



State of Oregon Department of Environmental Quality

Written Comments

Clean Fuels Program Expansion 2022

Rulemaking: Advisory Committee Meeting 1

This document is a compilation of written comments received related to the first meeting of the advisory committee for the Clean Fuels Program Expansion 2022 Rulemaking held Dec. 9, 2021.

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December 23, 2021

Cory Ann Wind
Oregon Department of Environmental Quality (DEQ)
700 NE Multnomah Street, Suite 600
Portland, OR 97232
Submitted electronically via CFP.2022@deq.state.or.us

RE: 3Degrees Group Inc.'s Comments on DEQ December 2021 Rulemaking Advisory Committee #1 Meeting

Dear Ms. Cory Ann Wind,

3Degrees Group Inc. (“3Degrees”) would like to thank Department of Environmental Quality (“DEQ”) Staff for hosting the initial RAC workshop to review the ICF Scenarios Analysis and the potential topics for the 2022 Clean Fuels Program (“CFP”) expansion rulemaking. We appreciate this opportunity to submit comments to inform the 2022 rulemaking.

3Degrees is a certified B Corporation with deep expertise in greenhouse gas accounting, environmental markets, renewable energy and carbon project development, transportation decarbonization solutions, and utility renewable energy programs. We are active in clean fuels programs in multiple jurisdictions and work with organizations to leverage these programs to enable transportation decarbonization. 3Degrees is excited to work with the DEQ and the CFP stakeholders to enhance Oregon's leadership in decarbonizing transportation by adopting a strong CFP that maximizes climate, public health, and economic benefits.

Our comments outline 3Degrees's priorities to be addressed in the 2022 rulemaking. We have organized the issues of interest to us around the proposed topics presented at the December 9th meeting. We look forward to further discussion on stakeholder priorities at the next RAC meeting in January.

Proposed Topic 1: Reporting

Within the topic of clarifying language related to reporting, 3Degrees requests that Staff clarify and align details around designated aggregators across credit generation opportunities. The entity with the first right to credits is meant to align with who is closest to the decision-making related to supplying low-carbon transportation fuels. Eligible credit generators are able to designate an aggregator in order to be able to benefit from the program even if they do not have the resources to manage program participation themselves or might not otherwise be able to participate directly. Aggregator designation is particularly beneficial for smaller entities, including entities providing smaller volumes of credit-generating fuels.

Across credit generation opportunities, DEQ should clarify that the credit generator is able to designate an aggregator, and that this aggregator inherits the priority and any other preferential treatment of the designator.

Proposed Topic 2: Pathways

Within the topic of pathways, 3Degrees is supportive of creating Tier 1 simplified calculators for additional fuels, including for electricity from dairy/swine manure. However, if Staff moves forward with the creation of simplified calculators for additional fuel pathways, this should not remove or affect the ability to use Lookup Table pathways.

Proposed Topic 3: Electricity

3Degrees supports Staff's proposal to address adding new EERs during the upcoming rulemaking, and recommends that Staff add an EER for electric airport ground support equipment ("eGSE") to the regulation so as to further incentivize airports to transition to electric options.

Proposed Topic 4: Hydrogen

3Degrees supports Staff's proposal to consider expanding book-and-claim accounting for hydrogen. It is worth further exploration of the likely energy carriers for hydrogen in the near future and how book-and-claim accounting could encompass these carriers, such as ammonia, to further incentivize low-CI hydrogen production.

Proposed sub-committees and workshops

3Degrees is supportive of sub-committees, particularly electricity and biogas/RNG, and would be eager to participate in the discussions outlined in the December 9th meeting. Within the biogas and RNG sub-committee, we support Staff's proposal to discuss project year requirements for biogas-derived electricity projects as well as default engine efficiency adjustments. On the latter topic, as several commenters included in their responses to the October 2021 listening session, the current implementation of the "efficiency adjustment factor" has resulted in biogas-derived electricity being less valuable under the program than the underlying biogas if used as a fuel itself.

Thank you for this opportunity to submit comments. We look forward to continued participation and discussion in upcoming workshops.

Sincerely,

/s/ Maya Kelty

Maya Kelty
Director, Regulatory Affairs

Air Products and Chemicals, Inc.
7201 Hamilton Boulevard
Allentown, PA 18195-1501



www.airproducts.com

December 21, 2021

Attn: Cory-Ann Wind
Clean Fuels Program Manager
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700 NE Multnomah Street, Suite 600 Portland, OR
97232-4100

Comments submitted electronically
CFP2022@deq.state.or.us

RE: Comments Related to the December 9th 2021 Workshop for the 2022 Clean Fuels Program Rulemaking

Dear Ms. Wind,

Air Products is pleased to provide comments in support of DEQ's 2022 rulemaking for the Clean Fuels Program (CFP). We strongly support low carbon transportation fuel programs like the one in Oregon and want to lend our support to specific concepts DEQ suggested during the workshop for inclusion in the upcoming rulemaking.

Air Products is the only US based global industrial gas company, in operation for over 80 years with operations in more than 50 countries around the globe. The company's core industrial gases business provides atmospheric and process gases and related equipment to manufacturing markets, including refining and petrochemical, metals, electronics, food and beverage and healthcare. Approximately 20,000 employees globally work to make Air Products the world's safest and best performing industrial gases company, providing sustainable offerings and excellent service to all customers. Worldwide, Air Products is the largest hydrogen producer with over 8,000 metric tons per day of production capacity and over 1,800 miles of industrial gas pipelines.

Air Products is committed to meeting the world's carbon reduction and energy transition challenges at scale. As an example, we have announced the world's largest green hydrogen project in Saudi Arabia. This \$5 billion project will deploy nearly five times more electrolyzer capacity than had been installed globally at the time the project was announced and Air Products recently signed a contract with thyssenkrupp Uhde Chlorine Engineers to supply a more than two-gigawatt (2 GW) electrolysis plant for the project. Our company has committed an additional \$2 billion to develop the distribution and refueling infrastructure to bring this fuel to mobility markets around the world. We have also announced a net-zero carbon blue hydrogen project – a \$1 billion investment in a hydrogen energy complex in Alberta, Canada, which deploys carbon capture and sequestration (CCS) coupled with an innovative design and advanced technology to minimize emissions of both greenhouse gases and criteria air pollutants. Most recently, Air Products announced on October 14th that we would build, own and operate a \$4.5 billion clean energy complex, which will produce over 750 million standard cubic feet per day (MMSCFD) of blue hydrogen in Louisiana. This U.S. project also includes the capture and permanent sequestration of over five million metric tons per year of carbon dioxide. Air Products

stands ready to partner with Oregon utilizing our hydrogen supply and distribution capabilities to contribute to the state's achievement of its carbon reduction goals.

DEQ acknowledged two very important concepts in the workshop that will help advance both the use of hydrogen as a zero-emission vehicle fuel, feedstock and support the development of a clean hydrogen economy.

Advanced Credit Opportunities for Hydrogen

Air Products appreciates DEQ considering advanced crediting provisions for the deployment of hydrogen fuel cell vehicles (FCVs). The switch to hydrogen for heavy-duty transportation such as buses and semi-trucks is an essential part of decarbonizing the sector. Hydrogen fuel cell trucks and buses have inherent technical advantages compared to their battery electric counterparts including faster refuel times, longer range, and larger payloads, while performing better in extreme climate conditions. Hydrogen as a transportation fuel most closely mirrors the traditional transportation fuel experience. When deployed at scale, hydrogen fuel cell vehicles provide cost savings on a total cost of ownership basis for many fleets.

