-making, and strategies selected for the multi-agency STS implementation effort should support efforts that result in more informed decision-making and solidified actions that help to reduce GHG emissions. This extends to supporting GHG in decisions that the agencies influence as well, such as DLCD and ODOT over local planning and implementation.

All of these sub-objectives will need to be balanced with other goals such as economic development and equity. Some in fact promote these goals, such as increased multi-modal options for all Oregonians, which has particular benefit to the one-third of Oregonians who are too young, old, infirmed, disabled or cannot

afford to drive a car. Many of the actions identified in this document will have co-benefits far beyond GHG emission reduction, such as improved health, and reduced traffic congestion.

As the work plan is implemented and future actions are identified, concerted efforts will be made to identify, address, and integrate diversity, and climate justice and equity throughout Every Mile Counts efforts.

Equity

- Climate Justice: the agencies recognize that the communities least responsible for climate change – such as black, indigenous, communities of color, low-income individuals, and people living with disabilities – are likely the most impacted by climate change. These frontline communities are disproportionately affected.
- The four agencies shall conduct priority community engagement to and collaborate with these frontline communities when implementing the individual climate actions identified in this Work Plan.

The intent of engagement is to learn about the impacts of climate on frontline communities, and tailor implementation actions to address the disparities, barriers, issues, and opportunities these communities face.

PRIORITY EFFORTS

All six categories of the STS were reviewed by the four state agencies when identifying actions. Categories requiring cross-agency collaboration were identified and were further narrowed based on the objectives described above, effectiveness in reducing emissions, and ability to implement within two years. Actions were also identified to demonstrate state agency leadership on issues and "walk our talk." Based on these factors and agency's abilities to influence, the following four priority efforts were identified:

- **Transportation Electrification**
  To help achieve the *Support Use of Clean Vehicles and Fuels* objective, transportation electrification was chosen as a focus area for the multi-agency work. Special attention will be placed on electrifying rural areas and increasing access for frontline communities and others. Each of the four agencies have a part in supporting electric vehicle (EV) implementation. DOE has been charged with EV tracking and actions to enable electrification; DEQ implements the Zero Emission Vehicle (ZEV) program and the Clean Vehicle Rebate program that support EV adoption; ODOT manages and leads state conversations around electrification, designates EV corridors, and upgrades the West Coast Electric Highway; and DLCD supports transportation electrification through land use provisions and model code on charging infrastructure. Combining and aligning efforts should help to better focus implementation and achieve additional results. Three actions are recommended under this category including: expanding EV incentive programs, developing an interagency ZEV action plan, and developing a transportation electrification infrastructure needs analysis. The latter of the three actions (needs analysis) is now a requirement according to the Governors Executive Order.

- **Cleaner Fuels**
  Also furthering the objective of *Support Use of Clean Vehicles and Fuels,* the agencies are looking at additional de-carbonization strategies that support increased use of lower-carbon fuels across urban and rural areas in the state. The Clean Fuels program and most actions fall primarily within the organizational responsibility of DEQ. DOE has definite supporting roles, and ODOT and DLCD can provide ancillary support to most actions. The actions recommended for cleaner fuels include: expanding the Clean Fuels program, developing an alternative fuels roadmap for state agencies, alignment of state agency policies to promote alternative fuels, truck alternative fuels study, and emission standards and requirements for medium- and heavy-duty trucks. Adjustments to the Clean Fuels Program is now a requirement according to the Governor's Executive Order.

- **Transportation Options**
  To directly *Reduce Vehicle Miles Traveled Per Capita* and promote alternative modes, transportation option strategies, also known as Transportation Demand Management strategies were selected. Although there are many potential demand management strategies, the four agencies narrowed in on two that require cross-agency collaboration. The first is a statewide trip reduction ordinance. This would require collaboration mostly between DEQ and ODOT, with support from the other two agencies. The other action encapsulates a body of work around parking management, primarily led by DLCD through integration in the Transportation Planning Rules (TPR), housing-related rules, and through guidance, with support from ODOT and some engagement by DOE and DEQ. Additional demand management strategies are being explored by ODOT and with other state agencies to increase telecommuting post COVID 19.

- **Local GHG Reduction Planning**
  While agencies need to *Consider GHG Emissions in Decision-Making*, it is also important for others to as well. Accordingly, the Governor's Executive Order explicitly directs DLCD to amend the Transportation Planning Rules (TPR) to require local governments and metropolitan areas to meet GHG reduction targets in their plans. The Executive Order also specifies that ODOT and DLCD must identify and provide technical and financial support.

