
2022 Legislative Alert



Tracking Trends in Advanced/Chemical “Recycling”

Introduction

In 2020, GAIA released an alert identifying an alarming trend: up to that point, legislators had introduced at least 15 bills to promote the expansion of so-called “chemical recycling” (also known as “advanced recycling”, “waste-to-fuel”, “waste-to-plastic,” “transformation,” and “plastics renewal”), eight of which were signed into law. ¹

This alert is an update on that trend, which the petrochemical industry has accelerated. Since 2017, **20 states** have passed laws redefining these processes as non-waste, including several that inaccurately **define chemical “recycling” as recycling (Table 1)**. In addition to these threats, this alert contains suggested intervention points for advocates, and highlights legislative approaches that counter the expansion of these technologies.

Background: What is Advanced/Chemical “Recycling”?

The plastics industry spent decades convincing consumers that they could continue to purchase vast amounts of single-use plastics, as long as they tossed them into the recycling bin. But traditional recycling has been an abysmal failure, forcing the industry at last to admit what it has known for years: recycling would never solve the plastics crisis. Current rates of plastic recycling are just 5-6%, down from a high of 9%, which plummeted to the current level after China stopped importing plastic waste in 2018². As the overall failure of single-use plastics becomes increasingly clear, the plastics industry has charged up its public relations and lobbying operations to promote chemical recycling, which they have since renamed “advanced recycling”. These facilities use incineration processes including pyrolysis, gasification, and solvolysis to break down plastic waste (It is worth noting that the industry is particularly combative in its messaging that “advanced recycling” is not incineration, despite the clear facts that the technologies are associated

¹ GAIA. 2020. US ACC State Legislation Alert. https://www.no-burn.org/wp-content/uploads/2021/08/US-ACC-State-Legislation-Alert_updated-July-2020.pdf

² <https://e360.yale.edu/features/piling-up-how-chinas-ban-on-importing-waste-has-stalled-global-recycling>

Background: What is Advanced/Chemical “Recycling”? (continued)

with very similar if not the same underlying processes and outputs). The outputs of these plants, such as pyrolysis oil or styrene, can purportedly then be used to make new plastic products, thereby ostensibly recycling plastic.

However, researchers have worked on this approach for over 40 years and still have not produced a commercially viable way to turn the massive volume of plastic waste generated yearly into usable outputs, nor a way to do so without resulting in enormous waste generation and pollution from burning. Instead, reporting from Reuters in 2021 found that only about 20% of proposed plants are operational, with the majority shutting down or being canceled despite tens of millions of dollars in funding.³ Research from GAIA confirms that these facilities are in actuality **waste-to-toxic oil plants**, processing plastic to turn it into a subpar and polluting fuel, a process that can create heavy pollution and distressing health issues in nearby communities.

In 2022, NRDC also found that most of these facilities “are not recycling any plastic; [They] generate large quantities of hazardous waste; They release hazardous air pollutants; They are often in communities that are disproportionately low income, people of color, or both.”⁴ Despite claims that advanced/chemical “recycling” produces high volumes of plastic ingredients, most operators of these facilities release no data on process outputs, including wastes. Independent analysis has found that these facilities are highly polluting, releasing chemical compounds that are hazardous to human and environmental health, and enormous quantities of greenhouse gasses. Some of these facilities are proposed for co-location at existing or previous oil refineries, showing the interconnected nature of the petroleum and plastics industries.^{5 6}

Despite the obvious failures of these approaches, the plastics industry has pressed forward with an aggressive legislative strategy, which so far has focused on the state level and includes two categories of bills. The first provides financial incentives to build these facilities, exempt them from some state environmental laws, or both. The second pushes for the inclusion of chemical “recycling” in the definition of acceptable recycling in Extended Producer Responsibility (EPR) bills, which aim to reduce packaging by requiring producers, rather than municipalities, to pay for the recycling of plastic packaging.

