

July 31, 2023

EPA Administrator Michael Regan  
United States Environmental Protection Agency  
1200 Pennsylvania Avenue NW  
Washington DC

Re: EPA Draft National Strategy to Prevent Plastic Pollution

Dear Administrator Regan,

Thank you for this opportunity to comment on the draft National Strategy to Prevent Plastic Pollution.

The undersigned organizations appreciate EPA's interest in addressing plastic pollution. EPA outlines several important goals including the reduction of plastics production and consumption. The agency then proposes a range of steps including studies, planning activities, innovation challenge ideas, and voluntary goal-setting.

Unfortunately, these strategies will not achieve the goals identified, and most are no match for the plastics industry's ongoing harm to people and the planet. We are concerned that the proposed National Strategy is built upon misguided assumptions and misleading frameworks that may actually deepen and perpetuate the petrochemical lock-in and magnify the plastic pollution problem.

In the latter part of this memo, we outline actions the agency can take to address its well-intentioned goals and to turn its widely-shared aspirations into an effective blueprint for action. We urge the agency to build upon its objectives by proposing robust mechanisms and metrics to:

- Measure plastics production;
- Cap and reduce plastics production;
- Establish full transparency of toxic chemicals at *every* stage in the plastics value chain;
- Ban the most toxic polymers and plastics chemicals;
- Strengthen and enforce laws protecting people who have no choice but to breathe the carcinogenic and neurotoxic emissions from plastics production and incineration facilities, and;
- Address the harm that plastics are inflicting on our planet and on our climate.

## What are plastics?

Plastics are made by combining fossil fuels and synthetic chemicals (which are commonly also derived from fossil fuels). The extraction and processing of the oil, gas, or coal pollutes waterways and releases heavy concentrations of air pollutants such as benzene and formaldehyde. To these plastics feedstocks are added thousands of chemicals, such as PFAS, phthalates, and heavy metals, which provide the functional and performance qualities that make plastic so versatile and so useful.

The EPA strategy seems to dismiss the toxicity of plastic and the harm it causes [at every step of the supply chain](#), from the [fracking for the feedstocks](#)<sup>1</sup> to the [burning of the plastic trash](#).<sup>2</sup> The emissions from plastic production and disposal are linked to cancers, respiratory ailments, endocrine disruption, neurodevelopmental conditions, reproductive disorders, and other ill effects. Plastics harm consumers, communities, ecosystems and the climate.<sup>3</sup>

## Concerns with EPA's proposed National Strategy

### **1. The National Strategy is focused on end-of-the-pipe solutions.**

EPA's draft National Strategy was produced in response to a narrow Congressional mandate to reduce the quantity of plastics and other trash that pollutes the seas and waterways. Despite that downstream focus, EPA states that this Strategy document plus its previously released Recycling Strategy would together constitute a full National Strategy to Prevent Plastic Pollution. This pair of documents does not represent an effective or viable strategy.

EPA's attempt to turn a very limited mandate – the Marine Debris Act -- into a more comprehensive plastics strategy results in a lopsided emphasis on “litter” and other “post-consumer materials.” Meanwhile, the draft National Strategy directs minimal attention to the upstream impacts from plastics production, in particular the carcinogenic air emissions from plastics-making facilities.

### **2. Much of the Strategy ignores the hazardous air pollution released into surrounding communities by plastics production and disposal facilities.**

Although several sections mention environmental justice, the report largely avoids the biggest inequity of all: the heavy concentrations of toxic air pollution – from every stage of the plastics supply chain – that harm the health of people living in surrounding communities. The Strategy's

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<sup>1</sup> Wollin, K.-M., Damm, G., Foth, H., Freyberger, A., Gebel, T., Mangerich, A., Gundert-Remy, U., Partosch, F., Röhl, C., Schupp, T., & Hengstler, J. G. (2020). Critical evaluation of human health risks due to hydraulic fracturing in natural gas and petroleum production. *Archives of Toxicology*, 94(4), 967–1016. <https://doi.org/10.1007/s00204-020-02758-7>

<sup>2</sup> Singla, V.. (2022). “Chemical recycling” of plastic is just greenwashing incineration. NRDC.org. <https://www.nrdc.org/sites/default/files/chemical-recycling-greenwashing-incineration-ib.pdf>

<sup>3</sup> Landrigan, P. J., Raps, H., Cropper, M., Bald, C., Brunner, M., Canonizado, E. M., Charles, D., Chiles, T. C., Donohue, M. J., Enck, J., Fenichel, P., Fleming, L. E., Ferrier-Pages, C., Fordham, R., Gozt, A., Griffin, C., Hahn, M. E., Haryanto, B., Hixson, R., ... Dunlop, S. (2023). The Minderoo-Monaco Commission on plastics and Human Health. *Annals of Global Health*, 89(1), 23. <https://doi.org/10.5334/aogh.4056>

proposed studies, increased communications, and voluntary goals are not adequate to meaningfully protect people living near petrochemical facilities.

The National Strategy's references to environmental justice need to go beyond abstract definitions, calls for more assessment, and attention to a narrow scope of issues such as access to trash collection and recycling services. It is concerning that some of the suggestions, including the expansion of plastics composting in underserved and overburdened communities, may actually magnify the cancer risks in those already vulnerable neighborhoods.

That said, our organizations are encouraged to see the powerful and succinct section A2.4, which calls for robust, updated regulations and rigorous enforcement of air and water pollution laws at new and existing petrochemical facilities. We also support the complementary section A2.5, which calls for mapping the existing and proposed plastic production facilities, and evaluating their environmental justice implications and the public health impacts on neighboring communities.

**3. The National Strategy perpetuates the plastics industry's false narratives.** The document is replete with plastics-industry greenwashing terminology including misleading "circularity," "restorative and regenerative," and "sound management" concepts borrowed from sustainable agriculture and other fields and not applicable to products made out of fossil fuels that are combined with phthalates, PFAS, bisphenols, UV328, flame retardants, heavy metals, and other toxic chemicals. EPA is perpetuating the petrochemical industry's false narrative that the issue of plastic pollution can be fixed with better planning and improved waste management.

**4. The National Strategy suggests false solutions.** The report leaves the door wide open to false solutions including so-called chemical recycling. These technologies, which the plastics industry is aggressively promoting as the future of waste management and the driver of a so-called "circular economy for plastics," pollute surrounding communities with toxic emissions such as dioxins, benzene, formaldehyde, and heavy metals. By rebranding pyrolysis and similar processes as "recycling," facilities are able to sidestep the pollution controls, monitoring, and reporting requirements of the Clean Air Act. In the National Strategy, EPA takes the discussion a step further by promoting the misleading distinction between the pyrolysis that is plastics-to-fuel and that which is plastics-to-plastics. Plastics pyrolysis is a heavily polluting, inefficient, and energy-intensive incineration technology that needs to remain under section 129 of the Clean Air Act *no matter what is done with the resulting hydrocarbons*.

EPA also proposes to assess risks from pyrolysis oils under the "significant new use rules" of the Toxic Substances Control Act (TSCA). This plan raises several concerns. TSCA risk assessments have been found to consistently underestimate the human health risks of chemical exposures. Moreover, TSCA's robust Confidential Business Information provisions may enable petrochemical corporations to bypass the strict transparency rules of the Clean Air Act, the Resource Conservation and Recovery Act (RCRA) and other environmental laws. TSCA thus

would become a mechanism through which polluting companies are able to launder pyrolysis oils for use as fuels with the imprimatur of EPA oversight. This could result in a failure to protect vulnerable populations from unreasonable risks to health, as observed in the TSCA section 5 consent order [issued to Chevron](#) for production of fuels derived from pyrolysis of plastic wastes at its refinery in Pascagoula, Mississippi.<sup>4</sup>

**5. The Strategy greenwashes plastics recycling.** Although EPA acknowledges that not all plastics are recyclable, the text blames “mismanagement” as the basis for other countries’ failure to recycle U.S. plastic waste exports. The report sidesteps the technical infeasibility of most plastic recycling, the toxic chemical leaching, the harmful air emissions, and the vast amount of microplastics generated by plastics recycling facilities.

**6. The National Strategy excludes the *intentional* application of plastic pollution to the environment.** This is particularly glaring in the agricultural context, for example in the widespread use of plastic-coated seeds, fertilizers, and pesticides; the coverage of farmland in plastic mulch films; and the application of microplastic-dense sewage sludge as a fertilizer. The [U.N. Food and Agriculture Organization](#) calls the impacts of agricultural plastics “disastrous.”<sup>5</sup>

**7. The National Strategy needs a closer examination of greenhouse gas emissions.** The climate figures cited appear to rely on incomplete data. Moreover, the Strategy’s recommendations do not align with the dramatic expansion of climate and planetary risks from plastics production, use, and incineration.

The low level of ambition suggested by EPA’s draft National Strategy mirrors the weak negotiating positions advanced by the U.S. delegation to the Global Plastics Treaty. We urge the EPA to overhaul its draft National Strategy and to instead embrace robust solutions that will protect people and the planet.

## Re-Framing the Strategy

While the report falls short in crucial respects, our organizations were pleased to see the inclusion of the aforementioned section A2.4, which calls for robust, updated regulations and for rigorous enforcement of air and water pollution laws at new and existing petrochemical facilities. This offers significant promise, and we suggest that section A2.4 become the centerpiece of the entire Strategy.

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<sup>4</sup> Lerner, S. (2023, February 23). *This “climate-friendly” fuel comes with an astronomical cancer risk.* ProPublica. <https://www.propublica.org/article/chevron-pascagoula-pollution-future-cancer-risk>

<sup>5</sup> United Nations Food and Agriculture Organization.(2021). Assessment of agricultural plastics and their sustainability. A call for action. Rome. <https://doi.org/10.4060/cb7856en>

The efforts under section A2.4 are complemented by section A2.5, which calls for mapping the existing and proposed plastic production facilities, and evaluating their environmental justice and public health impacts on neighboring communities.

The Strategy includes a number of other sound and important goals. For example, page 13 of the document states the following:

*“Recycling initiatives are part of the solution. However, we need more upstream solutions to addressing plastic pollution, such as reducing the use of unnecessary plastic, designing for circularity, and increasing innovations in systems that extend the lifespan of products, such as repair and reuse.”*

Sections A2.4 and A2.5, and the highlighted excerpt from page 13 outline valid goals. Where the report misses the mark is in the identification and execution of strategies to achieve these goals.

## Further elaboration on the issues identified above

In the following pages, we elaborate on the seven issues identified above. This is followed by a closer look at some of the proposed strategies. We conclude with a compendium of the most important elements to include in this National Strategy.

### ***1. The National Strategy is focused on end-of-the-pipe solutions.***

It is unclear how EPA could consider this draft National Strategy -- in addition to a report about recycling -- to be a comprehensive national plastics roadmap. This document was produced in response to a narrow Congressional mandate addressing post-consumer plastic and other waste in waterways and oceans. The [Save Our Seas 2.0 Act](#)<sup>6</sup> charges EPA with developing a strategy to address post-consumer waste management *“to reduce plastic waste and other post-consumer materials in waterways and oceans”* (p. 13).

EPA has stated that this Plastics Strategy document in tandem with their recycling strategy fulfills the Save Our Seas 2.0 mandate. In response to questions at their May 11 webinar, EPA reiterated that no other chapters of the Plastics Strategy are anticipated, though staff indicated they would welcome comments on the current draft document.

In the draft National Strategy, the authors state that their goal is to identify actions needed to eliminate the release of plastic waste from land-based sources into the environment by 2040.

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<sup>6</sup> S.1982 - Save Our Seas 2.0 Act 116th Congress (2019-2020)  
<https://www.congress.gov/bill/116th-congress/senate-bill/1982/text>

*“This strategy, the Draft National Strategy to Prevent Plastic Pollution, builds upon the National Recycling Strategy’s focus on actions to reduce, reuse, collect, and capture plastic waste. Other strategies in the strategy series will focus on different parts of building a more circular economy for all, including a strategy on textiles.” (p. 14)*

It is not apparent what these “other strategies” are, and to what extent they will address plastics, given EPA representatives’ affirmation that the draft National Strategy completes the U.S. plastics strategy. For example, it is unclear whether the “other strategy” on textiles will focus on textiles that are made from plastics polymers, which represent the majority of textiles on the market. Plastics-derived fast-fashion presents significant human rights, climate, and toxic pollution challenges at every step of the value chain. [Textiles are the second-largest product group](#) made from petrochemical plastics after packaging – they make up 15 percent of all petrochemical products.<sup>7</sup> And an astounding 30 percent of textile garments are [never even sold](#), according to the Australian Circular Textile Association, and go straight to landfills or incinerators.<sup>8</sup> We recommend that the EPA strategy on textiles become a part of the National Plastics Strategy.

