Action: Clean Fuels Program Expansion 2022 Rulemaking

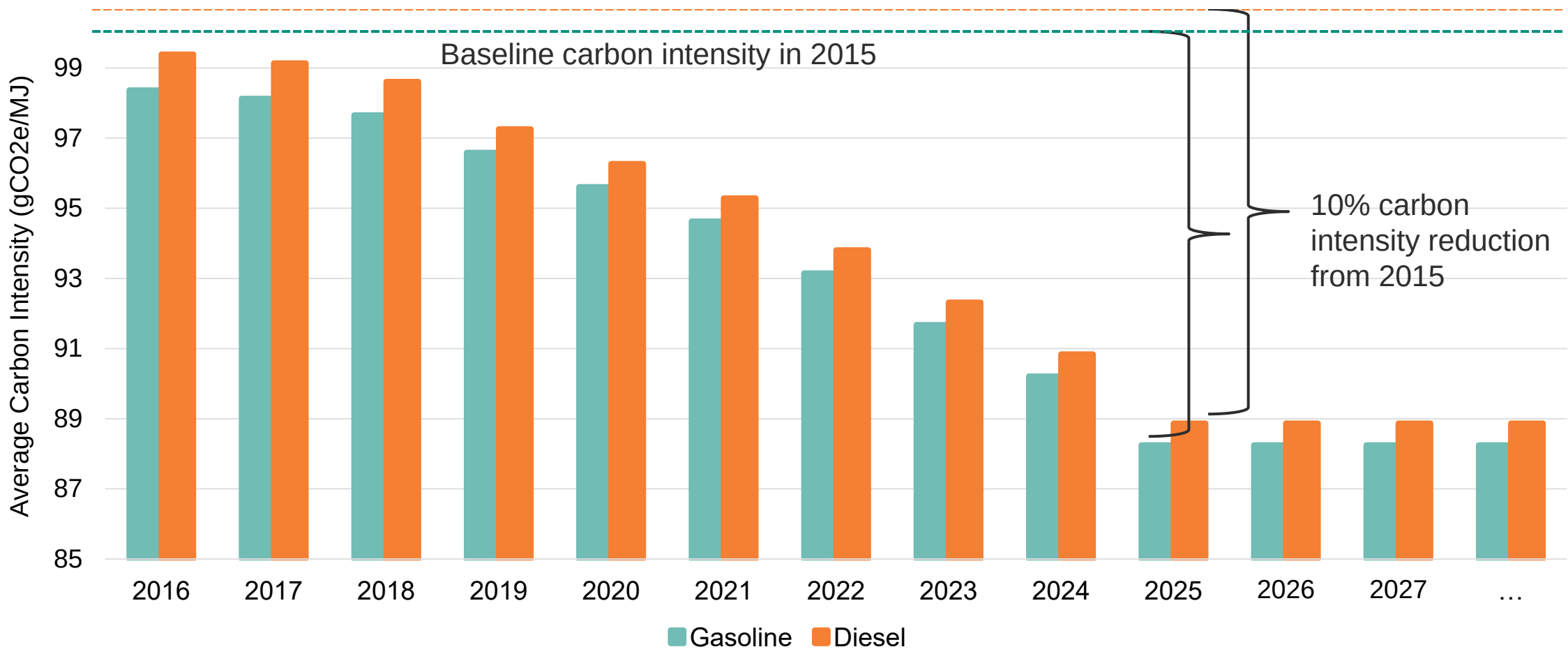
Oregon Environmental Quality Commission meeting

Item G

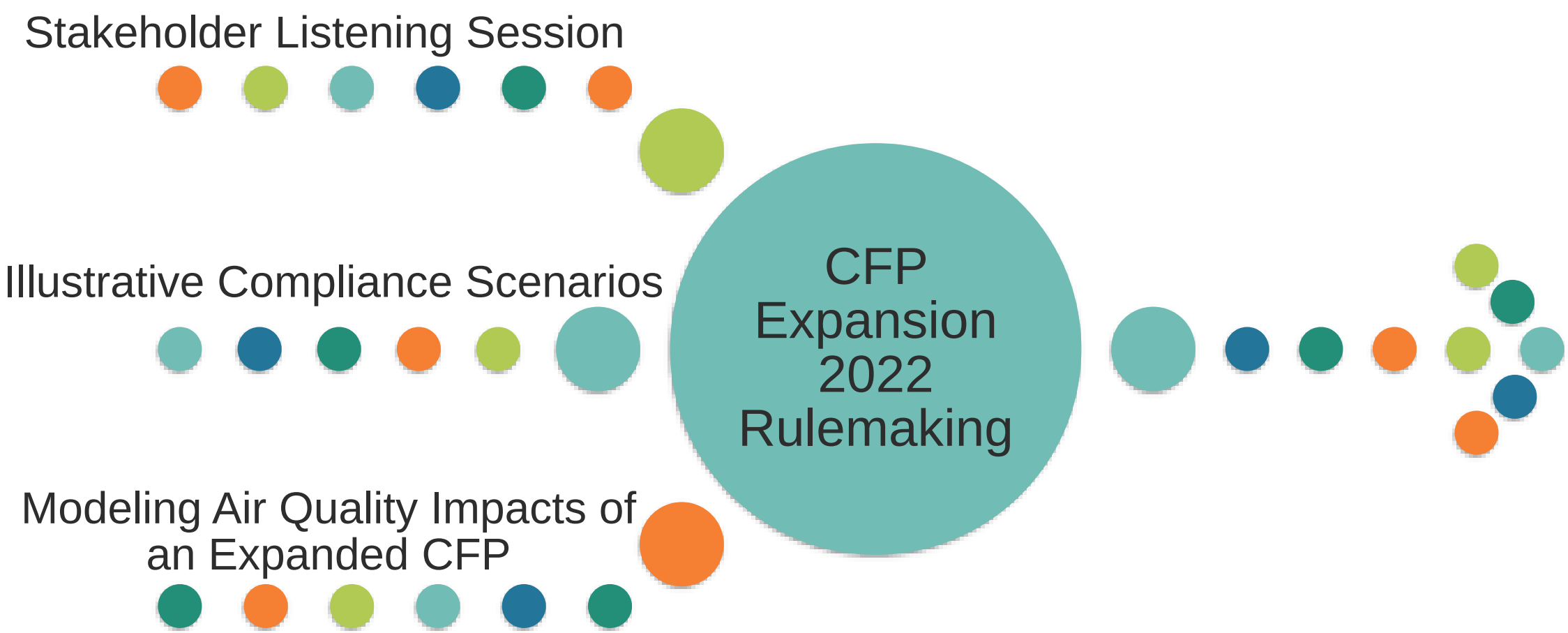
Sept. 23, 2022

Colin McConnaha, Manager, Office of Greenhouse Gas Program
Cory-Ann Wind, Oregon Clean Fuels Program Manager

