Invitation to Comment

Clean Fuels Program Corrections 2016

This document includes:

- -Invitation to Comment
- -Notice of Rulemaking Hearing
- -Draft Rules

DEQ invites public input on proposed permanent rule amendments to chapter 340 of the Oregon Administrative Rules.

DEQ proposal

DEQ proposes the following changes to OAR 340, division number **253** that will correct a miscalculation of how the clean fuel standards and the carbon intensity values of two fuel pathways were calculated in the rules adopted by the EQC on Dec. 9, 2015.

The EQC adopted temporary rules on April 21, 2016 to correct the miscalculation described above; this rulemaking will make those corrections permanent.

More information

Information about this rulemaking is on this rulemaking's web page: Clean Fuels Program Corrections 2016.

Public Hearings

DEQ will hold the following public hearings on this rulemaking:

10:00 a.m., July 20, 2016
DEQ Headquarters, 10th Floor – EQC A, 811 SW 6th Avenue, Portland, OR 97204
Conference call phone number: 888-278-0296
Conference call participant ID: 8040259

What will happen next?

DEQ will include a written response to comments in a staff report DEQ will submit to the Environmental Quality Commission. DEQ may modify the rule proposal based on the comments.

Present proposal to the EQC

Proposed rules only become effective if the Environmental Quality Commission adopts them. DEQ plans to present the proposed rules to the commission for a decision at its meeting on August 17-18.

How to comment on this rulemaking proposal

DEQ is asking for public comment on the proposed rules. Anyone can submit comments and questions about this rulemaking.

Comment deadline
DEQ will only consider comments on the proposed rules that DEQ receives by 4 p.m., on July 21, 2016.

Submit comment online
Clean Fuels Program Corrections Comment Page

Note for public university students:
ORS 192.501(29) allows Oregon public university and OHSU students to protect their university email addresses from disclosure under Oregon's public records law. If you are an Oregon public university or OHSU student you may omit your email address when you complete the online form to submit a comment.

By mail
Oregon DEQ
Attn: Cory-Ann Wind
811 SW Sixth Avenue
Portland, OR 97204-1390

At hearing
July 20, 2016

Sign up for rulemaking notices
Get email updates about future DEQ rulemaking by signing up through DEQ GovDelivery or on the rulemaking web site.

Accessibility information
You may review copies of all documents referenced in this announcement at:

Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland, OR, 97204

To schedule a review of all websites and documents referenced in this announcement, call Cory-Ann Wind, Portland, at 503-229-5388 (800-452-4011, ext. 5622 toll-free in Oregon).

Please notify DEQ of any special physical or language accommodations or if you need information in large print, Braille or another format. To make these arrangements, contact DEQ, Portland, at 503-229-5696 or call toll-free in Oregon at 1-800-452-4011, ext. 5696; fax to 503-229-6762; or email to deqinfo@deq.state.or.us. Hearing impaired persons may call 711.

Oregon Department of Environmental Quality
June 15, 2016
Notice of Proposed Rulemaking

Clean Fuels Program Corrections

Overview

Short summary

DEQ proposes to amend Oregon Clean Fuels Program rules under division 253 of chapter 340 of the Oregon Administrative Rules. The proposed rule changes would correct a miscalculation of how the clean fuel standards and the carbon intensity values of two fuel pathways were calculated in the rules adopted by the EQC on Dec. 9, 2015.

Brief history

The 2009 Oregon Legislature passed House Bill 2186 authorizing 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 EQC adopted phase 1 rules on Dec. 7, 2012 that required Oregon transportation fuel producers and importers to register, keep records and report the volumes and carbon intensities of the transportation fuels they provide in Oregon.

The EQC adopted phase 2 rules on Jan. 7, 2015 that required Oregon transportation fuel importers to reduce the average carbon intensity of fuels they provide in Oregon by 10 percent over a 10-year period.

The 2015 Oregon Legislature passed Senate Bill 324 that removed the Dec. 31, 2015 sunset date in House Bill 2186 (2009) and further amended the Oregon Clean Fuels Program.