To ensure this work is effective over time in achieving GHG reductions and the objectives described in this document, **performance measures** will also need to be developed.

WORK PROGRAM

Staff developed a work program to detail the actions within each priority effort, including scope, timing, and roles and responsibilities. The work program covers a two-year period, from June 2020 to June 2022. More details on each action can be found in Appendix A.

The work program includes actions above and beyond work underway or planned by the agencies and represents a substantial effort toward reducing GHG emissions from transportation. Staff and financial resources will be redirected as needed to prioritize implementation actions herein. Any funding or staffing needs above and beyond what can reasonably be made available are described later in this document.

The actions identified were selected cooperatively among ODOT, DLCD, DEQ, and DOE and the agencies agree that the work program is achievable.

ACTIONS

Each of the actions identified further the objectives set by the group and are thus organized under the primary objective they serve. More information on each action, including more detailed scopes, task descriptions, roles and responsibilities, level of effort, and timing can be found in Appendix A.

Objective: Reduce Vehicle Miles Traveled Per Capita

Although actions that further consideration of GHG emissions in decision-making are also likely to result in reduced VMT, two actions have been identified under "*Transportation Options*" that directly target people to driving alone less.

Transportation Options

Action: Statewide Trip Reduction Policy

A state trip reduction policy would require certain-sized businesses in certain geographic areas of the state (medium to large metropolitan areas) to plan for and implement techniques to reduce employees' vehicle miles traveled. Techniques may include telecommuting, flexible work schedules (to shift travel out of peak hours), free transit passes, parking cash-out programs, encouraging bike and pedestrian options, etc. These strategies work where transportation options are available and continued investment in bicycle and pedestrian infrastructure and public transportation is needed. Development of a Statewide Trip Reduction Policy would be led by DEQ, who would amend their Employee Commute Options (ECO) Rule. The rule currently only applies to Portland Metro and would need to be expanded to other areas and strengthened. In order to develop a Statewide Trip Reduction Policy, the following tasks are needed: research similar programs in other states and jurisdictions, engage stakeholders, and conduct a rulemaking process. The rulemaking effort is likely to be time and staff intensive, and is likely to be controversial. Once the rule is completed and a program developed, there would be a need for ongoing resources to implement the statewide trip reduction program including DEQ program management personnel, and funding for ODOT to provide technical support directly and through local transportation option providers.

Phase / Tasks	Timeline	Cost	Role	Staff
Background, Communications, Rulemaking	12-18 months	N/A	DEQ - Lead	1.00 FTE
			ODOT - Support	0.25 FTE
Implementation	Ongoing	$200,000 annually*	DEQ - Compliance	0.75 FTE*
			ODOT – Tech Support	0.50 FTE*

** Costs and Staff FTE are above and beyond current resources, thus requiring additional funding.*

Action: Parking Management

Parking management is a multi-faceted action that supports limiting the growth of parking spaces, more pay-to-park locations, higher parking rates, and other strategies that incentivize people not to drive to their destinations. It also provides important co-benefits such as reducing the number of mandated parking spaces allowing for building more units on the same amount of land. This action will be primarily led by DLCD, with support from ODOT and DEQ, and engagement of other entities as needed. The most direct implementation mechanism for parking management is through the update of the Transportation Planning Rules (TPR), as part of the Climate-Friendly and Equitable Communities (CFEC) action. An update for the TPR is required by the Governor for regulating GHG emissions in local planning (described below). The other mechanisms for implementation include the development of guidance and information. ODOT and DLCD will create informational materials and work with locals on parking management programs. This will primarily be done through the Transportation Growth Management (TGM) program. Because the TPR amendment process can be leveraged and the TGM program is already set up to support creation and dissemination of guidance materials, the overall level of effort for this action is projected as low. Based on TPR rule revisions, DEQ will explore updates to their air quality rules for indirect source emissions and parking restrictions as well as look into parking cash out elements as part of the Eco Rule.

Phase / Tasks	Timeline	Cost	Role	Staff
TPR Rulemaking – adding parking	18 months	Included in CFEC Action	DLCD - Lead	Included in CFEC Action
			ODOT - Support	
Outreach and Guidance	24 months	$100,000	DEQ - Compliance	1.00 FTE
			ODOT – Tech Support	0.25 FTE
Indirect Source Rulemaking – adding parking	12 months	Included in DEQ rulemaking	DEQ - Lead	Included in DEQ rulemaking

Objective: Support Use of Cleaner Vehicles and Fuels

Two of the priority efforts, "Transportation Electrification" and "Cleaner Fuels," are designed to achieve a mix of cleaner vehicles and fuels on Oregon's roads. Most of these efforts involve better understanding barriers and opportunities to converting the fleet through research and studies. These will help agencies identify and pursue the most effective actions. Some rulemaking and legislative support is also required.