Current Clean Fuels Standards



Pre-Rulemaking Activities

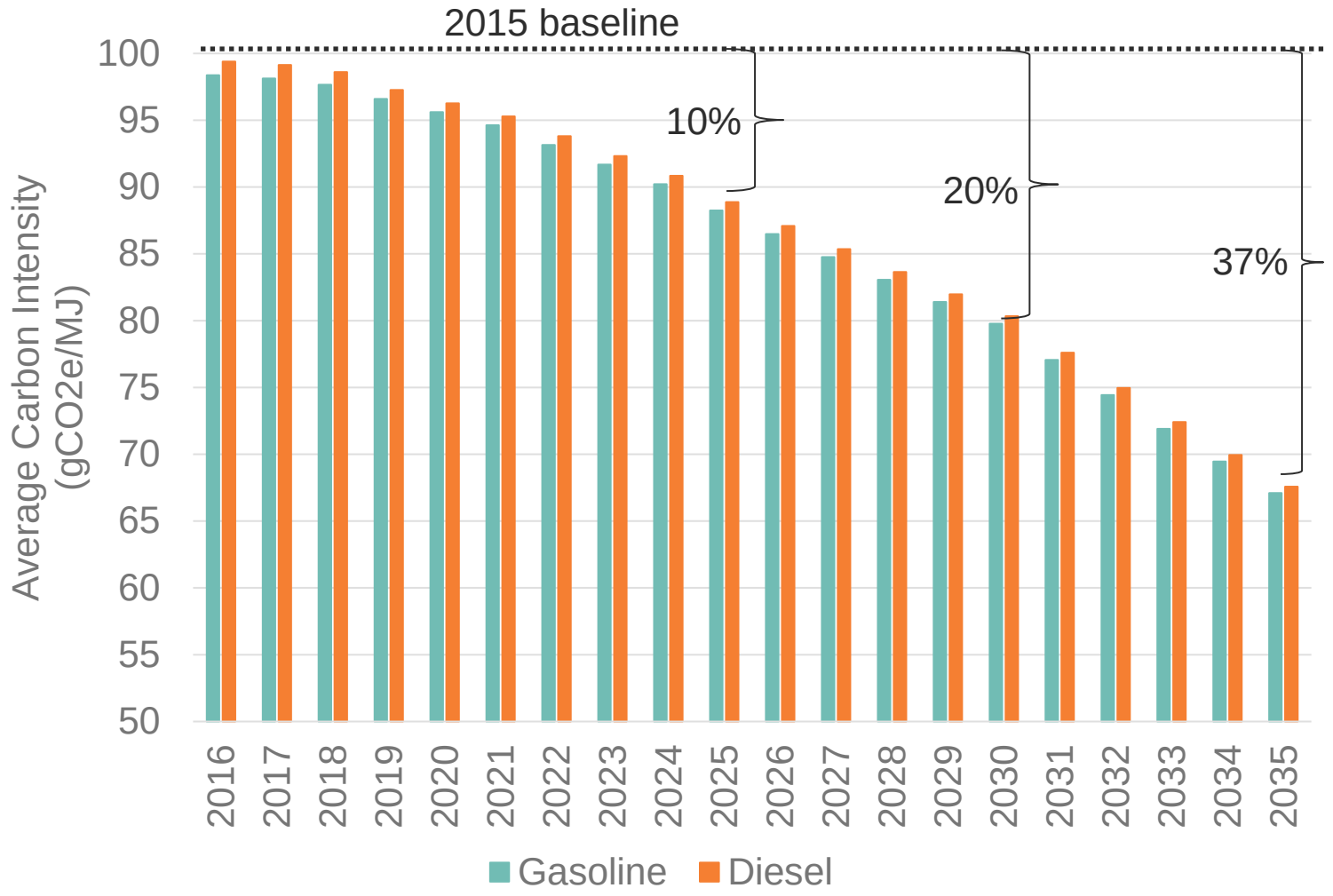


Stakeholder Listening Session

Fuel producers, marketers, distributors, consumers, and other interested parties directly and indirectly impacted by the program

- Strongly support performance-based programs
- Compliance scenarios show that targets beyond 25% in 2035 are feasible
- Strong cost containment and forecast provisions provide flexibility and safeguards against negative market impacts
- Periodic reviews are needed to show progress and remain aligned with other jurisdictions
- Incentives for hydrogen are needed

