

PLASTIC-TO-FUEL: A FALSE SOLUTION

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WHY IT MATTERS

Plastic production is increasing globally and in Virginia. As a result, the state's waterways are inundated by single-use plastic pollution, but "advanced" or "chemical" recycling, also known as pyrolysis, gasification, chemical conversion, and chemical depolymerization are not solutions to the plastic pollution crisis. These processes use chemicals and heat to incinerate plastic waste to create fossil fuels.¹ They do not reduce the use of single-use plastics but instead incentivize the continued use of plastics for plastics-to-fuel manufacturing. The resulting air pollution and hazardous waste put Virginia's communities and environmental health at risk.

"Chemical recycling" has been introduced as the answer to plastic pollution by the plastics industry for more than 35 years.² In that time, plastic production and plastic pollution have drastically increased, while

the plastic industry continues to look to these failed systems as justification to increase plastic production. Simply put, "chemical recycling" burns plastic to create fossil fuel (see graphic to left). Despite plastic industry lobbying, these processes are classified as "incineration" by the U.S. Environmental Protection Agency (EPA).³ In addition, "chemical recycling" produces more greenhouse gases and hazardous waste than the production of virgin plastic,⁴ while also incentivizing the production of more plastic.

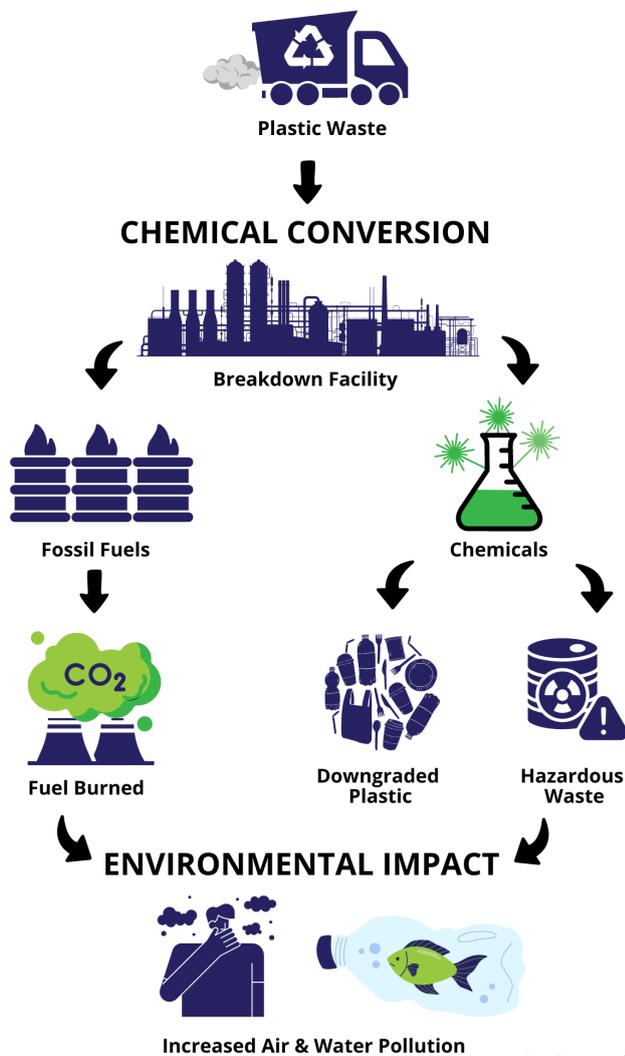
Many of these facilities do not test, record, or report the environmental impacts of their incineration. Of the three operating facilities in the US, a 2018 report found that an Oregon facility released over 49,000 tons of waste styrene, a highly toxic chemical, into our air.⁵ Pollution disproportionately burdens communities of color^{6,7} and, as a result of this environmental injustice, Black people are three times more likely to die from exposure to air pollutants than white people. Seven of the eight "chemical recycling" facilities in the United States are located in environmental justice communities;⁸ this, combined with the fact that these facilities are often out of compliance with EPA hazardous waste regulations,⁹ further demonstrates that "chemical recycling" is a false, inequitable solution.

CURRENT LANDSCAPE

In 24 states,¹⁰ including Virginia, "chemical recycling" facilities are effectively exempt from important waste regulations required of other waste industries. This carveout has been given with false promises from the American Chemistry Council, highlighting the "success" of a Tigard, Oregon polystyrene "chemical recycling" facility. However, between 2021 and 2023, this facility lost \$4.5 million and the facility closed in early 2024 because it failed to produce a marketable product while also generating more than 200 tons of styrene waste from 2018 to 2022, all of which was burned off-site.¹¹

Likewise, the short history of "chemical recycling" facilities in Virginia confirms "chemical recycling" as a false solution in need of a handout to the plastic industry and a burden to taxpayers. Braven Environmental LLC abruptly canceled its plans to build a facility that would serve as a "solution" to the state's plastic waste problem in Cumberland County¹² after being awarded over \$200,000 in state grants in 2020.¹³

In March 2025, the National Recycling Coalition announced that any process using heat or chemicals to transform plastic waste into fossil fuels, fossil fuel additives, substitutes, or waxes does not meet their "definition of recycling."¹⁴



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OPPORTUNITIES

The “chemical recycling” industry has repeatedly failed for decades due to issues surrounding technology scalability, high volumes of hazardous waste production, energy consumption, and overall inability to turn a profit. If Virginia is looking to truly tackle the plastic pollution crisis, the Commonwealth should look towards producer responsibility and proven solutions that reduce our reliance on single-use plastic to protect human health, our waterways, the ocean, aquatic animals, and the economy.

State solid waste management policy follows the hierarchy: source reduction, reuse, recycling, resource recovery (waste-to-energy), incineration, and land-filling.¹⁵ This hierarchy should be followed when discussing “chemical recycling” because it is considered incineration according to EPA regulations. Solid waste management should continue to focus on reducing single-use plastics in the waste stream and as litter, reusing products where possible, and if recycling is required, elevating solutions that reduce the amount of virgin plastics manufactured. Technologies that turn plastic into fuel are not recycling and should be excluded from extended producer responsibility and recycling development programs.

Failed technologies, such as “chemical recycling”,

should be robustly evaluated for safety, proof of scalability, and economic viability before being allowed in Virginia. Technologies should be profitable (i.e., not reliant on taxpayer dollars) and proven to achieve goals that advance Virginia’s quality of life, such as litter reduction, plastic waste management, and environmental equity. Taxpayer money (loans, grants, subsidies, etc.) should not be used to recruit, retain, or support any private “chemical recycling” businesses.

TOP TAKEAWAYS

Chemical recycling and burning plastics is environmentally unsustainable and enables the petrochemical industry to increase the production of plastics.

Environmental justice communities are disproportionately impacted by “chemical recycling” facilities, with seven of the eight US facilities that are often out of compliance with EPA hazardous waste regulations sited in low-income and communities of color.

ENDNOTES

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