ADVANCING COMMUNITY-CENTERED ZERO WASTE SOLUTIONS

March 20, 2025

Chair John Livley
House Committee on Climate, Energy, and Environment
Oregon Legislature

RE: Testimony in Support of HB 2960: Prohibiting the Establishment or Operation of Plastic Conversion Facilities.

Dear Chair Livley, and Members of the House Committee on Climate, Energy, and Environment:

Thank you for the opportunity to provide testimony on HB 2960. Just Zero strongly supports this bill and urges a favorable report from the committee. Just Zero is a national environmental non-profit advocacy organization that works to implement just and equitable solutions to climate-damaging and toxic production, consumption, and waste disposal practices. We believe that all people deserve Zero Waste solutions with zero climate-damaging emissions and zero toxic exposures.

Oregon is taking important measures to address the plastic pollution crisis. HB 2960 is a commonsense measure that ensures the laws and regulations aimed at addressing plastic pollution only include recycling technologies that will genuinely recycle plastic waste. This bill does two important things. First, it prohibits the development of "chemical recycling"[1] facilities in Oregon. Second, it prohibits state funding for chemical recycling technologies. This bill will protect Oregon's residents and the environment from the pollution associated with unproven and polluting technologies.

Chemical recycling is not the solution plastic lobbyists make it out to be. It is an expensive, unreliable, and toxic myth that does not recycle meaningful amounts of plastic. Industry lobbyists do not care about the truth of these technologies. They care about tricking lawmakers and the public into believing that they are a silver bullet that will solve our plastic problems.

This testimony (1) provides an overview of what chemical recycling is, (2) uses case studies to demonstrate that chemical recycling does not result in the recycling of plastic waste, (3) explains the environmental and public health concerns associated with chemical recycling, (4) exposes how the plastic industry uses chemical recycling to undermine policies designed to address the plastic pollution crisis, and (5) illustrates how the plastic industry is lobbying state legislatures to exempt these facilities from commonsense regulation.

[1] The following terms are generally used interchangeably – "plastic conversion technologies," "chemical" recycling, "advanced" recycling, and "molecular" recycling. For the purpose of this testimony, we will be using the term chemical recycling.

I. Overview of Chemical Recycling

Chemical recycling refers to an array of technologies that use heat and/or chemical solvents to break down plastics into monomers (the building blocks of plastic), hydrocarbons, fuels, chemicals, and waste byproducts.[2] These technologies include gasification, pyrolysis, depolymerization, solvolysis, methanolysis, and hydrolysis.[3] Pyrolysis and gasification are by far the two most prominent forms of chemical recycling.

According to proponents like the American Chemistry Council, the byproducts of these technologies can be used to manufacture new plastic products.[4] However, the reality of chemical recycling dramatically contrasts with these statements. In fact, chemical recycling is an expensive, risky, toxic, and climate-damaging process that doesn't improve recycling. Its only purpose is to deepen our dependence on single-use plastics. Currently, all the chemical recycling facilities operating at a commercial scale in the U.S. are using pyrolysis to primarily create and burn plastic derived fuel.[5] Converting plastic into fuels is not considered recycling by national and international standards.[6]

II. Chemical Recycling Does Not Result in the Recycling of Plastic Waste

The simple truth is chemical recycling does not result in any meaningful recycling of plastic waste. These processes simply involve subjecting plastics to high heat and turning it into gases, chemicals, tars, oils, and toxic waste byproducts, which are subsequently burned.[7] Little to no new plastics are manufactured.[8] Below are several case studies and examples illustrating how chemical recycling facilities actually operate in the U.S.

