Chemical Recycling Is a Deception

By Lee Bell

In a debate, it's important for readers to know the biases of the participants. IPEN aims to eliminate hazardous chemicals that pollute our air and water, that threaten the healthy environments we need to survive. These chemicals are linked to serious health concerns like cancer, infertility, heart disease, and many others. Our bias is that public health—your health—is more important than chemical industry profits.

The chemical industry's bias appears to be the opposite—to them, making money is more important than their consequences to people and our planet. When asbestos was linked to cancer, the industry spent millions in lobbying to maintain their sales (with ongoing lobbying to this day). When DDT was shown to be a hazardous pesticide that was poisoning the food chain, industry responded by attacking Rachel Carson, the scientist who identified the problem, and by manipulating science and using tobacco industry tactics to fend off regulations.

More recently, a peer-reviewed publication noted that the industry knew of the health and environmental threats from PFAS "forever chemicals" for decades but covered them up, using "strategies that have been shown common to tobacco, pharmaceutical. and other industries to influence science and regulation—most notably, suppressing unfavorable research and distorting public discourse."

These are just a few of dozens of examples of industry's use of disinformation, greenwashing, and other deceptive tactics to maintain sales of dangerous products. Their current promotion of chemical recycling as a way to resolve the plastics crisis is equally disingenuous. As a recent report noted, chemical recycling at best generates plastic with 10 percent recycled content—and typically as low as 2-5 percent. Most of the rest of the waste plastic going into the process remains waste, or is converted to emissions and even more hazardous waste that needs to be landfilled or burned, with just a small amount of dirty fuel produced as the desired end product. Most chemical recycling is energy intensive and generates a high carbon footprint to produce a small amount of contaminated output. The report investigated several industry projects that claimed chemical recycling was already creating useful recycled plastic products and found none of them stood up to scrutiny.

As the recent report on chemical recycling by IPEN and Beyond Plastics noted, wide adoption of chemical recycling would do nothing to resolve the plastics crisis. Indeed, it would actually support expansion of plastic production, while causing unacceptable levels of environmental and social harm, as well as impacts on human health, through emissions, waste generation, energy consumption, and contaminated outputs.

Chemical recycling is neither a new nor advanced technology. It is based primarily on old processes that have struggled for decades technically and commercially to manage plastic waste. The majority of the output is not new "circular" or "green" plastic but dirty petrochemical fuels that will be burned, creating toxic emissions and emitting greenhouse gases. Every step of these technologies is expensive, polluting, and energy-intensive. In fact, an independent study found that the economic and environmental impacts of common chemical recycling technologies were up to 100 times higher than for virgin plastic production.

Chemical recycling facilities emit cancer-causing chemicals and substances that have been banned globally because they are among the most toxic chemicals known. Yet in the United States, many states eliminate or relax environmental and health rules to incentivize new plants, and the industry often evades federal clean air rules and pollution controls. Environmental justice communities who already experience unequal health risks from toxic pollution will face the highest health risks from the expansion of chemical recycling. Especially as chemical recyclers seek to co-locate with petrochemical refineries that are already impacting communities.

Even if these were not inherent problems with chemical recycling, the technology is simply not efficient enough to make a dent in the plastic pollution problem. In the United States, our report found that as of September 2023, 11 chemical recycling facilities were operating in the United States. Several of these facilities have since closed and most were not working at anywhere close to full capacity, but even if they were, these facilities would process less than 1.3 percent of the 35.7 million tons of discarded plastic generated in the country each year. Similarly, an independent researcher told ProPublica that the world could, at best, replace 0.2 percent of new plastic with recycled plastic from chemical recycling.

In short, the only benefit from chemical recycling is to chemical and plastic industry profits. Instead of promoting and subsidizing the industry's dirty and dangerous technology, we should demand governments address the plastics crisis by limiting plastic production, restricting the use of toxic chemicals, and pursuing innovative, safer materials made without climate-destroying fossil fuels or harmful chemicals.

Lee Bell is a technical and policy advisor for the International Pollutants Elimination Network.