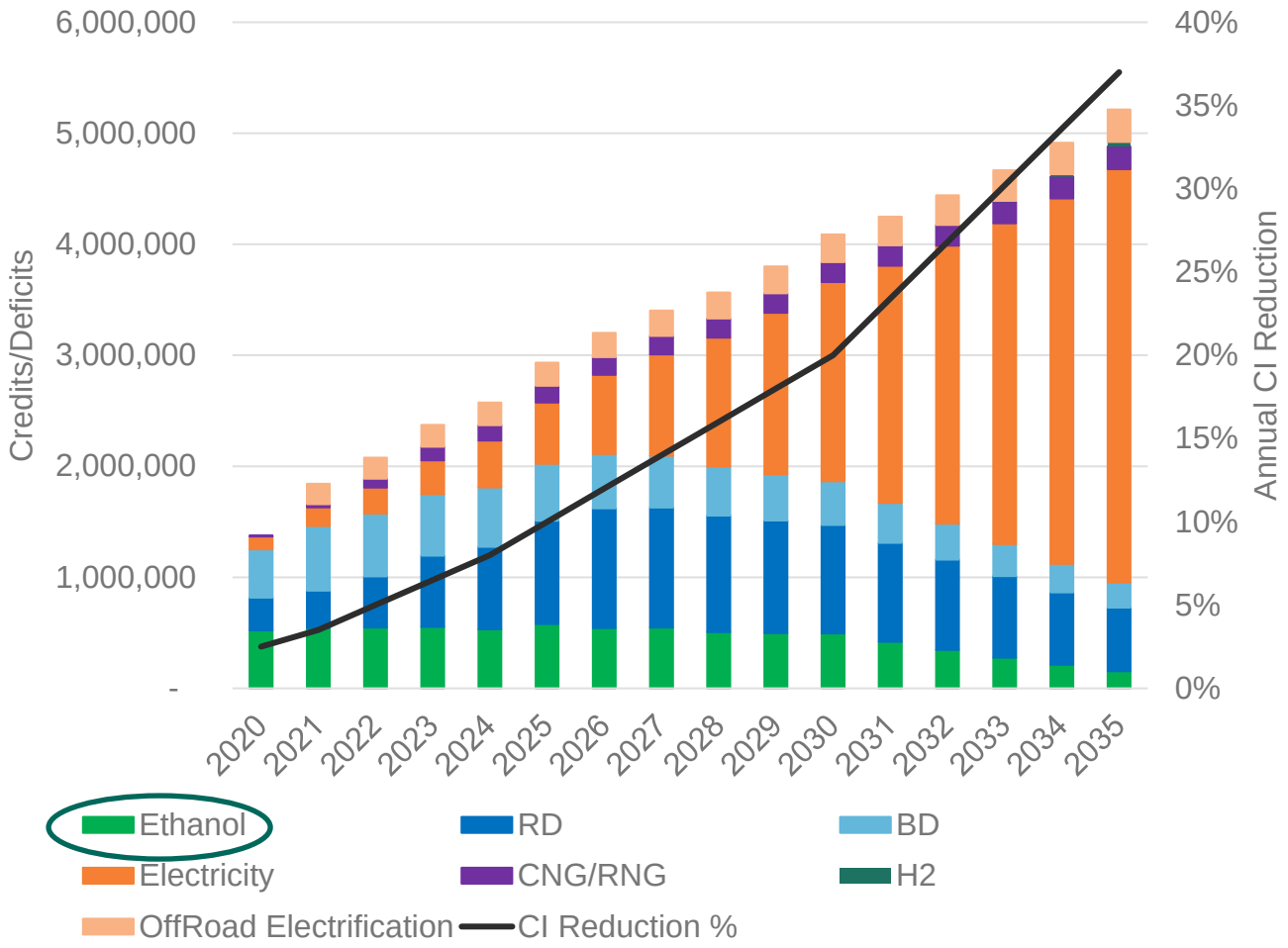
Proposed Clean Fuel Standards



Proposed expanded targets:

- 10% in 2025, 20% in 2030, and 37% in 2035
- 2% annual reductions from 2026 to 2030
- 3.4% annual reductions from 2031 to 2035

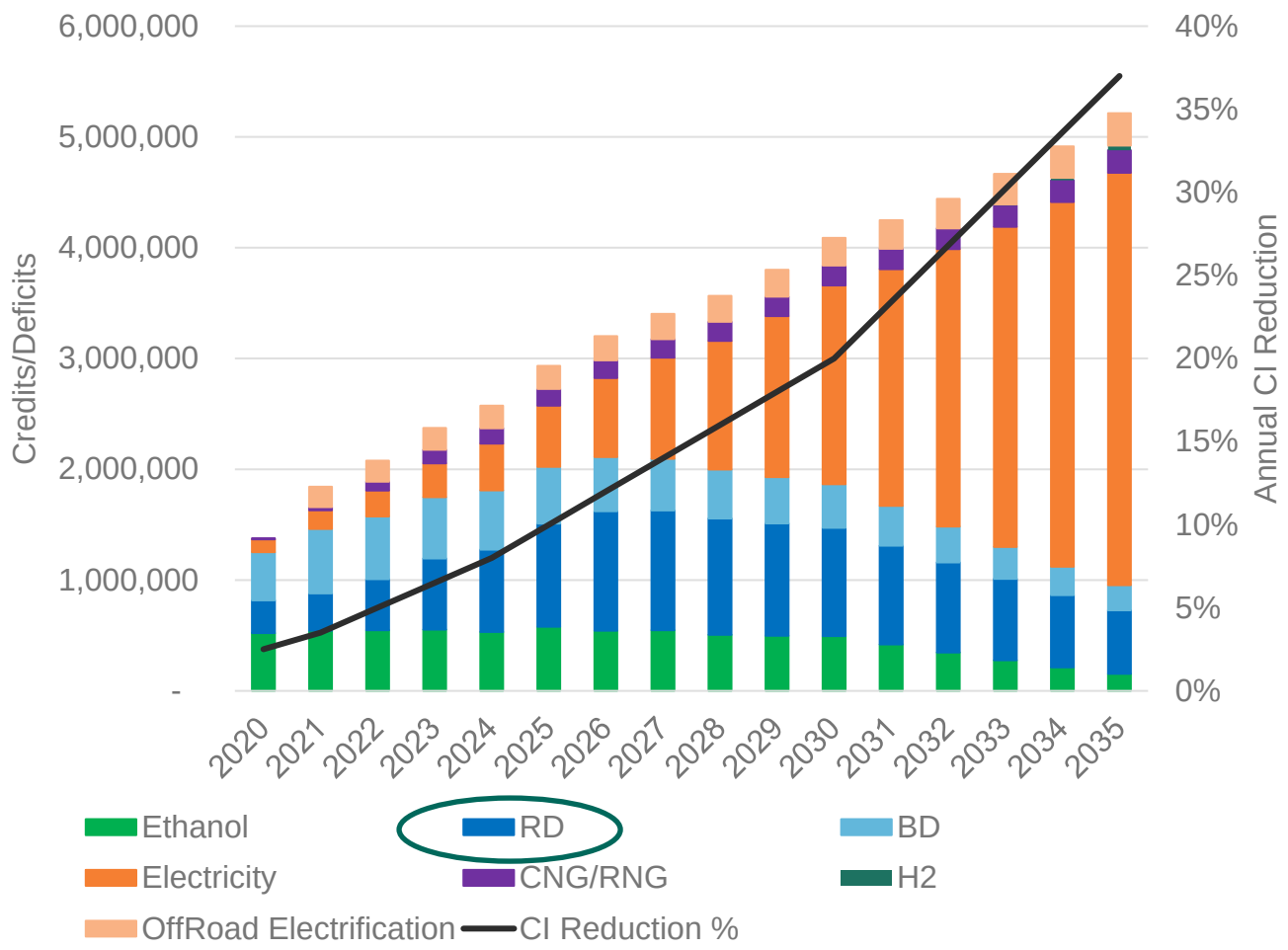
Expanded Program: Ethanol (Green)



Key considerations:

- Assumed E15 in 2035
- As of 2022, retail E15 is allowed
- E15/85 will be cheaper than E10
- The CI of ethanol has decreased from 64.5 to 52.9 gCO2e/MJ since 2016 and will continue to decrease
- Corn is the dominant feedstock
- Carbon Capture and Sequestration projects are coming on-line and reduce the CIs by about 30 gCO2e/MJ

