Union of Concerned Scientists

May 8, 2023

Committee On Environment and Natural Resources
Cross Building, Room 216, 287-4149
100 State House Station
Augusta, ME 04333

Senator Brenner, Representative Gramlich and members of the committee,

Thank you for the opportunity to testify in support of LD 1660, *An Act to Provide That Advanced Recycling Facilities Are Subject to Solid Waste Regulation and That Advanced Recycling Does Not Constitute Recycling.*

My name is Roger Stephenson and I serve as regional director for climate and energy advocacy for the Union of Concerned Scientists, a national organization with almost 3,000 Maine supporters.

We do ask that you amend language that explains what recycling is not (line 2 page 2) to read, *"Recycling" does not include energy recovery, or energy generation,* ***or the creation of hazardous chemicals*** *by any means*.

It is my desire to point out to you three issues which argue for the need for scrutiny and rigorous oversight of advanced recycling facilities and operations in Maine.

First, the technology is relatively new, still being tested, and sustained operations remain unproven with respect to truly recycling plastic waste. Second, claims by those of the advanced recycling (AR) industry are misleading. Industry communications are replete with disinformation; plastics-to-fuels is not recycling anything except toxic chemicals. Third, industry practices are often obscure because of proprietary data and operations, therefore the lack of transparency can lead to misleading or missing data related to harmful emissions into our air and water.

Unproven solutions to plastic waste

Let's start at the end, that is, downstream where plastic is collected and sorted. 90 percent is still landfilled. According to a December 2022 Bloomberg report, "almost four years since the Alliance to End Plastic Waste launched, on-the-ground recycling is negligible compared to the new plastic produced by its core members, petrochemical companies". [1]

[1] https://www.bloomberg.com/features/2022-exxon-mobil-plastic-waste-cleanup-greenwashing/?leadSource=uverify%20wall

Downstream technological fixes are unproven and ineffective. According to researchers, "Proof of successful status (and failures) [of chemical recycling] remains largely undisclosed outside of laboratory trials, and for the interested party much will be found in theory but little or no substance given to practice".[2]

Because the technology is still being tested the **risks** to compliance associated with regulation of toxic emissions into our air and water are **very real**. Plastics to plastics conversion is only one of 8 interventions (three of which are upstream) identified in a 2020 Pew report[3] that indicates plastic-to-plastic chemical recycling can only tackle 6 percent of plastic waste by 2040. Moreover, pyrolysis is currently profitable only because collection and sorting are being subsidized by local governments.

Misleading claims from industry

Most plastic in use today comes from hydrocarbons derived from crude oil, natural gas and coal.

Chemical recycling includes pyrolysis and has high energy requirements, leading to carbon emissions that are 110 percent higher than mechanical recycling, and 9 per cent higher than landfilling—though 19 per cent lower than that of plastic that is incinerated.[4]

The advanced recycling company Agilyx states, "we can turn post-use plastics back into their original chemical components for continued use, over and over again" [5] **This is misleading**. First, plastic waste that may be recycled into new plastic is not a solution because of plastic degradation; the (plastic) material can be reused once, maybe twice[6]. Second, the company further states that the plastics can be turned in to feedstocks such as naphtha or into drop-in fuels (jet fuel, diesel and bunker fuel); doing so is not recycling and therefore the claims that the technology aims to increase plastics recycling rate from 10 to 90 percent are false and misleading.

Not surprisingly, the major partners of the Alliance to End Plastic Waste are petrochemical companies who have long recognized public dependence on plastics, and **public misperceptions of plastics recycling are critical to their profit making**. Companies like Exxon, Chevron, Dow, DuPont and their lobbying and trade organizations in Washington have over the last few decades spent millions of dollars persuading the public that recycling plastic was viable

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[2] Rollinson, A., Oladejo, J. (2020). Chemical Recycling: Status, Sustainability, and Environmental Impacts. Global Alliance for Incinerator Alternatives. doi:10.46556/ONLS4535 Available online at: www.no-burn.org/cr-technical-assessment

[3] https://www.systemiq.earth/wp-content/uploads/2020/07/BreakingThePlasticWave_MainReport.pdf

[4] IBID

[5] https://www.agilyx.com/what-we-do/

[6] https://www.npr.org/2020/09/11/897692090/how-big-oil-misled-the-public-into-believing-plastic-would-be-recycled

even though they knew the opposite. The evidence illustrates the **public deception** and misinformation on the part of the plastics and petrochemical industry **since the late 1970s**.

Disinformation is a business model for increasing markets and profits often at the expense of public health and the environment.

Lack of transparency

When an advanced recycling company is asked to provide a life cycle analysis for one of its plants, and when the regulated company has sole discretion in determining the scope of the analysis, what we really is have the fox guarding the henhouse, and this is exactly what a company did with its facility in Indiana.[7] In fact according to researchers, "Grossly inadequate reporting exists on the status of chemical recycling which, along with a lack of independent evidence on the technology, appears to have led to it being portrayed above and well beyond its capabilities. Much **greater transparency** on operational performance, energy balances, and environmental impact assessment must **be provided as standard**".[8]

Conclusion

Absent transparency, and because of industry disinformation and because of the risks inherent with new technology, the **protection of our air and water resources and protection of public health must rely on legislation specific to advanced recycling** as well as rigorous oversight and accountability on the part of regulatory agencies including but not necessarily limited to the Maine DEP. I urge you to strengthen LD 1660 by acknowledging that chemical processes to convert plastic waste into hazardous chemical components and other products does not constitute recycling.

Roger W. Stephenson, APR
Northeast Regional Advocacy Director
Union of Concerned Scientists
(603) 770-9484 rstephenson@ucsusa.org

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[7] https://insideclimatenews.org/news/11092022/indiana-plant-pyrolysis-plastic-recycling/?utm_source=InsideClimate+News&utm_campaign=e7c6e3c241-&utm_medium=email&utm_term=0_29c928ffb5-e7c6e3c241-329301981

[8] Rollinson, A., Oladejo, J. (2020). Chemical Recycling: Status, Sustainability, and Environmental Impacts. Global Alliance for Incinerator Alternatives. doi:10.46556/ONLS4535 Available online at: www.no-burn.org/cr-technical-assessment