Transportation Electrification

Action: Interagency Zero Emission Vehicle (ZEV) Action Plan

This action has been started by the Zero Emission Vehicle Interagency Working Group (ZEVIWG) and supports transportation electrification in Oregon by developing a statewide interagency Zero Emission Vehicle (ZEV) Action Plan. The intent of the Action Plan is to create a roadmap for efforts that will increase Oregonian's awareness of and access to ZEVs (such as expanding DEQ's EV incentive program), increasing access to charging infrastructure (including ODOTs task of

developing transportation electrification infrastructure needs analysis – described below), and increasing use of ZEVs at state agencies. The Action Plan will be developed by DOE in partnership with ZEVIWG, and implementation will be led by ODOT in close collaboration with DOE and others. Level of effort is anticipated to be low, although subsequent actions identified in the Plan will be require a more substantial level of effort.

Phase / Tasks	Timeline	Cost	Role	Staff
Interagency ZEV Action Plan	3 months	N/A	DOE - Lead	0.30 FTE
			ODOT – Support DEQ – Support	0.20 FTE
Implementation	Ongoing	TBD	ODOT – Lead	TBD
			DOE – Support DEQ - Support	TBD

Action: Transportation Electrification Infrastructure Needs Analysis

The Interagency ZEV Action Plan will help inform the direction of the Transportation Electrification Infrastructure Needs Analysis, which is called for in Governor's Executive Order. The Executive Order specifies that ODOT must complete a statewide transportation electrification infrastructure needs analysis by June 2021. The study must give consideration to rural needs, equity issues, and focus on helping to meet the goals for light-duty Zero Emission Vehicles set in SB 1044 (2019). While the focus is on light vehicles, the analysis will look at electrification across modes including micro-mobility (scooters and bikes), public transportation, and freight vehicles. The study will be led by ODOT with consultant support and in close consultation with DOE. Given the tight timeframes, complexity of data and information, and large number of interested parties and stakeholders, the level of effort on this action will be large, although over a fairly short timeframe. Other agencies beyond ODOT and DOE will need to participate in this effort, in addition to public utilities and others, whose role will be less significant.

Phase / Tasks	Timeline	Cost	Role	Staff
Transportation Electrification Needs Analysis	12-18 months	$250,000*	ODOT - Lead	1.00 FTE
			DOE - Support	0.50 FTE

** Costs are above and beyond current resources, thus requiring additional funding.*

Cleaner Fuels

Action: Expand the Clean Fuels Program

DEQ will enter into a rulemaking process for the Clean Fuels Program, implementing the direction of Governor Brown's Executive Order. The Clean Fuels Program will be extended and the requirements enhanced. Dedicated staff time will be needed for a few years to complete the rulemaking process. Concerted efforts will also be focused on making state agencies aware of the Clean Fuels Program, broaden engagement, and support overall use of lower carbon fuels across state agencies. This work will be led by DEQ with support from DOE.

Phase / Tasks	Timeline	Cost	Role	Staff
Amend Low Carbon Fuel Standards	27-33 months	$200,000	DEQ - Lead	1.00 FTE
State Agency Fuel Use	24 months	TBD	DEQ – Lead	0.25 FTE
			DOE - Support	0.25 FTE

Action: Truck Alternative Fuels Study and Implementation

The freight market has a large GHG emission profile and actions are needed to support reduced emissions. Accordingly, this action will focus on the potential for freight trucks to be powered by electricity, hydrogen, or other lower carbon fuels. Specifically, the study will identify fueling and infrastructure needs and associated approaches agencies may take to enable transition to alternative fuels. Work will be led by DEQ, with ODOT providing technical data and connections to the freight industry. Part of the work will rely on market data, while additional information will be needed from the freight industry directly. The goal of the effort is to support the freight sector, not to regulate fuels and technology. It is recommended that, given other priority efforts in this work plan, this Action not start until mid- to late- 2021.