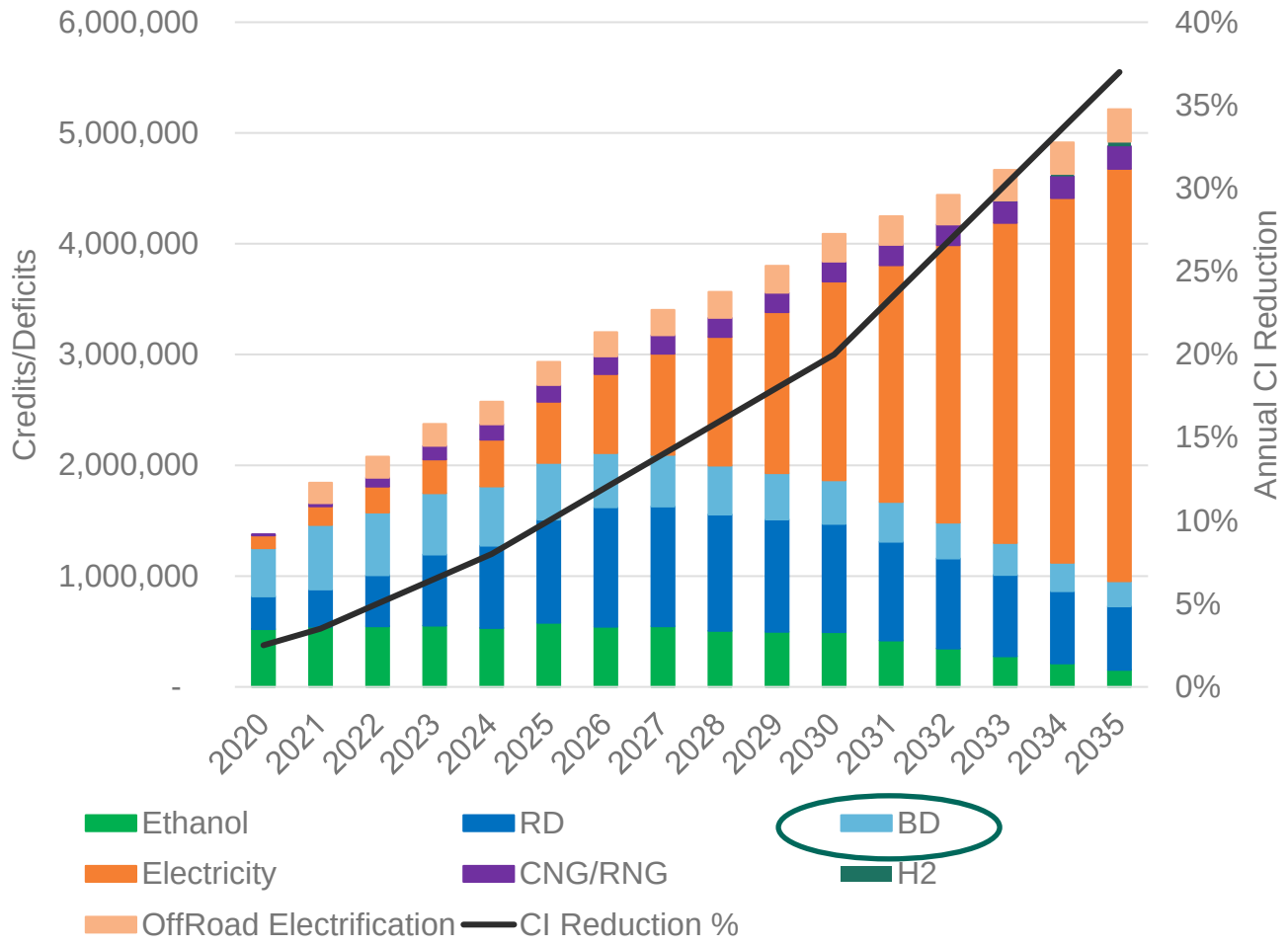
Expanded Program: Renewable Diesel (Dark Blue)



Key considerations:

- The blend rate has approached 6% and the scenario assumes 25% by 2035
- Consumers favor RD because it doesn't require changes in tanks or vehicles.
- Waste fats (used cooking oil and tallow) and virgin oils (soybean and canola) are the dominant feedstocks
- A large increase in regional RD production is anticipated in a few years

Expanded Program: Biodiesel (Light Blue)



Key considerations:

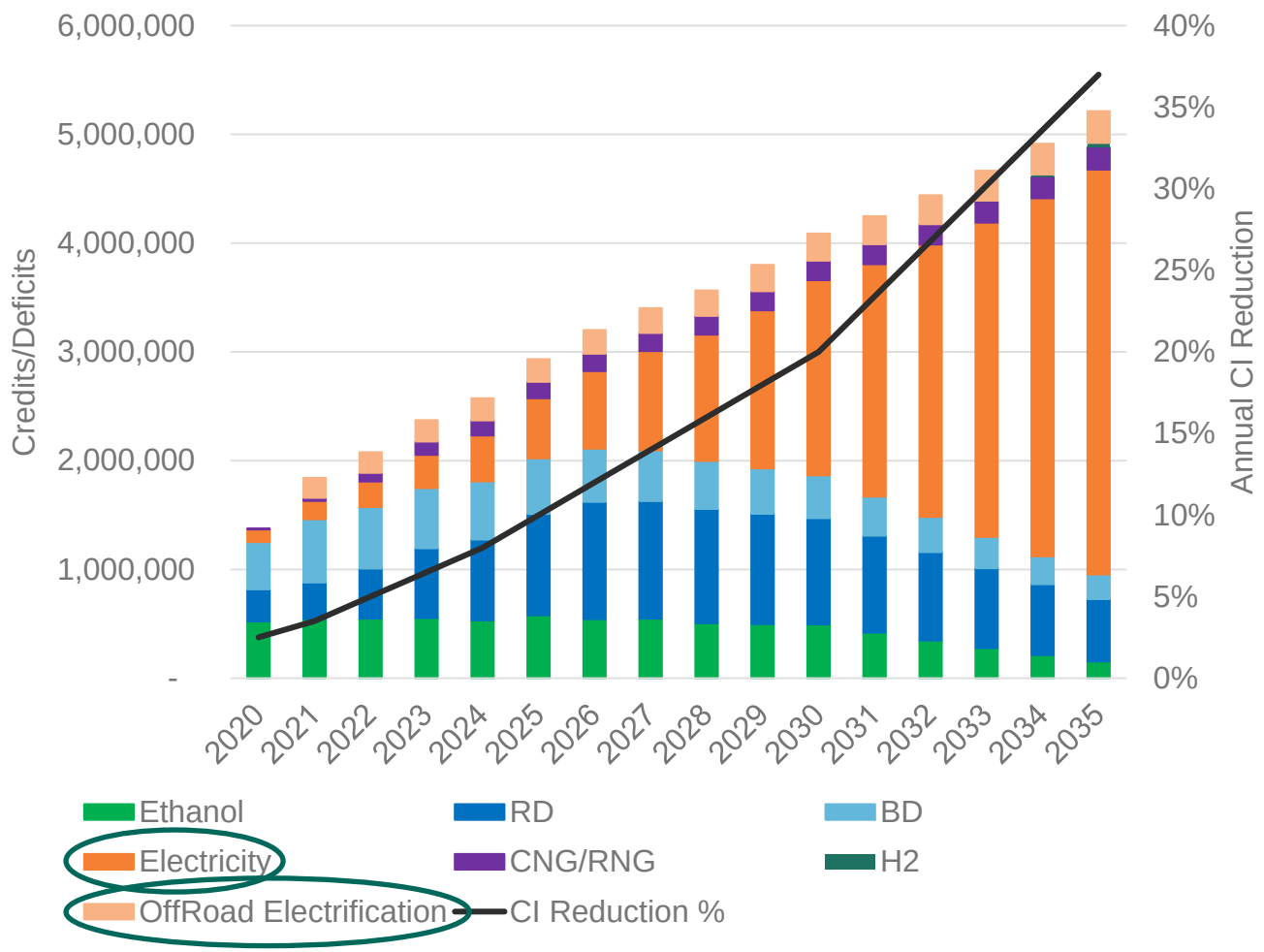
- While current blends are about 12%, the scenario assumed 10% in 2035
- B20 is often cheaper than B5
- A fleet will need to modify their vehicles to take blends higher than B20
- The CI of BD has decreased from 56.4 to 36.6 gCO2e/MJ since 2016
- Waste fats (used cooking oil and inedible corn oil) and virgin oils (canola) are the dominant feedstocks