Case Study #1 – Brightmark (Ashley, Indiana)
Brightmark Energy operates a chemical recycling facility in Ashley, Indiana.[9] The facility utilizes pyrolysis to process plastic waste into diesel fuel, pyrolysis oil, and wax which are intended for use as transportation fuels and raw chemical materials.[10] Four years after breaking ground, the facility is still operating in a test-phase capacity, and to date has only processed 2,000 tons of plastic waste – a fifth of the plant's publicized yearly capacity of 10,000 tons per year.[11] Yet, the company has received over $4 million in public subsidies.[12] Additionally, this

[2] Andrew Rollinson & Jumoke Oladejo, Chemical Recycling: Status, Sustainability, and Environmental Impacts, Global Alliance for Incinerator Alternatives, at 7–12 (2020).
[3] *Id.*
[4] American Chemistry Council, Advanced Recycling – Overview.
[5] *Id.*
[6] *See* U.S. Environmental Protection Agency (EPA), Measuring Recycling: A Guide for State and Local Governments, (1997); Council Directive 2008/98/EC, Directive of the European Parliament on Waste and Repealing Certain Directives, 2008 O.J. (L 312) 3(17).
[7] Dr. Veena Singla, Recycling Lies: Chemical Recycling of Plastic is Just Greenwashing Incineration, Natural Resources Defense Council, at 2 (2022).
[8] *Id.* at 3.
[9] Lee Bell, et. al., Chemical Recycling: A Dangerous Deception – Why Chemical Recycling Won't Solve the Plastic Pollution Problem, Beyond Plastics, at 91 (Oct. 2023).
[10] *Id.*
[11] *Id.*
[12] *Id.* at 92.

facility does not recycle any plastic waste into new plastic. Documents show that 70% of the output from this facility is plastic-derived "syngas," which Brightmark burns onsite.[13] Another 20% of the output is liquid fuel, which Brightmark ships to be burned offsite.[14] The remaining 10% is a "powdery residue," which Brightmark landfills.[15]

In 2022, Brightmark Energy sought to build another chemical recycling facility in Macon County, Georgia.[16] To develop the facility, Brightmark reached a tentative deal with the county to receive $500 million in government bonds to help finance construction of the $680 million plant.[17] This deal was contingent upon Brightmark demonstrating that its Ashley, Indiana, plant successfully produced and sold products to manufacture new plastic products.[18] The company could not meet this request and was forced to scrap the project.[19]

Earlier this week, Brightmark filed for bankruptcy.[20] The company has $178.3 million in debt.[21] The Ashley, Indiana facility is currently only operating at 5% capacity and can't generate enough revenue to fund operations, according to court filings.[22]

Case Study #2 – Agilyx (Tigard, Oregon)

The Agilyx chemical recycling facility in Tigard, Oregon, offers another example of how these technologies do not actually recycle plastic and instead produce hazardous waste that is subsequently burned. The now closed facility utilized pyrolysis to process polystyrene – a plastic often used for food and beverage containers – into styrene.[23] Though Agilyx claimed this styrene would be usedto create new polystyrene, that never occurred. Agilyx shipped much, if not all, of that styrene to be burned offsite.[24] Between 2019 and 2021, Agilyx reported to the U.S. Environmental Protection Agency (EPA) that it shipped more than 340,000 pounds of styrene to be burned for "energy recovery."[25] Agilyx's practices resulted in the EPA designating the facility as a "large quantity generator" of hazardous waste. The facility closed in March of 2024.[26]

Case Study #3 – U.S. Department of Energy Study

Proponents of chemical recycling argue that *some* of the plastic processed at these facilities is used to manufacture new products. However, even this claim is extremely misleading.

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[13] *See*, Brightmark Response to Draft Survey for Pyrolysis and Gasification Units, at 17 (Dec. 23, 2021).
[14] *Id.*
[15] *Id.*
[16] DeAnne Toto, Brightmark Scraps Plans for Georgia Plant, Recycling Today (Apr. 12, 2022).
[17] Lee Bell, et. al., Chemical Recycling: A Dangerous Deception – Why Chemical Recycling Won't Solve the Plastic Pollution Problem, Beyond Plastics, at. 92. (Oct. 2023).
[18] DeAnne Toto, Brightmark Scraps Plans for Georgia Plant, Recycling Today. (Apr. 12, 2022).
[19] *Id.*
[20] Megan Quinn, Brightmark Files for Bankruptcy at Indiana Chemical Recycling Facility, Waste Dive (Mar. 18, 2025)
[21] *Id.*
[22] *Id.*
[23] *See*, Agilyx, Regenyx: Changing the Way We Recycle Polystyrene.
[24] EPA, Agilyx Production Related Waste Management for Styrene.
[25] *Id.*
[26] Beyond Plastics, One of the Eleven Constructed Chemical Recycling Facilities in the U.S. Shuts Down (Mar. 6, 2024).