The EQC adopted updated rules on Dec. 9, 2015 to implement SB 324 (2015).

The EQC adopted temporary rules on April 21, 2016 to correct the miscalculation described above; this rulemaking will make those corrections permanent.

Regulated parties

The Clean Fuels Program regulates Oregon producers and importers of transportation fuels.

Request for other options

During the public comment period, DEQ requests public comment on whether to consider other options for achieving the rules' substantive goals while reducing the rules' negative economic impact on business.

Statement of need

What need would the proposed rule address?

In February 2016, a regulated party contacted the Clean Fuels Program because calculations they had developed while planning for compliance with the clean fuel standards were not consistent with those adopted by the EQC on Dec. 9, 2015. It was discovered that the adopted rules omitted a necessary adjustment for the energy density of ethanol and biodiesel relative to the energy density of gasoline and diesel fuel.

1) The miscalculation results in the clean fuel standards being lower than they should be. Table 1 shows the current and proposed clean fuel standards after the miscalculation is corrected.

Table 1
Current and proposed clean fuel standards

Year	Reduction	Current Standards		Proposed Standards	
		Gasoline	Diesel	Gasoline	Diesel
2015	(baseline)	97.80	99.48	98.62	99.64
2016	0.25%	97.56	99.23	98.37	99.39
2017	0.50%	97.31	98.98	98.13	99.14
2018	1.00%	96.82	98.49	97.63	98.64
2019	1.50%	96.33	97.99	97.14	98.15
2020	2.50%	95.36	96.99	96.15	97.15
2021	3.50%	94.38	96.00	95.17	96.15
2022	5.00%	92.91	94.51	93.69	94.66
2023	6.50%	91.44	93.01	92.21	93.16
2024	8.00%	89.98	91.52	90.73	91.67
2025	10.00%	88.02	89.53	88.76	89.68

2) The miscalculation also results in the carbon intensity values for E10 (gasoline blended with 10 percent ethanol) and B5 (diesel blended with 5 percent biodiesel) being lower than they should be. Table 2 shows the current and proposed carbon intensity values.

Table 2 **Current and proposed clean fuel standards**		
Fuel type	Current carbon intensity value	Proposed carbon intensity value
E10	97.68 gCO2e/MJ	98.54 gCO2e/MJ
B5	98.48 gCO2e/MJ	99.64 gCO2e/MJ

Adopting the proposed rules will correct the miscalculations.

This affects the program in two important ways:

- Most importantly, the clean fuel standards and the carbon intensity values currently in rule are simply inaccurate and need to be corrected. Correcting the rule will ensure that reports submitted by regulated parties are accurate. DEQ has notified the regulated parties about this situation and will continue to do so to ensure proper reporting after this rulemaking is complete.

- The omission has created inaccuracies in the way deficits and credits are calculated and used to demonstrate compliance with the program.

How would the proposed rule address the need?

Adopting the proposed rules will correct the omission, ensuring that reports submitted by regulated parties are accurate.

How will DEQ know the rule addressed the need?

DEQ will know that the need was addressed when quarterly reports are submitted and they are accurate.

Rules affected, authorities, supporting documents

Lead division

Environmental Solutions Division
Air Quality Planning Section

Program or activity

Oregon Clean Fuels Program

Chapter 340 action

Repeal	OAR 340-253-8010(T), OAR 340-253-8020(T), OAR 340-253-8030(T), 340-253-8040(T)
Amend	OAR 340-253-8010, OAR 340-253-8020, OAR 340-253-8030, 340-253-8040

Statutory authority

ORS 468.020, 468A.275

Statute implemented

ORS 468A.275

Legislation

House Bill 2186 (2009) & Senate Bill 324 (2015)

Documents relied on for rulemaking

Document title	Document location
Memo to explain the corrections to the clean fuels standards	http://www.oregon.gov/deq/RulesandRegulations/Documents/cfBaseStand.pdf
CFP Corrections temporary rulemaking materials, April 2016	http://www.oregon.gov/deq/EQC/Documents/2016/042116eqcItemN.pdf

Fee Analysis

This rulemaking does not involve fees.