Electricity Credit Generation

Residential	Public Transit (bus, rail, tram)	Transportation Refrigeration Units	Forklifts
• Utilities • Backstop Aggregator	• Transit agency	• TRU owner	• Forklift owner • Forklift operator

Public, workplaces, fleets, multi-unit dwellings	Cargo Handling Equipment	Ocean-going Vessel Shore Power	Airport Ground Service Equipment (proposed)
• Charger owner • Charger operator	• Charger owner	• Charger owner	• Charger owner

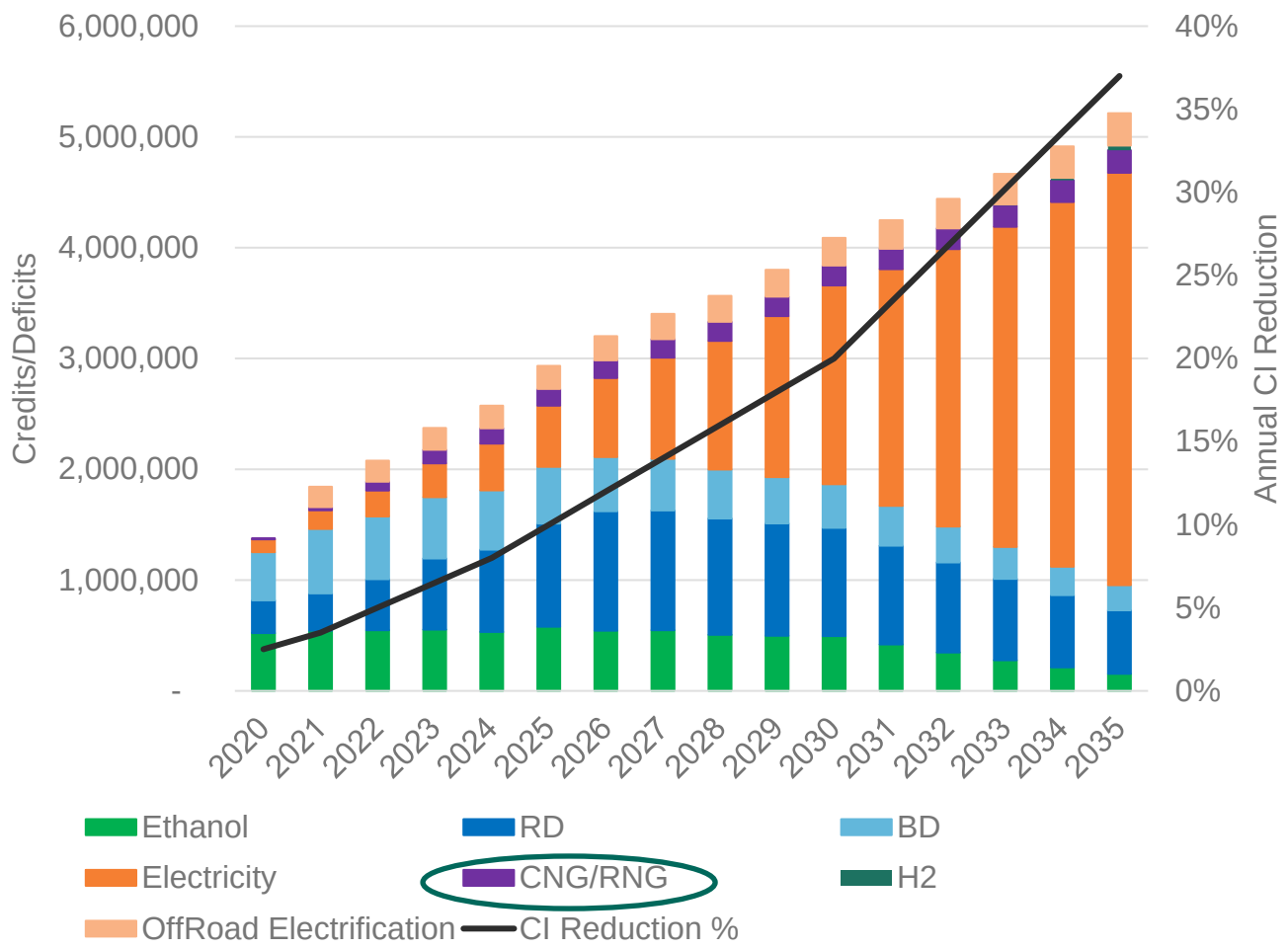
Expanded Program: Electricity (Orange)



Key considerations:

- Modeled legislative goal of 90% new light-duty vehicle sales as EVs in 2035
- If adopted, Advanced Clean Cars II will require 100% be ZEV in 2035
- Advanced Clean Trucks requires increasing truck sales to be ZEV in 2035
- Off-road EVs are increasing rapidly
- Approximately 70% of electricity reported in 2021 is renewable and the scenario assumes 100% by 2035
- Significant incentives for ZEVs in the BIL and the IRA

Expanded Program: Natural Gas (Purple)



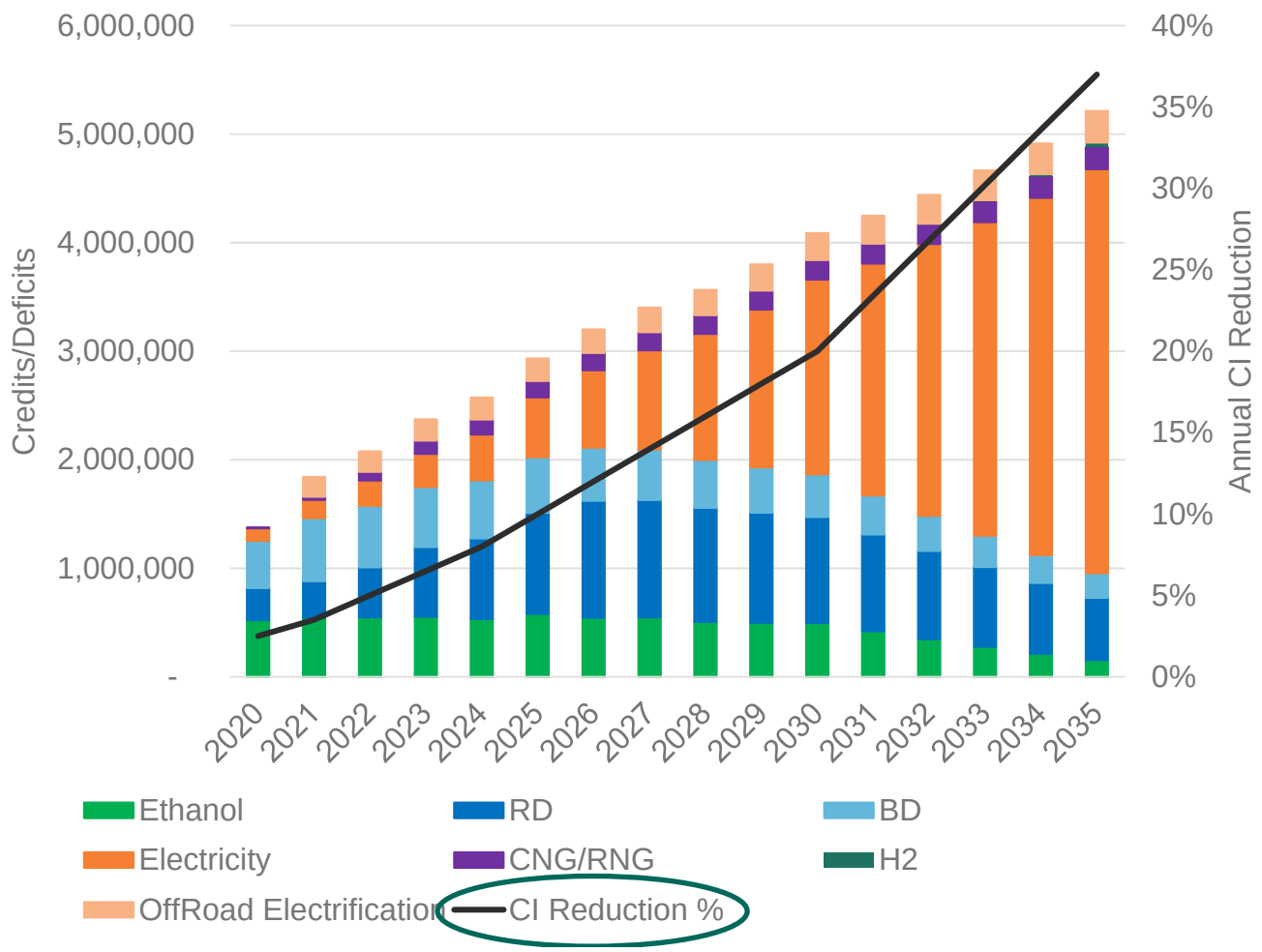
Key considerations:

- The CI of NG has decreased from about 80 to 40 gCO2e/MJ with transition from fossil gas to biogas collected at landfills and wastewater treatment plants
- The scenario assumes the CI to further decrease to -150 gCO2e/MJ in 2035 as dairy manure digester gas becomes the dominant feedstock
- Renewable natural gas has increased from 32.8% to 87.9% since 2016 and is assumed to be 100% in 2035

Scenarios – Other Fuels

Assumptions	Since the beginning of the program…	Considerations
• No credit generation from propane and renewable propane was assumed	• The consumption of propane has increased from 8,000 gallons to 800,000 gallons • The CI has decreased from 83 to 32 gCO2e/MJ as it transitioned from fossil to renewable feedstocks. • The percent renewable has averaged about 33%	• Renewable propane is a co-product of producing RD and its production will increase as RD production increases • Renewable propane is a drop-in replacement in propane buses and trucks
• No credit generation from sustainable aviation fuels (SAF) was assumed		• The first delivery of SAF was made to Hillsboro Airport last month and will likely continue. • There are a lot of incentives for SAF in the IRA

Long-Term Illustrative Compliance Scenario



Overall findings:

- Electrification alone achieves about 25% CI reductions
- Since the transition to ZEV will take a long time, a higher target is needed to support the clean fuels that can help decarbonize the sector in the medium-term
- The combined blend rate of biodiesel and renewable should easily exceed the 35% assumed in the scenario based on what has happened in California

