



February 26, 2025

Chair Korman
Environment and Transportation Committee
Maryland House of Delegates
Room 251
House Office Building
Annapolis, Maryland 21401

RE: Testimony in Support of HB 1092: Recycling – Prohibition on Chemical Conversion of Plastic.

Dear Chair Korman, Vice Chair Boyce, and Members of the Maryland Environment and Transportation Committee:

Thank you for the opportunity to provide testimony on HB 1092. 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 alongside 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.

Maryland is taking important measures to address the plastic pollution crisis. HB 1092 is a commonsense measure that ensures the laws and regulations aimed at addressing plastic pollution only include recycling technologies that will actually recycle plastic waste. This bill does two important things. First, it clarifies that “chemical recycling”¹ technologies do not count as recycling. Second, it prohibits the development “chemical recycling” facilities. This bill will protect Maryland’s residents and environment from the pollution associated with an array of unproven and polluting technologies.

The truth is 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. But the industry lobbyists don’t care about that. What they care about is tricking lawmakers and the public into believing that this silver bullet 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 – “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

In theory, chemical recycling refers to an array of technologies that use heat and/or 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, these materials can be used to manufacture new plastic products.⁴ The reality of chemical recycling, however, dramatically contrasts with these statements. Chemical recycling isn't an answer to our plastic woes. It's an expensive, risky, toxic, and climate-damaging process that doesn't improve recycling. And its only purpose is to convince us to deepen our dependence on single-use plastics. In fact, 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 in chemical recycling does not result in any meaningful recycling of plastic waste. Chemical recycling processes result in plastics being boiled down 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 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 The company has received over \$4 million in public subsidies.¹² Documents show that 70% of the

² Andrew Rollinson & Jumoke Oladejo, [Chemical Recycling: Status, Sustainability, and Environmental Impacts](#), Global Alliance for Incinerator Alternatives, p. 7–12. (2020).

³ *Id.*

⁴ American Chemistry Council, [Advanced Recycling – Overview](#).

⁵ *Id.*

⁶ See [EPA's 1997 Measuring Recycling: A Guide for State and Local Governments](#) and European Union, [Directive of the European Parliament on Waste and Repealing Certain Directives](#), Pub. L. No. Article 3(17).

⁷ Dr. Veena Singla, [Recycling Lies: Chemical Recycling of Plastic is Just Greenwashing Incineration](#), Natural Resources Defense Council, p. 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.

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 to receive \$500 million in exempt facility revenue bonds to help finance construction of the \$680 million plant.¹⁷ This deal was contingent upon Brightmark demonstrating that its existing Ashley, Indiana, plant was successfully producing and selling products that can be used to manufacture new plastic products.¹⁸ The company could not make the demonstration and subsequently was forced to scrap the project.¹⁹

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 its monomer styrene.²⁰ Agilyx claimed this styrene would be used as a feedstock to create new polystyrene. But that never occurred. Agilyx shipped much, if not all, of that styrene to be burned offsite.²¹ Between 2019 and 2021, Agilyx reported to the U.S. Environmental Protection Agency that it shipped more than 340,000 pounds of styrene to be burned for “energy recovery.”²² The quantity of styrene generated resulted in the EPA designating the facility as a “large quantity generator” of hazardous waste. The facility closed in March of 2024.²³

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

While proponents argue that *some* of the plastic processed at chemical recycling facilities is used to manufacture new plastic products, this is extremely misleading. A report from the Department of Energy found that plastic processed through chemical recycling technologies – specifically pyrolysis and gasification – were rarely used to manufacture new plastic products.²⁴ In fact, only 1 – 14% of the plastic processed at chemical recycling facilities were retained and used to manufacture new plastics.²⁵ In addition to resulting in virtually no recycling, the Department of Energy report also found that these technologies had significant economic and environmental

¹³ See, [Brightmark Response to Draft Survey for Pyrolysis and Gasification Units](#), p. 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 See Agilyx, [Regenyx: Changing the Way We Recycle Polystyrene](#).

²¹ U.S. Environmental Protection Agency, [Agilyx Production Related Waste Management for Styrene](#).

²² *Id.*

²³ Beyond Plastics, One of the Eleven Constructed Chemical Recycling Facilities in the U.S. Shuts Down (Mar. 6, 2024).

²⁴ Taylor Uekert, et al, [Technical, Economic, and Environmental Comparison of Closed-Loop Recycling Technologies for Common Plastics](#), Department of Energy, ACS Sustainable Chem. Eng. 2023, 11, 3, 965–978.