At the federal level, the industry has targeted regulatory bodies instead of legislators. The US Department of Energy is funding chemical recycling research projects and, shockingly, has signed a Memorandum of Agreement with the American Chemistry Council to promote

³ <https://www.reuters.com/investigates/special-report/environment-plastic-oil-recycling>

⁴ NRDC. RECYCLING LIES: “CHEMICAL RECYCLING” OF PLASTIC IS JUST GREENWASHING INCINERATION. 2022. <https://www.nrdc.org/sites/default/files/chemical-recycling-greenwashing-incineration-ib.pdf>

⁵ <https://www.recycling-magazine.com/2020/06/04/chemical-recycling-distraction-not-solution/>

⁶ <https://www.icis.com/explore/jp/resources/news/2022/04/29/10759479/lyondellbasell-mulls-chem-recycling-among-options-for-us-refinery>

Background: What is Advanced/Chemical “Recycling”? (continued)

it. Additionally, the US Environmental Protection Agency included chemical/advanced “recycling” in its landmark 2021 National Recycling Strategy.

Carrying out this influence campaign is the American Chemistry Council (ACC), the industry’s lobbying arm. Their 2022 report, *The Potential Economic Impact of Advanced Recycling and Recovery Facilities in the United States*⁷ outlines their continued goals for this industry, touting “\$8.7 billion in investments for 83 new projects in advanced recycling and recovery, as well as mechanical recycling (as of April 2022), aimed at revolutionizing the use and reuse of plastic resources.”

The ACC promotes pyrolysis as an economic opportunity that projected to create billions of dollars in direct and indirect economic output. It has started a partnership with one such pyrolysis company, Renewlogy. The CEO of Renewlogy, Priyanka Bakaya, also chaired the Plastics-to-Fuel and Petrochemistry Alliance during the time the Alliance commissioned the ACC’s 2020⁸ study promoting economic expansion in chemical/advanced “recycling”. Brightmark proposed a chemical recycling plant in Macon, GA which they called a “plastics renewal” plant, which would have heated plastics to turn them into fuels and wax. The company requested \$500 million in government bonds for a \$680 million project, but the local government decided not to proceed with the proposal in April 2022.⁹

The Industry’s Legislative Campaign for Advanced/Chemical “Recycling” – Including Bills that Falsely Consider it as Actual Recycling.

Since 2017, 20 states have passed laws that advance chemical/advanced “recycling” primarily by reclassifying waste or incineration processes and/or feedstocks in ways that would subject them to less stringent air and water quality requirements (Table 1). Some of these signed bills redefine solid waste processing as manufacturing, or plastic waste as a post-use polymer or recovered feedstock. A handful of proposed bills in other states, if passed, would do the same (**Table 2**). Additionally, some recent bills and laws explicitly define chemical/advanced recycling as ‘recycling’, justifying this by claiming that feedstocks are “recycled” through chemical conversion, including, in part, Oklahoma

⁷ ACC. 2022. <https://www.americanchemistry.com/better-policy-regulation/plastics/advanced-recycling/resources/the-potential-economic-impact-of-advanced-recycling-and-recovery-facilities-in-the-united-states>.

⁸ ACC. Economic Impacts of Advanced Plastics Recycling and Recovery Facilities in the U.S

⁹ The Macon Newsroom, April 11, 2022 “Macon-Bibb, Industrial Authority end Talks With Brightmark on Plastics Recycling Plant.”

S.B.448 (passed 2021), South Carolina S.B.0525 (passed 2022), and Virginia S.B. 1164 (passed 2021).