Phase / Tasks	Timeline	Cost	Role	Staff
Truck Alternative Fuels Study	9 months	N/A	DEQ - Lead	0.25 FTE
			ODOT – Support	0.25 FTE
			DOE – Support	0.10 FTE
Implementation	Ongoing	N/A	DEQ – Lead	0.25 FTE
			ODOT - Support	0.25 FTE

Action: Adopt New Emissions Standards and ZEV Requirements for Medium- and Heavy-Duty Trucks

This action will propose that the Environmental Quality Commission consider adopting California's emission standards for new medium- and heavy- duty trucks and requirements for manufacturers to make zero emission medium- and heavy- duty vehicles available for sale in Oregon. Executive Order 17-21 directs DEQ to maintain consistency with California's zero emission vehicle regulation, including efforts to ramp up regulatory requirements. California recently adopted ZEV mandates and transition plans for medium- and heavy-duty trucks, and remains on track to adopt new emissions standards for diesel-fueled medium- and heavy-duty trucks. DEQ would need to work with partner agencies to adopt regulations quickly and

maintain parity with model years being developed by manufactures to meet California's standards.

Phase / Tasks	Timeline	Cost	Role	Staff
Support California's Development of New Regulations	8 months	N/A	DEQ- Lead	0.20 FTE
Adopt New Regulations	12 months	N/A	DEQ – Lead	0.33 FTE
			ODOE- Support	0.25 FTE
			ODOT- Support	0.25 FTE

Objective: Consider GHG in Decision-Making

There are several overarching actions that support multiple objectives, but that are foundational to making decisions considerate of GHG emissions. The bulk of that work focuses on "Local GHG Reduction Planning." In addition, an action item is included for "Performance Measures." Performance measures will be needed for all other actions in this document to ensure accountability and overall progress towards the objectives.

Local GHG Reduction Planning

Action: Climate Friendly and Equitable Communities (CFEC)

The Climate-Friendly and Equitable Communities action will include a set of rulemaking activities to integrate climate and equity outcomes into a number of land use and transportation planning administrative rules. The rulemaking effort will include Tribal consultation and broad community engagement. Rules that are likely to be amended include rule updates for Division 12 (Transportation Planning Rules), Division 44 (Metropolitan Greenhouse Gas Reduction Targets), Division 7 (Metropolitan Housing Rules), Division 8 (Interpretation of Goal 10, Housing) and Division 46 (implementing Housing Bill 2001.

One of the largest rulemaking efforts will be the update of the Transportation Planning Rules (TPR). Overall the TPR directs most cities and counties in Oregon to have coordinated land use and transportation plans. Rule amendments will require local governments to plan for transportation systems and land uses to reduce GHG emissions, including requiring transportation plans within metropolitan areas to meet GHG reduction goals. Strengthened requirements will include encouraging more housing mixed-use development in centers and along transit corridors; enhancing planning for pedestrian, bicycle, and transit networks; limiting how motor vehicle capacity-based performance standards may be used in planning; and adjusting how projects are prioritized and selected in transportation plans. Staff have also identified the opportunity to strengthen parking management regulations within the TPR, which is described above under the "Parking Management" action. There may also be opportunities within the TPR and in rules to ensure consideration of local electric vehicle charging needs and to address the state's housing crisis by increasing residential units in priority investment areas. This work item is anticipated to take a significant level of effort, requiring several DLCD staff and support from ODOT. DLCD will need to continue and perhaps intensify efforts to monitor and enforce local plans. In addition

ODOT and DLCD will examine changes needed to state plans, policies, and investments in order to enable implementation.

Phase / Tasks	Timeline	Cost	Role	Staff
Update Rules	18 months	$275,000*	DLCD – Lead	4.00 FTE 0.50 FTE
			ODOT – Support	1.00 FTE
Monitor and Enforce Program	6 months	N/A	DLCD – Lead	4.00 FTE
Enable Implementation	6 months	N/A	ODOT – Lead	1.00 FTE
			DLCD – Support	0.50 FTE

Action: Scenario and GHG Reduction Planning

In order to proceed with any further mandates for scenario and GHG reduction planning, studies will be needed to identify the best approaches for local GHG reduction planning and for associated costs and technical support needs. ODOT and DLCD will engage stakeholders to understand their needs and constraints and rely on lessons learned from the last ten years of scenario planning to complete this work. These efforts will be done prior to or in the early stages of rulemaking in order to appropriately scope the effort and identify policy options that can reasonably be implemented. Once the rulemaking is complete, ODOT and DLCD will need to provide technical and financial support to metropolitan areas in support of their planning. ODOT and DLCD could potentially support scenario planning for up to one metropolitan area at a time within existing resources. However, each effort may take around two years to complete and there are seven metropolitan areas in the state that will require new work. Thus the demand will likely exceed capacity and additional staff FTE and funding is critical. For the plans to be effective overtime, they will need to be implemented. The agencies will explore accountability mechanisms and how to fund climate-friendly projects and programs in local plans.