We understand that the current regulation provides advanced credits for medium, heavy, and light-duty electric vehicles primarily deployed by government agencies, including transit agencies and school districts, as well as tribes. Currently, eligible light-duty vehicles must be part of a fleet that will be fully electrified in 15 years. At a minimum, FCVs should be able to generate advanced credits for the same fleets as prescribed currently for battery-electric vehicles. However, we ask that DEQ consider extending advanced credits to private fleets of medium and heavy-duty vehicles as converting these fleets to zero-emission fleets can provide substantial reductions in diesel emissions and promote public health in communities heavily impacted by goods movement related activities (like ports, railyards, and warehouse distribution centers).

In support of expanding advanced crediting opportunities to hydrogen, we ask that DEQ undertake a review of the 5% advanced credit generation limit prescribed in 340-253-1100 (8) and raise it if needed to accommodate the new credit generating activities.

Applicability of Book and Claim Accounting to Incentivize Increased Utilization of Low Carbon Hydrogen

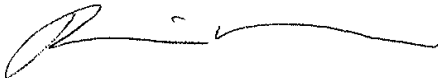
We appreciate DEQs willingness to consider expanding a book and claim accounting approach beyond renewable electricity and biomethane to low carbon hydrogen. This approach will be important as new sources of low-carbon intensity (CI) hydrogen come on-line but are transported in multi-source/multi-use distribution systems. The approved CI for the hydrogen should be retained to its designated end-use and robust accounting systems can be deployed to ensure accurate credit generation at the point of end use. We also ask that any approach accommodate retained environmental attributes when low-CI hydrogen is converted to ammonia (NH₃) as an efficient long-distant carrier for hydrogen. In the future, this low CI NH₃ could be used directly as a fuel in shipping or disassociated near the point of end use to provide a source of low-CI hydrogen.

It will be important that the provisions allow the environmental attributes of hydrogen at varying carbon intensities to be tracked and credited consistent with a variety of end uses including, but not limited to:

- Clean fuel dispensed to fuel cell vehicles.
- Feedstock to produce renewable fuels like renewable diesel, gasoline, or alternative jet fuel, including co-processed renewable fuels.
- Feedstock to petroleum refinery processes should DEQ consider future amendments to allow refinery investment credit or renewable hydrogen provisions like California.

Air Products appreciates the opportunity to provide this feedback and would be happy to meet with DEQ to provide additional details related to regulatory development. Please feel free to contact me.

Respectfully,

A handwritten signature in black ink, appearing to read "Miles Heller", with a long horizontal flourish extending to the right.

Miles Heller
Director, Greenhouse Gas Government Policy



Mark Bunch
Regulatory Advisor
C&P – Fuel supply & midstream: biofuel & low carbon

bp America Inc.
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Chicago, IL 60606

December 21, 2021

Oregon Department of Environment Quality
VIA Email Transmission
CFP2022@deq.state.or.us

Re: Oregon Clean Fuels Rules Advisory Committee Meeting, December 9, 2021

Dear Department of Environmental Quality Staff:

On behalf of bp America Inc. (“bp”), thank you for the opportunity to participate in the Oregon Department of Environmental Quality’s (“DEQ”) rulemaking on the Clean Fuels Program (“CFP”) as a member of the Rules Advisory Committee (“RAC”).

bp’s ambition is to become a net zero company by 2050 or sooner, and to help the world reach net zero. Consistent with bp’s ambition, we are actively advocating for policies that address greenhouse gas (“GHG”) emissions. These comments are given in that context and pertain to some of the issues discussed during the December 9th meeting.

Within the context of the DEQ’s July 2021 Illustrative Compliance Scenario, bp recommends that DEQ consider a diversified portfolio approach for GHG reduction in the transport sector. Adopting this approach to carbon intensity (“CI”) reduction target planning will help to mitigate unforeseen impacts to the program and would allow DEQ to avoid restricting potential options in rulemaking.

bp has the following observations and suggestions for DEQ’s consideration:

Project-based crediting

bp recommends that the RAC specifically discuss project-based crediting. Fossil fuels will be used for many years even within a rapid energy transition scenario. Project-based crediting has the potential to accelerate life cycle decarbonization of the fossil component of fuels. Adoption could support DEQ program expansion for CI target setting and accelerate refinery decarbonization projects in the Pacific Northwest. If project-based crediting is not considered, DEQ would be overlooking a considerable source of GHG reduction essential to a diversified portfolio approach.

As a reminder, bp shared its position on this issue during the October 22, 2021 listening session and in the comment letter we subsequently submitted.

Book-and-Claim

There are many proposed topics within the RAC presentation deck that bp welcomes. In particular, the proposals for hydrogen are forward thinking and should encourage future investment in Oregon's hydrogen economy. The consideration of book-and-claim accounting for hydrogen into a hydrogen network begs the question: why not also consider expanding Renewable Natural Gas ("RNG") book-and-claim for hydrogen and process energy in liquid fuel pathways? There are many possible benefits in taking book-and-claim expansion a step further that could include, but are not limited to, the following:

- Allowing RNG to make a greater contribution to supporting DEQ's CFP target setting than solely through direct transport. ICF International's 2021 Illustrative Compliance Scenario suggested limited contribution based purely on direct transport demand.
- Offering the ability for liquid fuel producers, such as RNG producers, to reduce CI that is not feedstock dependent. This will be an important factor as liquid biofuel demand grows. Ultimately, it may not be liquid fuel production capacity that is the limiting factor, but access to the low CI feedstocks. As such, RNG could mitigate risk associated with the forecasting of liquid fuel contribution to support DEQ's target ambitions under the CFP.
- Taking advantage of a technology that is available now. Credit bank drawdown was a theme within the scenarios that were presented and the ability to bolster and/or provide assurance from the liquid fuel GHG reduction contribution would make this an attractive option for DEQ to consider.

Given the points above, bp requests book-and-claim be given future RAC consideration, perhaps by adding it to the agenda of the proposed Biogas and RNG workshop that was discussed in our recent RAC meeting.

Thank you for the opportunity to comment on these important topics and we look forward to working with DEQ and key stakeholders through this rulemaking process. In the meantime, do not hesitate to reach out to me at mark.bunch@bp.com or 708-228-6093 if you have any questions or need additional context.

Sincerely,

A handwritten signature in blue ink, appearing to read "M. Bunch".

Mark Bunch



December 23, 2021

Cory-Ann Wind, Clean Fuels Program Manager
Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
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Re: NBB Comments on 2022 CFP Expansion Rulemaking

Dear Ms. Wind:

As a member of the Rulemaking Advisory Committee (RAC), I want to thank you for the opportunity to provide comments on the 2022 Clean Fuels Program (CFP) expansion rulemaking. The National Biodiesel Board (NBB) is the U.S. trade association representing the entire biodiesel and renewable diesel value chain, including producers, feedstock suppliers, and fuel distributors. Our members are also producing an increasing amount of sustainable aviation fuel to meet a growing demand.

You have asked for input from RAC members and the general public on a number of points discussed at the December 9th RAC meeting, which are shown below along with our responses. We also fully support the comments submitted by our member companies, including those provided by Renewable Energy Group (REG).

As a general comment, NBB fully supports expanding and accelerating the CFP under this rulemaking. Low carbon fuel programs like the CFP are a key part of the West Coast's suite of measures to reduce greenhouse gas emissions (GHG) aggressively and effectively from the transportation sector, the single biggest contributor of GHGs in Oregon and other states.

Avoiding and Reducing New Anthropogenic Carbon Emissions Are Key to Addressing Climate Change

As an initial matter, it is important to emphasize that new carbon emissions must be eliminated or reduced to the maximum extent feasible and as quickly as possible in order to address climate change effectively. The Intergovernmental Panel on Climate Change (IPCC) recently released its latest report (AR6) amplifying the need for quick and effective actions to reduce

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GHG emissions to reduce the worst effects of climate change¹. The use of petroleum fuels in transport continues to be the largest source of anthropogenic emissions in Oregon and other states, so strategies to address climate change and achieve carbon neutrality as quickly as possible must have, at a minimum, the goal of eliminating, or reducing to the maximum extent feasible, the use of petroleum fuel². While the current CFP carbon intensity (CI) reduction targets of 10% by 2025, 20% by 2030 and 25% by 2035 are aggressive, we believe even more stringent CI reduction targets are feasible in the 2025-2035 timeframe. By ratcheting down the CI targets even more, we believe Oregon can enhance the strong market signals already generated by the CFP, thereby further incentivizing innovations that can bring more alternative and sustainable fuels to the state.