Table 1. Twenty Signed Laws that Redefine Waste to Exclude Advanced/Chemical 'Recycling'

Region	Law	Title
Arizona	S.B.1156 , 2021	solid waste; advanced recycling facilities
Arkansas	HB 1944 , 2021	An Act To Facilitate The Conversion Of Plastics And 9 Other Recovered Materials Through Advanced Recycling Processes; And For Other Purposes.
Florida	HB 335 , 2017	Resource Recovery and Management
Georgia	HB 785 , 2018	Solid waste management; certain definitions; modify and enact
Illinois	HB 2491 , 2019	EPA-Uncontaminated Plastics
Iowa	S534 , 2019	A bill for an act relating to the use of gasification and pyrolysis facilities for the conversion of certain recoverable waste materials.
Kentucky	B.R.192 / HB 45 , 2022	AN ACT relating to resource recovery.
Louisiana	S.B.97 , 2021	SOLID WASTE: Provides for advanced recycling facilities and processes for the conversion of certain recovered materials.
Mississippi	H.B. 1135 , 2022	Advanced plastic recycling; define terms relating to.
Missouri	H.B. 2485 , 2022	Enacts provisions relating to environmental regulation
New Hampshire	SB 367 , 2022	Relative to the Regulatory Status of Advanced Recycling and Manufacturing Facilities.
Ohio	HB 166 , 2019	Creates FY 2020-2021 operating budget
Oklahoma	S.B.448 , 2021	Solid waste management; adding definitions; modifying definitions. Effective date.
Pennsylvania	HB 1808 , 2020	Solid Waste Management Act - Definitions and Editorial Changes
South Carolina	S.B.0525 , 2021	Solid Waste Policy and Management Act
Tennessee	S923 , 2019	AN ACT to amend Tennessee Code Annotated, Title 68, Chapter 211, relative to solid waste.
Texas	SB 1656 , 2019	Relating to the conversion of plastics and other recoverable materials through pyrolysis or gasification.
Virginia	S.B. 1164 , 2021	Advanced recycling, etc.; definitions.
West Virginia	SB 4084 , 2022	Relating to advanced recycling
Wisconsin	A789 , 2018	Relating to: exempting certain facilities from solid waste facility regulations.

* bill titles; law titles may be different; rows in **dark red** are laws passed since GAIA's 2020 legislative alert

Table 2. Selection of Recent Bills that Would Redefine Waste to Exclude Advanced/Chemical “Recycling”

Region	Bill	Title
Alabama	S.B.131 , 2022	Solid waste recycling, advanced recycling defined, conversion of materials back to basis hydrocarbons, not waste disposal or incineration
New Jersey	A.1759 , 2022	Exempts certain plastic materials processed at advanced plastic processing facilities from State laws regulating solid waste disposal and recycling
Michigan	SB 954 , 2022	Environmental protection: recycling and waste utilization; definition of advanced recycling; provide for. Amends secs. 11502, 11503, 11504, 11505 & 11506 of 1994 PA 451 (MCL 324.11502 et seq.)
Rhode Island	S.B. 2788 , 2022	Refuse Disposal * bill was blocked after a June 2022 campaign
New York	S.B. 7891 (same as: A 9495), 2022	Relates to advanced recycling and advanced recycling facilities.

Additionally, some problematic bills do explicitly define recycling to exclude incineration, which is a step in the right direction, but can not be wholesale supported due to other clauses that otherwise allow for chemical recycling:

- [New Jersey S.B. 426](#) (2022) states that “recycling does not include energy recovery or energy generation resulting from combustion or incineration processes,” but does promote chemical recycling.
- [Rhode Island H.B.7438](#) (2022) states that “refuse-derived fuel or other material that is destroyed by incineration is not a recycled material,” but enables plastic-to-fuel industry players to participate in recycling working groups.

Other Ways Advanced/Chemical “Recycling” is Enabled in Legislation.

Much of the legislation presented in this update defines chemical/advanced “recycling” as non-waste or recycling, but there are many bills that are negative in that they fail to explicitly rule out chemical conversion in recycling, energy, or zero waste programs. These include recycling and Extended Producer Responsibility (EPR) bills which do not explicitly rule out chemical processes as recycling, or laws that provide direct incentives to chemical/advanced “recycling” facilities through sales tax exemptions (VA [S.B. 590](#), 2020), or that fail to rule out these processes in considering recycled content (WA [S.B. 5022](#), 2021), or laws that define recycling to explicitly exclude pyrolysis, but do not overall exclude these processes from occurring (CA [SB 54](#), 2022).