Despite the focus on plastic waste in oceans, the draft strategy explicitly does not address any sea-based sources of plastic pollution. The Strategy notes, however, that the Save Our Seas 2.0 Act “requests several reports on various aspects of sea-based sources, which are currently under development” (p. 16). In its list of questions to commenters, EPA is soliciting public feedback on whether it should “expand the scope of the strategy to include sea-based sources?” (p. 3). Our organizations would support inclusion of sea-based sources in a comprehensive National Strategy.

### **End-of-the-Pipe Focus**

Given the Save Our Seas mandate, the report’s downstream focus is hard to miss. Much of the Strategy is focused on how to reduce litter and keep waste plastic out of the ocean. There are 35 references to “litter,” 79 to “trash” and 9 to “leak” or “leaking,” referring to littered plastic that enters the environment. Meanwhile, there are only 7 mentions of “air” (including just two of “air pollution”), few of which are substantive. Instead, EPA addresses “litter from cars,” “pedestrian litter,” and every other sort of “litter.”

The draft Strategy emphasizes preventing the release of plastic litter into nature. It “identifies actions ... to eliminate the release of plastic waste into the environment by 2040” (p. 5). There is no rationale or scientific basis offered for the 2040 date for this litter-oriented goal, which is

<sup>7</sup> Dottle, R and Gu, J. The Global Glut of Clothing is an Environmental Crisis. (Feb. 23, 2022) Bloomberg News <https://www.bloomberg.com/graphics/2022-fashion-industry-environmental-impact/>

<sup>8</sup> International Council for Circular Economy (2021). <https://ic-ce.com/what-does-it-take-to-make-fashion-circular/>

17 years from now.

None of us like litter, but clamping down on litter and fixing garbage collection will not solve the plastics pollution problem. It is far more effective to turn off the tap than to endlessly mop the floor.

## ***2. Much of the Strategy ignores the hazardous pollution released by plastics production and disposal facilities into our air, water, and soil.***

The Strategy mentions environmental justice in several passages, including in assisting communities in the development of plastic-reuse systems; improving access to trash collection and recycling services; and evaluating the availability of plastics composting facilities. Yet there is scant attention to the biggest, cruelest inequity of all: the heavy concentrations of toxic air pollution that sicken fenceline communities from plastics incineration, plastics production and processing, and fracking for plastics feedstocks.

We are pleased to see objective A, to reduce pollution during plastic production. The introductory note mentions the special circumstances of people on the frontlines of plastics production:

*“It is also important to reduce impacts from the production of materials, which can negatively impact the environment and human health, especially in disadvantaged or underserved communities with environmental justice concerns.” (p. 15)*

Despite these sound ambitions, however, many of the strategies that follow downplay the seriousness and urgency of the need to reduce pollution from plastics production. For example, in A1.1, EPA suggests that the answer lies in encouraging stakeholders to use better products. “Identifying and communicating the types of products with adverse environmental impacts could help shift consumption away from these products.” In practice, consumers have little choice but to use plastic and other toxic petrochemicals. And to suggest that a multi-billion dollar industry will change course based on increased communications is wishful thinking. Scientists and public health organizations have been raising red flags for decades, and EPA researchers have also shared their concerns, to little avail.

While most of the strategies outlined would not actually improve the lives of environmental justice communities living at the petrochemical fenceline, Section A2.4 offers hope. It proposes to “Conduct evaluations to ensure that production facilities within the plastic sector are in compliance with applicable federal, state, Tribal and local regulatory requirements.” The two paragraphs that follow suggest a concerted effort by EPA to strengthen and enforce air and water pollution regulations for new and existing plastics production and recycling facilities and

during transportation. This includes actions to update regulations and “to avoid and reduce negative environmental or human health impacts, including safety threats like chemical leaks, fires, and explosions.”

Bravo. It is clear that the author of this section understands the severity and urgency of the situation faced by people condemned to live amidst the heavy emissions of carcinogenic air and water pollution from plastics production and disposal facilities. Our organizations look forward to further details of the EPA plan for A2.4, and we stand ready to assist the agency in any way possible. We urge EPA to make this the centerpiece of its plastics strategy, in combination with a meaningful reduction in plastics production.

The regulatory updates, compliance, and enforcement actions in A2.4 will be buttressed by the environmental justice mapping proposed in A2.5.

*“Map existing and proposed plastic production facilities, as well as evaluate their environmental justice and public health impacts on neighboring communities.”*

We fully support mapping of the harm from plastics production infrastructure. Much of this work has already been done by our organizations and by EPA. Here are some excellent resources to use as a starting point.

EPA EJ-screen: <https://ejscreen.epa.gov/mapper/>

EPA Toxics Release Inventory:

<https://www.epa.gov/toxics-release-inventory-tri-program/tri-data-and-tools#triadvanced>

FracTracker <https://www.fractracker.org/>

FracTracker HON map:

<https://ft.maps.arcgis.com/apps/webappviewer/index.html?appid=c41d02e9099246baa4f4b222e1f20ff1>

Oil and Gas Watch: <https://oilandgaswatch.org/>

Propublica: <https://projects.propublica.org/toxmap/>

CLEAR Collaborative HON map: <https://www.clearcollab.org/proposal-map/>

While studies and maps are important, we know enough to act now. Ninety-five percent of petrochemical production [takes place in Texas and Louisiana](#),<sup>9</sup> inflicting massive public health burdens on the poorest and most powerless communities, many of which are Black, Latino, and

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<sup>9</sup> U.S. Department of Energy, Report to Congress (Nov. 2018). *Ethane Storage and Distribution Hub in the United States*.

<https://www.energy.gov/sites/prod/files/2018/12/f58/Nov%202018%20DOE%20Ethane%20Hub%20Report.pdf>



Indigenous. These communities face [vastly elevated risk](#) of [cancer](#) and [other illnesses](#).<sup>1011121314</sup> In addition to the higher disease burden, many of these localities face declining quality of life, property values, and neighborhood infrastructure and services. Their populations are saddled with the intense odors, noise, and light pollution of a heavily polluted industrial landscape. And often [the most contaminated, impoverished and disenfranchised communities](#) are the very ones targeted for additional *new* petrochemical infrastructure such as cracker plants, petrochemical way stations and terminals, plastics-burning incinerators, and other sources of plastics pollution.<sup>15</sup>

### **“Communities with environmental justice concerns”**

We also note that the authors choose an ill-suited formulation and repeat it seven times in the text: “communities with environmental justice concerns.” Such language has a dismissive feel. Instead, we suggest using the term “environmental justice communities.” The dramatically [elevated risk](#) of [dying from cancer](#) and other illnesses faced by the Black, Latino, Indigenous and low-wealth communities located near the fenceline of heavily-polluting petrochemical facilities<sup>1617</sup> is not simply a concern that is voiced by a specific sector. Rather it is a deep-seated wrong that has been happening for decades and needs to be righted. People are dying because of the hazardous air pollution they breathe ‘round-the-clock 24/7. Their lives are treated as expendable.

The White House does not use the formulation, “communities with environmental justice

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<sup>10</sup> Lin, C.-K., Hsu, Y.-T., Christiani, D. C., Hung, H.-Y., & Lin, R.-T. (2018). Risks and burden of lung cancer incidence for residential petrochemical industrial complexes: A meta-analysis and application. *Environment International*, 121(Pt 1), 404–414. <https://doi.org/10.1016/j.envint.2018.09.018>

<sup>11</sup> Jephcote, C., Brown, D., Verbeek, T., & Mah, A. (2020). A systematic review and meta-analysis of haematological malignancies in residents living near petrochemical facilities. *Environmental Health: A Global Access Science Source*, 19(1). <https://doi.org/10.1186/s12940-020-00582-1>

<sup>12</sup> Domingo, J. L., Marquès, M., Nadal, M., & Schuhmacher, M. (2020). Health risks for the population living near petrochemical industrial complexes. 1. Cancer risks: A review of the scientific literature. *Environmental Research*, 186(109495), 109495. <https://doi.org/10.1016/j.envres.2020.109495>

<sup>13</sup> Marquès, M., Domingo, J. L., Nadal, M., & Schuhmacher, M. (2020). Health risks for the population living near petrochemical industrial complexes. 2. Adverse health outcomes other than cancer. *The Science of the Total Environment*, 730, 139122. <https://doi.org/10.1016/j.scitotenv.2020.139122>

<sup>14</sup> Chin, W.-S., Pan, S.-C., Huang, C.-C., Chen, Y.-C., Hsu, C.-Y., Lin, P., Chen, P.-C., & Guo, Y. L. (2022). Proximity to petrochemical industrial parks and risk of chronic glomerulonephritis. *Environmental Research*, 208(112700), 112700. <https://doi.org/10.1016/j.envres.2022.112700>

<sup>15</sup> Younes, L., Kofman, A., Shaw, A., Song, L., Miller, M., & Flynn, K. (2021, November 2). *Poison in the air*. ProPublica. <https://www.propublica.org/article/toxmap-poison-in-the-air>

<sup>16</sup> Lerner, S. (2019, February 24). *A Tale of Two Toxic Cities: The EPA's Bungled Response to an Air Pollution Crisis Exposes a Toxic Racial Divide*. The Intercept. <https://theintercept.com/2019/02/24/epa-response-air-pollution-crisis-toxic-racial-divide/>

<sup>17</sup> Ward, K., Jr. (2021, December 21). *How Black communities become “sacrifice zones” for industrial air pollution*. ProPublica.

<https://www.propublica.org/article/how-black-communities-become-sacrifice-zones-for-industrial-air-pollution>

concerns,” and nor should EPA.<sup>18</sup>

### ***3. The National Strategy perpetuates the plastics industry’s false narratives.***

The draft Plastics Strategy builds upon the plastics industry’s misleading concepts and false narratives. It is replete with plastics greenwashing terminology. Below are some examples.

#### **Increasing the plastics “circular economy”**

The report refers dozens of times to the “circularity” of plastics, an illusory idea. The reality is that plastics are part of a linear system that starts with oil, gas, and sometimes coal, and ends with incineration, landfill, and plastic pollution in the soils and waterways. Even with the best of intentions it is not possible to make plastics into a circular commodity given the toxic nature of its constituents. [A 2021 assessment](#) found 10,000 chemicals added to plastics, 2,400 of which meet the criteria for toxicity, bioaccumulation, or persistence. In other words, these chemicals are known to harm human health and the environment. EPA allows 667 of these chemicals of concern for use in *food-contact plastics alone*, and many more in cosmetics and other consumer uses.<sup>19</sup>

A [May, 2023 UNEP Technical Report](#) determined that the number of chemicals in plastic is actually over 13,000.<sup>20</sup>

Many of these chemicals contribute to the air and water pollution in the vicinity of petrochemical production and disposal facilities. In addition, many leach out of plastics during use. The very potent phthalate DEHP (di-(2-ethylhexyl)phthalate), for example, is used to soften PVC and other vinyl plastics, thus making product packaging, dolls, tablecloths, raincoats, shower curtains and other products more pliable. It is of particular [concern for babies](#) that spend time in neonatal intensive care units.<sup>21</sup> DEHP is part of a class of chemicals that mimic the body’s hormones and can disrupt developmental processes. Phthalates can damage the developing brain, liver, heart, lungs, male reproductive tract and other organs. In the health care setting, phthalate chemicals are extremely common in blood bags, catheters, disposable gloves

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<sup>18</sup> See, e.g., <https://www.whitehouse.gov/environmentaljustice/> and <https://www.whitehouse.gov/environmentaljustice/justice40/>

<sup>19</sup> Wiesinger, H., Wang, Z., & Hellweg, S. (2021). Deep dive into plastic monomers, additives, and processing aids. *Environmental Science & Technology*, 55(13), 9339–9351. <https://doi.org/10.1021/acs.est.1c00976>

<sup>20</sup> Environment, U. N. (2023, May 3). *Chemicals in plastics - A Technical Report*. UNEP - UN Environment Programme. <https://www.unep.org/resources/report/chemicals-plastics-technical-report>

<sup>21</sup> Jenkins, R. (2022). Reducing toxic phthalate exposures in premature infants. In R. M. Barría (Ed.), *Topics on Critical Issues in Neonatal Care*. IntechOpen. [Reducing Toxic Phthalate Exposures in Premature Infants | IntechOpen](#)

and other products. IV bags and tubing can contain as much as [40 percent DEHP by weight](#).<sup>22</sup> DEHP is ubiquitous in [neonatal intensive care units](#), found in feeding tubes, fluid bags, syringes, respiratory support tubes, intravenous lines, nasal cannulas, catheters, incubators, among other devices.<sup>23</sup>

It is not possible to simply remove chemicals from plastics. Though sometimes referred to as “additives,” the PFAS chemicals, UV-328, bisphenols, phthalates, brominated flame retardants, chlorinated paraffins, and other toxic chemicals are intrinsic components that affect plastics’ function, durability, and performance. Moreover, each piece of plastic has a different combination of polymers and toxic chemicals, often combined with layers of metals, paper, and other materials. Attempts to process, recirculate, and recycle plastic trash produce low-value outputs and risk disseminating the toxic chemicals throughout the environment and into our bodies.