Phase / Tasks	Timeline	Cost	Role	Staff
Scenario and GHG Reduction Planning Feasibility Report	6 months	Included in CFEC Action	DLCD – Lead	Included in CFEC Action
			ODOT – Support	0.50 FTE
Scenario and GHG Reduction Planning Technical Assistance	Ongoing	$0.5M-$2M annually*	ODOT – Lead	2 FTE*
			DLCD – Support	1 FTE*

** Costs and Staff FTE are above and beyond current resources, thus requiring additional funding.*

Performance Measures

Action: GHG Reduction Performance Measures

To ensure that the state agencies and local governments are on track to meet GHG reduction goals and to effectively steer resources towards this effort, the agencies will develop GHG reduction performance measures. Progress will be measured in three ways. First, performance measures and targets will be developed using the trajectory of actions in the STS. Second, local performance measures for GHG reductions actions will be developed, monitored, and enforced. Thirdly, programmatic performance measures will be developed to demonstrate progress towards meeting the goals specific to each action outlined in this work plan. Overall performance tracked by metrics in the STS are unlikely to show large statewide GHG reduction differences in the short term. Performance measures at the local level will help to track small changes in different categories of approaches that will help determine where more effort might be needed to further overall GHG reduction goals. Programmatic performance measures specific to each of the work actions will demonstrate progress and allow agencies to course correct when necessary.

Phase / Tasks	Timeline	Cost	Role	Staff
Performance Measure Development	12 months	N/A	ODOT – Lead	0.50 FTE
			DLCD – Support	0.25 FTE
			DEQ – Support	0.25 FTE
			DOE – Support	0.25 FTE
Reporting	Ongoing	N/A	ODOT – Lead	0.50 FTE
			DLCD – Support	0.10 FTE
			DEQ – Support	0.10 FTE
			DOE – Support	0.10 FTE

TIMING

The actions described above will be sequenced over the next five years. Most actions will start in the next six months, while some of the work (e.g. Truck Alternative Fuels Study) is set to start in about a year. The general sequencing of the actions is shown in Figure 4 below.

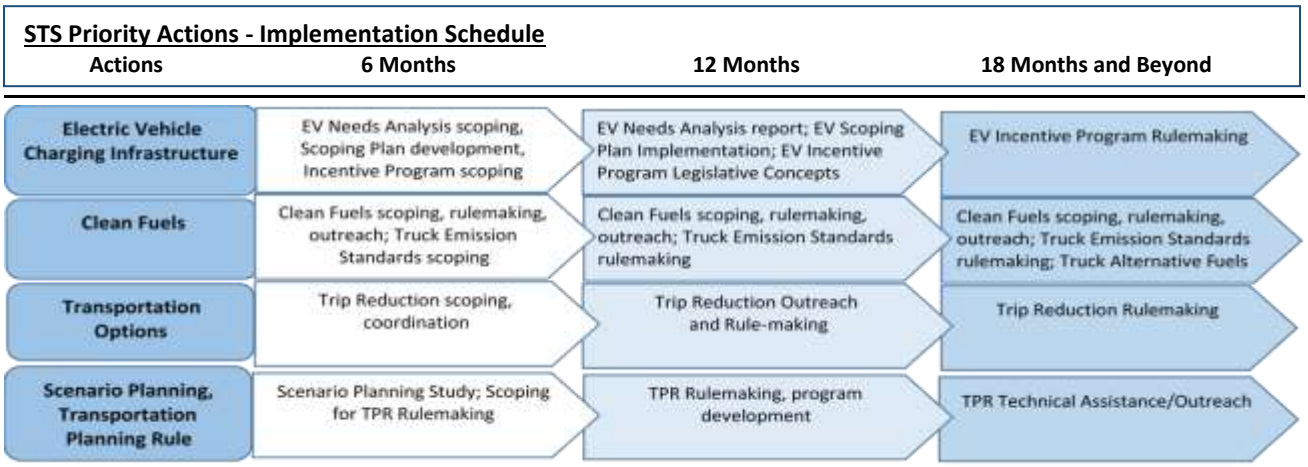


Figure 4: Timeline and Sequencing of STS Multi-Agency Implementation Actions

RESOURCE NEEDS

As shown in the timeline (Figure 4), much of the work is front loaded in the first two years. Such efforts will require at least 1-2 dedicated staff per agency over this time period. This demonstrates a significant commitment across state agencies towards helping to achieve the STS vision and GHG reductions from transportation.