Statement of fiscal and economic impact

Fiscal and Economic Impact

Deficits are generated when the carbon intensity of a specific fuel exceeds the clean fuel standard in a given year. Credits are generated when the carbon intensity of a specific fuel is lower than the clean fuel standard in a given year. To be in compliance, a regulated party must balance the number of deficits and credits generated in a compliance period.

For this rulemaking, the fiscal and economic impacts relates to the change in the amount of deficits and credits that are generated as a result of the proposed rule changes. Table 3 compares how many credits are generated with the current clean fuel standards and the proposed ones for select fuels. Deficits are shown as negative credits.

Table 3
Changes in credits generated

Fuel type	CI (gCO2e/MJ)	2016 Clean fuel standard (gCO2e/MJ)		Deficits or Credits generated (gCO2e/MJ)	
		Current	Proposed	Current	Proposed
Gasoline	100.77	97.56	98.37	- 3.21	- 2.40
Diesel	101.65	99.23	99.39	- 2.42	- 2.26
MW corn ethanol	69.89	97.56	98.37	+ 27.67	+ 28.48
NW soybean biodiesel	58.25	99.23	99.39	+ 40.98	+ 41.14
Electricity	31.85	97.56	98.37	+ 65.71	+ 66.52
Fossil CNG	79.93	99.23	99.39	+ 19.30	+ 19.46

Statement of Cost of Compliance

For importers of fuels that generate deficits, this rulemaking will reduce the number of deficits generated for those fuels. For importers and producers of fuels that generate credits, this rulemaking will increase the number of credits generated by those fuels. In both cases, the proposed rules will make it easier, and thus less costly, for regulated parties to comply with the clean fuel standards. Fuel consumers could also benefit if the savings from reduced compliance costs are passed on to consumers. Generators of credits might see a slight drop in revenues as more credits will be generated for the same amount of alternative fuels provided and fewer credits will be needed by regulated parties to meet the standards, hence the value of the credits might decrease.

Oregon Department of Environmental Quality

Direct Impacts

The proposed rule changes would not impact DEQ's cost to implement the Clean Fuels Program.

Indirect Impacts
DEQ is a fuel consumer. Fuel consumers could benefit if the savings from reduced compliance costs are passed on to consumers.

State and federal agencies

Direct Impacts
The proposed rule changes do not impose direct fiscal or economic effects on state or federal agencies, unless the agency imports or provides transportation fuels.

Indirect Impacts
State and federal agencies are fuel consumers. Fuel consumers could benefit if the savings from reduced compliance costs are passed on to consumers.

Local governments

Direct Impacts
The proposed rule changes do not impose direct fiscal or economic effects on local governments, unless the government imports or provides transportation fuels.

Indirect Impacts
Local governments are fuel consumers. Fuel consumers could benefit if the savings from reduced compliance costs are passed on to consumers.

Public

Direct Impacts
The proposed rule changes do not impose direct fiscal or economic effects on the public.

Indirect Impacts
Members of the public are fuel consumers. Fuel consumers could benefit if the savings from reduced compliance costs are passed on to consumers.

Large businesses - businesses with more than 50 employees

There are approximately 42 large businesses registered with the Clean Fuels Program as a regulated party or a credit generator. The proposed rule changes do not impact the number or type of large businesses subject to the program.

Direct Impacts
For importers of fuels that generate deficits, this rulemaking will reduce the number of deficits generated for those fuels. For importers and producers of fuels that generate credits, this rulemaking will increase the number of credits generated by those fuels. In both cases, the proposed rules will make it easier, and thus less costly, for businesses to comply with the clean fuel standards. This could also mean that businesses that generate credits might see a slight drop in revenues.

Indirect Impacts
Large businesses are fuel consumers. Fuel consumers could benefit if the savings from reduced compliance costs are passed on to consumers.