The National Strategy mistakenly extols U.S. leadership in the false framework of “plastic circularity.”

*“The United States can be a leader in developing an innovative, circular approach to reducing plastic pollution while growing the economy and fulfilling America’s needs. Already, the United States is a leader in plastic circularity innovation. This innovation was incentivized by many state and local government policies that address plastic pollution by curbing plastic use and increasing recycling.”* (p. 12)

The final sentence above appears to be a reference to the chemical recycling laws that the plastics industry lobby has managed to enact in 25 states. These laws promote the re-branding of plastics pyrolysis incineration as “advanced recycling,” making these heavily polluting facilities eligible for tax breaks and exempting them from Clean Air Act pollution controls, reporting, and monitoring requirements. [More on this topic, below.]

As well, taking discarded plastic trash, removing it from the regulations in the Resource Conservation and Recovery Act which protect communities from the pollution it causes during collection, storage, and disposal further places environmental justice communities in harm’s way. States that passed the American Chemistry Council’s legislation to de-regulate plastic as a waste did not increase the chance that plastic would get recycled, they just put their already vulnerable communities in more danger from plastic pollution.

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<sup>22</sup> Schettler, T. *Polyvinyl chloride in health care: A rationale for choosing alternatives*. (2020, January 29). Health Care Without Harm.

<https://noharm-uscanada.org/documents/polyvinyl-chloride-health-care-rationale-choosing-alternatives>

<sup>23</sup> James, A. (2023, January 30). *What will it take to give babies a phthalate-free start in the world?* EHN. <https://www.ehn.org/phthalates-in-medical-devices-2659296934.html>

## **“Restorative or regenerative by design”**

The National Strategy includes the claim that the proposed plastics pathway is not only “circular” but also “restorative or regenerative by design.” This language comes from the Save Our Seas definition of circularity (cited on p. 9 of the National Strategy) and is repeated throughout the report on pages 1, 9, 15, and 27. These terms are misleading: there is nothing “restorative or regenerative” about current plastics production, use, and disposal.

Here is the excerpt from the Strategy quoting [Save Our Seas 2.0](#).<sup>24</sup> (sponsored by Sen. Dan Sullivan [R-AK] and introduced on 6/26/2019):

*“Circular economy is defined in the Save Our Seas 2.0 Act as ‘a systems-focused approach and involves industrial processes and economic activities that are restorative or regenerative by design, enable resources used in such processes and activities to maintain their highest values for as long as possible, and aim for the elimination of waste through superior design of materials, products, and systems (including business models).’”*

The heavily contaminated and polluting plastics supply chain is anything but “restorative and regenerative.” The National Strategy repeats these terms without ever trying to justify their relevance. The EPA states as fact (p. 1):

*“The proposed actions under each objective support United States’ shift to a circular approach that is restorative or regenerative by design, enables resources to maintain their highest value for as long as possible, and aims to eliminate waste in the management of plastic products.”*

The above language repeats in an expanded form on p. 15:

*“The proposed actions under each objective create opportunities to shift from a linear approach in plastic materials management to a circular system that is restorative or regenerative by design, enables resources to maintain their highest value for as long as possible, and aims for the elimination of waste.”*

When used in the sustainable agriculture sector, “restorative and regenerative” are more than mere buzzwords, describing farming and ranching in harmony with nature, relying on beneficial insects and plants instead of chemical pesticides, using vegetative mulching and cover crops, enhancing plant and animal diversity, and nurturing relationships between people and the soil, animals, and waterways.

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<sup>24</sup> Save Our Seas 2.0. Congress.gov. Retrieved July 19, 2023, from <https://www.congress.gov/bill/116th-congress/senate-bill/1982/text>

When speaking about the plastics supply chain, by contrast, the terms are mere greenwashing. It is not appropriate to apply “restorative and regenerative” terminology to the linear, health-harming, greenhouse gas-emitting pathway of plastics materials.

The National Strategy also speaks to eliminating waste and to enabling plastics resources “to maintain their highest value for as long as possible.” As discussed in this memo, however, assessments of the value of plastics need to take into account health considerations for consumers, for communities in the vicinity of plastics production and disposal, and for the environment. Plastics are derived from toxic chemicals and oil, gas, or coal, and they continue to leach phthalates and other harmful chemicals and to release greenhouse gasses for hundreds of years. Few plastics are recyclable, and even in the best of circumstances plastics recycling only works once or a very few times (unlike the limitless circularity of glass recycling) since the plastic polymer chains degrade each time they are recycled, and require input of virgin plastics to make up for the lost quality. Efforts to extend the use of plastics “*for as long as possible*” need also consider that aged plastics and recycled plastics are commonly more harmful to consumers, given the elevated levels of toxic chemicals that leach from these products. See section 6, below.

### **U.S. leadership**

The Strategy tries to put a positive spin on the abject failure of the U.S. to confront the plastics problem. We read that,

*“The United States is looking to accelerate leadership in innovations and technology to reduce plastic waste in oceans and landfills...”*

And that

*“The United States plays a critical role in reducing global plastic pollution as a major global plastic producer and plastic waste generator.”*

The National Strategy acknowledges that Americans generate 486 lbs of plastic per capita per year -- vastly much more than people in any other country – and that a resident of the United States used approximately 1.8 times more plastic products than a resident of the European Union in 2019. Nonetheless, the report uses these facts to brandish our national importance as an economic engine and our “critical role” on the global stage.

Rather than grandstand U.S. prominence, the National Strategy ought to acknowledge the failure of the United States to contain the runaway plastics problem, and our outsized responsibility for the resulting illness, climate change, and ecological damage.

### **“Sound management of plastic waste”**

The National Strategy makes many references to post-consumer management (or mismanagement) of plastics, suggesting that communities are not managing their trash correctly. Peppered throughout the document are phrases such as “proper management at end of life.”

As noted earlier, the Strategy attributes the presence of plastic waste in the environment to such factors as “exports to other countries for recycling” that “are subsequently mismanaged.” The document suggests that the U.S. follows national and international laws on trade in plastic waste but that the importing countries are failing to properly manage the vast amounts of mixed plastic waste that the U.S. sends them.

Implicit throughout the commentary is that there are safe and healthy solutions to plastic trash and that the real troubles are the insufficient waste management capacity and the failure to take advantage of post-consumer management solutions. The unfortunate reality is that plastic waste management options – whether landfilling or burning or mechanical recycling – are a choice between bad and worse.

Plastic is made from toxic chemicals and it lasts for centuries. There is no way to safely dispose of plastic waste without impacting the health of people, the climate and the environment.

### **“Life-saving products”**

Devoid of context, explanation, or annotation, statements like this one contribute to misconceptions about the role of plastics in our society:

*“...plastic innovations have contributed to many life-saving products that have revolutionized the health care industry.”*

While it is true that certain single-use plastics such as surgical gloves, syringes, and IV lines have saved lives and led to transformations in healthcare, this is only a small subset of the plastics used in healthcare and beyond. The U.S. healthcare sector also procures extraordinary ([and increasing](#)) amounts of *unnecessary* single-use plastics,<sup>25</sup> from Styrofoam cups to throwaway plastic surgical tools to disposable blood pressure cuffs.

The healthcare industry has a long history of [lobbying against health and environmental protection rules](#) for the use of toxic chemicals in plastics, despite the availability of safe alternatives.<sup>26</sup> This includes everything from PFAS chemicals in medical textiles to lead in PVC

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<sup>25</sup> Jain, N., & LaBeaud, D. (2022). How should US health care lead global change in plastic waste disposal? *AMA Journal of Ethics*, 24(10), E986-993. <https://doi.org/10.1001/amajethics.2022.986>

<sup>26</sup> *Plastics and health - An urgent environmental, climate and health issue*. (2022, November 30). Health Care Without Harm. [https://noharm-global.org/plastics\\_and\\_health](https://noharm-global.org/plastics_and_health)

medical sensors to DEHP and other phthalates in the feeding and respiratory tubes and other devices used in [neonatal intensive care units](#).<sup>27</sup> (Note that DEHP is [not chemically bound](#) to the plastic in which it is used.<sup>28</sup> Therefore, it leaches out of the plastic and dissolves into the blood, other liquids, food, or skin with which the plastic comes in contact. Exposure can also take place from the room's air, especially in hospital settings where there are PVC and DEHP devices in addition to vinyl flooring and other sources. DEHP is associated with hormonal, cardiovascular, immunological, neurological, reproductive, and other effects including possible cancers. There are safer substitutes that do not contain phthalates.) Aside from the environmental and public health impacts from plastics production and disposal, these plastic health care products are harmful to the well-being of those receiving medical care.

Like other sectors, the healthcare industry [can and must reduce](#) its reliance on plastic.<sup>29</sup> In addition, it must stop fighting efforts to eliminate the most toxic chemicals from the plastics that do remain in use. The EPA must explicitly include the health care sector in any U.S. or international plastics strategy, including restrictions or phasedowns, chemical transparency, and the removal of plastics' most toxic "additives." This is critical for protecting patients as well as communities.

## Plastics "innovations" as the reason behind the pollution problem

*"Over the last 20 years, global plastic production, consumption, and waste have increased steeply as innovations for plastic applications continue to rise."*

We were surprised to see EPA attribute the increasing plastics problem to the growth in plastic "innovations" rather than the industry's failure to take responsibility for its air pollution, toxic waste, plastic trash, and other externalities.

The claims are misleading. The petrochemical industry has [evolved remarkably little](#) since inception.<sup>30</sup> The large and heavily subsidized initial expenditures and relatively low operating costs translate into scant motivation to try anything new or different. The plastics industry focus remains on recompensing the costs from construction of the billion-dollar petrochemical

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<sup>27</sup> Al-Saleh, I., Elkhatib, R., Alnuwaysir, H. *et al.* Exposure of preterm neonates receiving total parenteral nutrition to phthalates and its impact on neurodevelopment at the age of 2 months. *Sci Rep* **13**, 6969 (2023). <https://doi.org/10.1038/s41598-023-33715-w>

<sup>28</sup> Rowdhwal SSS, Chen J. Toxic Effects of Di-2-ethylhexyl Phthalate: An Overview. *Biomed Res Int.* 2018 Feb 22;2018:1750368. doi: 10.1155/2018/1750368. PMID: 29682520; PMCID: PMC5842715. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5842715/>

<sup>29</sup> *Plastics and health - An urgent environmental, climate and health issue.* (2022). [https://noharm-global.org/plastics\\_and\\_health](https://noharm-global.org/plastics_and_health)

<sup>30</sup> Joel Tickner, Ken Geiser & Stephanie Baima (2021) Transitioning the Chemical Industry: The Case for Addressing the Climate, Toxics, and Plastics Crises, *Environment: Science and Policy for Sustainable Development*, 63:6, 4-15, DOI: [10.1080/00139157.2021.1979857](https://doi.org/10.1080/00139157.2021.1979857)



production facilities and keeping them profitable for as long as possible. The sector has become locked in to a small number of platform chemicals that have remained the dominant feedstocks since the 1960s.