Timelines may need to adjust as unforeseen circumstances arise or as opportunities or challenges present themselves. The timelines are also contingent of available resources. Some of the actions described above will require additional resources above and beyond what can be made available today. Specifically additional resource needs include:

- *Trip Reduction Ordinance*
  Additional staff are needed at DEQ (0.75 FTE) to implement and enforce the program once it is created and at ODOT (0.50 FTE) to provide statewide technical assistance to businesses. In addition about $200K annually is needed to pass through ODOT to local transportation options providers to provide location-specific and hands-on technical support.

- *Transportation Electrification Infrastructure Needs Analysis*
  To complete the required elements of the Executive Order, ODOT will need to hire a consultant and funding is needed ($250,000).

- *Climate-Friendly and Equitable Communities*
  Given other high profile rulemaking efforts and limited agency capacity, DLCD will need additional staffing support (for administrative tasks) for the CFEC rulemaking (0.50 FTE). In addition, $275,000 will be needed to support the rulemaking process and equity outcomes.

- *Implementation of Scenario and GHG Reduction Planning*
  To support more than one local GHG reduction planning at a time, staffing to ODOT (2 FTE) and DLCD (1 FTE) is needed as well as additional funding to pass through ODOT ($0.5M-$2M annually) to local areas doing the planning work.

Some of the needs described above are immediate, like the Transportation Electrification Infrastructure Needs Analysis, while others are longer term and support long-term implementation, such as the Trip Reduction Ordinance, Climate Friendly and Equitable Communities, and GHG Reduction Planning efforts.

SUMMARY

The ten actions identified in this work plan reflect efforts that require cooperation by two or more of the agencies, support STS implementation, and can help to achieve a cleaner Oregon. There are many additional actions needed, which will be the focus of future joint work plans that ODOT, DOE, DLCD, and DEQ are committed to developing every two years. In addition, individual agencies are pursuing or identifying climate actions which fall primarily under their implementation authority alone. For example, ODOT has established a Climate Office and is developing an ODOT-focused STS implementation plan that will identify actions the agency will undertake to support low carbon modes like biking, walking, and transit, increased telecommuting statewide, as well as transitioning to a vehicle miles traveled fee, and establishing other pricing programs, among other activities. DOE has many clean energy initiatives and has several efforts that support transportation electrification. DLCD is leading state climate adaptation

efforts, is pursuing integration of transportation and land use to shorten trip distances, and is working several efforts related to building codes and housing. DEQ established a climate group and is pursuing additional clean fuels and electrification efforts, in addition to setting up a new Cap and Reduce program.

The actions chosen for this first STS Multi-Agency Implementation Work Plan will be leveraged with and complement the other individual agency work described above. Efforts will also needed by local jurisdictions, the private sector, and the public in order to see significant GHG emission reductions. The state agencies are working to enable a cleaner future and support market transitions. Progress will be tracked over time and adjustments made to focus on the most effective actions and those that best address frontline community disparities.

The four agencies have finalized their formal commitment to this work through the development of a Memorandum of Understanding (MOU). The MOU, this Work Plan, and more information about the multi-agency STS implementation efforts can be found on the Every Mile Counts website at: https://www.oregon.gov/odot/Programs/Pages/Every-Mile-Counts.aspx.

State of Oregon Department of Environmental Quality

Preliminary Work Plan for Achieving Reductions in Methane Emissions from Landfills