²⁵ *Id.*

impacts.²⁶ The study found that the environmental and economic impacts of pyrolysis and gasification are 10 to 100 times worse than using virgin plastics.²⁷

Case Study #4: Pro-Publica Reporting

A recent in-dept analysis from ProPublica found that the maximum amount of feedstock produced through pyrolysis that can be used to manufacture new plastic products is 20%.²⁸ This means if a pyrolysis operator started with 100 pounds of plastic waste, it can expect to end up with 15-20 pounds of reusable plastic.²⁹ Importantly, this 20% is only achievable under ideal conditions. In general, the process yields significantly lower outputs due to contamination in post-consumer plastics.³⁰

Case Study #5: Maine's De Facto Ban on Chemical Recycling

In 2024, Maine passed a legislation clarifying how chemical recycling facilities are classified under the state's solid waste management laws.³¹ The law was a response to the American Chemistry Council's lobbying campaign which seeks to enact legislation exempting chemical recycling facilities from state and local solid waste management laws and regulations.³²

Maine's new law clarifies that chemical recycling facilities are considered solid waste processing facilities.³³ Therefore, to develop a chemical recycling facility in Maine, an applicant must meet the permitting requirements for solid waste processing facilities. This includes demonstrating that at least 50% of the waste accepted is recycled.³⁴ Proponents of chemical recycling are calling Maine's new law a ban because chemical recycling technologies are incapable of recycling 50% of the plastic waste they accept.

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

In addition to not actually recycling any meaningful amount of plastic waste, chemical recycling facilities pose a significant threat to the environment. These facilities also jeopardize the health of the surrounding communities and the communities near where the plastic-derived fuels and chemicals are burned.

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,

²⁶ Taylor Uekert, et al, [Technical, Economic, and Environmental Comparison of Closed-Loop Recycling Technologies for Common Plastics](#), Department of Energy, ACS Sustainable Chem. Eng. 2023, 11, 3, 965–978.

²⁷ *Id.*

²⁸ Lisa Song, [Selling a Mirage: The Delusion of “Advanced Plastic Recycling](#), ProPublica. (June 20, 2024).

²⁹ *Id.*

³⁰ *Id.*

³¹ Maine Legislature, [L.D. 1660: An Act to Ensure the Proper Regulation of Chemical Plastic Processing](#). (Mar. 5, 2024).

³² Colin Staub, [Chemical Recycling Not “Recycling” in Maine](#), Resource Recycling (Mar. 6, 2024).

³³ *Id.*

³⁴ 38 M.R.S.A. §1310-N

³⁵ Dr. Veena Singla, [Recycling Lies: Chemical Recycling of Plastic is Just Greenwashing Incineration](#), Natural Resources Defense Council, p. 6. (2022).

fuels, oils, tars, and solid wastes that result from processing the plastic waste.³⁶ Burning these materials – which as explained above is the status quo – releases many of these toxics into the air.³⁷ The EPA found that the production of jet fuel through pyrolysis of plastic waste – the leading chemical recycling technology – can emit air pollution that is so toxic, 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 usually considered acceptable by the EPA.³⁹

Unsurprisingly, the pollution and public health impacts created by chemical recycling facilities are primarily born by communities that are already subjected to a disproportionate amount of pollution from other sources.⁴⁰ 76% of chemical recycling facilities in the U.S. are in communities of color and/or low-income communities.⁴¹

IV. Maryland Must Reject Chemical Recycling to Ensure Policies That Address the Plastic Pollution Crisis Only Include Real Solutions.

Clarifying that chemical recycling does not count as recycling is necessary to ensure the efforts Maryland is taking to address plastic pollution are actually solving – rather than masking – the problem. Over the past several years, lobbyists for the plastic industry have worked to add language in state recycling laws that allow plastic waste sent to chemical recycling facilities to count as being recycled.

Given the country’s extremely low plastic recycling rate, this language does two things. First, it incentivizes companies making and distributing plastic packaging to send their plastic waste to chemical recycling facilities. This gives them an easy out to say they’re working to manage their plastic waste. It also provides financial support to help prop-up the chemical recycling industry. Second, it helps perpetuate the myth that these facilities actually recycle plastic.

Specifically, they seek to include language that allows chemical recycling to count as recycling in post-consumer recycled content laws and in extended producer responsibility for packaging laws. Maryland is currently considering both these legislative initiatives and lobbyists for the plastic industry are arguing for the inclusion of chemical recycling.⁴² Including chemical recycling in these programs undermines their ability to meaningfully address the plastic waste crisis.