Not included in this update are a number of bills and laws that give monetary or tax incentives for the development of these plants, or those that consider this technology to

be a form of “clean’ or “renewable” energy. **These are also very concerning threats in the realm of chemical/advanced “recycling” expansion.**

Legislative Language Limiting Advanced/Chemical “Recycling”.

Identifying bills that accurately define and effectively exclude chemical/advanced “recycling” from consideration is difficult. However, several states have introduced legislation that appropriately classifies pyrolysis, gasification, and other high heat depolymerization processes as incineration, and/or explicitly rule out high heat processing as recycling.

Minnesota H.F. 2661 (dead), a bill proposing a zero-waste grant program, accurately ruled out all forms of incineration as recycling:

(h) "Recycling" means the mechanical processing of materials that has reached the end of its current use into materials to be used in the production of new products. It does not include incineration or any energy recovery process or depolymerization or a similar process.

A bill that would have **prevented permits or construction of chemical recycling facilities** is Oregon HB 2811, which died in committee in 2021, but is worth highlighting for an innovative approach by utilizing a new project ban to combat the growth of these technologies, in addition to the language explicitly ruling out chemical/advanced ‘recycling’ as recycling:

"A public body as defined in ORS 174.109 may not issue a permit or other authorization for the construction, expansion or modification of any chemical recycling facility."

The federal Break Free From Plastic Pollution Act, HR 2238, S984, also explicitly excludes these chemical waste to downgraded fuel processes from the definition of recycling:

"(B) EXCLUSION.—The term ‘recycle’ does not include—.... (iii) the conversion of waste into alternative products, such as chemicals, feedstocks, fuels, and energy, through—(I) incineration; (II) pyrolysis; (III) hydrolysis; (IV) methanolysis; (V) gasification; or (VI) a similar technology, as determined by the Administrator."

Select language in signed laws (see footnotes) also accurately rules out this technology as “recycling”, even while some such laws are overall problematic and not to be wholesale supported for otherwise supporting these technologies: [Kentucky B.R.192 / HB 45](#)

(passed 2022)¹⁰, [Louisiana S.B.97](#) (passed 2021)¹¹, [New Hampshire SB 367](#) (passed 2022)¹², and Washington S.B. 5022 (passed 2021)¹³- this law is one of a package of laws being worked on by Washington advocates to limit these technologies. EPR law [Colorado HB 22-1355](#) (passed 2022) and recycling law [California SB 343](#) (passed 2021) also includes language accurately designating recycling as 'not incineration'.¹⁴

Other Methods of Limiting Incineration in Bills:

- Removing diversion credits for municipal solid waste (MSW) going to incinerators (and classifies burning trash as not recycling and not waste reduction)([California AB 1857](#), 2022)
- Banning incineration of PFAS including PFAS foam or limiting air emissions of PFAS [Illinois H.B. 4818](#) (2021), [New Hampshire H.B.1546](#) (2022)
- Prohibiting incineration of mattresses in most cases [Maryland H.B.1226](#) (2021; bill died, but worth highlighting), or carpets [Illinois H.B.4356](#) (2021)

Environmental Justice Considerations

Certain legislation explicitly calls for the consideration of environmental justice communities in the potential citing of industrial processes, including incineration or chemical/advanced "recycling" projects.

¹⁰ "Recovered material" means those materials, including but not limited to compost, which have known current use, reuse, or recycling potential, which can be feasibly used, reused, or recycled, and which have been diverted or removed from the solid waste stream for sale, use, reuse, or recycling, whether or not requiring subsequent separation and processing, but does not include materials diverted or removed for purposes of energy recovery or combustion except refuse-derived fuel (RDF), which shall be credited as a recovered material in an amount equal to that percentage of the municipal solid waste received on a daily basis at the processing facility and processed into RDF; but not to exceed fifteen percent (15%) of the total amount of the municipal solid waste received at the processing facility on a daily basis. Notwithstanding any provision of law to the contrary, tire-derived fuel, as defined in subsection (53) of this section, shall be considered a recovered material;"

¹¹ "Energy recovery or the conversion of post-use polymers into fuel shall not be considered recycling as defined in R.S. 30:2412(24)"

¹² "Recycled product shall not include any residual material, product used for fuel, or non-post-use-polymer feedstock converted to product."