Rather than innovate, the petrochemical industry is engaged in a vigorous effort to develop new markets and to hang on to the old ones in an effort to prolong and extend its return on investment. The continued build-out of ethane crackers and other petrochemical facilities will [lock in the generation of toxic emissions and greenhouse gas pollution](#)<sup>31</sup> well into the future.

Innovation is not what drives the plastics pollution problem. Rather the issue is one of corporations acting irresponsibly and prioritizing profits over the health and safety of people and our climate. Plastics are a life-raft for fossil fuel companies determined not to let climate change and the promise of renewable energy cut into their profits. Decades of industry marketing have enabled the plastics sector to infiltrate nearly every aspect of our lives, replacing glass, metals, paper, wood, and other materials. The plastics lobby spends millions of dollars to convince us that their toxic products are inexpensive, clean, and environmentally friendly, and that it is up to individuals and our local municipalities to dispose of them properly. Petrochemical corporations need to be held accountable for the problems that they have created.

#### ***4. The National Strategy suggests false solutions***

The draft strategy states on p. 15,

***“EPA is promoting circular economy policies while excluding processes that convert solid waste to fuels, fuel ingredients, or energy from being considered as a recycling practice in the Draft National Strategy to Prevent Plastic Pollution and the implementation of the National Recycling Strategy. EPA’s National Recycling Strategy primarily focused on mechanical recycling of municipal solid waste but welcomed further discussion on technologies often referred to as “chemical recycling,” such as pyrolysis. EPA now understands that some of these technologies produce fuels and/or intermediate materials used in the manufacturing or processing of fuel or fuel substitutes. EPA reaffirms that the Agency does not consider activities that convert non-hazardous solid waste to fuels or fuel substitutes (“plastics-to-fuel”) or for energy production to be “recycling” activities . . . .”*** [Emphasis added.]

In stating that EPA does not consider *plastics-to-fuel* as recycling, the agency leaves the door wide open to a determination that so-called plastics-to-plastics “chemical recycling” <sup>\*</sup>is\* recycling. EPA seems to suggest that the requisite distinction is whether the facility yields any

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<sup>31</sup> Bauer, F., & Fontenit, G. (2021). Plastic dinosaurs – Digging deep into the accelerating carbon lock-in of plastics. *Energy Policy*, 156(112418), 112418. <https://doi.org/10.1016/j.enpol.2021.112418>



plastic as a final product. We disagree.

There is very little evidence that most “chemical recycling” facilities produce more than contaminated fuels. And regardless of whether a small portion of the plastic trash is ultimately turned back into plastic, the “chemical recycling” processes are heavily polluting, energy intensive, and technically unproven.

Scientists at the [National Renewable Energy Laboratory](#) (NREL) suggest that we should expect only 1 to 14 percent of the waste plastic that enters a “chemical recycling” plastics-to-plastics pyrolysis and gasification facility to actually become part of new plastics, and that “the economic and environmental metrics of pyrolysis and gasification are currently 10–100 times higher than virgin polymers” due to high energy requirements and low yields of monomers suitable for repolymerization.<sup>32</sup>

These are important technical insights on “chemical recycling.” Compounding the issues raised in the NREL report are the toxic air emissions and [the resulting harm](#) to workers and to people living in the vicinity of these plants. Chemical recyclers commonly locate their facilities in the underserved and overburdened communities that are least able to fight back.<sup>33</sup>

EPA mentions pyrolysis as its illustrative “chemical recycling” technology. Pyrolysis is a form of solid waste incineration. As such, for nearly thirty years, EPA has required the same strong air quality protections for pyrolysis as it has for all other solid waste incinerators, as governed by section 129 of the Clean Air Act. Were EPA to reclassify pyrolysis facilities as “manufacturing,” “recycling” or anything other than incineration, it would leave these plants entirely unregulated under federal law, free to operate with no pollution controls, monitoring, or reporting requirements. Already the chemical industry has pushed through legislation in 25 states to relax state-level “chemical recycling” requirements.

The chemical industry lobby claims that if pyrolysis incinerators are not regulated as incinerators under Section 129 of the Clean Air Act then they will be regulated under some other provision of the Act. That claim is ludicrous, based on the false premise that EPA will someday list pyrolysis and gasification as a new category of manufacturing plants to be regulated under Section 112 (the air toxics section that lays out standards for Maximum Achievable Control Technologies, known as MACT). The chemical lobby is well aware that no such category exists;

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<sup>32</sup> Taylor Uekert, Avantika Singh, Jason S. DesVeaux, Tapajyoti Ghosh, Arpit Bhatt, Geetanjali Yadav, Shaik Afzal, Julien Walzberg, Katrina M. Knauer, Scott R. Nicholson, Gregg T. Beckham, and Alberta C. Carpenter. *ACS Sustainable Chemistry & Engineering* 2023 11 (3), 965-978. DOI: 10.1021/acssuschemeng.2c05497 <https://pubs.acs.org/doi/10.1021/acssuschemeng.2c05497>

<sup>33</sup> Congress of the United States. (July 14, 2022). Letter to EPA from Senator Booker and Representatives Huffman, Lowenthal, et al. [https://www.booker.senate.gov/imo/media/doc/booker\\_huffman\\_lowenthal\\_lead\\_35\\_colleagues\\_in\\_letter\\_raising\\_concerns\\_over\\_climate\\_environmental\\_justice\\_risks\\_of\\_chemical\\_recycling\\_of\\_plastics1.pdf](https://www.booker.senate.gov/imo/media/doc/booker_huffman_lowenthal_lead_35_colleagues_in_letter_raising_concerns_over_climate_environmental_justice_risks_of_chemical_recycling_of_plastics1.pdf)

that the Clean Air Act does not require EPA to ever create one; and that EPA has *never* even created and regulated a new category of \*area sources\* in the absence of a statutory mandate. Moreover, most “area sources” include only the weakest of protections.

And even if – years down the line – EPA created such a new category under Clean Air Act Section 112, the “maximum achievable control technology standards” would still not apply, as these pyrolysis incinerators emit less than 10 tons per year of a single air toxic or 25 tons per year of any combination of air toxics. The quantities emitted are not large enough to meet the thresholds (the pollution amounts) required by section 112.

It was with good reason that Congress added section 129 for solid waste incinerators in the 1990 Clean Air Act amendments. Congress knew that the emissions from solid waste incinerators (dioxin, cadmium, lead, PFAS, etc.) do not meet the threshold requirements for mandatory MACT regulation under section 112 but sicken people nonetheless. These hazardous air pollutants cause cancer, disrupt reproduction, and make endocrine systems go haywire even in seemingly tiny amounts – it does not take 10 tons to become gravely ill. The Clean Air Act section 112 tonnage requirements for hazardous air pollutants are an outdated relic from decades past.

In its National Strategy, EPA affirms that it does not consider “plastics-to-fuel” to be a form of recycling. But the agency makes no indication as to whether it considers “plastics-to-plastics” pyrolysis to count as recycling – and whether the agency will continue to regulate this re-branded incineration technology under section 129 of the Clean Air Act.

EPA seems to suggest that its regulatory decisions may rest on the purpose of the final product rather than on the waste-combustion process itself. Yet in repeated decisions, the D.C. Circuit has affirmed that section 129 of the Clean Air Act regulates facilities that combust any solid waste material regardless of what is produced at the end of the process. For example, when EPA issued a rule that excluded certain waste-combusting boilers and industrial heaters from meeting its standards for commercial and industrial incinerators under 42 U.S.C. § 7429(a)(1)(C), on the grounds that they “use a process that recovers thermal energy from the combustion for a useful purpose,” the [D.C. Circuit held](#) EPA’s definition to be flatly unlawful.<sup>34</sup> The judges understood that Clean Air Act section 129 is meant to protect people from the extremely toxic air emissions from solid waste incinerators [regardless of what some might perceive as a socially desirable outcome](#), in that case thermal energy recovery.<sup>35</sup>

Plastic contains hundreds of toxic chemicals, including heavy metals, phthalates, flame retardants, bisphenol A and PFAS. Unsurprisingly, when plastic is burned via pyrolysis and

<sup>34</sup> United States Court of Appeals, & District of Columbia Circuit. (2007). 489 F3d 1250 *Natural Resources Defense Council v. Environmental Protection Agency*. F3d(489), 1250.

<https://openjurist.org/489/f3d/1250/natural-resources-defense-council-v-environmental-protection-agency>

<sup>35</sup> Potential Future Regulation Addressing Pyrolysis and Gasification Units. EPA advanced notice of proposed rulemaking. Docket (EPA-HQ-OAR-2021-0382) Comment Submitted by Earthjustice et al. (2021, December 23). <https://www.regulations.gov/comment/EPA-HQ-OAR-2021-0382-0165>

gasification, it generates toxic air pollutants that are known to cause cancer, birth defects and other serious health harms. Emissions from “chemical recycling” include dioxins, benzene, cadmium, arsenic, lead, polycyclic aromatic hydrocarbons and mercury. Removing existing Clean Air Act safeguards (were EPA to announce that “plastics-to-plastics chemical recycling” is now classified as “recycling” and not “incineration”) would allow facilities to produce and release heavy concentrations of these toxic chemicals into Black, Brown, and low-income communities – communities that the National Strategy is meant to protect.

Despite the toxic air emissions from these facilities, the entire discussion of “chemical recycling” sidesteps any mention of hazardous air pollutants. It is hard to fathom why EPA would leave out this most obvious threat. For example, the “chemical recycling” paragraph states, *“EPA also aims to ensure that a U.S. circular economy approach for plastic products reduces greenhouse gas emissions and protects overburdened communities from facilities that can increase the generation of hazardous waste and other forms of pollution.”* (p. 15)

EPA mentions only the need to protect people from “hazardous waste and other forms of pollution.” For whatever reason, the agency chooses not to acknowledge the hazardous air pollution from plastic burning technologies.

The plastics industry is marketing “chemical recycling” as a silver bullet, an eco-friendly way to make plastic trash disappear from sight. The truth is, this waste-burning technology converts the plastic trash into air pollution. Even though plastics-to-plastics “chemical recycling” is in its infancy and hardly takes place beyond the laboratory, the petrochemical lobby is energetically promoting the technology as a building block for a circular economy and as the solution to the plastics crisis.

The plastics industry is supporting a technology that has almost no track record or economic promise because they know that consumers and regulators have no way of following what happens to the waste plastics that enter their facilities. There is no transparency, traceability, or accountability. To add to the haze, the plastics lobby is pushing hard for the adoption of “mass balance accounting,” allowing companies to determine recycled content by comparing plastic trash inputs to recycled content outputs or to the amount of contaminated fuels produced. Mass balance attribution would aggregate recycled content at the facility or at the company level – *or sometimes even at the global level of a multinational corporation* – rather than for individual products. So, for example, a product could claim it has 20 percent recycled content when in fact it has no recycled plastic in it at all.

For the plastics industry, the unproven “plastics-to-plastics chemical recycling” technology is a win-win strategy, combining enormous public relations value with zero-accountability operations.

The EPA needs to affirm that the toxic air emissions from pyrolysis and gasification “chemical

recycling” technologies will continue to be regulated by section 129 of the Clean Air Act, as they have been for nearly three decades.

EPA’s Plastics Strategy continues,

*“Additionally, EPA is aware of concerns about the potential health and environmental risks posed by impurities that may be present in pyrolysis oils generated from plastic waste. Accordingly, EPA intends to require companies submitting new pyrolysis oil chemicals to the Agency for review under TSCA to conduct testing for impurities that could be present in the new chemical substance prior to approval, and ongoing testing to ensure there is no variability in the plastic waste stream that is used to generate the pyrolysis oil.”*

At first glance, EPA’s plan to assess risks from pyrolysis oils under the Toxic Substances Control Act (TSCA) “significant new use rules” sounds as if it is adding a welcome new layer of protection. In practice – as observed in the TSCA section 5 new chemicals program assessment for [Chevron’s Pascagoula Mississippi refinery](#)<sup>36</sup> -- the opposite may be true.

An investigation by ProPublica released in February 2023 examined EPA’s use of TSCA to authorize the burning of pyrolysis oil under a “climate-friendly” EPA biofuels initiative. The researchers revealed the agency’s approval of a predicted 1-in-4 community cancer risk from the toxic air pollutants released by burning plastics-pyrolysis oil as fuel in Pascagoula.