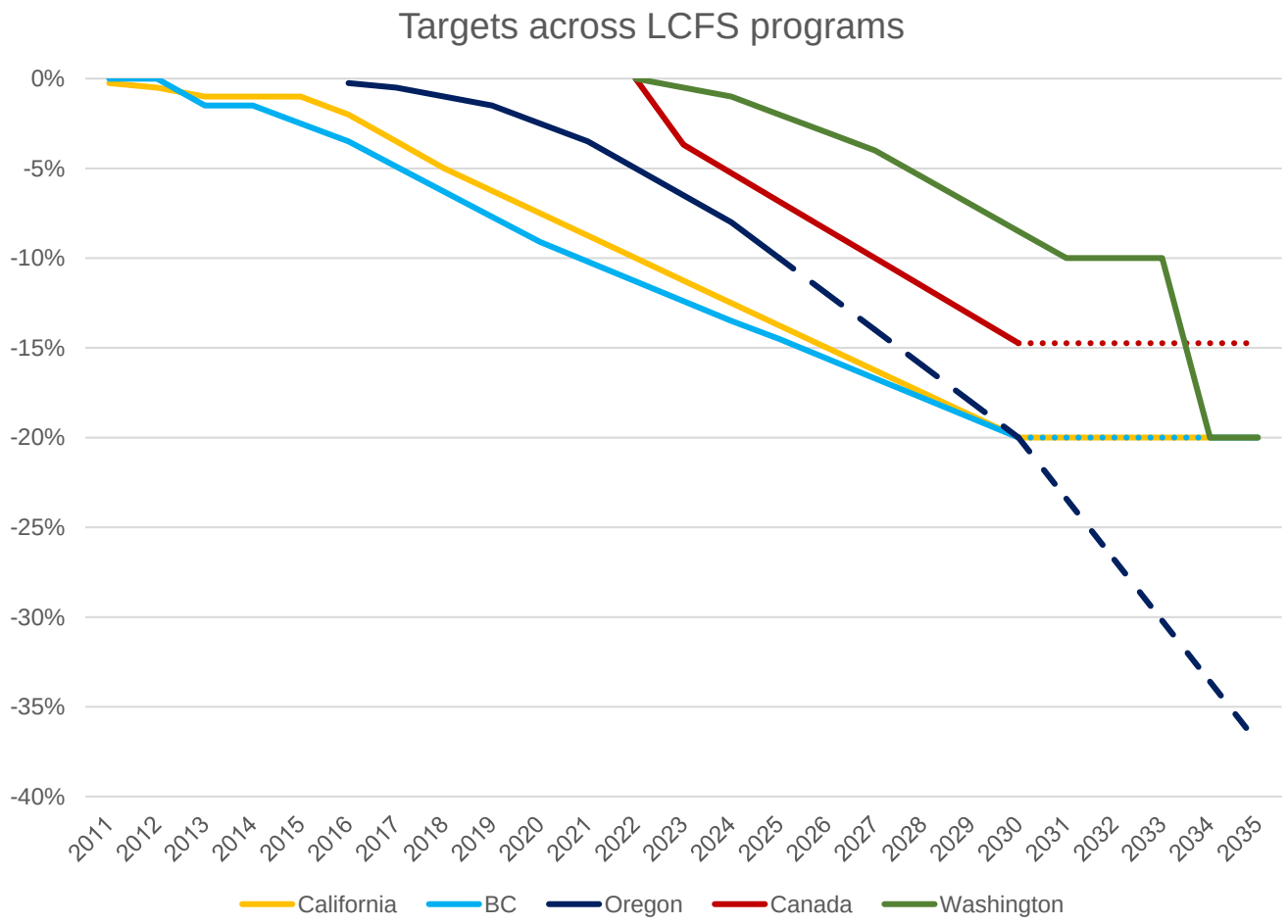
Additional Highlights of the Proposed Rules

- Allowing hydrogen vehicles and fueling infrastructure to generate advance credits
- Allowing projects that are funded through recently-passed federal bills to generate advance credits (such as NEVI, Clean School Bus, port infrastructure)
- Allowing electric ground service equipment to generate electricity credits
- Eliminating multiple claims on the environmental attributes of renewable natural gas by requiring additional documentation and electronic tracking
- Updating the enforcement provisions to maintain the integrity of the program's GHG reductions and the clean fuels market

New Program Reviews

- In 2026, CFP will provide the EQC with an update that:
  - Uses 2025 calendar year reported data
  - Demonstrates status of compliance with the 2025 carbon intensity reduction targets
  - Identifies any jurisdictions that have adopted or expanded clean fuels programs
  - Assesses whether the 2030 and 2035 targets remain appropriate or whether modifications are needed
- In 2029, CFP will provide the EQC with an update that:
  - Uses 2028 calendar year reported data
  - Assesses whether the 2035 target remains appropriate or whether modifications are needed

Alignment with other Jurisdictions



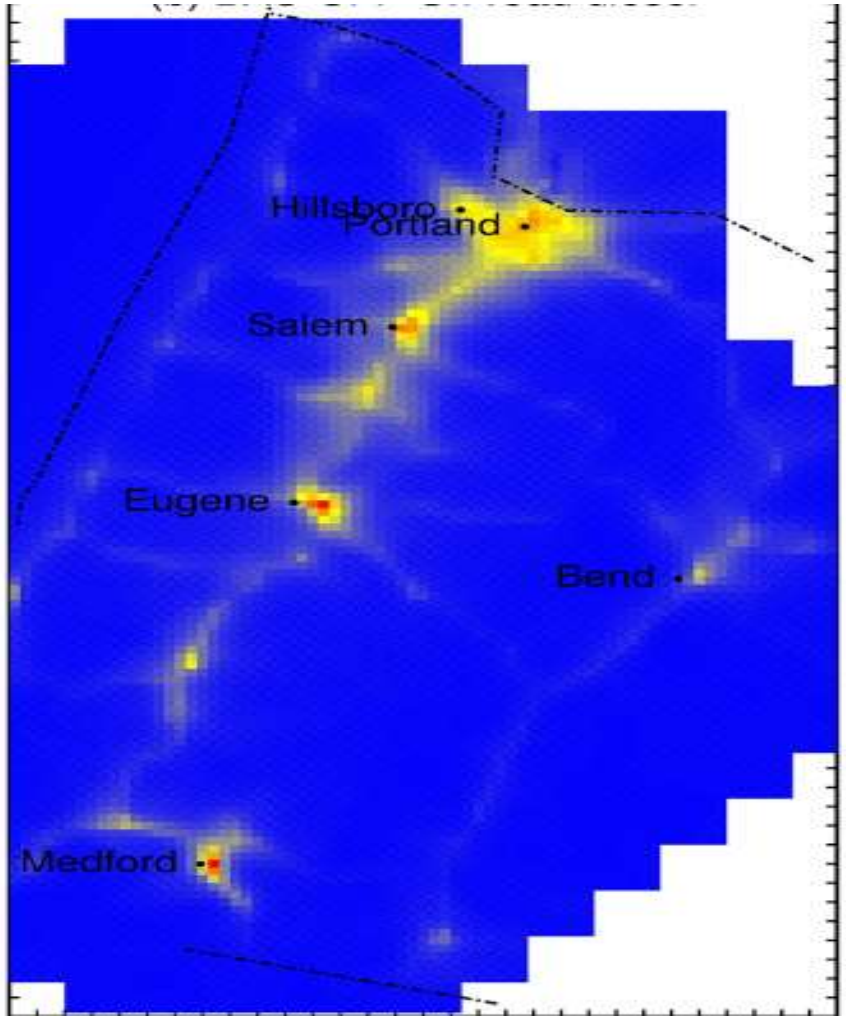
- California: rulemaking to expand the program will begin next year
- British Columbia: They will begin rulemaking next year to expand their targets
- Canada: The Canadian program is slated to begin in 2023 and their targets for 2023 – 2030 are shown in the solid red line
- Washington: The Washington program is slated to begin in 2023 and is still in rulemaking