Small businesses – businesses with 50 or fewer employees

There are approximately 54 small businesses registered with the program as a regulated party or a credit generator. The proposed rule changes do not impact the number or type of small businesses subject to the program.

Direct Impacts

For importers of fuels that generate deficits, this rulemaking will reduce the number of deficits generated for those fuels. For importers and producers of fuels that generate credits, this rulemaking will increase the number of credits generated by those fuels. In both cases, the proposed rules will make it easier, and thus less costly, for businesses to comply with the clean fuel standards. This could also mean that businesses that generate credits might see a slight drop in revenues.

Indirect Impacts

Small businesses are fuel consumers. Fuel consumers could benefit if the savings from reduced compliance costs are passed on to consumers.

a. Estimated number of small businesses and types of businesses and industries with small businesses subject to proposed rule.

There are currently 54 small businesses registered with the program, primarily fuel providers and distributors and biofuel producers.

b. Projected reporting, recordkeeping and other administrative activities, including costs of professional services, required for small businesses to comply with the proposed rule.

The proposed rule changes would not affect these costs.

c. Projected equipment, supplies, labor and increased administration required for small businesses to comply with the proposed rule.

The proposed rule changes would not affect these costs.

d. Describe how DEQ involved small businesses in developing this proposed rule.

DEQ convened a 10-member advisory committee that included small businesses to discuss the proposed rule changes.

Documents relied on for fiscal and economic impact

Document title	Document location
CFP Corrections temporary rulemaking materials, April 2016	http://www.oregon.gov/deq/EQC/Documents/2016/042116eqcItemN.pdf

Advisory committee

DEQ appointed an advisory committee to assess the fiscal and economic impact of the proposed rule changes. As ORS 183.33 requires, DEQ asked for the committee's recommendations on:

- Whether the proposed rules would have a fiscal impact,
- The extent of the impact, and
- Whether the proposed rules would have a significant impact on small businesses and complies with ORS 183.540.

The committee reviewed the draft fiscal and economic impact statement and its findings are stated in the meeting summary dated June 1, 2016. The committee determined the proposed rules would not have a significant adverse impact on small businesses in Oregon.

Housing cost

As ORS 183.534 requires, DEQ evaluated whether the proposed rules would have an effect on the development cost of a 6,000-square-foot parcel and construction of a 1,200-square-foot detached, single-family dwelling on that parcel. DEQ determined the proposed rules would have no effect on the development costs because the proposed rules only affect transportation fuels used in Oregon.

Federal relationship

Relationship to federal requirements

ORS 183.332, 468A.327 and OAR 340-011-0029 require DEQ to attempt to adopt rules that correspond with existing equivalent federal laws and rules unless there are reasons not to do so.

The proposed rules are “in addition to federal requirements” since there are no federal regulations that require the reduction in the average lifecycle content of greenhouse gases in transportation fuels. The proposed rules protect the environment and residents of Oregon by reducing greenhouse gas emissions.

What alternatives did DEQ consider if any?

In designing the Clean Fuels Program, DEQ considered many alternatives contained in the proposed rule. Input from advisory committees in 2010, 2012, 2014, 2015 and 2016 and extensive outreach with affected stakeholders throughout the process informed the design of the Oregon Clean Fuels Program. Documentation is in the rulemaking record.

Land use

Land-use considerations

In adopting new or amended rules, ORS 197.180 and OAR 340-018-0070 require DEQ to determine whether the proposed rules significantly affect land use. If so, DEQ must explain how the proposed rules comply with state wide land-use planning goals and local acknowledged comprehensive plans.

