Growth Energy

Please see our attached comment. Thank you for your consideration.

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August 31, 2022

Rachel Assink
Air Quality Program
Washington Department of Ecology
300 Desmond Drive SE
Lacey, WA 98503
Via electronic submission

RE: Clean Fuels Program Proposed Rulemaking

Dear Ms. Assink:

Thank you for the opportunity to comment on the Department of Ecology's proposal to develop and implement a clean fuel program for the state of Washington. Growth Energy is the world's largest association of biofuel producers, representing 89 U.S. plants that each year produce more than 8 billion gallons of renewable fuel; 105 businesses associated with the production process; and tens of thousands of biofuel supporters around the country. Together, we are working to bring better and more affordable choices at the fuel pump to consumers, improve air quality, and protect the environment for future generations. We remain committed to helping our country diversify our energy portfolio in order to grow more green energy jobs, decarbonize our nation's energy mix, sustain family farms, and drive down the costs of transportation fuels for consumers.

We sincerely appreciate the Department's attention and hard work to reshape Washington's fuel mix to make it more sustainable. This objective is a central driver for our industry, and we look forward to continuing our work on our common goals as you develop and implement the Clean Fuel Program (CFP) moving ahead. Liquid fuels will continue to play an important role in the transportation sector, even as alternative technologies flourish. As such, it is imperative to consider the vital role that environmentally sustainable fuel options such as bioethanol will play in reducing greenhouse gas emissions (GHG) and cutting consumer costs in the current and future Washington vehicle fleet.

As we have continued to advocate, a primary solution for cleaning up the liquid fuel supply is the promotion of additional use of bioethanol, from starch or cellulosic sources. According to recent data from Environmental Health and Engineering, today's bioethanol reduces GHG emissions by an average of 46 percent compared to gasoline and can provide even further GHG

reductions with additional readily available technologies.[1] In the existing light duty fleet, higher bioethanol blends can be immediately deployed to achieve immediate GHG reductions, reduce harmful air toxics, and reduce consumer costs at the pump.

Already, we've seen biofuels provide the foundation for both California's Low Carbon Fuel Standard (LCFS) and Oregon's Clean Fuel Program (CFP). In fact, biofuels like bioethanol have generated more than 75 percent of credits under both the California LCFS and Oregon CFP. Additionally, even with room to further improve GHG lifecycle modeling, the LCFS and CFP recognize the significant improvement in bioethanol's carbon intensity. For California, in 2011, the California Air Resources Board (CARB) reported the average carbon intensity (CI) for ethanol at 88 gCO2e/MJ. Through 2021, the average recorded CI for bioethanol has decreased to 59.02 gCO2e/MJ, a 33 percent reduction in carbon intensity (CI).[2] In 2016, Oregon's Department of Environmental Quality (DEQ) reported the average CI for bioethanol at 64.5 gCO2e/MJ. Through 2021, the average recorded CI for bioethanol has decreased to 53.98 gCO2e/MJ, a nearly 17 percent reduction in CI in just 5 years.[3] Additional CI reductions are anticipated as projects of diverse technological variety at ethanol biorefineries come on-line starting this year.

Bioethanol's other environmental benefits are also noteworthy. The University of California, Riverside and the University of Illinois at Chicago have found that the use of more bioethanol and bioethanol-blended fuel reduces air toxics such as carbon monoxide, benzene, and other harmful particulates.[4] To fully realize these and other important air quality benefits, there needs to be a clear policy with a firm future for the role and growth of cleaner-burning, affordable bioethanol fuels.

We continue to urge the Department to further develop clear policies that recognize the realities of today's fuel market and examine how homegrown biofuels can immediately contribute to achieving GHG reductions. Today, nearly all gasoline in Washington – and across the U.S. – is blended with 10 percent bioethanol. E15, a blend consisting of 15 percent bioethanol, has been approved for use by the U.S. Environmental Protection Agency (EPA) in all model year 2001 and newer passenger vehicles, more than 96 percent of the vehicles on the road today, and it is now for sale at nearly 2700 locations in 31 states. Expansion of E15 in Washington can be an immediate tool to help further reduce Washington's GHG emissions. In fact, a recent study from Air Improvement Resources found that if Washington converted completely to E15, it could reduce GHG emissions by 334,000 tons per year – the equivalent of taking 73,000 cars off the road annually.[5]

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[1] Environmental Research Letters: Carbon intensity of corn ethanol in the United States: state of the science (iop.org)
[2] CARB LCFS Data: https://ww2.arb.ca.gov/resources/documents/lcfs-pathway-certified-carbon-intensities
[3] DEQ CFP Data: Department of Environmental Quality : Quarterly Data Summaries : Oregon Clean Fuels Program : State of Oregon
[4] University of California Riverside: https://fixourfuel.com/wp-content/uploads/2018/04/UC-Riverside-Study.pdf and Comparison of Exhaust Emissions Between E10 CaRFG and Splash Blended E15 | California Air Resources Board; University of Illinois at Chicago: https://grains.org/wp-content/uploads/2018/11/Complete-Study-Summary.pdf
[5] Air Improvement Resources: National E15 Analysis Final (airimprovement.com)

Additionally, as we have seen in California, low carbon fuel programs are helping to drive growth in the use of E85 in flex-fuel vehicles. In 2021, California saw more than a 50% increase in the use of E85.[6] The use of E85 will promote even greater reductions in GHG emissions and reductions of air toxics.