The EPA has not been transparent with its risk assessments for the many other plastics-burning ventures that the agency included in what was supposed to be an ecological biofuels program, and even the consent order for Chevron was heavily redacted. The EPA has not disclosed the names of the carcinogens to which the local residents would be exposed, and Chevron has opted not to share publicly this “confidential business information” (CBI).

We are concerned that the National Strategy’s proposed new TSCA risk assessments, shielded by the Act’s robust CBI provisions, may provide a mechanism by which to bypass the stricter transparency rules of the Resource Conservation and Recovery Act (RCRA), the Clean Air Act, and other environmental laws. The TSCA non-disclosure provisions would thus provide petrochemical corporations the opportunity to launder plastic-waste-derived pyrolysis oils for use as fuels with the imprimatur of EPA oversight. EPA’s risk evaluations under the 2016 amended TSCA rules have been found to consistently underestimate the human health risks of chemical exposures,<sup>37</sup> and the agency’s initial foray into the review of pyrolysis oils under TSCA does not inspire confidence.

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<sup>36</sup> Lerner, S. (2023, February 23). *This “climate-friendly” fuel comes with an astronomical cancer risk.* ProPublica. <https://www.propublica.org/article/chevron-pascagoula-pollution-future-cancer-risk>

<sup>37</sup> Rayasam, S. D. G., Koman, P. D., Axelrad, D. A., Woodruff, T. J., & Chartres, N. (2022). Toxic substances control act (TSCA) implementation: How the amended law has failed to protect vulnerable populations from toxic chemicals in the United States. *Environmental Science & Technology*, 56(17), 11969–11982. <https://doi.org/10.1021/acs.est.2c02079>

Most immediately, we ask EPA to share more information on its proposed TSCA requirement, and to begin to publicly disclose information on the chemical pollution rather than suppressing this data as CBI. We would like to have clarification about which situations and circumstances will involve the TSCA assessment, and when or if actual chemical testing will be conducted. In the Chevron case, EPA failed to exercise its TSCA section 5(e) authority to require such testing. Such analysis is critical in determining the toxicity, persistence, and bioaccumulation of the chemicals identified, and their byproducts, and in assessing the extent of the human health risks.

Would the new TSCA analysis requirement apply to the pyrolysis oil produced in any “chemical recycling” operation? Would the findings continue to be withheld from the community as “confidential business information”? How would EPA coordinate or prioritize its TSCA section 5 assessment with its regulatory reviews under RCRA and the Clean Air Act? Would EPA’s [new rule on Confidential Business Information Claims Under TSCA](#) (June 7, 2023)<sup>38</sup> affect the review process for pyrolysis oils?

Pyrolysis oils could be used as fuels, for example they could be combusted in boilers, used as fuel in engines and turbines, or upgraded to transportation fuels. They could also be used as a feedstock for chemicals and materials. However since burning hazardous waste anywhere but in a hazardous waste incinerator is illegal, any combustion devices burning hazardous waste would have to meet the hazardous waste combustion regulations under both RCRA and the Clean Air Act.

The National Strategy speaks of “risks posed by *impurities* that may be present in pyrolysis oils” but it is not clear what this means in this context. Plastics pyrolysis oil is expected to be dense with toxic plastics chemicals – are these considered “impurities” or rather the expected outcome from burning plastics? Any residuals created from pyrolyzing plastic would be hazardous waste if they meet any of the criteria for hazardous waste, and those wastes would be subject to the RCRA and Clean Air Act standards for hazardous waste combustion if burned.

Hazardous waste is currently prohibited from being added to consumer products without a waiver from RCRA unless it meets the criteria of an existing exemption. If EPA is stating that pyrolysis oil that meets a characteristic which makes it hazardous waste would be allowed to be added to consumer products, under what circumstances would that occur?

Any actual plastics that result from plastics-to-plastics “chemical recycling” are likely to be contaminated, as well. TSCA grants EPA certain authorities to regulate chemicals and mixtures in finished products and articles. Would the resulting plastic products be tested too, or only the

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<sup>38</sup> Environmental Protection Agency. (2023). Confidential business information claims under the Toxic Substances Control Act (TSCA). In *Federal Register* (Vol. 88, pp. 37155–37174). <https://www.federalregister.gov/d/2023-12044>

pyrolysis oil?

## ***5. The Strategy greenwashes plastics recycling***

The EPA Strategy makes more than 100 references to recycling and supports EPA's National Recycling Goal to increase the U.S. recycling rate to 50 percent by 2030.

The report cites data from 2018 suggesting that 9 percent of the plastic collected through municipal solid waste gets recycled. Currently the U.S. recycling rate for plastics is [closer to 5 percent](#).<sup>39</sup>

**We need to emphasize that plastics recycling is not a solution to the plastic crisis but rather a harmful-but-“better than nothing” end-of-pipe approach for a small subset of waste plastic.**

Even in the best of circumstances, recycling of plastics is not without significant downsides. These include:

- **Recycled plastic contains elevated concentrations of toxic chemicals.**

Plastics are made from thousands of toxic chemicals. As noted above, the May, 2023 Technical Report from the United Nations Environment Program identified [more than 13,000 chemicals](#) associated with plastics and plastics production. These include UV-328, phthalates, heavy metals, bisphenol A, flame retardants, and PFAS. Toxic chemicals give plastics their functional and performance qualities – they are integral components of plastic rather than something extra. The toxic components present health and safety risks at every step of the plastics supply chain – including during production, use, and disposal.

Attempts to retrieve and recirculate waste plastic as recycled product compound the risk by exposing workers and communities to concentrated amounts of hazardous air pollution, and by bringing consumers in contact with elevated concentrations of PFAS, phthalates, heavy metals and other toxic chemicals in the reconstituted plastic products.

The EPA Strategy only tip-toes around the endocrine and other health effects from chemicals leaching out of plastics. The introduction acknowledges, *“In addition to environmental impacts, there are growing health concerns related to plastic*

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<sup>39</sup> *Circular Claims Fall Flat Again*. (2022, October 24). Greenpeace USA. <https://www.greenpeace.org/usa/reports/circular-claims-fall-flat-again/>

*products. Some animal studies have raised concerns regarding endocrine-disrupting effects from chemicals that may leach out of plastics, including impacts on the reproductive system (NASEM, 2022). Microplastics have also been found in human placentas after birth, despite the use of a plastic-free birthing protocol (NASEM, 2022).” (p. 9)*

EPA scientists are undoubtedly aware of the formidable and growing body of scientific findings on exposures and effects from the leaching of DEHP and other phthalates, bisphenol A, flame retardants, PFAS chemicals, dioxins, UV-stabilizers, and toxic metals such as lead and cadmium. [Here](#) is a document from the Endocrine Society that examines some of that research.<sup>40</sup> And [here](#) is an update on two persistent bioaccumulative toxic chemicals that are ubiquitous plastics-components, UV-328 and Dechlorane Plus.<sup>41</sup> Both have been detected in human breast milk. The risks to people working in the plastics recycling industry are particularly acute. These chemicals were added to the Stockholm Convention in May, 2023. As of July 22, 2023, 186 countries are parties to the Stockholm Convention on Persistent Organic Pollutants; the [U.S. is not among them](#).<sup>42</sup>

Products made from recycled plastics generally contain more hazardous substances than virgin plastic due to the dangerous mix of plastic types that get recycled. Studies are finding [elevated levels of toxic chemicals](#) in recycled plastic children’s toys, water bottles, and food-contact materials, sometimes far higher than the amounts found in virgin plastic. Researchers are finding high concentrations of PFAS, phthalates, flame retardants, bisphenol A, UV stabilizers, and other chemicals.<sup>43</sup> These chemicals can sicken recycling industry workers, surrounding communities, and consumers of [recycled plastics](#).<sup>44</sup>

Despite decades of research on separation technologies, there are limited ways to sort the different types of solid waste plastic – most are inefficient, ineffective, and expensive. The most dangerous types of plastics such as polyvinyl chloride ultimately make their way into the recycling-bound feedstock.

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<sup>40</sup> Endocrine Society. (2020, December 15). *Plastics pose threat to human health*. Endocrine Society. <https://www.endocrine.org/news-and-advocacy/news-room/2020/plastics-pose-threat-to-human-health>

<sup>41</sup> Erickson, B. (2023, May 12). *Two plastics additives, insecticide face global ban*. Chemical and Engineering News. <https://cen.acs.org/environment/persistent-pollutants/2-plastics-additives-insecticide-face-global-ban/101/web/2023/05>

<sup>42</sup> United Nations Environment Program, Stockholm Convention. *Status of ratification*. Pops.int. Retrieved July 22, 2023, from <https://chm.pops.int/Countries/StatusofRatifications/PartiesandSignatoires/tabid/4500/Default.aspx>

<sup>43</sup> Hahladakis, J. N., Velis, C. A., Weber, R., Iacovidou, E., & Purnell, P. (2018). An overview of chemical additives present in plastics: Migration, release, fate and environmental impact during their use, disposal and recycling. *Journal of Hazardous Materials*, 344, 179–199. <https://doi.org/10.1016/j.jhazmat.2017.10.014>

<sup>44</sup> *Forever Toxic: The science on health threats from plastic recycling*. (2023, May 24). Greenpeace USA. <https://www.greenpeace.org/usa/reports/forever-toxic/>



Some of the most heavily contaminated plastics are those used in electric and electronic materials and in vehicles. Making recycled plastic from such items introduces brominated flame retardants and other dangerous chemicals into the recycled plastic. This is especially worrisome when the recycled plastic is destined for [food-contact materials](#) such as utensils and food storage and serving containers.<sup>45</sup> Waste authorities and scientists have been debating what to do with recycled plastic given the potential risk to consumers from highly elevated concentrations of toxic chemicals.

- **Only a small subset of plastics can actually be recycled.**

Recycling can work for PET plastic #1 (such as water bottles) and HDPE plastic #2 (such as milk jugs) and some jurisdictions accept polypropylene plastic #5 (such as dairy tubs). If made from a singular type of polymer, not tinted, and free of food and beverages, such containers can *once or twice* be melted, filtered and molded into new bottles, or into items like carpets and park benches. The length of the polymer chains shortens each time the plastic is recycled, and thus the quality decreases. This is completely different from recycling glass and metal, which can be done over and over without reducing the quality (unlike plastics, those materials can become truly circular). Recyclers need to add virgin plastic to upgrade the quality of the “recycled” plastic product, thus giving it a chance to compete against higher quality newly produced virgin plastic.

For most other plastics, recycling is technically complex and uneconomical. The plastic waste materials are chock-full of toxic substances, and commonly they are also contaminated by things like food and used motor oil and other items in the waste stream. Moreover, there are so many different types of plastic with thousands of toxic-chemical variations, and each would need to be recycled separately. As [former EPA Regional Administrator Judith Enck and chemical engineer Jan Dell describe](#),

“The first problem is that there are thousands of different plastics, each with its own composition and characteristics. They all include different chemical additives and colorants that cannot be recycled together, making it impossible to sort the trillions of pieces of plastics into separate types for processing. For example, polyethylene terephthalate (PET#1) bottles cannot be recycled with PET#1 clamshells, which are a different PET#1 material, and green PET#1 bottles cannot be recycled with clear PET#1 bottles (which is why South Korea has outlawed colored PET#1 bottles.) High-density polyethylene (HDPE#2), polyvinyl chloride (PVC#3), low-density polyethylene (LDPE#4), polypropylene (PP#5), and polystyrene (PS#6)

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<sup>45</sup> Muncke, J., Andersson, A.-M., Backhaus, T., Boucher, J. M., Carney Almroth, B., Castillo Castillo, A., Chevrier, J., Demeneix, B. A., Emmanuel, J. A., Fini, J.-B., Gee, D., Geueke, B., Groh, K., Heindel, J. J., Houlihan, J., Kassotis, C. D., Kwiatkowski, C. F., Lefferts, L. Y., Maffini, M. V., ... Scheringer, M. (2020). Impacts of food contact chemicals on human health: a consensus statement. *Environmental Health: A Global Access Science Source*, 19(1). <https://doi.org/10.1186/s12940-020-0572-5>



all must be separated for recycling.”<sup>46</sup>

More and more products incorporate multiple plastic polymers, each with different chemical additives and properties. For example, a candy wrapper or a chip bag might contain five or 10 different plastic films plus an aluminum layer that are impossible to separate. Other products combine plastics with paper or metal. Soda and beer cans have layers of plastic, while cardboard coffee cups include polypropylene plastic #5 sleeves.