1) Does setting targets through 2035 provide sufficient long-term certainty for investment decisions?

This question correctly recognizes that investors in low-carbon fuels require long-term certainty in order to secure the funding needed for high capital expense projects. These include new charging infrastructure for vehicle electrification; clean hydrogen production and refueling stations; organic waste digesters and biomethane upgrading facilities; and new and expanded biodiesel and renewable diesel feedstock pre-processing and fuel production facilities. Accordingly, setting enforceable CI standards through 2035 would help provide long-term certainty for those types of investment decisions. But even better would be to set standards through 2050, consistent with Oregon's overall climate program targets. Since the CFP is one of Oregon's marquee carbon reduction strategies that will remain important throughout the state's climate program, the market signal and investment certainty would be greatly enhanced by setting longer term targets through 2050 as it would reflect the state's long-term commitment to an aggressive, all-of-the-above decarbonization effort that would help de-risk the investment decisions needed to accomplish the state's climate objectives.

2) What are the risks of setting the targets too low or too high?

Governor Brown's directive to achieve a more than doubling of the state's carbon intensity reduction targets for transportation fuels places Oregon at the forefront of U.S. clean fuels programs, ahead of even California. We applaud the Governor's bold leadership. With that said, we believe Oregon can and should pursue an even more aggressive set of CI targets, for the various reasons discussed in these comments.

¹ IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press. In Press.

² The transition from petroleum fuel use in transportation and other sectors has been identified as a priority objective in Governor Brown's EO 20-04 and other executive orders.

Setting the targets too low would run a number of risks. For example, the state risks setting up an oversupply of credits due to its expanded and aggressive electrification efforts, new/expanded renewable diesel production coming online in the next several years, and new/expanded renewable natural gas production. The oversupply, in turn, would likely depress CFP credit prices, reducing the CFP's market signal and further eroding investor interest in Oregon's low carbon fuels market, making it more difficult for the state to reach its climate objectives in the long term.

Further, setting the targets too low misses the opportunity to achieve "low hanging fruit" GHG reductions as quickly as possible, such as expanding the use of drop-in petroleum replacements like biodiesel and renewable diesel. Because these are drop-in fuels that can completely replace a fleet's petroleum diesel consumption immediately and without any additional infrastructure or vehicular changes, targets that are too low would not be able to leverage the ability of these diesel replacements to reduce GHGs to the maximum extent feasible in the near term.³

From NBB's perspective, there are few, if any, substantive downsides to setting the targets too high; previous experience shows the market responds to strong policy signals. When California doubled its CI reduction targets in 2018 to 20% by 2030, the low carbon fuels industry responded by innovating new technologies and expanding production of low carbon fuels to meet the increased demand. For example, the biomass-based diesel sector increased supplies of low carbon biodiesel and renewable diesel in California by 51% from 2018 through 2020 (and that includes the economic dampening from the COVID-19 pandemic).⁴ Indeed, California is now actively exploring whether to accelerate its pre-2030 CI targets or even deepen them further through 2030 and beyond⁵. The biomass-based diesel industry is already ramping up efforts to further increase supplies of biodiesel and renewable diesel to help California, Oregon, and Washington decarbonize one of the most difficult to decarbonize sectors, medium and heavy duty on- and off-road vehicles and equipment. A set of more aggressive targets would leverage the efforts to increase clean fuel supplies already underway by the biomass-based diesel industry, as well as those involved in providing electrification, renewable natural gas, and other low carbon fuels.

³ For example, a number of fleets are already using R80/B20 blends that are 100% sustainable and renewable.

⁴ CARB LCFS Quarterly Data Spreadsheet, https://ww2.arb.ca.gov/sites/default/files/2021-12/quarterlysummary_103121.xlsx, accessed Dec. 22, 2021. From 2018 through 2020, overall credit generation from all fuels increased by 34%. Ibid.

⁵ CARB Workshop, "Potential Future Changes to the LCFS," https://ww2.arb.ca.gov/sites/default/files/2021-12/LCFS%2012_7%20Workshop%20Presentation.pdf, and CARB 2022 GHG Scoping Plan Update process, <https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/scoping-plan-meetings-workshops>.

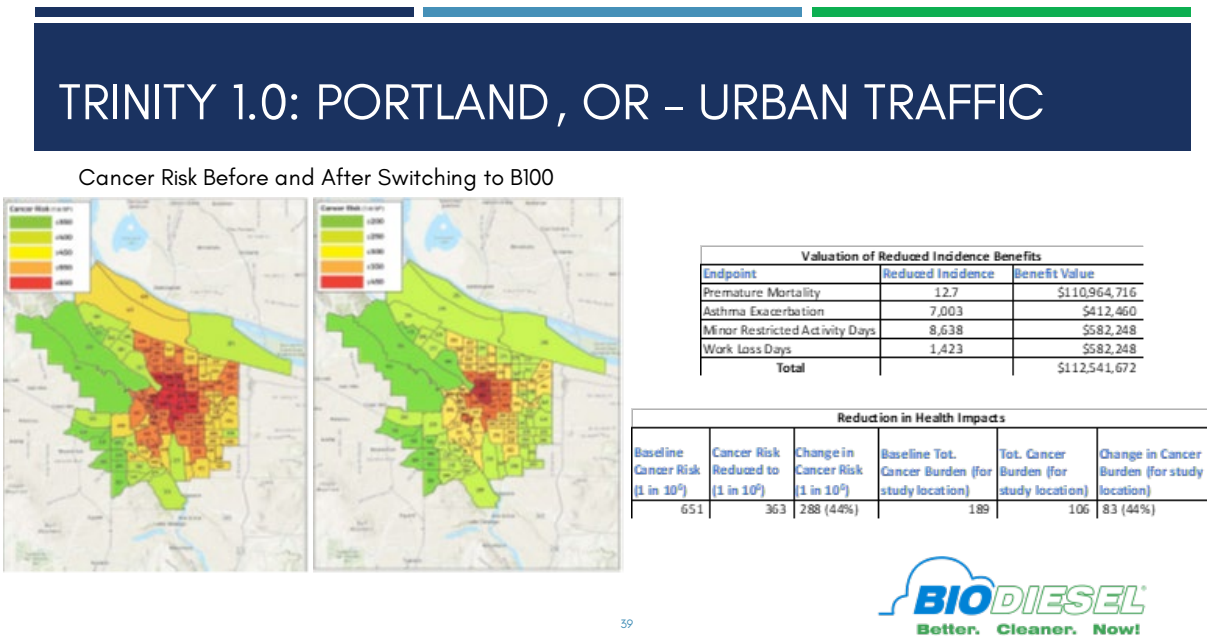
3) Are there any community needs and health impacts that we need to take into consideration?

Besides achieving greater GHG reductions, a more aggressive set of CI targets would facilitate greater co-benefits in the near and long term, particularly in reducing health impactful pollutants like diesel particulate matter (diesel PM). As DEQ has already highlighted from market trends and clean fuels forecasts, volumes of biodiesel and renewable diesel are expected to continue growing in the coming years. As noted, these drop-in diesel replacements reduce GHGs substantially, upwards of 86% or more (74% on average) as compared to petroleum diesel. But just as important, these diesel replacements significantly reduce diesel PM emissions, upwards of 50-70% or more in older, legacy vehicles (i.e., those without diesel particulate filters).

