

Oregon Low Carbon Fuel Standard Revised Policy Issues



Advisory Committee – Background Topics

- HB 2186;
- California’s low carbon fuel standard;
- Renewable fuel standards – federal, state, and local;
- Oregon’s current fuel sources and volumes;
- Oregon’s current and potential alternative fuel production; and
- Commercialization status of alternative fuel technologies.

Advisory Committee – Policy Issues

Beginning with the second half of the December meeting, the advisory committee will start addressing policy issues and giving input to DEQ on planned technical analyses. At later meetings, DEQ will present the results of technical analyses for comment by the committee. Below in brief, are planned LCFS meeting topics, in the approximate order they will be taken up by the advisory committee. Detailed discussion papers will be developed for each topic below.

1. Consumer cost safety net (Section 6, (2)(d))

HB 2186 requires the LCFS rules to provide exemptions and deferrals “as necessary to mitigate the costs of complying with the low carbon fuel standards,” based upon a finding by the EQC that fuel prices in Oregon are “not competitive” with fuel prices in neighboring states. At issue are, what will be the guidelines for the EQC to make a finding as required, and what types of exemptions and deferrals can mitigate the costs of compliance?

2. Covered Fuels (including Opt-In)

Based on their carbon intensities, compliance could be compulsory for some fuels, while some low carbon fuels would be able to opt-in. At issue is the question, which fuels should be covered under a LCFS? Which fuels will be regulated, and which fuels should be able to opt-in and sell credits?

3. Exemption threshold (Section 6, (2)(b)(E)) and Exempted fuels (Section 6, (4)(a)-(d))

At issue is the question, what should the exemption threshold be for small-volume fuel producers? Should all fuel producers below the exemption threshold be exempt?

HB 2186 authorizes the LCFS program to exempt propane and other alternative fuels falling below a volume threshold to be determined by the EQC. California exempts any non-biomass-based alternative fuel with an aggregate sales volume equivalent to 3.6 million gallons of gasoline per year. The California exemption is intended to cover new fuels still under research, or niche fuels. California does not exempt biomass-based fuels due to potential land-use impacts and sustainability considerations.

Some fuels have specific regulatory, performance, or other reasons why they should be exempted from a LCFS. California exempts any transportation fuel used by aircraft, racing vehicles, military tactical vehicles, oceangoing marine vessels, and interstate trains. HB 2186 exempts certain farm and forestry vehicles from a low carbon fuel standard, but does not mention the fuels used by those vehicles.

4. Oregon's approach to lifecycle analysis and calculating carbon intensities (Section 6, (2)(b)(B), including drive train efficiencies, Section 6 (2)(b)(G))

DEQ will conduct a lifecycle analysis of the greenhouse gas emissions attributable to the various fuels sold in Oregon, including emissions from production, storage, transportation and combustion, and accounting for drive train efficiencies¹ and co-products². The final result of this analysis will be a table with carbon intensity values for each fuel that is regulated under the program. DEQ will use the GREET model (Greenhouse gases, Regulated Emissions, and Energy use in Transportation) developed by Argonne National Laboratory and also used by California in developing its table of carbon intensities. The model requires substantial information gathering for model inputs. DEQ will coordinate with the state of Washington to complete technical lifecycle analyses on fuel carbon intensities and pathways, and modify them for Oregon as warranted. For some fuels (electricity, crops and fuel production processes unique to Oregon), DEQ will complete original analyses and inputs for the lifecycle analysis model.

With the input of the advisory committee, DEQ will determine carbon intensity values for conventional and alternative fuels. Policy choices in setting these values will guide the purchasing and investment decisions of fuel suppliers and affect the potential demand for various alternative fuels, as well as the potential demand for conventional fuels from various sources of crude oil (e.g., Canadian oil sands). Examples of policy choices include: setting a baseline against which to assess future compliance; whether or not to allow carbon capture and sequestration to reduce the carbon intensity of fuels; and deciding whether to average carbon intensities across petroleum sources or to disaggregate them by source, hence disadvantaging oil sands fuels compared to fuels made from light crude sources.