The plastics industry does not design its products for recycling or re-use, and takes no responsibility for disposal. [This description](#) of plastics recycling is on the mark:

“Today, recycling is a flailing, failing system—and yet it is still touted as plastics’ panacea. No end-of-the-pipe fix can manage mass plastics’ volume, complex toxicity, or legacy of pollution, and the industry’s long-standing infractions against human health and rights.”<sup>47</sup>

- **Plastics recycling releases microplastics in water and in air**

While it’s long been documented that plastics recycling produces micro- and nano- plastic pollution, [a new study](#) published in the *Journal of Hazardous Materials Advances* offers a snapshot of the extent of this problem.<sup>48</sup> Researchers studied the wastewater effluent from a plastics recycling facility before and after the installation of cutting-edge filtration equipment. Even with the high-tech filtering, the researchers calculated that the total discharge amounted to up to 75 billion particles per cubic meter of wastewater.

In terms of annual tonnage, pre-filtration, this single recycling facility was releasing 6.5 million pounds of microplastics per year. The top-of-the-line filters got those numbers down to about 3 million pounds per year, a substantial reduction but still an astronomical amount of microplastic pollution. While the filters were able to capture a significant portion of the larger micro-plastics (roughly 50 microns in diameter and larger), the researchers found that vast quantities of smaller particles (generally under 5 microns) were readily slipping through the filters. The effluent from plastics recycling facilities gets [released into the environment](#), including into the groundwater, drinking water, and water used to irrigate crops.<sup>49</sup> (Note: 1 micron is 1 millionth of a meter.)

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<sup>46</sup> Enck, J., & Dell, J. (2022, May 30). Plastic recycling doesn’t work and will never work. *Atlantic Monthly* (Boston, Mass.: 1993).

<https://www.theatlantic.com/ideas/archive/2022/05/single-use-plastic-chemical-recycling-disposal/661141/>

<sup>47</sup> Altman, R. (2022, January 3). How bad are plastics, really? *Atlantic Monthly* (Boston, Mass.: 1993).

<https://www.theatlantic.com/science/archive/2022/01/plastic-history-climate-change/621033/>

<sup>48</sup> Brown, E., MacDonald, A., Allen, S., & Allen, D. (2023). The potential for a plastic recycling facility to release microplastic pollution and possible filtration remediation effectiveness. *Journal of Hazardous Materials Advances*, 10(100309), 100309. <https://doi.org/10.1016/j.hazadv.2023.100309>

<sup>49</sup> Simon, M. (2023, May 5). Yet another problem with recycling: It spews microplastics. *Wired*.

<https://www.wired.com/story/yet-another-problem-with-recycling-it-spews-microplastics/>

Although worker health was not the main focus of the study, the researchers also examined the “atmospheric discharge” of micro- and nano- plastic particles in the plastics recycling facility. They found high concentrations of airborne plastics particles, raising red flags for workers. Plastic pollution has been found to penetrate deep into human lung tissue and to cause respiratory illness in workers, due to the particle accumulation and the plastics chemicals with which they are composed. The researchers cited many relevant studies on human health effects from respirable plastics particles. Undoubtedly there are more, but these are a good starting place for EPA’s review of airborne health effects from plastics recycling.

<https://www.sciencedirect.com/science/article/pii/S2772416623000803>

<https://www.sciencedirect.com/science/article/abs/pii/S0269749117307686>

<https://www.sciencedirect.com/science/article/pii/S0160412022001258?via%3Dihub>

<https://www.tandfonline.com/doi/abs/10.1080/20014091111965>

<https://www.atsjournals.org/doi/10.1164/ajrccm.159.6.9808002>

[https://journals.lww.com/ajsp/Abstract/1999/12000/The\\_Pathology\\_of\\_Interstitial\\_Lung\\_Disease\\_in.12.aspx](https://journals.lww.com/ajsp/Abstract/1999/12000/The_Pathology_of_Interstitial_Lung_Disease_in.12.aspx)

<https://www.sciencedirect.com/science/article/abs/pii/S0304389421010888>

<https://www.sciencedirect.com/science/article/pii/S0048969722020009>

<https://www.sciencedirect.com/science/article/pii/S0048969711004268>

<https://www.biorxiv.org/content/10.1101/2021.01.25.428144v1>

<https://pubmed.ncbi.nlm.nih.gov/9729178/>

<https://erj.ersjournals.com/content/25/1/110>

## ***6. The National Strategy excludes the intentional application of plastic pollution to the environment.***

The report makes no mention of deliberately-introduced land-based sources of plastic pollution. A growing body of research warns that there may be even more plastic pollution in the soils than in the oceans – and that much of this plastic is intentionally applied. Single-use plastics have become a ubiquitous part of both terrestrial and marine agriculture.

A 160-page [UN Food and Agriculture Organization report](#) paints a profile of an agricultural system that is literally drenched in plastics and other petrochemicals at every turn. FAO calls the impacts “disastrous,” while offering alternatives that can deliver similar advantages.<sup>50</sup> Of the dozens of agricultural uses included in the United Nations report, the FAO highlights agricultural mulch films and polymer coated fertilizers as the most dangerous and consequential.

Agricultural plastic mulch films are widely used in farming to reduce weed pressures, conserve

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<sup>50</sup> United Nations Food and Agriculture Organization.(2021). Assessment of agricultural plastics and their sustainability. A call for action. Rome. <https://doi.org/10.4060/cb7856en>

moisture, and modify soil temperatures. It has become standard in many agricultural contexts to cover the soil with single-use low density polyethylene films (thousands of feet in length) and then to remove the films at the end of the growing season. Researchers have found, however, that the films contaminate the soil with chemical additives and plasticizing agents, leaving behind a residual layer of [plastic and chemical leachate](#) in the topsoil.<sup>51</sup> The films also affect the soil microclimates, soil microbial communities, and plant growth and development, and they contribute to the massive worldwide plastic pollution and global heating. After the growing season, the sheets of plastic film are [transported to landfills, stockpiled, burned or buried in the fields](#).<sup>52</sup>

An increasing subset of growers are instead using so-called biodegradable plastic mulches, which are tilled into the soil after use. Biodegradable plastics can be made from microbes or plants, from fossil-fuel polyesters, or from a combination. Some researchers have suggested that these mulches inhibit plant growth and others have found that the plastic [does not fully decompose](#).<sup>53</sup> Upon soil incorporation, these mulches add physical fragments of plastic to the soil, including the carbon, additives, and adherent chemicals, [with effects on the soil microclimate](#) and soil microorganisms and ultimately on future crops.<sup>54</sup>

In addition, there is a whole industry promoting “rubber mulch” – the ground-up synthetic tire material that has also become standard as the surface for children’s playgrounds and sports fields. Rubber mulch is used in landscaping and gardening as an alternative to natural mulches such as hay and woodchips. It is advertised as ecologically sound since it helps find a home for expended tires.

Plastic-coated fertilizers, pesticides, and seeds have also become increasingly common. Essentially, they are tablets, granules or seeds that are coated with a conventional plastic or a “biodegradable plastic,” or sometimes a plant-based fiber such as cellulose. They release fertilizer or insecticide over time. Unfortunately, as the plastic coatings degrade they become vast amounts of toxic chemical-dense microplastics in the soils and surrounding waterways. This [vast and intentional source of microplastic pollution](#) ends up in our food, and ultimately,

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<sup>51</sup> Petersen, K. S. (2020, August 31). *Microplastics in farm soils: A growing concern*. EHN. <https://www.ehn.org/plastic-in-farm-soil-and-food-2647384684.html>

<sup>52</sup> Madrid, B., Wortman, S., Hayes, D. G., DeBruyn, J. M., Miles, C., Flury, M., Marsh, T. L., Galinato, S. P., Englund, K., Agehara, S., & DeVetter, L. W. (2022). End-of-life management options for agricultural mulch films in the United States—A review. *Frontiers in Sustainable Food Systems*, 6. <https://doi.org/10.3389/fsufs.2022.921496>

<sup>53</sup> Serrano-Ruiz, H., Martin-Closas, L., & Pelacho, A. M. (2021). Biodegradable plastic mulches: Impact on the agricultural biotic environment. *The Science of the Total Environment*, 750(141228), 141228. <https://doi.org/10.1016/j.scitotenv.2020.141228>

<sup>54</sup> Bandopadhyay, S., Martin-Closas, L., Pelacho, A. M., & DeBruyn, J. M. (2018). Biodegradable plastic mulch films: Impacts on soil microbial communities and ecosystem functions. *Frontiers in Microbiology*, 9. <https://doi.org/10.3389/fmicb.2018.00819>

our bodies.<sup>55</sup> Some researchers have suggested that the biodegradable-plastic versions of slow-release coatings may be less harmful than conventional plastic coatings, but there has been minimal research into how much these plastics actually degrade; the extent to which they are contaminating soils, waterways, and food products; and the nutrient effects on soil ecosystems.

Another example of land-based plastics pollution is the application of microplastic-rich sewage sludge on farmland. In the U.S., [more than half of sewage sludge](#) (the solids that are filtered out by municipal wastewater treatment facilities) is applied to crops as an economic way to get rid of it. (The rest is landfilled or incinerated.)<sup>56</sup> The sewage sludge adds nutrients such as nitrogen and phosphorus to the soil, but it also adds PFAS, heavy metals, antibiotics, and other contaminants. It is dense with microplastics from our roads, tires, laundry, artificial turf and other sources. Researchers have estimated that approximately [21,249 metric tons of microplastics](#) are dumped on U.S. agricultural fields from sewage sludge each year.<sup>57</sup>

## ***7. The National Strategy needs a closer examination of greenhouse gas emissions.***

The draft National Strategy presents global greenhouse gas estimates that were compiled by the Organization for Economic Cooperation and Development.

“In 2019, plastic products were responsible for 3.4 percent of global greenhouse gas emissions throughout their life cycles, with 90 percent of these emissions coming from the production and conversion of fossil fuels into new plastic products (OECD, 2022a).”

Recent assessments have challenged those figures. Whatever the exact number, the strategic elements outlined by EPA seem out-of-sync with the rapid pace of plastics-industry expansion. We urge the agency to align its National Strategy with the explosive growth underway in U.S. plastics production infrastructure. Here are four comments:

- A. We suggest EPA review this analysis in Nature Sustainability, “[Growing environmental footprint of plastics driven by coal combustion](#),” which explains that plastic’s contribution to global warming may be actually higher due to the growth of plastics production in coal-based economies. (Note that the U.S. imports those plastics.) The

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<sup>55</sup> *Sowing a plastic planet: How microplastics in agrochemicals are affecting our soils, our food, and our future (may 2022)*. (2022, May 24). Center for International Environmental Law.

<https://www.ciel.org/reports/microplastics-in-agrochemicals/>

<sup>56</sup> *National summary*. National Biosolids Data Project. Retrieved July 22, 2023, from <https://www.biosolidsdata.org/national-summary>

<sup>57</sup> Petersen, K. S. (2020, August 31). *Microplastics in farm soils: A growing concern*. EHN. <https://www.ehn.org/plastic-in-farm-soil-and-food-2647384684.html>

authors state that in 2015, plastics contributed 4.5% of global greenhouse gas emissions.<sup>58</sup> The percent is likely higher now given the steep increase in plastics production since 2015 and the reduced reliance on fossil-fuel energy.

- B. It would be worth clarifying the extent to which any of these figures include the full cradle-to-grave emissions of climate-heating gasses from plastics. Only about 35 percent of potential climate emissions from plastics are released as part of the manufacturing process. [University of Pennsylvania researchers](#) have calculated that the other 65 percent is “embedded” carbon, meaning it is temporarily sequestered in the plastic products.<sup>59</sup> Plastics continue to release greenhouse gasses throughout the product lifecycle, whether as insulation and vinyl siding on our homes or as single use plastic lunch-trays bound for incinerators, landfills, or a future as micro-plastics in the oceans or agricultural soils.
- C. The introduction to the EPA National Strategy acknowledges that plastics production is increasing. *“Without intervention, it is projected that by 2050 the global plastics industry will account for 20 percent of total oil consumption and up to 15 percent of global carbon emissions (World Economic Forum et al., 2016).*

And yet the steps the Strategy articulates – from information sharing to voluntary goal-setting to further contemplation whether to sign the Basel Treaty -- are no match for the accelerated growth in plastics-production and associated petrochemical infrastructure.