While states like Oregon and California are rightfully pushing to electrify all emission sources as quickly as possible, your opening remarks at the RAC meeting correctly recognize that, in difficult to decarbonize sectors like medium and heavy duty on- and off-road vehicles, such a transition will likely take a long time and very large investments in both new vehicles and charging infrastructure. As you further noted, this begs the question of what the state can do while it is pursuing electrification in these challenging sectors to continue to reduce both GHGs and air pollution that adversely affects Oregon residents, especially those in disadvantaged and EJ communities.

While biodiesel's ability to reduce diesel PM emissions is well-established, there is little, if any, work in the literature to quantify those benefits at the neighborhood or census tract level in metrics that are relevant to ordinary citizens (e.g., cancer burden reduced, premature deaths avoided, asthma cases mitigated, etc.). Thus, over the past two years, NBB has commissioned Trinity Consultants to quantify the public health benefits of replacing petroleum diesel with biodiesel in such legacy vehicles. Using the same air dispersion and health risk assessment modeling tools used by U.S. EPA and CARB, the resulting Trinity Study quantified the expected benefits from such a switch in terms of premature deaths avoided, asthma cases reduced, work loss days avoided, and minor restricted activity days reduced, and translated those results into avoided health costs for 28 different high diesel activity sites in various states across the country, including Portland, Oregon (see Fig. 1).

Fig. 1. Projected Cancer Risk Reduction and Other Health Benefits by Switching to Biodiesel



Source: https://www.biodiesel.org/docs/default-source/trinity-study/trinity-nbb-transportation-health-risks-review-v1-03.pdf?sfvrsn=ec0f774a_2.

As shown in Fig. 1, switching from petroleum diesel to B100 in legacy vehicles operating in the Portland area would reduce cancer burden from exposure to diesel PM by about 44% (a reduction of over 80 cancer cases over a 70-yr timeframe), along with annual reductions in premature deaths (13), asthma attacks (7,000), minor restricted activity days (8,600), and work loss days (1,400), cumulatively worth nearly \$113 million per year in avoided health costs. And that is just for Portland; substantial health improvements can be achieved in other areas around Oregon exposed to high diesel emissions. Overall, Phase 1 of the study showed that, for the 13 sites evaluated in 8 states, the benefits estimated from switching to B100 would be⁶:

- 370 cancer cases reduced
- 230 premature deaths reduced per year
- 150,000 asthma attacks reduced per year
- 31,000 work loss days reduced per year
- \$2.0B health costs avoided per year.

⁶ See <https://www.biodiesel.org/news-resources/health-benefits-study>. It should be noted that the results of the Trinity Study are scalable to both similar sites as those evaluated as well as to biodiesel blends. For example, benefits for a switch to B20 would be 20% of the benefits estimated for the switch to B100. Similarly, a switch to R80/B20 would be expected to result in about 29% of the B100 benefits, based on PM reduction factors for B100 and R100. Phase 2 of the study, covering an additional 15 sites in Southwest, Midwest, and East Coast states, is due for completion in December 2021.

These benefits are especially important for disadvantaged and EJ communities, many of which are located at or near sites that still use high levels of petroleum diesel. At these sites, there are significant numbers of legacy vehicles that can benefit from the reduced DPM emissions which biomass-based diesel provides. And these sustainable diesel replacements would benefit even the more modern, 2007 and newer engines by reducing their GHG emissions and particle loading of the diesel particulate filters, thereby improving their longevity and maintenance.

4) What are the supply chain considerations that we need to account for? Production capacities of different fuel types?

We support REG's comments on feedstock and supply chain availability and incorporate those here by reference. Instead of making similar comments, we would like to focus on the need for the CFP to reflect the best GHG lifecycle assessment (LCA) science so that the CI for various alternative fuels are correctly scored and appropriately incentivized. Updating the LCA science underpinning the CFP is critical for maintaining the integrity of the program and investor confidence. To update the underlying science, it is not necessary to modify the basic LCA tools used by CFP implementing staff; rather, the only updates needed are for the datasets and assumptions used to run those modeling tools.

Since CARB last visited the indirect and direct aspects of the CI scoring under its LCFS program in 2015, the science based on direct observations and lessons learned in the field (as opposed to mere modeling speculation) show that both the indirect and direct contributions to a fuel's overall CI score have improved dramatically. For direct emission contributions, one of CARB's own staff was primary author on the lead paper showing up to an 80% overestimation of the direct CI associated with producing biomass-based diesel from rendered tallow alone.⁷ Other updates to account for actual production CI values from other feedstocks can also be made based on actual production data gained since the LCFS program began.⁸ There are also significant errors associated with the use of hydrogen in the production of biomass-based diesel that have not yet been corrected.⁹

Updating these underlying datasets and assumptions can significantly improve the carbon scores for a number of biofuels, which in turn will facilitate the increase in volumes needed to help meet an accelerated and deeper set of CI targets.

⁸ For example, correcting the rendering energy used for uncooked used cooking oil (UCO) based on actual production data supplied to CARB would lower the current value of 1073 BTU/lb to 300 BTU/lb, resulting in a further reduction of the CI score from 5.3g/MJ to 2g/MJ.

⁹ For example, 2.81 g/MJ for corn oil extraction is improperly double-counted as both an ethanol debit and a biodiesel feedstock debit. Correcting this error alone would reduce the direct CI emissions for corn oil biodiesel by 27%.

5) What are the time horizons for potential commercialization of new technologies?

Key low carbon technologies and production capacities needed to meet more aggressive CI targets are available now and in the next several years, especially for fuels operating in the medium to heavy duty on-and offroad sectors. To illustrate, much of the recent news involving renewable diesel has focused on numerous announcements of new or expanded RD production. Based on those announced and developing projects, the Energy Information Agency (EIA) forecasts that the U.S. could have 5.1 billion gallons of renewable diesel production capacity by 2024¹⁰, up from the current 0.91 billion gallons of production capacity¹¹. Even with a more aggressive set of CI targets and assuming only half (about 2.7 billion gallons) of that announced capacity comes online by 2030¹², there would still be ample amounts of biodiesel¹³ and renewable diesel to meet Oregon's needs in the medium and heavy duty sector for the foreseeable future.

Conclusion

The biomass-based diesel industry, and more recently the growing sustainable aviation fuel sector, have been strong champions of the West Coast's efforts to address climate change. We applaud Oregon's leadership and efforts to reduce GHGs further from the transportation sector through an expansion of the Clean Fuels Program. NBB believes DEQ should continue strengthening the CFP to achieve even greater carbon and air pollution reductions. We strongly encourage DEQ to consider deeper and more aggressive CI reduction targets, as well as implementing the updates and improvements noted in this letter to reflect the best available science and real-world experience. We appreciate the good working relationship we have developed with DEQ over many years and look forward to working cooperatively and productively as you proceed with the expansion rulemaking.

¹⁰ U.S. Energy Information Administration, <https://www.eia.gov/todayinenergy/detail.php?id=48916>, accessed Sept. 1, 2021.

¹¹ U.S. Energy Information Administration, <https://www.eia.gov/biofuels/update/table1.pdf>, accessed Sept. 3, 2021.

¹² Note that Bob Nelson, Senior Analyst, Jacobsen Fastmarkets, projected 3.16 billion gallons of renewable diesel production capacity from plants under construction or otherwise with an estimated 50% or greater probability of coming online within the next few years. The Jacobsen Fuel & Feedstock Conference 2021, Denver, Colorado, Aug. 25-26, 2021.

¹³ U.S. Energy Information Administration, <https://www.eia.gov/biofuels/biodiesel/capacity/>. It should be noted that the National Biodiesel Board's feedstock analysis provided the basis for its 2020 Vision, which projects the use of 6 billion gallons or more of biodiesel, renewable diesel, and sustainable aviation fuel by 2030. See [NBB Vision 2020](#), visited 9/1/2021.