This topic will likely be discussed over several advisory committee meetings, with an early informational session focused on the GREET model and later discussions focused on the results

¹ "Drive train efficiency" is used to account for differences in energy efficiency among different types of fuels and vehicles. For example, electric vehicles require much less energy than a gasoline engine to travel a specified distance due to the greater efficiency of the engine. As a result of their much lower per mile energy consumption, electric vehicles emit less greenhouse gases than gasoline vehicles on a per mile basis.

² Some production of biofuels generates useful co-products such as distillers grain that can be fed to livestock. The carbon intensity of this co-product is deducted from the carbon intensity of the fuel.

for specific fuel pathways (e.g., gasoline, diesel, biodiesel, ethanol, electricity, hydrogen, compressed natural gas).

5. Economic analysis

DEQ will likely hire an independent contractor to assist with the economic analysis needed for this rulemaking. DEQ will discuss its proposed plan for economic analysis with the advisory committee, likely at the December meeting. At a later meeting, DEQ and the contractor will present the results of the economic analysis for comment by the advisory committee.

DEQ has categorized probable economic analysis topics as follows:

- Questions explicitly required to be evaluated by HB 2186 (cost-effectiveness, Sec. 6 (3)(a); evaluation of economic studies of other states' measures, Sec. 6 (3)(d));
- Questions helpful for addressing broader public questions and concerns such as how a low carbon fuel standard may affect the cost of transportation fuel, or sectors of the state economy, including the possible economic benefits of increased alternative fuels production in Oregon.

6. Regulated parties (Section 6 (2)(b) (C))

At issue is the question, who should be a regulated party under the LCFS? Because each fuel type has a different distribution network, each type will likely require a different definition of regulated party. We will need to examine whether California's framework of regulated parties will work for Oregon.

7. Credits and Deficits, including Trading

California's program is based upon a system where credits generated from selling fuels with lower carbon intensity than the annual standard can be sold to fuel suppliers with fuels of higher carbon intensity than the standard. Such credits could help a producer or distributor of higher carbon fuels meet their compliance obligations under the program. DEQ will discuss with the committee whether Oregon should follow a similar approach. Another issue for discussion is the mechanism for selling and buying the credits.

8. Compliance scenarios/feasibility (Section (3) (a))

As part of the supporting analysis for its low carbon fuel standard, California created seven example scenarios comprising different mixes of traditional and lower carbon alternative fuels that would comply with their standard. California developed four feasibility scenarios for gasoline and three for diesel. California used these scenarios to demonstrate ways to reach the standard, and to estimate program costs. With the input of the advisory committee, DEQ plans to create several compliance scenarios for Oregon's low carbon fuel standard to evaluate the feasibility of achieving the LCFS program goal.

9. Storage and distribution of low carbon fuels

What is the storage capacity for alternative fuels at each level of the fuel distribution chain (i.e. from terminal to retail)? What is the storage capacity for different commodities and the fungibility of infrastructure? What effect would a low carbon fuel standard have on these issues?

9-10. Electricity-specific issues

There are two main discussion areas related to the use of electricity as a transportation fuel, infrastructure and determining carbon intensity values.

- a. **Infrastructure.** Making electricity widely available for transportation use will require substantial new infrastructure and it is still uncertain how this infrastructure will be built, who will pay for it, and who will own it. Electric utilities have raised questions about whether current regulations allow their financing structure to be used to develop electric charging infrastructure.

- b. **Carbon intensity values.** California included two carbon intensity values for electricity in its regulation: an average value, reflecting their current mix of different types of electric generation sources (i.e. hydro-power, natural gas, etc); and “marginal”, reflecting the assumption that any new generating capacity will be lower carbon intensity combined-cycle natural gas. Oregon’s situation as a whole is different, and our investor-owned utilities also have a different emissions profile than our consumer-owned utilities. Deciding how to categorize electricity generation in Oregon will affect the average carbon intensity assigned to electricity under Oregon’s LCFS.

10-11. Short term fuel supply deferrals (Section 6, (2)(b)(D))

HB 2186 allows for deferrals of the LCFS to ensure an adequate fuel supply in case of unanticipated disruptions in existing fuel production or infrastructure. For example, unusual events such as the unanticipated closure of a large fuel plant or a natural disaster that disrupts fuel distribution could cause Oregon to experience a shortage of low carbon fuels. What kinds of deferrals can ensure an adequate fuel supply? This would likely involve temporarily suspending the compliance obligation during the disruption period because compliance is predicated on the availability of an adequate supply of alternative fuels.