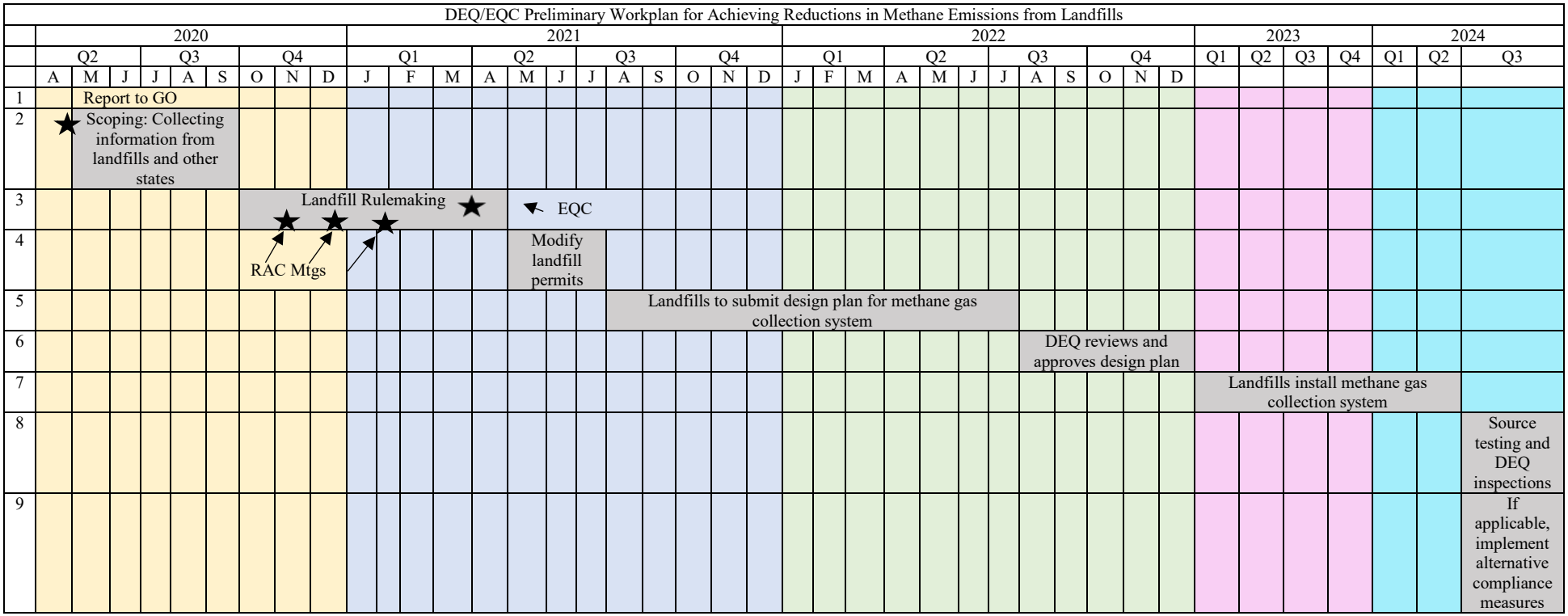
May 15, 2020

Contact: Michael Orman, orman.michael@deq.state.or.us
700 NE Multnomah
Suite 600
Portland, OR 97232

Background: Executive Order No. 20-04 (EO 20-04), signed by Governor Brown on March 10, 2020, directs state agencies to take actions to reduce greenhouse gas emissions, with the purpose of achieving reductions of at least 45 percent by 2035 and 80 percent by 2050. One of the specific actions that is directed by EO 20-04 is for the EQC and DEQ to "take actions necessary to reduce methane gas emissions from landfills, as defined in ORS 459.005(14), that are aligned with the most stringent standards and requirements for reducing methane gas emissions from landfills adopted among the states having a boundary with Oregon." EO 20-04, at 7.

Methane emissions from landfills represent an important element of Oregon's overall greenhouse gas (GHG) emissions. Methane is natural byproduct of the decomposition of organic material in landfills. Methane is a potent greenhouse gas, far more effective than CO_2 at trapping heat in the atmosphere over a 100-year period. In 2017, six of the twenty-five largest stationary sources of GHG emissions in Oregon were landfills. Existing and new large landfills are required to have emissions controls under federal regulations, and federal rules were updated in 2016. However, the EPA has delayed implementation of the new requirements.

DEQ has conducted a very preliminary analysis of standards and requirements for reducing methane emissions in states adjoining Oregon. For the most part, it appears that the State of California has the most stringent standards and requirements for methane reduction. To implement this section of EO 20-04 DEQ first will complete an initial documentation of the specific standards and requirements in adjoining states that are the most stringent (in terms of emissions reductions, including emissions avoidance). DEQ and the EQC will then undertake the steps described in summary form in the chart below and in more detail in the written work plan that follows the chart, in order to implement EO 20-04.



1. **Scoping:** During past legislative sessions, the AQ program conducted a high-level analysis of the effects of EQC adoption of California's Air Resources Board (CARB) rules for landfill methane. See https://ww3.arb.ca.gov/cc/landfills/landfills.htm. Applying the CARB regulations in Oregon would result in lower emissions thresholds for installing gas collections systems; increased type and frequency of surface monitoring and component leak testing; and shortened compliance schedules. At least some existing landfills would have to install new (or improve existing) landfill gas collection systems under these lower emissions thresholds. In addition, EO 20-04 requires that these standards and requirements be considered for industrial landfills as well as municipal solid waste landfills. Landfills would also be subject to increased types and frequency of surface monitoring. Results of this additional monitoring (one aspect of the CARB rules is a 200 ppmv trigger) may require more stringent gas collection requirements for some landfills after rules are implemented. In the scoping phase, DEQ also would seek input on whether alternative compliance measures for reducing the

production of methane should be considered in the rulemaking, including permit conditions providing for limits or arrangements to limit putrescible waste accepted by a facility.