Adoption of these recommendations will help ensure that biomass-based diesel fuels will continue to play the strong role they have played historically and must continue to play -- especially in the difficult to decarbonize sectors like medium and heavy-duty on-road and off-road vehicles -- while Oregon works toward a much lower carbon future,.

Sincerely,

A handwritten signature in blue ink, reading "Floyd Vergara". The signature is written in a cursive, flowing style.

Floyd Vergara, Esq., P.E.
Director of State Governmental Affairs

Sent: Friday, December 31, 2021 10:01 AM

Subject: Requested Comments re Extension & Expansion of Oregon's Clean Fuels Program (CFP)

Good morning Bill:

As requested, I take this opportunity to provide written feedback concerning extension and expansion of Oregon's Clean Fuels Program (CFP). Broadly speaking, the goal of this program is to reduce the carbon intensity of Oregon's overall transportation fuel mix from a 2025 level of 88.87 gCO₂e / MJ to something like 74 or 75 gCO₂e / MJ by 2035. Several technologies, including battery-electric, hydrogen fuel cell, and RNG-based propulsion technologies, can help Oregonians achieve this goal. To that end, we encourage Oregon DEQ to take a neutral stance with regard to selection of alternative-fuel technologies. Attempting to pick winners by providing incentives for certain technologies over other technologies should not be the role of Oregon DEQ. While we recognize that incentivizing certain propulsion technologies, such as battery-electric technology, has the potential to stimulate innovation and "move the needle" toward development of commercially-ready vehicles, we do not think that State government should encourage one technology over another.

Thanks for incorporating this perspective into the rulemaking process. I look forward to continued participation throughout this rulemaking effort, and I have altered my travel plans so I may participate in the January 26th meeting.

I hope you enjoy New Year's Eve, and I look forward to a promising 2022!

Warm regards,

Alex

Alex Schay
Membership Services
NW Alliance for Clean Transportation

www.nwalliance.net

Clean Fuels Program
Department of Environmental Quality
700 NE Multnomah St., Suite 600
Portland, OR 97232

December 27, 2021

RE: Clean Fuels Program Expansion - RAC Meeting #1 Comments

DEQ Clean Fuels Program staff,

Thank you for the opportunity to comment following the Department of Environmental Quality (DEQ)'s first Clean Fuels Program Expansion Rulemaking Advisory Committee (RAC) meeting. We submit for your consideration feedback regarding the materials and conversation from the RAC meeting, and to express our strong support for expanding the carbon intensity reduction targets to reflect the ambition that science demands and that Oregon deserves. Thank you in advance for your consideration.

Carbon intensity reduction targets

This past year, Oregon has unwantingly become the poster child for climate change, making international headlines for our deadly and devastating climate-fueled heat waves, wildfires and drought. The June 2021 heat dome alone killed some 100 Oregonians¹, including several frontline workers; threatened our state's economic recovery by shuttering small businesses and impacting local tourism²; and compounded our ongoing public health crisis by worsening air quality³ and disproportionately affecting environmental justice communities. Oregon has a responsibility to address its share of this global challenge. It is unconscionable to continue putting the lives and livelihoods of our workers, frontline communities, children and grandchildren at risk; DEQ must use every tool at its disposal to immediately cut the fossil fuel emissions that are destabilizing the climate.

Moreover, Oregon's climate tragedies are grim visual evidence of what scientific consensus has long concluded. The August 2021 U.N. Intergovernmental Panel on Climate Change (IPCC) report, described by the U.N. Secretary-General as "Code Red for Humanity," only further underscores the need for urgent action by decision-makers in Oregon to significantly and immediately cut fossil fuel emissions. The report warns that we are perilously close to exceeding the internationally agreed-upon threshold of limiting global temperature rise to 1.5°C. Oregon is already experiencing devastating extreme heatwaves, wildfires, and droughts at 1.2°C of warming, and **our state's current transportation emissions levels are contributing to these deadly, harmful and expensive climate impacts, which disproportionately**

¹<https://www.opb.org/article/2021/08/06/oregon-june-heat-wave-deaths-names-revealed-medical-examiner/#:~:text=The%20heatwave%20led%20to%20more,occurring%20in%20the%20Portland%20area.&text=Shandas%20said%20it's%20rare%20%2D%20and,on%20mortality%20during%20a%20heatwave.>

²<https://www.kgw.com/article/news/local/max-lines-businesses-close-due-to-excessive-heat/283-094c46c6-5b2e-4836-9e04-46b6ba6f593d>

³ <https://www.oregon.gov/newsroom/pages/NewsDetail.aspx?newsid=64009>

harm communities of color, tribal, rural, low-income, and other frontline communities and have taken a tremendous toll on Oregon’s overall economy. At a time when the state has needed to support COVID recovery, Oregon decision-makers also had to use precious state and local resources to respond to the following:

- **wildfires that have damaged homes, businesses, roads and water systems,**
- **long-term drought that has stressed trees, impacted livestock, and made domestic wells run dry,**
- **heat domes that harmed communities as well as damaged crops,**
- **ice storms that knocked power out,**
- **flooding that made rural roads impassable, and**
- **ocean acidification and dead zones that continue to harm marine resources.**

We are in the decisive decade for climate action. DEQ’s Clean Fuels Program Expansion provides a crucial opportunity to achieve significant emissions reductions from Oregon’s top polluting sector: transportation. By establishing a strong carbon intensity target for the program, DEQ will help create jobs in the clean fuels economy, improve public health by reducing harmful co-pollutants from tailpipe emissions, and invest in local communities and economies. The carbon intensity reduction targets are essential to the overall ambition of the Clean Fuels Program and moving the needle on climate emissions and co-pollutant reductions in the transportation sector.

We urge DEQ to maximize benefits under the Clean Fuels Program by establishing carbon intensity reduction targets that help ensure Oregon achieves science-based emissions reductions of at least 50% by 2030 and at least 90% by 2050. These economy-wide targets are in line with deep decarbonization studies and the Biden administration’s target of reducing U.S. greenhouse gas emissions 50-52% by 2030,⁴ and are necessary to fulfilling Oregon’s responsibility to meeting global greenhouse gas reduction goals. In addition, DEQ’s recently-adopted Climate Protection Program establishes a mandatory cap decline for transportation fuels, requiring 50% reductions from a baseline of 2017-2019 emissions by 2035, and 90% by 2050. An ambitious Clean Fuels Standard is complementary and supportive of achieving these mandatory emissions reductions from the transportation sector.

Of the scenarios modeled in ICF’s illustrative compliance scenarios, **Scenario C, which includes a 20% carbon intensity reduction by 2030 and a 37% CI reduction by 2035, is most in-line with the necessary ambition to achieve these science-based goals.**

Fuel pathway considerations

In order to maximize emissions reductions and co-benefits under this program, it is critical to ensure that—as the Clean Fuels Standard gets stronger—early investments in the program do not result in perverse long-term consequences. We therefore urge DEQ to be cautious not to reward early emissions reductions that may not achieve meaningful carbon intensity reductions in the future. For instance, paper transactions for

⁴ <https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/22/fact-sheet-president-biden-sets-2030-greenhouse-gas-pollution-reduction-target-aimed-at-creating-good-paying-union-jobs-and-securing-u-s-leadership-on-clean-energy-technologies/>

emissions reductions that may actually result in a buildout of fossil infrastructure without real net emissions reductions in Oregon. There may be a lot of competition for RNG throughout the economy, and transportation may not be the highest and best use for these limited molecules.