If the point is to protect people and the planet, the National Strategy may be ill-fated. Plastics and other petrochemicals are made from oil, gas and coal, and are a significant and growing part of the climate-and-fossil-fuels crisis. Fossil fuel companies are relying heavily on plastics – especially single-use plastics -- to keep profits high as the world shifts toward greener, renewable sources of energy like solar and wind power.

Plastics production has [nearly doubled](#) over the past two decades,<sup>60</sup> and has expanded

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<sup>58</sup> Cabernard, L., Pfister, S., Oberschelp, C., & Hellweg, S. (2021). Growing environmental footprint of plastics driven by coal combustion. *Nature Sustainability*, 5(2), 139–148.  
<https://doi.org/10.1038/s41893-021-00807-2>

<sup>59</sup> *Balancing act: Can petrochemicals be both emissions free and zero-waste?* (2021, February 15). Kleinman Center for Energy Policy.  
<https://kleinmanenergy.upenn.edu/research/publications/balancing-act-can-petrochemicals-be-both-emissions-free-and-zero-waste/>

<sup>60</sup> International Energy Agency. (2018). *The future of petrochemicals: Towards more sustainable plastics and fertilisers*. OECD. <https://www.iea.org/reports/the-future-of-petrochemicals>

[twenty-fold in the past half century](#).<sup>61</sup> Scientists have found that the annual greenhouse gas emissions from the plastics industry in the U.S. are as much as the average emissions released by [116 coal-fired power plants](#), as of 2020. This amount is equivalent to the greenhouse gas pollution from 50 million cars.<sup>62</sup>

Disturbingly, [2022 was the biggest year ever](#) for launching new U.S. petrochemical production facilities, known as ethane “cracker” plants.<sup>63</sup> The manufacture of plastics is expected to double again in the next twenty years and to nearly [triple by 2060](#).<sup>64</sup> Already the petrochemicals market is valued at [over 500 billion dollars globally](#).<sup>65</sup> If governments do not intervene, the petrochemical sector could stymie international efforts to curb the release of climate-heating pollutants.

As of May 27, 2023, [418 new oil, gas, and petrochemical infrastructure projects](#) have been built in the U.S. in the past decade. These facilities are permitted to release up to 133,458,383 tons of greenhouse gases per year. An additional 455 projects have not yet been constructed, but have the potential to release an additional 213,620,118 tons of greenhouse gases per year.<sup>66</sup>

The enormity of the climate consequences from recently or soon-to-be-built oil, gas, and petrochemical infrastructure in two states, Texas and Louisiana, is captured by this analysis in [Environmental Research Letters](#) (2020). The researchers project that the new buildout in Texas and Louisiana will increase annual GHG emissions of about 541 million tons of CO<sub>2</sub>e by 2030. This is more than 8% of total 2017 U.S. GHG emissions. The extra carbon emissions are roughly equivalent to the CO<sub>2</sub>e emissions of 131 coal-fired power plants.<sup>67</sup> This analysis does not include the vast new petrochemical buildout in other parts of the U.S. including the Ohio River Valley.

The largest share of climate-heating petrochemical emissions is from production and

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<sup>61</sup> World Economic Forum. (2016). The New Plastics Economy: Rethinking the future of plastics. [WEF\\_The\\_New\\_Plastics\\_Economy.pdf \(weforum.org\)](#)

<sup>62</sup> Beyond Plastics. (October, 2021). *The new coal: Plastics & climate change*. Retrieved July 22, 2023, from <https://www.beyondplastics.org/plastics-and-climate>

<sup>63</sup> The petrochemical industry’s pandemic hangover. (March 28, 2022). *Chemical and Engineering News*. Volume 100, Issue 11. [The petrochemical industry’s pandemic hangover \(acs.org\)](#)

<sup>64</sup> Lebreton, L., & Andrady, A. (2019). Future scenarios of global plastic waste generation and disposal. *Palgrave Communications*, 5(1), 1–11. <https://doi.org/10.1057/s41599-018-0212-7>

<sup>65</sup> *Petrochemicals market size, share & trends analysis report by product (ethylene, propylene, butadiene), by region (North America, Europe, Asia pacific, Latin America, Middle East, Africa), and segment forecasts, 2023 - 2030*. (n.d.). Grandviewresearch.com. Retrieved July 22, 2023, from <https://www.grandviewresearch.com/industry-analysis/petrochemical-market>

<sup>66</sup> <https://oilandgaswatch.org/> Oil and Gas Watch, Environmental Integrity Project.

<sup>67</sup> Waxman, A. R., Khomaini, A., Leibowicz, B. D., & Olmstead, S. M. (2020). Emissions in the stream: estimating the greenhouse gas impacts of an oil and gas boom. *Environmental Research Letters*, 15(1), 014004. <https://doi.org/10.1088/1748-9326/ab5e6f>



incineration of *single-use* plastics. ExxonMobil is the [largest producer of polymers used in single-use plastics](#), followed by China's Sinopec and then Dow Chemical.<sup>68</sup> As the National Strategy notes, currently the U.S. and other wealthy countries consume over 15 times more single-use plastics per capita than some of the less wealthy nations in Africa and South Asia, but use is expected to accelerate in those regions.

Many petrochemical facilities are multi-billion-dollar investments. Once built, the plants can operate at relatively low cost for many decades. But therein lies the problem. The multinational corporations have every reason to fight for the continued profitability of their assets. They seek to “bury our economies deeper in the carbon lock-in while deflecting their responsibility for the climate impact associated with the production of fossil-based plastics,” as [Lund University researchers](#) explain.

In addition to the private and public sectors funneling vast sums toward petrochemical infrastructure, locking in carbon emissions for decades to come, there are also opportunity costs – the money that could have been spent on solutions. The Swedish scientists state, “Recent investments are likely to have crowded out low carbon options from the project portfolio of these firms despite their significant responsibilities for greenhouse gas emissions, other environmental impacts and capability to implement new industrial norms and long-term behaviours.”<sup>69</sup>

While [coal-fired power plants](#) have been shutting across the country,<sup>70</sup> and the U.S. aspires to transition to cleaner energy sources, those environmental gains may soon be canceled out by the massive growth of the petrochemical sector. The fossil fuel industry has been scrambling to build new petrochemical infrastructure to replace profits from declining electricity markets.

Plastics and other petrochemicals are the fossil fuel industry's solution to the threat of depleted profits in a post-carbon future. In the words of [Beyond Plastics](#), “plastics is the fossil fuel industry's Plan B. But there is no Plan B for the rest of us.”<sup>71</sup> It will require

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<sup>68</sup> Charles D & Kimman L (2023). Plastic Waste Makers Index, Minderoo Foundation. <https://cdn.minderoo.org/content/uploads/2023/02/04205527/Plastic-Waste-Makers-Index-2023.pdf>

<sup>69</sup> Bauer, F., & Fontenit, G. (2021). Plastic dinosaurs – Digging deep into the accelerating carbon lock-in of plastics. *Energy Policy*, 156(112418), 112418. <https://doi.org/10.1016/j.enpol.2021.112418>

<sup>70</sup> Institute for Energy Economics and Financial Analysis. *U.S. on track to close half of coal capacity by 2026*. (2023, April 3). IEEFA.org. Retrieved July 22, 2023, from <https://ieefa.org/resources/us-track-close-half-coal-capacity-2026>

<sup>71</sup> Beyond Plastics. (October, 2021). *The new coal: Plastics & climate change*. Retrieved July 22, 2023, from <https://www.beyondplastics.org/plastics-and-climate>

systemic, structural changes to fix this situation, and the fortitude to hold responsible the petrochemical profiteers who set us on this dangerous path.

- D. Assuming that EPA is planning to prepare a separate report on plastics in the oceans, we will refrain from commenting on the oceanic implications, other than to remind EPA that --at projected rates of plastics production, the oceans may have [more plastic than fish](#) by mid-century.<sup>72</sup> The [mass of plastic floating in the Pacific](#)<sup>73</sup> currently covers twice as much surface area as the state of Texas. Plastics and microplastics in the ocean create myriad problems including the fact that they interfere with carbon fixation and that they endanger wildlife. There is also evidence that the smallest microplastics damage [zooplankton](#), the tiny organisms that are critical in the ocean's ability to absorb carbon.<sup>74</sup> Meanwhile, the microplastics themselves [keep releasing greenhouse gases](#) into the atmosphere.<sup>75</sup>

## Detailed review of the strategies

We share here a few highlights from our reactions to the Strategy objectives and proposed actions. We would be happy to provide more detailed input in future.

### Proposed objectives (p. 17)

The EPA identifies three draft objectives for its strategy:

- A. Reduce pollution during plastic production*
- B. Improve post-use materials management*
- C. Prevent trash and micro/nanoplastics from entering waterways and remove escaped trash from the environment*

All of the above are sound goals, and we wholeheartedly agree on the need for upstream solutions such as reducing the production and use of unnecessary plastic. As noted above and below, the problem is not the goals but rather their interpretation and execution.

### Objective A. Reduce Pollution During Plastic Production (p. 17)

<sup>72</sup> World Economic Forum. (January, 2016). The New Plastics Economy: Rethinking the Future of Plastics.. Retrieved July 19, 2023, from [https://www3.weforum.org/docs/WEF\\_The\\_New\\_Plastics\\_Economy.pdf](https://www3.weforum.org/docs/WEF_The_New_Plastics_Economy.pdf)

<sup>73</sup> Kottasová, I. (2023, April 17). The Great Pacific Garbage Patch is now so huge and permanent that a coastal ecosystem is thriving on it, scientists say. *CNN*. <https://www.cnn.com/2023/04/17/world/plastic-pollution-ocean-ecosystems-intl-climate/index.html>

<sup>74</sup> Botterell, Z. L. R., Beaumont, N., Dorrington, T., Steinke, M., Thompson, R. C., & Lindeque, P. K. (2019). Bioavailability and effects of microplastics on marine zooplankton: A review. *Environmental Pollution (Barking, Essex: 1987)*, 245, 98–110. <https://doi.org/10.1016/j.envpol.2018.10.065>

<sup>75</sup> Royer, S.-J., Ferrón, S., Wilson, S. T., & Karl, D. M. (2018). Production of methane and ethylene from plastic in the environment. *PloS One*, 13(8), e0200574. <https://doi.org/10.1371/journal.pone.0200574>



*“Most plastic products found in the environment are items that are single-use, unrecyclable, or frequently littered. To minimize the associated environmental impacts of these plastics it is **essential to reduce the increasing rates of both plastic production and consumption** in the United States and to address pollution that occurs along the life cycle of plastics products. It is also important to reduce impacts from the production of materials, which can negatively impact the environment and human health, especially in disadvantaged or underserved communities with environmental justice concerns.” [Emphasis added.]*

Our organizations applaud much of Objective A, above. It is essential to cap and ultimately reduce the production and consumption of plastic in the U.S. and to address the toxic pollution, fires, explosions, and other human health impacts at every stage in the plastics production value chain. Petrochemical facilities saddle low-income neighborhoods and communities of color with a heavy burden of cancers, respiratory effects, reproductive abnormalities, neurodevelopmental illnesses, and other ailments. Children are [particularly vulnerable](#)<sup>76</sup> to the life-altering consequences.

Regarding the last line quoted above (on environmental justice), we note that the language has a dismissive tone and we ask you to edit. That our nation creates toxic sacrifice zones of low-wealth people and people of color for the purpose of making unnecessary single-use plastic is more than just a “concern” held by particular unlucky subsets of the population. Such inequity should be front and center for an agency whose mission is to protect human health and the environment.

*A1. Reduce the production and consumption of single-use, unrecyclable, or frequently littered plastic products. (p. 17)*

This is a very reasonable goal.