Under OAR 660-030-0005 and OAR 340 Division 18, DEQ considers that rules affect land use if:

- The statewide land use planning goals specifically refer to the rule or program, or
- The rule or program is reasonably expected to have significant effects on:
  - Resources, objectives or areas identified in the statewide planning goals, or
  - Present or future land uses identified in acknowledged comprehensive plans

To determine whether the proposed rules involve programs or actions that affect land use, DEQ reviewed its Statewide Agency Coordination plan, which describes the DEQ programs that have been determined to significantly affect land use. DEQ considers that its programs specifically relate to the following statewide goals:

Goal	Title
5	Open Spaces, Scenic and Historic Areas, and Natural Resources
6	Air, Water and Land Resources Quality
9	Ocean Resources
11	Public Facilities and Services
16	Estuarial Resources

Statewide goals also specifically reference the following DEQ programs:

- Nonpoint source discharge water quality program – Goal 16
- Water quality and sewage disposal systems – Goal 16
- Water quality permits and oil spill regulations – Goal 19

Determination

DEQ determined that these proposed rules do not affect land use under OAR 340-018-0030 or DEQ's State Agency Coordination Program.

Stakeholder and public involvement

Advisory committee

Background

DEQ convened the Clean Fuels Program Corrections 2016 Rulemaking advisory committee which met on June 1, 2016. The committee included importers of various transportation fuels; large and small businesses that may be regulated parties; the general public; and conservation organizations with members that may be impacted by the program. The committee's web page is located at: Clean Fuels Program Corrections Advisory Committee.

The committee members were:

Name	Representing
Ralph Poole	Campo & Poole Distributing
Micah Berry	Chevron
Todd Campbell	Clean Energy Fuels
Jana Gastellum	Oregon Environmental Council
Jessica Hoffman	RPMG
Connor Nix	Shell Oil Products US
Miles Heller	Tesoro
Elizabeth Hepp	Valero
Frank Holmes	Western States Petroleum Association

Meeting notifications

To notify people about the advisory committee's activities, DEQ:

- Sent GovDelivery bulletins, a free e-mail subscription service, to the following lists:
  - On May 16, 2016 DEQ sent a one-time notice to DEQ Public Notices, Oregon Clean Fuels Program, and Rulemaking subscribers to describe how to sign up for advisory committee meeting notices, and
  - People who signed up for the advisory committee bulletin.
- Added advisory committee announcements to DEQ's calendar of public meetings at DEQ Calendar.

Committee discussions

The committee discussed the recommendations described under the Statement of Fiscal and Economic Impact section above.

EQC prior involvement

DEQ shared information about this rulemaking in an email from Stephanie Caldera to the EQC dated February 29, 2016.

DEQ also shared information about this rulemaking on April 21, 2016 when it proposed temporary rule changes.

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Public notice and hearings

Public notice

DEQ provided notice of the proposed rulemaking and rulemaking hearing on June 15, 2016 by:

- Filing notice with the Oregon Secretary of State for publication in the Oregon Bulletin on July 1, 2016,
- Notifying the EPA by email,
- Posting the Notice, Invitation to Comment and Draft Rules on the web page for this rulemaking; located at: Clean Fuels Program Corrections 2016 Rulemaking,
- Emailing 2,529 interested parties on the following DEQ lists through GovDelivery:
  - Oregon Clean Fuels Program
- Emailing the following key legislators required under ORS 183.335:
  - Senator Chris Edwards, Chair, Senate Environment and Natural Resources Committee
  - Representative Jessica Vega-Pederson, Chair, House Energy and Environment Committee
  - Senator Lee Beyer
- Emailing advisory committee members,
- Postings on Twitter and Facebook
- Posting on the DEQ event calendar: DEQ Calendar

Public hearings

DEQ plans to hold one public hearing. The table(s) below provides the details.

DEQ will consider all written comments received at the hearings listed below before completing the draft rules. DEQ will summarize all comments and respond to comments in the Environmental Quality Commission staff report.

Hearing 1	
Date	**July 20, 2016**
Time	**10:00 a.m.**
Address Line 1	**811 SW 6th Avenue**
Address Line 2	Conference Room 10
City	Portland
Presiding Officer	Elizabeth Elbel
Staff Presenter	Cory-Ann Wind
Call-in Phone Number	888-278-0296
Call-in Access Code	8040259

How to comment on the proposed rules:

Submit comment online

Clean Fuels Program Corrections Comment Page

Note for public university students:
ORS 192.501(29) allows Oregon public university and OHSU students to protect their university email addresses from disclosure under Oregon's public records law. If you are an Oregon public university or OHSU student you may omit your email address when you complete the online form to submit a comment.