While an ambitious carbon intensity reduction target serves as the backbone of the Clean Fuels Standard, we also urge DEQ to be thoughtful about the potential fuel pathways that could achieve these targets. Specifically, while ICF modeling of Scenario C indicates excessive growth in Natural Gas and Renewable Natural Gas fuel consumption, it is important to note that increased carbon intensity targets do not guarantee any given fuel pathway, and could be achievable through means other than higher use of RNG. **Moreover, to maximize climate emissions reductions, health benefits, and cost-effectiveness, carbon intensity targets can and should be achieved through electrification as much as possible. As the modeling shows, strong electrification, especially of medium- and heavy-duty engines, creates a virtuous cycle: there is a cross over point when enough electrification starts to reduce the amount of diesel/gasoline used such that deficits actually start to decline while credits continue increasing.**

Expanded sectors in the Clean Fuels Program

Finally, we are eager to continue the conversation from the first RAC meeting around the potential for new Energy Economy Ratios (EERs) to be established for electrified airport service ground equipment. This equipment most often runs on diesel, impacting workers and increasing the overall carbon intensity of air travel. In addition, there have been occasions when Oregon has unfortunately become a dumping ground for dirtier equipment as a result of stronger regulations for diesel emissions in neighboring states. The Clean Fuels Program provides an important opportunity and leverage point for airlines to make it attractive for companies to put clean equipment at airports in Oregon.

Thank you for your consideration, and we look forward to continuing to work with you to ensure a healthy future and a stable climate for all Oregonians through the establishment of an ambitious Clean Fuels Program.

Sincerely,

Jana Gastellum, Deputy Director for Programs
Oregon Environmental Council

From: [Breen, David](#)
To: [CFP2022 * DEQ](#)
Subject: Breen CFP Session #1 Comments
Date: Friday, December 17, 2021 6:42:59 PM

1. Does setting targets through 2035 provide sufficient long-term certainty for investment decisions?
2. What are the risks of setting the targets too low or too high? [Being non-competitive with California and losing Oregon produced fuel supply to California \(see 4 below\).](#)
3. Are there any community needs and health impacts that we need to take into consideration?
4. What are the supply chain considerations that we need to account for? Production capacities of different fuel types? [There are current renewable diesel supply shortages and projected feedstock shortfalls through at least 2030. This has the potential to also disrupt the development of sustainable aviation fuels and further development of renewable diesel. Biofuels are currently competing to secure limited available feedstocks. Due to market price advantages, available supplies of clean favor movement to California. This is a significant issue that needs to be looked at. For electrification, infrastructure capacity and resiliency needs to be looked at. Many fleets can't do off-peak charging.](#)
5. What are the time horizons for potential commercialization of new technologies?

In addition, DEQ staff are interested in your suggestions for what the targets through 2035 should be and an explanation for how you arrived at them. If you don't feel like you know enough to comment on what the targets should be, feel free to offer your suggestions about what additional information you'd like DEQ staff to provide to help you understand the topic better.



December 23, 2021

Cory Ann Wind, Clean Fuels Program Manager
Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, OR 97232-4100

Submitted electronically

RE: Second Clean Fuel Program Expansion Comments

Program Manager Wind:

Renewable Energy Group, Inc. (“REG”) reiterates our support of expanding and accelerating the Clean Fuel Program (“CFP”) through this rulemaking. Growing the Oregon CFP is a significant step forward in reducing fossil carbon emissions in Oregon and REG is pleased to participate in this important opportunity.

REG believes expanding the proposed compliance requirements beyond a 25% reduction by 2035 is possible. The ICF illustrative scenarios demonstrate that a 37% reduction is feasible, even while estimating biodiesel will be used at only a 10% blend level. REG believes this conservative level of biodiesel usage can be easily exceeded. Higher biodiesel blends are consistently used in Oregon and according to the 2021 fuel forecast by the Oregon Office of Economic Analysis (“OEA”), the statewide biodiesel blend average is 9% of the entire Oregon diesel pool. OEA also estimates biodiesel usage will exceed 10.5% in 2022¹, a full three years before the planned expansion of the CFP. When factoring in the prevalence of B20 blends across the state, the growth of B20/R80 blends, the potential for B30+ blends, and B100 applications, the growth trajectory of biodiesel in Oregon is **significantly** higher than a stagnant B10 level. When fully accounting for biodiesel supply, acceptance, availability, and fungibility in the ICF illustrative compliance scenarios beyond a 10% usage assumption, it is clear Oregon could achieve around a 40% carbon reduction by 2035. This also helps Oregon meet its stated greenhouse gas (“GHG”) reduction goal of a 45% reduction by 2035.

If the Department of Environmental Quality (“DEQ”) were to implement this suggested compliance target, REG would recommend adjusting the compliance curve immediately in 2023 to be significantly more aggressive, with an easing of the carbon reductions as the program nears 2035. The initially aggressive curve implements rapid carbon reduction that can be met with existing technology. It provides a lower compliance requirement in later years of the program to account for nascent technologies such as electrification of heavy and medium diesel engines or hydrogen. Additionally, establishing an immediate aggressive compliance curve will elevate Oregon to a leadership position in our country, enabling more bio-based diesel to be available for this market as well as harmonize the West Coast programs in a substantial way.

¹ <https://www.oregon.gov/das/oea/pages/forecastcleanfuels.aspx>



If a front-end loaded path is not chosen, a linear path to compliance would be preferable to back loading the program with low initial compliance and aggressive targets as the program nears 2035.

Does setting targets through 2035 provide sufficient long-term certainty for investment decisions?

Setting the compliance target through 2035 provides a significant, long-term vision for the biofuels industry. Such a position would certainly encourage investment in plants, infrastructure, distribution, and feedstock development creating well-paying jobs and contributing to Oregon's growth in renewable fuels. The biofuel industry has long sought state and federal fuel policy that goes beyond a five or ten year timeline in order to give the industry confidence in investing and committing to a certain market.

Although the 2035 target is an important step forward, we would challenge DEQ to think bolder and establish within the CFP an additional 2050 target. This would pair the CFP with Oregon's carbon reduction goal of an 80% reduction by 2050. Setting this longer term goal, with a planned review in 2035, would be a bold statement on carbon reduction and provide additional certainty for renewable fuel producers to make significant investments.

What are the risks of setting the targets too low or too high?

Setting targets too low misses a significant opportunity to impact carbon reduction today. Because carbon dioxide accumulates in the atmosphere creating a compounding effect on climate change, it is imperative to reduce GHGs as much as possible, as soon as possible, and from as many sources as possible.

Establishing targets that are too modest also will limit the expansion of new technologies and the availability of renewable diesel into the Oregon market in the short term. Rapid expansion of the CFP will be the best opportunity to grow these fuels and ensure they flow into the state.

As mentioned above, REG believes establishing a compliance target of 40% by 2035 is a judicious and feasible goal. This objective should maintain a robust market through the life of the program, spur innovation, and build out all technologies in a neutral way. REG believes there is little risk to establishing a compliance target at this level given the abundance of existing technologies available to meet demand, as well as the need to advance future fuels.

Are there any community needs and health impacts that need to be taken into consideration?

Using blends of biodiesel on our highways has numerous environmental benefits when compared to petroleum-based diesel fuel and has been shown to reduce particulate matter up to 47%,



carbon monoxide up to 51%, and hydrocarbon emissions by up to 67%.² These important emission reductions provide cleaner air in communities that are most effected by diesel pollution. Environmental Justice is important and growing the CFP in a meaningful way is crucial to reducing the harmful effects of particulate matter and other pollutants in these densely populated areas.

REG encourages DEQ to review the National Biodiesel Board's Health Benefits Study assessing the air quality improvement for Portland if diesel fuel were replaced with biodiesel.³ This study provides an eye opening review of the benefits renewable fuels provide to communities impacted by diesel pollution. The study highlights the economic benefits of reduced pollution with improved health outcomes and reduced absenteeism.

What are the supply chain considerations that need accounting for? Production capabilities of different fuel types?

The future availability of bio-based diesel to meet the needs of a large CFP expansion is substantial. The Environmental Protection Agency estimates the bio-based diesel market in 2019 was approximately 2.8 billion gallons annually⁴ and the National Biodiesel Board has calculated the total annual production capacity of existing U.S. biodiesel plants is approximately 4.554 billion gallons.⁵ In addition to biodiesel production, announced expansions in the growth of renewable diesel has new production at the 5 billion gallon/year mark by 2025. This demonstrates there is significant ability for the bio-based diesel industry to increase production within built infrastructure.