A report funded by the Department of Energy found that plastic processed through chemical recycling technologies – specifically pyrolysis and gasification – were rarely used manufacture new plastic products.[27] In fact, only 1-14% of the plastic processed at chemical recycling facilities were retained and used to manufacture new plastics.[28] The report also found that the environmental and economic impacts of pyrolysis and gasification are 10 to 100 times worse than using virgin plastics.[29]

Case Study #4: Pro-Publica Reporting
A recent in-depth analysis from ProPublica found that the maximum amount of plastic waste subjected to pyrolysis that can be used to recycle into new plastic products is 20%.[30] This means if a pyrolysis operator started with 100 pounds of plastic waste, it can expect to end up with just 15-20 pounds of reusable plastic.[31] Notably, this 20% is *only* achievable under ideal conditions. In general, the process yields significantly lower outputs due to contamination in post-consumer plastics.[32]

Case Study #5: Maine's De Facto Ban on Chemical Recycling
In 2024, Maine passed legislation clarifying that chemical recycling facilities are considered solid waste processing facilities.[33] The law was a response to the American Chemistry Council's lobbying campaign which seeks to exempt chemical recycling facilities from state and local solid waste management laws and regulations.[34]

In order to build a solid waste processing facility in Maine, an applicant must demonstrate that the facility will achieve a 50% recycling rate. This requirement now applies to chemical recycling facilities. Given that chemical recycling technologies are incapable of recycling 50% of the plastic waste they accept, proponents of chemical recycling are arguing that Maine's new law is a ban. Indeed, the law is a de facto ban because these technologies cannot meet an extremely low recycling standard that applies to all other recycling technologies.

III. Chemical Recycling is Toxic, Dangerous, and Threatens Oregon Communities

In addition to not recycling any meaningful amount of plastic waste, chemical recycling facilities pose a significant threat to the environment and public health. Air emissions, chemicals, and waste products generated at chemical recycling facilities can include lead, mercury, chromium, benzene, toluene, arsenic, and dioxins – all of which pose significant risks to human health and the environment.[35] These chemicals are found in the gases, fuels, oils, tars, and solid wastes that

[27] Taylor Uekert, et. al., Technical, Economic, and Environmental Comparison of Closed-Loop Recycling Technologies for Common Plastics, 11 ACS Sustainable Chem. Eng., 965–978 (2023).
[28] *Id.*
[29] *Id.*
[30] Lisa Song, Selling a Mirage: The Delusion of "Advanced Plastic Recycling, ProPublica (June 20, 2024).
[31] *Id.*
[32] *Id.*
[33] Maine Legislature, L.D. 1660: An Act to Ensure the Proper Regulation of Chemical Plastic Processing (Mar. 5, 2024).
[34] Colin Staub, Chemical Recycling Not "Recycling" in Maine, Resource Recycling (Mar. 6, 2024).
[35] Dr. Veena Singla, Recycling Lies: Chemical Recycling of Plastic is Just Greenwashing Incineration, Natural Resources Defense Council, at 6 (2022).

result from processing the plastic waste.[36] As discussed above, burning these chemicals is the most common use of this by-product and is how many of these toxics are released into the air.[37] The EPA found that the use of plastic waste to produce jet fuel through the leading chemical recycling technology, pyrolysis, can emit air pollution so toxic that 1 out of 4 people exposed to it over a lifetime may develop cancer.[38] That risk is 250,000 times greater than the level considered acceptable by the EPA.[39]