By mail
Oregon DEQ
Attn: Cory-Ann Wind
811 SW Sixth Avenue
Portland, OR 97204-1390

At the hearing

Close of public comment period

The comment period will close 4 p.m. on July 21, 2016.

Accessibility Information

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Portland, OR, 97204

To schedule a review of all websites and documents referenced in this announcement, call Cory-Ann Wind, Portland, 503-229-5388 (800-452-4011, ext. 5622 toll-free in Oregon).

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Note: DEQ is proposing to make the current, temporary rules (included below) permanent. Therefore, no rule changes are indicated.

DEPARTMENT OF ENVIRONMENTAL QUALITY

DIVISION 253

OREGON CLEAN FUELS PROGRAM

340-253-8010

Table 1 — Oregon Clean Fuel Standard for Gasoline and Gasoline Substitutes

Oregon Department of Environmental Quality Table 1 – 340-253-8010 **Oregon Clean Fuel Standard for Gasoline and Gasoline Substitutes**		
Calendar Year	**Oregon Clean Fuel Standard (gCO2e per MJ)**	**Percent Reduction**
2015	None (Gasoline Baseline is 98.62)	
2016*	98.37	0.25 percent
2017	98.13	0.50 percent
2018	97.63	1.00 percent
2019	97.14	1.50 percent
2020	96.15	2.50 percent
2021	95.17	3.50 percent
2022	93.69	5.00 percent
2023	92.21	6.50 percent

Oregon Department of Environmental Quality Table 1 – 340-253-8010 **Oregon Clean Fuel Standard for Gasoline and Gasoline Substitutes**		
2024	90.73	8.00 percent
2025 and beyond	88.76	10.0 ercent

*Initial compliance period is a two-year period for 2016 and 2017. The 2016 standard is to be used only to calculate deficits and credits in 2016 under OAR 340-253-2010.

[ED. NOTE: Tables referenced are not included in rule text. Click here for PDF copy of table(s).]

Stat. Auth.: ORS 468.020 & 2009 OL Ch. 754 Sec. 6 (2011 Edition)
Stats. Implemented: 2009 OL Ch. 754 Sec. 6 (2011 Edition)
Hist.: DEQ 3-2015, f. 1-8-15, cert. ef. 2-1-15; DEQ 13-2015, f. 12-10-15, cert. ef. 1-1-16; DEQ 5-2016(Temp), f. & cert. ef. 4-22-16 thru 9-1-16

340-253-8020

Table 2 — Oregon Clean Fuel Standard for Diesel Fuel and Diesel Substitutes

State of Oregon Department of Environmental Quality Table 2 – 340-253-8020 **Oregon Clean Fuel Standard for Diesel Fuel and Diesel Substitutes**		
Calendar Year	**Oregon Clean Fuel Standard (gCO2e per MJ)**	**Percent Reduction**
2015	None (Diesel Baseline is 99.64)	
2016*	99.39	0.25 percent
2017	99.14	0.50 percent
2018	98.64	1.00 percent
2019	98.15	1.50 percent

State of Oregon Department of Environmental Quality Table 2 – 340-253-8020 **Oregon Clean Fuel Standard for Diesel Fuel and Diesel Substitutes**		
2020	97.15	2.50 percent
2021	96.15	3.50 percent
2022	94.66	5.00 percent
2023	93.16	6.50 percent
2024	91.67	8.00 percent
2025 and beyond	89.68	10.00 percent

*Initial compliance period is a two-year period for 2016 and 2017. The 2016 standard is to be used only to calculate deficits and credits in 2016 under OAR 340-253-2010.

[ED. NOTE: Tables referenced are not included in rule text. Click here for PDF copy of table(s).]