2. **Rules Advisory Committee Consideration of Options/Public Engagements/EQC Consideration of Proposed Rules:** The goal of this rulemaking is to align DEQ's rules with the most stringent standards and requirements for reducing methane gas emissions from landfills adopted among the states having a boundary with Oregon, consistent with the direction of EO 20-04. Following the scoping phase described above, DEQ will convene a rules advisory committee to consider key policy questions, impacts of policy options, and proposed rule language, along with the fiscal impacts of proposed rules. The preliminary work plan calls for three RAC meetings between November 2020 and February of 2021. Following release of draft rules, and a public comment and hearing opportunity, DEQ will develop a final proposed rule, fiscal impact statement, and responses to comments. DEQ plans to submit the rulemaking proposal for EQC consideration and potential adoption at the commissions' May 2021 meeting.

3. **Modify air permits to include updated landfill rules:** DEQ will modify permits for all landfills affected by this rulemaking, either through a permit reopening or a permit modification. DEQ will provide the required public notice for these permit action.

4. **Design Plan:** Affected landfills will need to submit a design plan to DEQ for a gas collection and control system, or alternative compliance measures. The timing of these plans will be specified in the proposed rules, which will consider how to integrate work already occurring under federal regulations with new state requirements.

5. **DEQ Review and Approval of Design Plan:** DEQ will then review and either approve or disapprove the plans submitted by permit holders.

6. **Installation of a methane gas collection/control system or alternative compliance measures:** DEQ will include a compliance schedule to require installation of a methane gas collection/control system or alternative compliance measures in the permit addenda for all landfills affected by this rulemaking. The permittee must install and operate a gas collection and control system or alternative compliance measures within a period established in the new rules (18 months under the CARB rules)

7. **Compliance demonstration by affected landfills:** DEQ may require source testing of the methane gas collection/control system or other measures to demonstrate compliance with permit requirements. DEQ will perform inspections of all affected landfills.

8. **Alternative compliance measures**

a. Alternative methane control measures at landfills: A variety landfill operational measures help control environmental releases, migration of explosive methane, odor, and litter. Some of these measures are currently being implemented at some landfills. These measures often have co-benefits of also reducing methane releases from landfills. Below are some of the actions that might be

considered as alternative compliance measures under the proposed rules. The GHG reduction potential of these actions would need to be evaluated for specific landfills seeking an alternative compliance pathway.

Action
Install intermediate covers to be designed as oxidation covers at areas of landfills without active gas collection.
Install horizontal gas collection as waste is placed (reduced installation delay), consistent with current technologies.
Design alternative final covers to reduce GHG emissions.
Speed-up final closure/capping, LFG extraction well installation for completed landfill cells.
At identified methane emission hot-spot areas (where final closure is not forthcoming) install temporary, shallow (less expensive, removable) extraction wells.
Review site development plans (construction sequence plan) in detail to reduce to the greatest extent possible the area of "open/active" landfill. This is mainly done now to control leachate but it can also be done to enhance reduction of methane emissions.
Enhance daily covers. Using biocovers, better tarps, thicker daily cover could reduce methane emissions during non-operating hours.

b. Alternative measures to reduce incoming (non-food) putrescible waste to landfills: The actions below focus on reducing putrescible waste going to landfills, but specifically exclude actions to reduce landfill-bound food waste, which are covered in part 4E of EO 20-04. The other materials that cause landfill methane are cardboard, paper fibers, grass clippings, and wood. A small amount of agricultural waste (dead animals, manure, dairy waste) also contributes to landfill methane, but in quantities too small to evaluate as alternative measures. Landfills might recover some of these materials at their facilities, but in many cases would need to contract with other entities to fund their recycling/waste prevention programs. The reduction potentials presented below are statewide estimates as a point of reference.

Action	**Statewide Reduction potential (MTCO2e) / year** (based on 2018 waste generation/recovery)

Increase recycling of **paper fiber** waste by 15%	~120,000
Decrease generation of **paper fiber** waste by 15%	~450,000
Increase recycling of **cardboard** waste by 15%	~200,000
Decrease generation of **cardboard** waste by 15%	~250,000
Decrease generation of **wood** waste by 15%	~135,000

Alternative formats

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.state.or.us.