State of Oregon
Department of Environmental Quality Memorandum

Date: May 6, 2022

To: Environmental Quality Commission

From: Richard Whitman, Director

Subject: Item B: Oregon Clean Fuels Program Updates (Informational)
May 19-20, 2022, EQC Meeting

Why this is important

DEQ will update the commission about rulemaking in progress for the Clean Fuels Program in preparation for a request for EQC action this fall. The Clean Fuels Program is one element of DEQ's overall greenhouse gas (GHG) emissions reduction work and is a critical piece of the overall climate policy of the state. Its demonstrated success in reducing the carbon intensity of fuels used in Oregon since 2016 is foundational to the ongoing work to reduce greenhouse gas emissions in the transportation sector.

Prior EQC involvement

The 2009 Oregon Legislature directed the Oregon Environmental Quality Commission to adopt rules to reduce lifecycle emissions of greenhouse gases from Oregon's transportation fuels by 10 percent over a 10-year period. The 2015 Oregon Legislature removed the December 31, 2015, sunset date, of the authorizing statute and further directed the EQC to adopt rules for managing and containing the costs of compliance. The 2017 Oregon Legislature authorized additional provisions to manage and contain the costs of compliance with the program.

EQC adopted Phase 1 rules in December 2012, Phase 2 rules in January 2015, and several rule revisions in December 2015, April 2016, August 2016, November 2017, May 2020, and March 2021 to implement these legislative mandates, update to the latest science, and improve how the program encourages greater supply and use of clean transportation fuels in Oregon.

Background

The Clean Fuels Program implements a low-carbon fuel policy by: 1) identifying the carbon intensity, (lifecycle GHG emissions) for each type of transportation fuel used in Oregon; 2) establishing decreasing annual targets for the overall carbon intensity of transportation fuels used in Oregon; 3) working with fuel providers to track the volume and types of fuels they supply for use in Oregon and ensure that they are in compliance with the program's requirements; and 4) managing the transfer of credits between parties.

Businesses that provide fuels that are lower in carbon intensity than the annual target generate credits, while higher carbon intensity fuels generate deficits. Credits and deficits are measured in metric tons of GHG emissions. To comply with the annual targets, participants must retire enough credits to offset the

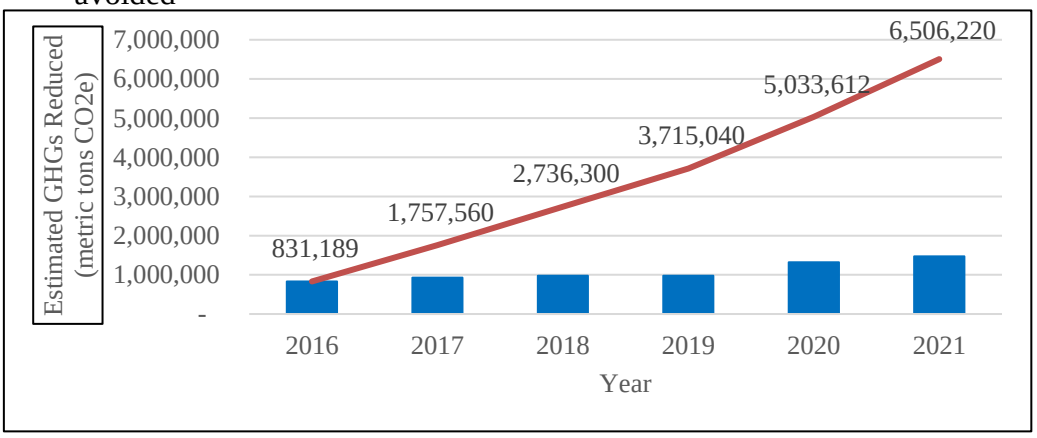
deficits they generate each year. They can either generate their own credits by providing lower-carbon fuels or purchase credits from others that do. Extra credits can be banked for future use or sold to other participants.

Importers of gasoline, diesel, ethanol, biodiesel, and renewable diesel and in-state producers of any transportation fuel are required to participate. Providers of fossil and renewable natural gas, fossil and renewable propane, electricity, hydrogen, and sustainable aviation fuel can voluntarily choose to participate in the program to generate credits. There are over 210 participants currently registered in the program – approximately 130 are required and 80 are voluntary.