REG believes DEQ should be proactive. We suggest that DEQ undertake efforts increase the availability of low carbon biodiesel and renewable diesel. This can be done by addressing the Greenhouse gases, Regulated Emissions, and Energy use in Technologies ("GREET") model for land use. Since the Oregon Clean Fuels Program was established in 2016, there has been advancements in the understanding of land use change for crop based feedstock such as canola and soybeans. We encourage DEQ to include these modeling changes into a life cycle analysis and reduce the indirect land use change penalty for these fuels. Doing so will accurately reflect prevailing science and provide additional low carbon fuels to meet the necessary demand.

Renewable diesel and biodiesel utilize the same fuel terminal system as petroleum fuel to distribute renewable products and access the market. The terminal system has the capacity to meet the current needs of this program, but as growth in the CFP occurs, we encourage DEQ and the State of Oregon to support additional renewable fuel storage. This could include quickly approving permits for additional storage tanks for renewable fuels, offering incentives such as tax

² https://afdc.energy.gov/vehicles/diesels_emissions.html

³ <https://www.biodiesel.org/news-resources/health-benefits-study>

⁴ <https://www.biodiesel.org/production/production-statistics>

⁵ <https://www.biodiesel.org/production/member-plants>



abatements for new terminals and tanks utilizing renewable fuels, as well as the conversion of petroleum fuel storage to renewable storage.

What are the time horizons for potential commercialization of new technologies?

REG believes the technology currently exists to meet these aspirational goals. Low carbon fuels are prevalent and available, and are being rapidly expanded. As mentioned previously, bio-based diesel is growing to meet its demand and there will be a much larger supply available in the near future.

REG would like to offer the following items in addition to the questions posed by the Clean Fuel Program and suggest that these concepts should be addressed in this rulemaking:

- Adjust the Oregon GREET Model to address the updated electricity production emissions which correspond to a recent edition of the eGRID model to accurately reflect fuel production carbon intensity.
- Provide a mechanism for indirect accounting of electricity, hydrogen, and renewable natural gas used at renewable fuel production facilities to allow these plants to pursue low carbon inputs that will reduce their carbon intensity without having a direct connection. The California Air Resources Board allows indirect accounting for renewable natural gas to hydrogen for renewable diesel production. An expanded indirect accounting system for renewable inputs in renewable fuel production would benefit the Oregon program.
- British Columbia is looking to simplify their reporting and regulated end uses so that low CI fuels that displace gasoline or diesel outside of traditional transportation applications would be able to generate credits (slide 7 of 9/14/2021 workshop). REG suggests Oregon consider something similar, perhaps by modifying the “Not Used for Transportation” definition to include something along the lines of “Not applicable for non-fossil regulated fuels in 340-253-0200(2)” to avoid the potential complexity and confusion by including non-liquid fuels which was identified during the BC LCFS workshop Q&A.

Thank you for the opportunity to present additional comments and for selecting Renewable Energy Group as a member of the Rule Advisory Committee. We are pleased to be a partner in Oregon’s decarbonization efforts.

Respectfully,

A handwritten signature in black ink that reads "Curtis Powers".

Curtis Powers, Manager, Compliance Supply Chain Management
Renewable Energy Group



A handwritten signature in black ink, appearing to read "KH", is positioned above the printed name.

Kent Hartwig, Director, Corporate Affairs and Development
Renewable Energy Group

RENEWABLE ENERGY GROUP

416 S. Bell Ave., Ames, IA 50010 / +1 888 REG 8686 / regi.com



January 17, 2022

VIA EMAIL

Cory Ann Wind
Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, OR 97232-4100

RE: Renewable Hydrogen Alliance Comments - 1st Clean Fuels Program RAC Meeting

The Renewable Hydrogen Alliance (RHA) appreciates the opportunity to serve on the Rules Advisory Committee for the Department of Environmental Quality's Clean Fuels Program (CFP) expansion. Please find below our initial comments and thoughts on the information presented at the first RAC meeting on December 9, 2022.

RHA strongly supports the CFP for its emission reduction impacts and environmental benefits to the state. The program has proven its influence in driving the market for and adoption of cleaner transportation technologies, such as battery electric vehicles (BEVs) and the greater availability of bio and renewable diesel. We are hopeful that expanding the CFP will have the same effect of increasing the availability of hydrogen fuel cell electric vehicles (FCEVs) and hydrogen refueling infrastructure throughout the state.

DEQ has asked RAC members to address four key questions related to the expansion of the CFP. RHA provides responses to those questions below. In addition, we provide some general comments and impressions related to the information provided in the first meeting.

General Comments

RHA would like to echo and support other stakeholder comments on various aspects of the CFP expansion, in particular:

- The importance of program structure and compliance mechanism alignment between Oregon, Washington and California's programs so that no one state has an advantage over another in markets, production and supply for clean fuels. Oregon should not be in a position where covered entities are put at a compliance disadvantage because markets outside of Oregon for alternative fuels are pulling supply to them and not into Oregon. Such a dynamic has both a negative economic impact for producers and a negative emissions impact for everyone.
- Inclusion of sustainable aviation fuels (SAF) into the CFP expansion discussion. Washington's newly enacted clean fuels program includes SAF and currently there is a

project to develop renewable hydrogen based SAF and convert a De Havilland Dash 8 aircraft to run on this fuel through a partnership with Universal Hydrogen, Plug Power and Alaska Airlines, among others. Oregon could benefit and build upon existing economic activity in the state by including incentives for production and distribution of alternative aviation fuels.

- Fuel Cell Electric Vehicles (FCEVs) should be able to generate advanced credits for the same fleets as for battery-electric vehicles.
- RHA supports DEQ’s consideration of extending a book and claim accounting approach to low carbon and renewable hydrogen. However, the CI should be based on the direct emissions of the individual utility from which, for example, an electrolyzer is purchasing electricity and not the statewide mix carbon intensity calculation. And the same CI calculation methodology should be used for hydrogen as it is for EV charging. The approved CI for the hydrogen should be retained to its designated end-use and robust accounting systems should be deployed to ensure accurate credit generation at the point of end use.
 - As an example, Washington’s new Clean Fuels Program (Chapter 317, Laws of 2021, Section 4(1)(b)(ii)) states:
“Measure greenhouse gas emissions associated with electricity and hydrogen based on a mix of generation resources specific to each electric utility participating in the clean fuels program. The department may apply an asset-controlling supplier emission factor certified or approved by a similar program to reduce the greenhouse gas emissions associated with transportation fuels in another state”.
- RHA asks that DEQ reconsider the limitation on the program to extend capacity credits. DEQ’s formula for calculating carbon reductions from alternative fuels that excludes the granting of capacity credits puts it at a distinct disadvantage for in state production of low or zero carbon fuels relative to Washington and California. This further hinders the potential for carbon emissions reductions as well as the economic benefit to the state of in state low and zero carbon fuel producers and suppliers.
- RHA strongly urges DEQ to develop expanded CFP rules that are technology neutral to avoid favoring one technology over another that may force the use of one type of fuel or propulsion technology that is not appropriate for given conditions or transportation applications.

RHA Responses to DEQ Questions Related to CFP Expansion

1. Does setting targets through 2035 provide sufficient long-term certainty for investment decisions?

We believe it does. While some stakeholders may want to see DEQ set targets through 2050, we believe that as the initial deadline approaches, it will become easier to determine what targets may be needed out to 2050. Technologies will advance, economies of scale will be reached and it may be possible to set revised targets that are much more ambitious and informed based on state greenhouse gas emission reduction goals than is possible in this round of the CFP expansion. In contrast to the emissions reduction target timeframe set for the electricity sector that is much longer than what DEQ is contemplating for transportation fuels, the transportation fuels sector is much more nimble and adaptive with significant advancements already made in “drop in” low carbon fuels. The electricity sector transition on the other hand is much more complicated and capital intensive and requires a longer time horizon. The development and

deployment of alternative transportation fuels do not have the same long term technological and capital intensive requirements and challenges that decommissioning fossil fuel plants and constructing renewable energy projects have and therefore it is reasonable to have shorter timelines within which to meet emissions targets.