11-12. Forecasted fuel supply deferrals (Section 6, (2)(b)(D))

HB 2186 also allows for deferrals of the LCFS to ensure an adequate fuel supply in the event anticipated increases in the production of lower carbon alternative fuels (e.g. advanced biofuels) do not materialize as planned. If these fuels are not available when predicted, what kinds of deferrals will be needed from the compliance obligations under the LCFS?

12-13. Indirect land use change (Sec. 6 (2)(b)(B))

California's table of carbon intensities includes an adjustment factor for all agricultural crop-based fuel products to take indirect land use change (ILUC) into account. California uses the results of a global trade model, GTAP, to estimate increases in greenhouse gas emissions due to more intensive cultivation and land conversions, which are a response to higher crop prices resulting from increased biofuels production. Indirect land use change emissions are a substantial share of the emissions ascribed to some biofuels.

The inclusion of indirect land use (ILUC) effects is complex and controversial. Some critics contend that the theory behind including ILUC is flawed, pointing to increased corn exports and crop yields in recent years as an indicator that the U.S. can produce ample raw material for biofuels without the need to bring new domestic or foreign agricultural lands into production. Some believe that indirect land use affects associated with alternative fuels production is indeed happening, but that the models used to estimate those affects are still too immature to base regulations on their results. Some in the biofuels industry have argued that California is selectively penalizing their products, while ignoring indirect effects of other fuels such as land use issues related to domestic or foreign oil exploration). California is convening a workgroup to re-examine the analysis behind its ILUC factors. EPA is also looking at ILUC as part of recent revisions to the federal renewable fuels standard. EPA used a different modeling process to estimate ILUC, which has provided different results than the California analysis, and has also met with strong criticism. DEQ will track both of these efforts and discuss the issue of indirect land use affects with the LCFS committee.

13.14. Process for establishing new fuel pathways

As new fuels and new production methods arise over time, DEQ must revise the table of carbon intensity values under the low carbon fuel standard program. California has addressed this issue by creating a process for fuel producers to propose new fuel pathways. DEQ will review this policy and make recommendations to the advisory committee for discussion on how Oregon should address this issue.

14.15. Implementation issues

Reporting

One set of implementation issues centers around reporting. Reporting requirements for the LCFS must try and balance the need for timely and accurate information with the desire to minimize the burden on affected parties, as well as the possible need to ensure the security of confidential business information. DEQ will discuss these issues with the committee.

Flexible Implementation approaches

Another set of issues centers on how to structure the program to offer flexible implementation approaches and minimize compliance costs.

15.16. Phase-in schedule for implementation (Section 6 (2)(b)(A))

California's low carbon fuel standard is heavily "back-loaded", meaning that small decreases in carbon intensity are required in the early years of the program and larger decreases required in later years as the availability of lower carbon alternative fuels increases. The first year of the program is "reporting only" with no reductions required, so that regulated parties can get accustomed to new reporting and tracking obligations. DEQ will seek input from the advisory committee on the best phase-in schedule for Oregon's program.

~~16-17.~~ Public health and environmental impacts (Section 6 (3)(a) and (b))

HB 2186 requires the EQC to evaluate "net reduction of greenhouse gas emissions" and "...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..." DEQ will discuss this analysis with the committee.

18. Review of rule/future updates

Should there be a periodic review of the program? If so, should the review be on a mandatory timeframe, or left flexible? What should this review entail, and what process should be used?

~~17-19.~~ Effect of sunset (Sec. 9 (2)(d))

Section 8 of HB 2186 stipulates that the low carbon fuel standard rules adopted under the bill will sunset on December 31, 2015. The bill requires DEQ to report to the interim legislative committees on environment and natural resources on or before December 31, 2010, on the "anticipated effects" of the sunset "on the availability of low carbon fuels and the development of biofuels production facilities and electric vehicle infrastructure in Oregon." DEQ will seek input from the committee on the affect of the sunset, including any dampening affect the sunset may have on future investment in Oregon biofuels production capability.