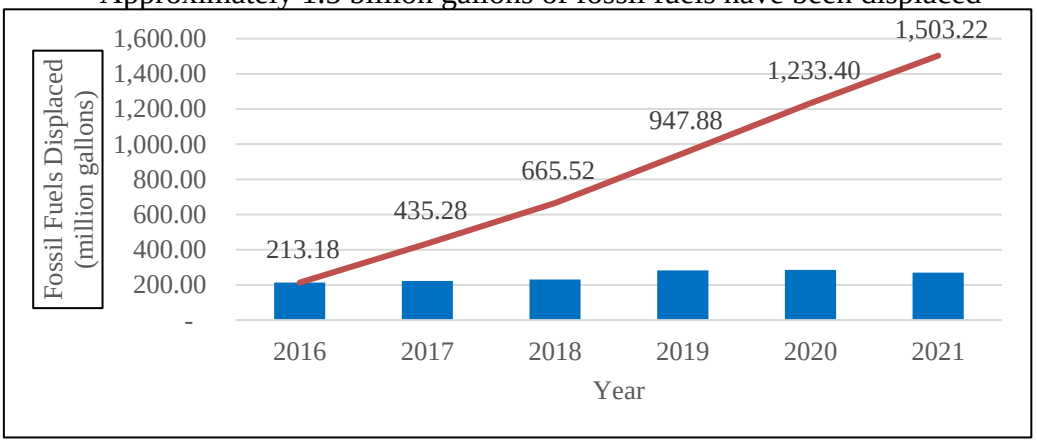
Benefits of the program

Since the beginning of the Clean Fuels Program in 2016 through 2021:

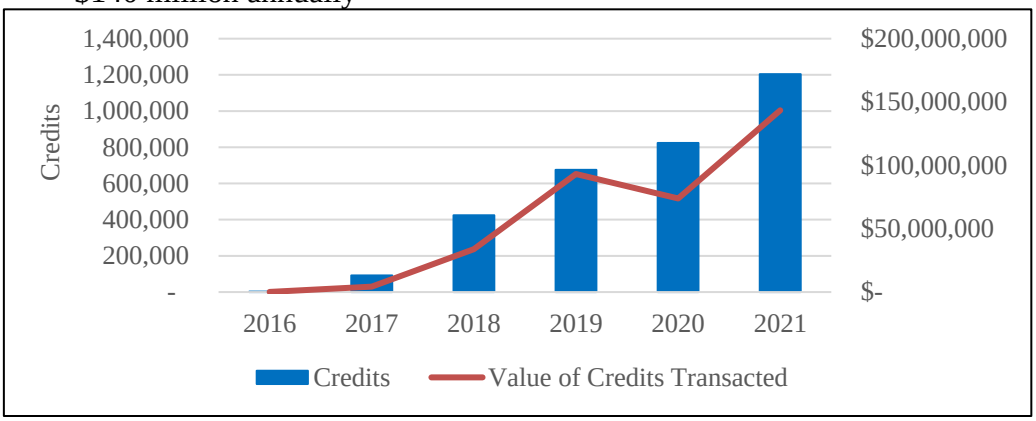
- Approximately 6.5 million metric tons of GHG emissions have been avoided



- Approximately 1.5 billion gallons of fossil fuels have been displaced



- The value of credits sold in the clean fuels market has increased to over $140 million annually



- The cost of lower-carbon fuels has decreased

Fuel	Avg Carbon Intensity[1] (gCO2e/MJ)	Avg Savings in 2021
Corn ethanol	55	$0.39 per gallon
Used cooking oil biodiesel	20	$1.16 per gallon
Soy biodiesel	55	$0.61 per gallon
Canola renewable diesel	45	$0.79 per gallon
Electricity in a light-duty vehicle	41	$0.08 per kWh
Electricity in a heavy-duty vehicle	28	$0.15 per kWh
Landfill gas	50	$0.34 per therm
Dairy digester gas	-250	$4.41 per therm
Renewable propane	45	$0.58 per gallon

- Oregon utilities[2] have made investments over $20 million to electrify transportation including:
  - Public chargers in Ashland, Beaverton, Cascade Locks, Cave Junction, Central Point, Clatskanie, Deer Island, Eugene, Florence, Grants Pass, Hillsboro, Klamath Falls, LaPine, Lebanon, Medford, Milwaukie, Myrtle Creek, Philomath, Portland, Rainier, Reedsport, Roseburg, Scappoose, St. Helens, Talent, The Dalles, Wilsonville, and more.

[1] Carbon intensity refers to lifecycle greenhouse gas emissions and includes extraction/production/processing of the feedstock through refining, transport to Oregon, and combusted in a vehicle. The units of carbon intensity are grams of CO2 equivalent per megajoule of energy. DEQ estimates the carbon intensity of fuels consumed in Oregon using the GREET model developed by the Argonne National Laboratory.

[2] For electricity used to charge residential vehicles, Oregon's electric utilities have the option to participate in the Clean Fuels Programs and aggregate the credits generated by their customers. Every six months, DEQ obtains registration data from the Oregon Department of Transportation and allocates registered electric vehicles (EVs) to the opted in utilities. DEQ then uses an estimation method to calculate the number of credits each utility receives based on the number of EVs registered and the CI of its electricity. The credits are sold and the revenue funds activities to encourage more transportation electrification. A summary of activities can be found: https://www.oregon.gov/deq/ghgp/cfp/Pages/utility.aspx.