Stat. Auth.: ORS 468.020, 2009 OL Ch. 754 Sec. 6 (2011 Edition) & 2015 OL Ch. 4 Sec. 3
Stats. Implemented: 2009 OL Ch. 754 Sec. 6 (2011 Edition)
Hist.: DEQ 3-2015, f. 1-8-15, cert. ef. 2-1-15; DEQ 13-2015, f. 12-10-15, cert. ef. 1-1-16; DEQ 5-2016(Temp), f. & cert. ef. 4-22-16 thru 9-1-16

340-253-8030

Table 3 — Oregon Carbon Intensity Lookup Table for Gasoline and Gasoline Substitutes

Oregon Department of Environmental Quality Table 3 – 340-253-8030 **Oregon Carbon Intensity Lookup Table for Gasoline and Gasoline Substitutes**					
Fuel	**Pathway Identifier**	**Pathway Description**	**Carbon Intensity Values (gCO2e/MJ)**		
			Direct Lifecycle Emissions	**Land Use or Other Indirect Effect**	**Total Emissions**

Oregon Department of Environmental Quality Table 3 – 340-253-8030 **Oregon Carbon Intensity Lookup Table for Gasoline and Gasoline Substitutes**					
Gasoline	ORGAS001	Clear gasoline - based on a weighted average of gasoline supplied to Oregon	100.77	-	100.77
	ORGAS002	Blended gasoline (E10) - 90% clear gasoline & 10% corn ethanol based on Midwest average	98.54	-	98.54
Ethanol from Corn	ORETHC001	Midwest average - MW corn; Dry Mill; NG; MW production	62.29	7.60	69.89
	ORETHC002	Oregon average - MW corn; Dry Mill; NG; Oregon production	57.08	7.60	64.68

Oregon Department of Environmental Quality Table 3 – 340-253-8030 **Oregon Carbon Intensity Lookup Table for Gasoline and Gasoline Substitutes**					
Ethanol from Sugarcane	ORETHS001	Brazilian sugarcane base case	39.24	11.80	51.04
Ethanol from Sorghum	ORETHG001	Sorghum; average	66.96	19.40	86.36
Ethanol from Molasses	ORETHM001	Molasses; average	41.03	11.80	52.83
Compressed Natural Gas	ORCNG001	North American NG delivered via pipeline; compressed in OR	79.93	-	79.93
	ORCNG002	Landfill gas (biomethane) cleaned up to pipeline quality NG; compressed in OR	50.26	-	50.26
Liquefied Natural Gas	ORLNG001	North American NG delivered via pipeline; liquefied in OR using liquefaction with 80% efficiency	94.46	-	94.46
	ORLNG002	Landfill Gas (biomethane) to LNG liquefied in OR using liquefaction with 80% efficiency	65.81	-	65.81
Liquefied Petroleum Gas	ORLPG001	Liquefied petroleum gas	83.05	-	83.05
Electricity	ORELC001	Oregon average electricity mix	31.85	-	31.85

NOTE: DEQ recognizes that indirect effects, including indirect land use change, are real. However the methodologies to quantify these effects are still in development. DEQ intends to monitor the science of indirect effect and will adjust carbon intensity values through future rulemaking as methodologies improve.

[ED. NOTE: Tables referenced are not included in rule text. Click here for PDF copy of table(s).]

Stat. Auth.: ORS 468.020, 2009 OL Ch. 754 Sec. 6 (2011 Edition) & 2015 OL Ch. 4 Sec. 3
Stats. Implemented: 2009 OL Ch. 754 Sec. 6 (2011 Edition) & 2015 OL Ch. 4 Sec. 3

Hist.: DEQ 8-2012, f. & cert. ef. 12-11-12; DEQ 15-2013(Temp), f. 12-20-13, cert. ef. 1-1-14 thru 6-30-14; DEQ 8-2014, f. & cert. ef. 6-26-14; Renumbered from 340-253-3010 by DEQ 3-2015, f. 1-8-15, cert. ef. 2-1-15; DEQ 13-2015, f. 12-10-15, cert. ef. 1-1-16; DEQ 5-2016(Temp), f. & cert. ef. 4-22-16 thru 9-1-16