Unsurprisingly, the pollution and negative public health impacts created by chemical recycling facilities are primarily endured by communities that are already overburdened by pollution from other sources.[40] Residents of these communities are also individuals that disproportionately face disparities and inequities. 76% of chemical recycling facilities in the U.S. are in communities of color and/or low-income communities.[41]

IV. Chemical Recycling Facilities Still Fail Despite Successful Efforts to Sheild Them from Solid Waste Laws and Regulations

Even as chemical recycling facilities collapse time and time again, the plastic and petrochemical industry – led primarily by the American Chemistry Council – work to lobby state legislatures to promote these unproven and polluting technologies.[42] The purpose of their multi-year campaign is to enact laws that reclassify chemical recycling as manufacturing and not solid waste management.[43] This is strategic on their part because states subject solid waste facilities to significantly more stringent regulations than manufacturing facilities. And for good reasons. Shipping, accepting, dumping, processing, and even recycling waste comes with inherent risks to the environment and surrounding communities. And plastic is a particularly toxic component of the waste stream.

Unfortunately, 24 states have passed these deregulatory laws shielding chemical recycling facilities from commonsense requirements.[44] Nonsensically, many of these laws also exempt plastic waste that is processed at a chemical recycling facility from being classified as solid

[36] Andrew Rollinson & Jumoke Oladejo, Chemical Recycling: Status, Sustainability, and Environmental Impacts, Global Alliance for Incinerator Alternatives, at 23-27 (2020).
[37] Dr. Veena Singla, Recycling Lies: Chemical Recycling of Plastic is Just Greenwashing Incineration, Natural Resources Defense Council, at (2022). David Azoulay et al., Plastic & Health: The Hidden Costs of a Plastic Planet, Center for International Environmental Law, at 47-48 (2019).
[38] Sharon Lerner, This "Climate-Friendly" Fuel Comes With an Astronomical Cancer Risk, ProPublica (Feb. 23, 2023).
[39] *Id.*
[40] Lauren Fernandez, Environmental Justice Communities Are Not Responsible for Our Waste Crisis, Just Zero (Nov. 8, 2022).
[41] Kevin Budris, Loopholes, Injustice, and the Advanced Recycling Myth, Just Zero, at 31 (Dec. 2022).
[42] Joseph Winters, The Petrochemical Industry is Convincing States to Deregulate Plastic Incineration, Grist (Aug. 18, 2022).
[43] Kevin Budris, Loopholes, Injustice, and the Advanced Recycling Myth, Just Zero, at 15-21. (Dec. 2022).
[44] *Id.* at 17. This chart shows the laws passed prior to Dec. 2022. Since the chart was published Kansas, Indiana, Michigan, and Utah have also passed laws that exempt advanced recycling from commonsense solid waste regulation.

waste.[45] Some also automatically classify plastic waste sent to a chemical recycling facility as being recycled without any requirement that the plastic was used to manufacture new products.[46]

And yet, these facilities continue to fail.[47] This is because they are simply not commercially viable. They are expensive to permit, build, and operate. These facilities can't even get off the ground without government financial support. Furthermore, the technology just isn't there to make valuable end products – not even getting into how unsafe these end products are.

V. Conclusion

Oregon is on the cusp of implementing important policies that will improve recycling, reduce plastic pollution, and protect public health. Chemical recycling threatens this important work. HB 2960 is a necessary and important policy that makes it clear that in Oregon, expensive, ineffective, and polluting facilities are not welcome. And that recycling means actually recycling waste into new consumer products, not burning it.

Thank you for your time and consideration of this testimony.

Respectfully submitted,

Peter Blair, Esq.
Policy Director
Just Zero

[45] *Id.* at 15.
[46] *Id.* at 22-27.
[47] Joe Brock et. al., The Recycling Myth Big Oil's Solution for Plastic Waste Littered with Failure, Reuters (July 29, 2021).