- Oregon's first electric school buses in the Beaverton, Bend-LaPine, Centennial, Gresham-Barlow, Hillsboro, Newberg, Portland, Reynolds, and Salem-Keizer School Districts.
- Dozens of grants to community-based organizations to provide electric vehicles (passenger cars, vans, shuttle buses, tractors, mowers, all-terrain vehicles, garbage trucks, e-bikes) and chargers.
- Workforce training programs and chargers at Clackamas and Klamath Community Colleges.
- The Oregoin' Electric statewide, brand-neutral media campaign to increase awareness of electric vehicles to all Oregonians.

Studies to inform the rulemaking

DEQ contracted with ICF International to develop scenarios of which combinations of vehicles and fuels we might see in the future, and then determine what reductions in GHGs would result. Two scenarios were ultimately developed: one focusing on electrification and another that assumed additional usage of biofuels in combustion engines. DEQ also contracted with UC Davis to model the air quality impacts of an expanded CFP. Reducing GHG emissions from transportation has many co-benefits, including lower tailpipe pollution that causes localized public health impacts. This study found that an expansion of the program to a 37 percent decrease in carbon intensity is readily achievable, and that this would result in significant air quality benefits, decreasing premature mortality and other disease burdens. Avoiding those health impacts to Oregonians is estimated to bring $80-90 million per year in health benefits by 2035. The greatest benefits occur in areas with the most vehicle activity which are traditionally lower-income communities that may have environmental justice burdens.

Rulemaking objectives

The primary objective of the Clean Fuels Program Expansion 2022 Rulemaking is to consider expanding the program's carbon intensity reduction requirements beyond the currently adopted 10 percent reduction in average carbon intensity by 2025. Extending the program to 2035 will provide continued certainty for investment in and deployment of clean transportation fuels necessary to continue to decarbonize Oregon's transportation sector and transition the state away from over-reliance on fossil fuels.

There are several co-benefits associated with the expansion of the Clean Fuels Program including:

- Improvements to local air quality and public health outcomes,
- Transition to lower carbon liquid fuel substitutes for gasoline and diesel at commercial scale, at lower costs, and with existing vehicles and infrastructure,
- Deployment of zero-emission vehicles and infrastructure,
- Reducing the total cost of ownership for fleets using alternative fuels,

- Investments made to distribute clean transportation fuels such as electric vehicle charging and propane or compressed natural gas dispensers, and
- Reducing Oregon's reliance on fossil fuels and the exposure to price volatility of that international commodity.

The rulemaking advisory committee has 26 members representing the potentially affected industries and communities. A link to the advisory committee information and rulemaking webpage is included at the end of this report.

Key issues

DEQ asked the rulemaking advisory committee to consider the following questions:

- How should we think about the Clean Fuels Program targets in relation to the state's GHG reduction goals?
- How should complementary programs/policies, be considered, such as the Climate Protection Program, the renewable fuel standard, ZEV regulations, clean energy requirements, etc.?
- How do we use the long-term illustrative compliance scenarios to understand specific outcomes given the inherent flexibility of the program?
- What are the outcomes anticipated with new expanded targets? What are the pros and cons that we should consider and what weight or priority should they be given?
- How should co-benefits be weighed alongside the primary GHG reduction goals?
- Are there different considerations for the 2035 reduction levels versus interim years? How should the levels for interim years be set?

The illustrative compliance scenarios show that expected rapid electrification, particularly of light-duty vehicles, would provide nearly all credits necessary to achieve a program expansion of 25 percent by 2035 (compared with the objective of 10 percent by 2025 of the current program). This illustrates that, because of electrification, a 25 percent target could cease to incent other clean fuels this program has always encouraged in addition to electricity.

Those results prompted DEQ to evaluate the potential for all clean fuels, including renewable diesel, ethanol, as well as electricity, available to Oregon's transportation market through 2035. That evaluation resulted in a revised program level for 2035 of 37 percent carbon intensity reduction. DEQ is seeking further input on this recommended target revision from members of the Rules Advisory Committee and, later this year, the public.

Next Steps

The fourth and final meeting of the Rules Advisory Committee is scheduled for May 26. The meeting will focus on the fiscal impact statement staff are currently developing. Following that meeting, DEQ will open a public comment period this summer. After responding to comments, DEQ will finalize proposed rule for consideration by the commission at the September 22-23, 2022, EQC meeting.

Supporting materials

A. Link to Long-term Illustrative Compliance Scenarios:
https://www.oregon.gov/deq/ghgp/Documents/cfpIlluCompScenD.pdf
B. Link to Clean Fuels Program Review to the 2022 Legislature:
https://www.oregon.gov/deq/ghgp/Documents/CFP-ProgramReview.pdf
C. Link to UC Davis study - Modeling Expected Air Quality Impacts of Oregon's Proposed Expanded Clean Fuels Program:
https://www.oregon.gov/deq/rulemaking/Pages/cfp2022.aspx
D. Link to Clean Fuels Program rulemaking webpage, including advisory committee information:
https://www.oregon.gov/deq/rulemaking/Pages/cfp2022.aspx

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