340-253-8040

Table 4 — Oregon Carbon Intensity Lookup Table for Diesel and Diesel Substitutes

Oregon Department of Environmental Quality

Table 4 – 340-253-8040

Oregon Carbon Intensity Lookup Table for Diesel and Diesel Substitutes

Fuel	Pathway Identifier	Pathway Description	Carbon Intensity Values (gCO2e/MJ)		
			Direct Lifecycle Emissions	Land Use or Other Indirect Effect	Total Emissions
Diesel	ORULSD001	Clear diesel, based on a weighted average of diesel fuel supplied to Oregon	101.65	-	101.65
	ORULSD002	Blended diesel (B5) - 95% clear diesel & 5% soybean biodiesel	99.64	-	99.64
Biodiesel	ORBIOD001	Conversion of Midwest soybeans to biodiesel	29.15	29.10	58.25

Oregon Department of Environmental Quality Table 4 – 340-253-8040 **Oregon Carbon Intensity Lookup Table for Diesel and Diesel Substitutes**					
	ORBIOD002	Conversion of Used Cooking Oil to biodiesel where "cooking" is required; NW UCO; Oregon production	18.12	-	18.12
	ORBIOD003	Conversion of tallow to biodiesel; MW tallow; MW production	37.93	-	37.93
	ORBIOD004	Conversion of canola oil to biodiesel	43.34	14.50	57.84
	ORBIOD005	Conversion of corn oil to biodiesel	36.89	-	36.89
Renewable Diesel	ORRNWD001	Conversion of soybeans to renewable diesel	23.15	29.10	52.25
	ORRNWD002	Conversion of Used Cooking Oil to renewable diesel	19.25	-	19.25
	ORRNWD003	Conversion of tallow to renewable diesel	29.96	-	29.96
	ORRNWD004	Conversion of canola oil to renewable diesel	35.48	14.50	49.98
	ORRNWD005	Conversion of corn oil to renewable diesel	33.64	-	33.64

Oregon Department of Environmental Quality Table 4 – 340-253-8040 **Oregon Carbon Intensity Lookup Table for Diesel and Diesel Substitutes**					
Compressed Natural Gas	ORCNG001	North American NG delivered via pipeline; compressed in OR	79.93	-	79.93
	ORCNG002	Landfill gas (biomethane) cleaned up to pipeline quality NG; compressed in OR	50.26	-	50.26
Liquefied Natural Gas	ORLNG001	North American NG delivered via pipeline; liquefied in OR using liquefaction with 80% efficiency	94.46	-	94.46
	ORLNG002	Landfill Gas (bio-methane) to LNG liquefied in OR using liquefaction with 80% efficiency	65.81	-	65.81
Liquefied Petroleum Gas	ORLPG001	Liquefied petroleum gas, crude and natural gas mix	83.05	-	83.05

[ED. NOTE: Tables referenced are not included in rule text. Click here for PDF copy of table(s).]

Stat. Auth.: ORS 468.020, 2009 OL Ch. 754 Sec. 6 (2011 Edition) & 2015 OL Ch. 4 Sec. 3
Stats. Implemented: 2009 OL Ch. 754 Sec. 6 (2011 Edition) & 2015 OL Ch. 4 Sec. 3
Hist.: DEQ 8-2012, f. & cert. ef. 12-11-12; DEQ 15-2013(Temp), f. 12-20-13, cert. ef. 1-1-14 thru 6-30-14; DEQ 8-2014, f. & cert. ef. 6-26-14; Renumbered from 340-253-3020 by DEQ 3-2015, f. 1-8-15, cert. ef. 2-1-155; DEQ 13-2015, f. 12-10-15, cert. ef. 1-1-16; DEQ 5-2016(Temp), f. & cert. ef. 4-22-16 thru 9-1-16