³⁶ Andrew Rollinson & Jumoke Oladejo, [Chemical Recycling: Status, Sustainability, and Environmental Impacts](#), Global Alliance for Incinerator Alternatives 23-27. (2020)

³⁷ Dr. Veena Singla, [Recycling Lies: Chemical Recycling of Plastic is Just Greenwashing Incineration](#), Natural Resources Defense Council, p. 6. (2022). David Azoulay et al., [Plastic & Health: The Hidden Costs of a Plastic Planet](#), Center for International Environmental Law, p. 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, p. 31. (Dec. 2022).

⁴² See, Maryland Legislature, Senate Bill 901 – Extended Producer Responsibility for Packaging (2025), and Maryland Legislature, Senate Bill 69 – Post-Consumer Recycled Content for Plastic Products (2025).

Take post-consumer recycled content law for example. These laws are designed to increase the use of recycled material in new plastic products. This in turn reduces demand for virgin plastic, while also increasing the market for recycled materials. Allowing chemical recycling to count as recycling undermines the entire intention of these laws.

As explained through the case studies above, most of the plastic processed through chemical recycling is burned. Only a small amount of feedstock that can be used to manufacture new plastics is created. However, this material is extremely contaminated and cannot be used to directly manufacture new plastics.⁴³ Rather, it must be mixed with crude oil to be clean enough to work. Therefore, even when chemical recycling “works,” it relies heavily on extracting fossil fuels to make new plastics. Studies show that 90% of the feedstock remains crude oil.⁴⁴ So at the end of the day, nothing that comes out of pyrolysis can physically contain more than 10% recycled material (though experts and studies have shown that, in practice, it’s more like 5% or 2%).⁴⁵

To obscure how ineffective chemical recycling is, the plastic industry uses a controversial and inaccurate accounting method to inflate the recycled content it advertises in everyday products made from chemical recycling feedstock. This accounting method – called the mass balance method – allows plastic products to advertise products as 20% or 30% recycled content even if they physically contain less than 1% recycled content.⁴⁶

Enacting HB 1092 will provide consistency to Maryland’s existing waste programs regarding what is and is not considered recycling. Additionally, it will ensure that any future programs designed to address plastic waste – including post-consumer recycled content requirements – only allow legitimate recycling practices to count as recycling.

V. Chemical Recycling is Failing Despite Successful Efforts to Shield Facilities from Solid Waste Laws and Regulations

Despite the repeated failures of chemical recycling facilities, the plastic and petrochemical industry – lead primarily by the American Chemistry Council – have spent the past several years working to lobby state legislatures to promote these unproven and polluting technologies.⁴⁷ The purpose of the legislative campaign is to enact laws that reclassify chemical recycling as manufacturing, and not solid waste management.⁴⁸ Currently, 24 states have passed these deregulatory laws.⁴⁹ Many of these laws also exempt plastic waste that is processed at a chemical recycling facility from being classified as solid waste.⁵⁰ Some also automatically classify plastic

⁴³ Lisa Song, [Selling a Mirage: The Delusion of Advanced Plastic Recycling](#), ProPublica (June 20, 2024).

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ Joseph Winters, [The Petrochemical Industry is Convincing States to Deregulate Plastic Incineration](#), Grist. (Aug. 18, 2022).

⁴⁸ Kevin Budris, [Loopholes, Injustice, and the Advanced Recycling Myth](#), Just Zero, p. 15-21. (Dec. 2022).

⁴⁹ *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.

⁵⁰ *Id.* at 15.

waste sent to an chemical recycling facility as being recycled without any requirement that the plastic was used to manufacture a new product.⁵¹

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.

The impact of this reclassification is that these facilities are now exempt from state solid waste laws and regulations that they would otherwise be required to comply with. This includes commonsense requirements for all facilities that handle solid waste such as public permitting processes, siting restrictions, public input and oversight, transparency requirements, closure plans, and operating conditions that apply to all solid waste facilities but not manufacturing facilities. Unsurprisingly, more than half of the chemical recycling facilities operating in the U.S. are located in states that have passed laws exempting these facilities from solid waste regulation.⁵² By design, this unproven and polluting industry is expanding most rapidly where there is little oversight or accountability.

VI. Conclusion

Maryland is on the cusp of passing important policies that will improve recycling, reduce plastic pollution, and protect public health. Chemical recycling threatens this important work. HB 1092 is a necessary and important policy that makes it clear that in Maryland 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

⁵¹ *Id.* at 22-27.

⁵² U.S. Environmental Protection Agency, [Potential Future Regulations Addressing Pyrolysis and Gasification Units](#), 86 Fed. Reg. 50296, 50302 (Sept. 8, 2021).