2. What are the risks of setting the targets too low or too high?

Setting the targets too low fails to incentivize and bring about the retirement of highly polluting vehicles and extends the negative and climate health impacts of excessive emissions from the transportation sector, particularly on low income and vulnerable communities. Setting the targets too high potentially makes Oregon's alternative fuels market uncompetitive with California and Washington as well as potentially failing to achieve emissions reductions, coupled with loss of jobs and economic benefits to the state.

3. Are there any community needs and health impacts that we need to take into consideration?

There is growing evidence that disadvantaged, vulnerable and communities of color bear the brunt of climate change which underscores the urgency of expanding the CFP. These communities are often clustered around high traffic corridors such as the I-5, I-205, I-84 and OR 26 interchanges in the Portland metro region and the I-84 and I-82 interchange at Umatilla. These corridors cause these communities to be exposed to unacceptable levels unhealthy air in both urban and rural areas. It is imperative that we speed up the replacement of fossil fuel powered vehicles with zero emitting vehicles as soon as possible.

4. What are the supply chain considerations that we need to account for? Production capacities of different fuel types?

Right now, to our knowledge, there are currently no suppliers of hydrogen for on road transportation fuel in Oregon. However, renewable hydrogen production in Washington is expected to come online by late 2022 to supply 2-3 refueling stations in that state with one of them on I-5 about 80 miles north of Portland. Hydrogen is currently produced to fuel forklifts at the Amazon warehouse in Salem, Oregon and there are several hydrogen production projects in the planning stages. A study by the Oregon Department of Energy due in September of 2022 will further highlight current and planned hydrogen production facilities and projects. The region also plans to pursue federal funding of a hydrogen hub that, if successful, would likely receive funding sometime in 2023 and would include production, distribution and end use projects.

Regarding production capacities, one point of reference is that a typical hydrogen fueling station will utilize about 2000 kg/day to fuel about 700 passenger FCEVs.

RHA would also like to reiterate our concern that the modeling done by both DEQ and by ODOT in their Hydrogen Pathways study underestimate the timeline for developing and installing fueling stations in the state (anticipating only 1 station in Oregon by 2030). In California, there are currently over 11,000 FCEVs on the road and the state is on track to have approximately 200 fueling stations by 2027, with likely at least 3 stations in Washington state by that time.

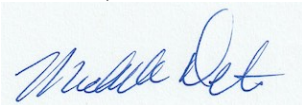
5. What are the time horizons for potential commercialization of new technologies?

In the case of FCEVs, the technology is commercialized, available and deployed today as demonstrated by the number of vehicles and fueling stations in California. To increase the availability of FCEVs in Oregon, it is a matter of having the right policies and regulations in place that create the market conditions for widespread and rapid investment in the fuel supply and fueling infrastructure which in turn, creates the demand for the vehicles. Hopefully, the expansion of the CFP will be one more step in achieving the ecosystem needed to make FCEVs a more accessible ZEV option for consumers.

Thank you for the opportunity to provide feedback on the CFP expansion rulemaking process and topics. RHA looks forward to working with DEQ and key stakeholders through this rulemaking process.

Please do not hesitate to reach out to me if you have any questions or need additional information.

Sincerely,

A handwritten signature in blue ink, appearing to read "Michelle Detwiler", is placed on a light blue rectangular background.

Michelle Detwiler
Executive Director



Jessica Spiegel

Senior Director, Northwest Region

December 23, 2021

Sent via e-mail to: CFP2022@deq.state.or.us

Ms. Cory Ann Wind
Oregon Department of Environmental Quality
700 NE Multnomah Street
Portland, OR 97232-4100

Re: WSPA Comments regarding DEQ Clean Fuels RAC Meeting #1

Dear Ms. Wind:

Western States Petroleum Association (WSPA) appreciates the opportunity to provide the Oregon Department of Environmental Quality (DEQ) Clean Fuels Rulemaking Advisory Committee (RAC) held on December 9, 2021. WSPA is a non-profit trade association that represents companies that explore for, produce, refine, transport and market petroleum, petroleum products, natural gas, and other energy supplies in Oregon and four other western states.

Provided below is our initial feedback on the proposed Clean Fuels Program Expansion 2022. WSPA looks forward to additional opportunities to comment on the rulemaking as DEQ further develops regulatory concepts.

Rulemaking Timeline

DEQ staff provided the following "Clean Fuels Program Expansion 2022 Rulemaking Timeline" for this LCFS rulemaking process:

- Winter 2021/2022 through Spring 2022 – RAC and Community Input
- Spring 2022 – Public Comment
- Winter 2021/2022 through Spring 2022 – DEQ Develops Recommendation
- Fall 2022 – EQC Consideration of Rulemaking

This timeline suggests that the research, analysis, and regulatory language development will be done during and even after certain stakeholder processes. In that sense, the timeline appears to be rushed and does not allow time for stakeholders to (1) provide early input and (2) review the results of DEQ's effort to incorporate that input. Clearly, there will be very little time if any for meaningful review of this complex program if the rulemaking is brought to EQC in the Fall 2022. WSPA suggests that DEQ reconsider the timeline, incorporating appropriate time for stakeholder (including RAC) review after modeling has been completed, LCFS-related credit elements have been identified, and draft language has been developed.

In addition, WSPA requests that DEQ provide in the regulation a timeline that includes the necessary amount of time after EQC approval of the Clean Fuels Program Expansion 2022 for regulatory parties to develop, install, and test systems in advance of implementation.

Long-Term Illustrative Compliance Scenarios

In considering the methodology for designing scenarios, WSPA believes that each scenario must work within the bounds that are supported by historical trends and realizable projections. In the case of the presented modeling scenarios, all of the scenarios used by ICF assume increases in electric vehicle (EV) penetration that are not consistent with historical trends. In Slide 30, it is highly questionable (probability is undefined) as to the ability to meet the ZEV1 (22% sales in 2025), ZEV2 (90% sales in 2035) and Advance Clean Truck goals.

It is acknowledged that certain modeling assumptions do make sense. In Slide 32 for example, the Renewable Diesel (RD) target assumptions will likely be easily met. Conversely in Slide 33, 100% Renewable Natural Gas (RNG) into natural gas vehicles seems aspirational, at best.

In Slide 35 (Scenario A), it is noted that credit bank goes to zero in 2030 to 2033 with Scenario A relying strongly on electrification to build the bank back up. It is likely that this scenario in reality would result in significant credit bank deficits for the later years of the program.

Slide 36 & 37 (Scenarios B & C), Each of these scenarios have annual credit deficit balances post-2029, with negative bank balances post-2036. As presented, no resolution to this eventuality is provided which is problematic to the resiliency of the LCFS program in the long-term.

In general, WSPA agrees with the key takeaways in Slides 38 and 39. The key issue is the likelihood of success of EV policies upon which the Long-Term Illustrative Compliance Scenarios are highly (and precariously) leveraged, making the Oregon LCFS program more of an electrification-focused initiative than a diversified approach. WSPA believes that the concept of "fuel neutrality" is a core aspect of any clean fuels program. In the consideration of fuels pathways and credit generating programs, fuel neutrality along with emissions integrity are key to avoiding the preemptively excluding viable clean fuels opportunity (i.e., avoid picking winners and losers).

WSPA appreciates the opportunity to provide comments on this important proposed regulation. If you have any questions regarding this submittal, please contact me.

Sincerely,