Fiscal & Economic Impact of the Rulemaking

An expanded CFP will:

- Expand the market for low-carbon fuels which would be a significant economic benefit to the parties that provide them.
- Increase the obligation of deficit-generating high-carbon fuels and the costs associated with them.
- Create incentives for higher blends of biofuels that will bring down the cost of fuels that can be used in gasoline and diesel vehicles.
- Create incentives for zero emission vehicles and their fueling infrastructure as we transition to an all-ZEV future.

Environmental & Health Impact of the Rulemaking



An expanded CFP will:

- Reduce lifecycle GHG emissions by about 43.7 million metric tons
- Reduce tailpipe GHG emissions by about 6.3 million metric tons
- Reduce tailpipe emissions of PM, NOx, SO2, CO, & VOCs
- Reduce toxic diesel pollution in major cities by about 15%
- Avoid nearly $90 million per year in health costs for Oregonians
- Health benefits are greatest in communities that are located near highways

Racial Equity Impact of the Rulemaking

- Communities that are adjacent to or near transportation facilities and corridors are disproportionately impacted by those emissions and are commonly lower-income and have a higher percentage of residents that are Black, indigenous, and other peoples of color.
- These communities have been historically overburdened by transportation emissions and expansion of the program's targets will benefit these most vulnerable Oregonians by decreasing the air pollution to which they are exposed.
- Switching from a gasoline or diesel-powered vehicle can be costly and lower income Oregonians may be delayed in that transition.
- Higher gasoline and diesel costs may disproportionately impact lower income Oregonians
- An expanded CFP mitigates many of these impacts by increasing the availability of lower-cost, lower-carbon alternatives which provides benefits to those same communities.

Impact of the CFP on the Cost of Fuels

Annually, CFP publishes a conservative estimate of the cost of complying with the program. This calculation is based on the CI reduction target and the average price of credits. The following table shows the impact in cents per gallon of gasoline and diesel, along with the amount of GHGs that were reduced:

Year	CI reduction target	Avg credit price	GHGs reduced	Avg E10 CFP cost	Avg B5 CFP cost
2017	0.25%	$48.09	926,000 tonnes	0.23 cent/gallon	0.31 cent/gallon
2018	0.5%	$84.06	976,000 tonnes	0.98 cent/gallon	1.13 cent/gallon
2019	1.0%	$147.95	1,275,000 tonnes	2.57 cents/gallon	2.94 cents/gallon
2020	1.5%	$128.08	1,318,000 tonnes	3.71 cents/gallon	4.24 cents/gallon
2021	2.5%	$125.30	1,472,000 tonnes	5.09 cents/gallon	5.80 cents/gallon

Those same credit prices can also provide a premium to the producer of a lower-carbon fuel, which can then be passed on to the consumer or spread throughout the supply chain. Using the average credit price of $125 in 2021, the following table shows the revenue from the sale of those credits for various widely-available lower-carbon fuels:

Fuel	Value of the Credits
Corn ethanol	$0.39 per gallon
Used cooking oil biodiesel	$1.16 per gallon
Soybean renewable diesel	$0.61 per gallon
Electricity in a car	$0.08 per kWh

Cost Containment and Safeguards

The Credit Clearance Market:

- offers a last chance for regulated parties to purchase credits if they need them to comply with the annual clean fuel standard
- establishes a maximum price that credits can be purchased and that price increases annually with inflation

For 2022,

- the CCM price is $230.43. Using this value would estimate the highest cost to comply with CFP and that would be 13.4 cents per gallon of gasoline and 15.2 cents per gallon of diesel.
- the average credit price so far in 2022 is $121.79. Using this would estimate the average cost to comply with CFP and that would be 7.1 cents per gallon of gasoline and 8.0 cents per gallon of diesel.

The Annual Fuel Supply Forecast:

- is the primary safeguard that ensures there will be enough low-carbon fuels available to Oregon for regulated parties to comply with the clean fuel standards.
- estimates deficit and credit generation based on projects of fuel consumption and carbon intensity.
- If there is a shortage of credits, then DEQ can make adjustments to the target.

Consideration of Statutory Factors

EQC must consider the following statutory factors when adopting rules for the Clean Fuels Program. There are two places in statute that provide direction on this:

ORS 468A.266(3) requires the commission to:

> *(3) Before adopting low carbon fuel standards under this section, the commission shall consider the low carbon fuel standards of other states for the purpose of determining schedules and goals for the reduction of the average amount of greenhouse gas emissions per unit of fuel energy and the default values for these reductions for applicable fuels.*

ORS 468A.266(5) requires the commission to:

> *(5) In adopting rules under this section, the commission shall evaluate:*
> *(a) Safety, feasibility, net reduction of greenhouse gas emissions and cost-effectiveness;*
> *(b) Potential adverse impacts to public health and the environment, including but not limited to air quality, water quality and the generation and disposal of waste in this state;*
> *(c) Flexible implementation approaches to minimize compliance costs; and*
> *(d) Technical and economic studies of comparable greenhouse gas emissions reduction measures implemented in other states and any other studies as determined by the commission.*

Recommendation

After the commission's consideration of the factors described in ORS 468A.266(3) and (5), DEQ recommends that the commission adopt the proposed rules in Attachment A as part of Chapter 340 of the Oregon Administrative Rules.

The proposed rules would become effective upon filing with the Secretary of State and will be done in two phases:

- Division 12 and Division 253-0680 will become effective on approximately Oct. 1, 2022
- The rest of Division 253 will become effective on approximately Jan. 1, 2023.

Language of Proposed EQC Motion:

"After consideration of the factors described in ORS 468A.266(3) and (5), and consistent with the staff report/recommendation, I move that the commission adopt the proposed rule amendments in Attachment A as part of Chapter 340 of the Oregon Administrative Rules with the rules in Division 12 and Division 253-0680 having an effective date of approximately October 1, 2022, and the remaining rules in Division 253 having an effective date of approximately January 1, 2023."