¹³ "(b) "Recycled material" does not include energy recovery and the reprocessing of materials that are to be used as fuels or landfill cover."

¹⁴ (b) Consistent with the waste hierarchy established pursuant to Section 40051, and pursuant to Section 40180, for purposes of this section, "recycling," "recyclable," and "recyclability" do not include transformation, as defined in Section 40201, EMSW conversion, or production of fuels.

This includes the following **signed laws**:

- [New York S.7880B](#) (Adopted 2022), which bans the incineration of fire fighting foam containing PFAS chemicals at the Norlite hazardous waste incinerator in the town of Cohoes, NY
- [Rhode Island H.B.5923](#) (Passed 2021), which:
 - includes high-heat waste medical processing facilities, including pyrolysis and gasification, under waste-to-energy combustion,
 - defines "environmental justice focus areas"
 - includes limitations on where high-heat facilities can be (cannot be located in an environmental justice municipality; within 1 mile of any area zoned for residential use or a school; within 2000 feet of water, park, public land)

As well as the following **bills**:

- [Rhode Island S.B.2087](#) (2022), which would require the Department Of Environmental Management to create environmental justice areas
- [Arizona H.B.2681](#) (2022), which would create an environmental justice task force to review existing and proposed siting of industrial facilities in communities of color and low-income communities

Moving Forward, a unified understanding of what processes constitute waste incineration is needed nationwide; this has already been defined at the federal level by the Clean Air Act, and reaffirmed by subsequent rulings by the EPA and district courts. In the United States, waste and energy tend to be transported across state boundaries, which could exacerbate interstate inequities in cumulative toxic impacts if waste burning expands, especially if solid waste "feedstock" is called different things in different states.

Legislators, policymakers, and advocates at state and national levels are recommended to carry out the following:

1. **Focus on waste reduction as the primary waste management strategy for climate and community.** The industry advocacy for so-called "chemical recycling" is a distraction from waste reduction and reusable products, and is an extension to the lifeline of the fossil fuel industry with toxic outcomes. High heat treatment of plastic waste is not recycling; even if it were recycling, recycling should come after reduction and reuse.
 2. **Encourage EPA regulation of gasification and pyrolysis incineration of plastic and all waste as incineration under Clean Air Act Section 129.** This federal-level regulation would provide the strongest short-term opportunity for oversight and
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would prevent differing definitions across state lines. This would eliminate the loophole preventing the redefinition of waste and waste facilities at state levels.¹⁵

- 3. Increase laws that limit incineration and protect environmental justice communities.**
- 4. Proactively eliminate gasification and pyrolysis incineration of plastic and all waste chemical recycling from clean/renewable energy definitions and from recycling definitions.** This includes direct language or vague language representing a missed opportunity to regulate these processes.
- 5. Expand public education about different forms of incineration.** Thus far, the plastic industry has succeeded in presenting these facilities as positive and necessary by using the misleading labels of chemical or advanced recycling, enabling incineration to slide into legislation without universal clarity about its negative impacts.

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“GAIA is a global network of more than 800 grassroots groups, NGOs, and individuals. We envision a just, zero waste world built on respect for ecological limits and community rights, where people are free from the burden of toxic pollution, and resources are sustainably conserved, not burned or dumped. We work to catalyze a global shift towards environmental justice by strengthening grassroots social movements that advance solutions to waste and pollution.”

¹⁵ (b) Consistent with the waste hierarchy established pursuant to Section 40051, and pursuant to Section 40180, for purposes of this section, “recycling,” “recyclable,” and “recyclability” do not include transformation, as defined in Section 40201, EMSW conversion, or production of fuels.