We encourage the Department and other state agencies to push for policies that strongly encourage and incentivize the use of higher bioethanol blends such as E15 and E85, the production and use of flex-fuel vehicles, and continued investment in infrastructure for the expanded use of E85.

With respect to some of the items in the proposal, we offer the following comments:

Correct the GREET Model to Reflect Updated Science on Land Use

As we have stated previously, we continue to urge the Department to review the latest science with respect to lifecycle GHG emissions modeling of bioethanol that shows a nearly 50 percent decrease in GHG emissions. The latest science from Argonne National Laboratory, the U.S. Department of Agriculture, Oregon Department of Environmental Quality, and Environmental Health and Engineering among others continues to show low and decreasing values for indirect land use change (ILUC). It is disappointing to see the Department propose an ILUC value of 19.8 gCO2e/MJ rather than use the ILUC value of 7.6 gCO2e/MJ currently in use in Oregon's CFP and recommended for Washington by Lifecycle Associates. Review of the more recent science over the last 5 years that better addresses innovation and increasing yields in agriculture indicates land use values closer to 4 gCO2e/MJ.[7] Including an ILUC value nearly 4 times the latest science and more than double that of Oregon makes little sense and will have tremendous implications not only for the CFP, but for the success of Washington's Cap and Invest Program as well.

Crediting for Field-based Farm Practices

Growth Energy strongly supports the appropriate crediting of on-the-farm field practices in the CFP. The U.S. EPA estimates that five percent of national GHG emissions is from crop cultivation and energy, and there is an opportunity for lower emissions in agriculture within the CFP. There has been a wealth of data including, a recent study done by Argonne National Laboratory, that show the possibility of a 35 percent reduction in carbon intensity through adoption of current best on-farm practices such as cover crops, strip tillage, reduced fertilizer use, and other innovations.[8] With the CFP's verification requirements, capturing these on the farm benefits for biofuel pathways is now more realistic and scalable. Allowing appropriate credit will help bioethanol producers continue to further innovate and lower their carbon intensity, while providing key incentives for farmers to adopt these effective conservation practices.

[6] California Air Resources Board: Annual E85 Volumes (ca.gov)
[7] Environmental Research Letters: Carbon intensity of corn ethanol in the United States: state of the science (iop.org)
[8] Argonne National Laboratory: https://www.anl.gov/article/argonnes-pivotal-research-discovers-practices-technologies-key-to-sustainable-farming

Carbon Capture and Sequestration

New innovations at biorefineries throughout the U.S. allow pure, biogenic carbon dioxide (CO2) to be captured at a massive scale, and multiple projects are already underway that repurpose, reuse, or provide a permanent storage solution for much of that CO2. The Inflation Reduction Act also includes significant incentives for carbon capture, utilization, and storage to further drive reductions in carbon intensity at biorefineries. We strongly support the Department's inclusion of credit generation from carbon capture, utilization, and storage (CCUS).

Energy Allocation for Non-Fuel Products

Many bioethanol producers have continued to innovate their biorefineries and are producing varying grades of bioethanol for applications beyond fuel. Some of these grades and specifications require additional processing and energy. We encourage the Department to clarify that its carbon intensity model does not allocate the energy used for non-fuel production inappropriately to biofuels.

Correcting Electricity Usage in Wet and Dry Distiller Grain (DDGS) Pathways

The Washington GREET model currently distinguishes between wet and dry DDGS pathways for thermal energy but does not do so with regard to electricity use. Electricity use between wet and dry DDGS production is quite different. We recommend that the Department further distinguish electricity use as it does with thermal energy in its GREET model.

Bioethanol/Fuel Cell Technology

Direct Bioethanol Fuel Cells for the use in motor vehicle transportation have been in development by Nissan for some time. As recently as January of 2020, Nissan and Lawrence Berkeley National Laboratory have published research on the use of 100 percent bioethanol in fuel cell technologies and innovations.[9] This technology not only meets zero emission vehicle requirements, but further eliminates particulates from tailpipe emissions. Using bioethanol in conjunction with a fuel cell would require less infrastructure change and investment and would help the state meet its ambitious climate goals. As the Department considers policies on zero emission vehicles in conjunction with the CFP, we strongly encourage you to consider ways to further develop this technology for consideration.

[9] Lawrence Berkeley National Laboratory: https://eta.lbl.gov/publications/ethanol-internal-reforming-solid

More broadly, we look forward to working with you through the regulatory process on implementation of the CFP program and ensure the role of biofuels in making Washington's fuel mix more sustainable and help the state achieve its climate goals through the expanded use of bioethanol.

Thank you in advance for your consideration.

Sincerely,

Chris Bliley
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Growth Energy

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