Agenda Item C

Oregon Low Carbon Fuel Standard Rulemaking Process and Policy Issues

State of Oregon Department of Environmental Quality

Rulemaking Process: Legislation to Rule

House Bill (HB) 2186 is a statute passed by the 2009 Oregon legislature, authorizing several greenhouse gas reduction strategies. Sections 6-9 of the bill authorize the Environmental Quality Commission[1] to adopt rules for low carbon fuel standards. Some of the provisions in HB 2186 are specific, and allow little or no room for interpretation. Others provisions set up general guidelines, but leave certain details and policy decisions to the Environmental Quality Commission.

DEQ staff will develop the rules proposed to the Environmental Quality Commission for adoption. The DEQ uses a formal rule adoption process governed by state administrative law. Input from the advisory committee is a key first part of the rulemaking process, and discussions at the advisory committee will inform DEQ's development of a draft rule. A formal public comment period then follows. DEQ considers all public comments, and if warranted, alters the draft rule based on those comments. Finally, DEQ proposes a rule to the Environmental Quality Commission for adoption.

Proposed Rulemaking Schedule

Tentative advisory committee meetings	Tuesday November 3, 2009 Thursday December 3, 2009 Wednesday January 27, 2010 Wednesday February 24, 2010 Thursday March 18, 2010 Thursday April 15, 2010 Thursday May 20, 2010 June 2010 – fiscal impact and wrap up
Draft rule language	January 2010 – June 2010
Advisory committee reviews fiscal impact of draft rule	June 2010
Tentative public comment period	Mid July 2010 – end August 2010
Tentative rule adoption	December 2010
Rule becomes operative	July 1, 2011 or later

[1] The Environmental Quality Commission is a five-member citizen panel appointed by the governor to four-year terms, serving as Department of Environmental Quality's (DEQ) policy and rulemaking board.

DEQ will be reporting to the legislature in 2010 and for the next three legislative sessions on the rules, significant policy decisions, and the manner in which the EQC complied with the requirements of HB 2186 in adopting rules.

The rule sunsets on December 31, 2015, and HB2186 specifically requires DEQ to evaluate and report on the expected affect the 2015 sunset would have on the availability of low carbon fuels and the development of biofuels production facilities and electric vehicle infrastructure in Oregon

Low Carbon Fuel Advisory Committee Process

DEQ anticipates that this rulemaking will be complex, and that there will be many different opinions about how a low carbon fuel standard should be implemented in Oregon. DEQ will vet policy issues and program details with the advisory committee in order to ensure a wide variety of stakeholder perspectives help form DEQ's initial LCFS rule proposal. Recognizing the complexity of a LCFS program, DEQ will not see consensus positions from the committee, nor will the committee be asked to vote on specific issues. However, DEQ would give great weight to any committee recommendation in which there is consensus. Meeting summaries and a final report will document the different perspectives and recommendations of committee members. At meetings, DEQ will present a white paper addressing each policy issue to solicit discussion among the group and recommendations from individual advisory committee members. For complicated technical analyses, DEQ will present a proposal outlining the scope and methodology of the work to be done, solicit input from the advisory committee, and then complete the work and return to the committee for input on resulting policy decisions.

Through this open and transparent advisory committee process, citizens and groups potentially affected by the rule will have ample opportunity for input. It is extremely important that advisory committee members representing stakeholder groups communicate with their respective groups in a timely manner.

Other input to DEQ on the Low Carbon Fuel Standard

In addition to input from the advisory committee, DEQ will also need to make sure that the rule addresses the issues raised in HB2186, is consistent with legal requirements and policies, and that it considers legislative history as well as economic, scientific, legal and technical issues. In addition, DEQ needs to take into account the practical implementation of the rule, and its enforceability.

We will be working with other Oregon agencies that have knowledge, data, expertise or authority relevant to this rulemaking, such as the Public Utility Commission, Business Oregon, and the departments of Agriculture, Transportation and Energy.

Once a proposed rule is developed, DEQ will begin a formal and public rulemaking process to seek public and stakeholder review and comment on the proposed rules. DEQ's low carbon fuel standard rule may be modified based on public comment. DEQ hopes to take its final proposed rule to the EQC for consideration in December 2010.

Advisory Committee – Background Topics

After covering introductions and reviewing and approving the advisory committee operating principals, the first one-and-a-half meetings will focus on background information pertinent to a low carbon fuel standard:

- 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 efficiencies[2] and co-products[3]. 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; 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 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.

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[2] "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.

[3] 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.

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

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. 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. 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. 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. 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 bio-fuels 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. 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. 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. 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. 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.

17. 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.