*A1.1: Identify single-use, unrecyclable, or frequently littered plastic products and identify alternative materials, products, or systems with fewer impacts on the environment*

“Identifying and communicating the types of products with adverse environmental impacts could help shift consumption away from these products.”

This is an anemic start to the “actions” to reduce plastic production.

*A1.2: Develop a plan to reduce single-use products across the federal government. (p. 18)*

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<sup>76</sup> Whitworth, K. W., Symanski, E., & Coker, A. L. (2008). Childhood lymphohematopoietic cancer incidence and hazardous air pollutants in southeast Texas, 1995–2004. *Environmental Health Perspectives*, 116(11), 1576–1580. <https://doi.org/10.1289/ehp.11593>

Our organizations enthusiastically support the objective of reducing (and we would add, eliminating) the use of single-use plastics across the federal government.

*A1.3 Create an innovation challenge program to develop alternatives to single-use, unrecyclable, or frequently littered plastic products. (p. 18)*

This is good but not transformative. Make sure that it includes both processes and product solutions since there is a need for both.

*A1.4 “The federal government should conduct a study or literature review to identify effective policy tools...” (p. 18)*

We would encourage the EPA to review the available studies and literature to date. This is not new territory and there is no need to re-invent the wheel.

*A1.5 “Setting a new national voluntary goal to reduce the production of single-use, unrecyclable, or frequently littered products identified in A1.1 is needed.”*

We encourage the EPA to set more ambitious goals.

*“This new goal would help galvanize action across the country, support and promote the use of alternative products and reuse programs.*

An analysis of World Bank data found that the oil and gas industry has been making [\\$2.8 billion dollars per day for the past 50 years](#).<sup>77</sup> This sort of industrial sector has clear priorities and would not be readily influenced by voluntary goals that have no consequences and are not enforceable.

*A2. Minimize pollution across the life cycle of plastic products (p. 19)*

*“Manufacturers must ensure that their plastic production operations meet relevant environmental regulatory standards at the federal, state, Tribal and local levels. They also have an opportunity to further reduce pollution from plastic production operations.”*

The goal is good but the implementation is weak and makes no mention of phase downs, restrictions on toxic air pollution, or enforcement.

*A2.1: Increase the availability of data on plastic products produced and perform life cycle assessment to better understand the health, environmental, social, and economic*

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<sup>77</sup> Carrington, D. (2022, July 21). Revealed: oil sector's 'staggering' \$3bn-a-day profits for last 50 years. *The Guardian*.

<https://www.theguardian.com/environment/2022/jul/21/revealed-oil-sectors-staggering-profits-last-50-years>

*impacts of plastic products and their alternatives.*

It is not clear exactly what EPA proposes to do and what sort of “data on plastic products” would become available. We urge EPA to gather and make public comprehensive data on plastics production and on the amount of each plastic polymer and associated toxic chemicals. At the national level, it is crucial to develop measures and metrics in order to cap and reduce plastics production. At the community level, the public has a right to know what toxic substances they are being exposed to. With regard to the “life cycle assessments,” please see our comments at A2.6.

*A2.2: Review, develop, update, and use sustainability standards, ecolabels, certifications, and design guidelines that decrease the environmental impacts of plastic products across their life cycle (p. 19)*

The EPA offers up a list of voluntary approaches and assessments such as a “gap analysis” of available ecolabels and certifications. Again, there is no impetus for companies to act.

The end of that paragraph states,

*“...appropriate methods and standards for the determination of chemicals of concern, including PFAS, could be established for recycled content to ensure protection of human health and the environment.”*

We favor testing recycled plastic material for PFAS. PFAS is toxic at extremely low levels and it can persist for hundreds of years. Presumably this testing will be part of the [National PFAS Testing Strategy](#) which is currently underway.<sup>78</sup>

Given that PFAS is commonly found in [virgin HDPE](#) and even more often in [recycled plastic](#), it is important to test for PFAS as well as for other chemicals, especially in any plastic that is destined to come in contact with food or with children.<sup>7980</sup>

*A2.3: Review and improve government purchasing criteria (p. 20)*

*“Criteria should be evaluated to ensure that the government is purchasing sustainable products, including products that have recycled content or can be reused.”*

This section is focused on government purchasing of products with recycled plastic content. As

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<sup>78</sup> U.S. EPA. *National PFAS testing strategy*.

<https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/national-pfas-testing-strategy>

<sup>79</sup> Beyond paper: PFAS linked to common plastic packaging used for food, cosmetics, and much more. (2021, July 8). *EDF Health - Our Experts' Views*. Environmental Defense Fund.

<https://blogs.edf.org/health/2021/07/07/beyond-paper-pfas/>

<sup>80</sup> *Forever Toxic: The science on health threats from plastic recycling*. (2023, May 24). Greenpeace USA. <https://www.greenpeace.org/usa/reports/forever-toxic/>

noted above, recycled plastic has been found to contain elevated concentrations of PFAS and other toxic chemicals – in addition to the associated technical challenges, air pollution problems, and vast production of microplastics, discussed above. Caution is warranted. A better strategy is found in A1.2 which recommends that the government reduce procurement of single-use plastics. We urge the government to phase out the use of single-use plastics.

*“Extended producer responsibility (EPR) approaches for key products and materials should also be explored for potential use in government purchasing criteria.”*

We support Extended Producer Responsibility [when it is done correctly](#). It is critical that definitions of “extended producer responsibility” do not count “plastics-to-plastics pyrolysis” or other forms of “chemical recycling” as an authorized treatment in their take-back programs. EPR programs can be valuable depending on how they are set up.<sup>81</sup>

*A2.4: Conduct evaluations to ensure that production facilities within the plastic sector are in compliance with applicable federal, state, Tribal and local regulatory requirements. (p. 20)*

*“Consistent implementation and enforcement of regulations at all levels of government can reduce or prevent environmental and human health risks posed by existing or proposed new plastic production facilities, particularly those that use or release toxic or other harmful chemical or additives. Various instruments and approaches can be used to ensure compliance with regulatory requirement and the need to ensure careful and full evaluation of any proposed new facilities or expansions of existing facilities, under all applicable requirements as follows:*

*A2.4a: For existing facilities in the plastic sector and facilities producing inputs used by the plastic sector, examine existing authorities, policies, and actions to determine how they could be adjusted or built upon to avoid and reduce negative environmental or human health impacts, including safety threats like chemical leaks, fires, and explosions.*

*A2.4b: Review and update, as appropriate, regulations relating to air emissions and water discharges of pollutants or waste disposal from plastic production and recycling facilities, and other health and safety measures, including regulation of the production and transport of plastic pellets. In addition, work across the federal government to prevent accidental releases of hazardous chemicals related to plastic production into the environment during transit.*

Our organizations applaud this effort to ensure that production facilities within the plastic sector are in compliance with applicable federal, state, Tribal and local regulatory requirements. This section (A2.4) is perhaps the most significant passage in the entire National Strategy. We

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<sup>81</sup> *Extended producer responsibility means the polluter pays.* Beyond Plastics - Working To End Single-Use Plastic Pollution. Retrieved July 22, 2023, from <https://www.beyondplastics.org/epr>

look forward to additional details on how EPA plans to “reduce or prevent environmental and human health risks posed by existing or proposed new plastic production facilities, particularly those that use or release toxic or other harmful chemical [sic] or additives.” And we are very pleased to hear of efforts to prevent “safety threats like chemical leaks, fires, and explosions” including hazardous releases of plastics-chemicals during transportation disasters. Renewed efforts to update outdated regulations governing discharges into air and water will be welcome. We urge EPA to proceed expeditiously in carrying out A2.4.

*A2.5: Map existing and proposed plastic production facilities, as well as evaluate their environmental justice and public health impacts on neighboring communities. (p. 21)*  
*“The locations of existing plastic production and recycling facilities and proposed new facilities should be mapped to analyze potential disproportionate impacts on disadvantaged and vulnerable communities, including air toxics and other air emissions, as well as water and waste impacts. Tools, such as EPA’s Environmental Justice Screening and Mapping Tool (EJScreen 2.0), the Council on Environmental Quality’s Climate and Economic Justice Screening Tool (CEJST) or Center for Disease Control’s Social Vulnerability Index, are available, and the analysis of potential impacts should also make use of other tools, research, information from environmental monitoring, and feedback received from impacted or potentially impacted communities.”*

This is an excellent complement to Section A2.4. Mapping is critically important -- and a lot has already been done by EPA and others. We would be pleased to collaborate with EPA in identifying any gaps in mapping the plastics and petrochemical infrastructure and resulting public health and environmental impacts.

*2.6 Develop methods to measure reductions in greenhouse gas emissions from the life cycle of plastic products and alternative materials...*  
*“...Policymakers must also understand the environmental trade-offs that result from the use of alternative materials.”*

The plastics and petrochemical lobby has been promoting these life-cycle analyses to somehow prove that plastics are superior and more climate-friendly than other materials. We urge caution, as these assessments can be misleading. Although climate impact sometimes appears to be less for plastics – depending on what is included or left out of the calculations – these analyses do not consider alternative systems and processes, focusing only on materials substitution. Moreover, there are critical environmental and public health impact categories that are barely captured by these analyses, including the impact on marine- and other ecosystems and the toxic and carcinogenic air pollution from plastics production and incineration. Different prioritizations of public health and environmental impacts can lead to different outcomes in the analysis, making these much-acclaimed life-cycle analyses of little value.

*A2.7 Coordinate domestic and international interests to support the development of international standards, including product labelling, to increase the circularity of plastic products.*

*““Adopting and further refining international standards for circularity will help support sustainable trade efforts and will reduce barriers to achieving a more circular economy. Product labeling ... can be an important lever for communicating product recyclability and **transparency** about chemicals in products. The United States should continue to support the development of international standards to increase the circularity of plastic products.” [Emphasis added.]*

We agree that transparency on the toxic chemicals in plastics is critical. The public has a right to know which carcinogenic, neurodevelopmental, and reproductive toxicants are part of plastics at each stage in the value chain. The selection of carcinogens and other toxic chemicals cannot continue to be treated as “confidential business information.” Fenceline communities, workers, and consumers need to know the identity of the plastics chemicals to which they are exposed. Disclosure is an essential first step if EPA is to safeguard people from the most lethal plastics components.

We also need transparency about the quantities of plastics feedstocks and plastics chemicals used and the plastics polymers produced. Basic metrics on plastics production inputs and outputs are essential if the U.S. is to slow and ultimately cap and reduce the vast expansion of the U.S. plastics sector.. There is no indication that EPA is even tracking the precise amounts of plastics polymers produced.

Instead of saying, the U.S. will require transparency, develop metrics, and require measurement of all plastics polymers and chemical constituents – and ban the most toxic materials such as vinyl chloride -- the National Strategy parrots industry marketing about U.S. support for international standards for the circularity of plastics products. Thus section A2.7 is a disappointment and a missed opportunity.

## **Objective B. Improve Post-Use Materials Management (p. 23)**

*“...further increases in circularity can be achieved by developing:”*

*--Reuse systems for plastic and alternative products -- we support re-use systems for alternative products.*

*--Composting systems – this is misleading and misguided.*

*--Public outreach and education on proper management – this objective seems outdated.*

*B1. Conduct a study of the effectiveness of existing public policies and incentives upon the reuse, collection, recycling, and conservation of materials.*

*“State, territorial, tribal, and local governments have implemented policies that have been effective at increasing the reuse, collection, recycling, and conservation of materials. Extended*

*producer responsibility policies and deposit refund schemes are two examples of policies that have been effective at achieving circularity goals in some jurisdictions at the state and local levels. A study is needed to assess the effectiveness of existing public policy frameworks to investigate, identify, and share best practices in programs and policies aimed to increase reuse or refill, collection, and recycling efforts. This study can then be used to inform the development of recommended actions.”*

This seems like a delay strategy rather than an honest effort to address plastics pollution. Instead of continuing to tiptoe around the issues, we urge EPA to call for a national bottle bill (for starters) and other deposit refund and extended producer responsibility policies.

*B2. Develop or expand capacity to maximize the reuse of materials (p. 23-24) “Effective reuse (including refill) systems can drastically reduce the disposal of plastic products. Innovative systems should be expanded or developed **to ensure that existing plastic products are reused as long as possible.**” [Emphasis added.]*

This raises significant public health concerns. As discussed earlier, plastics are made from toxic, persistent, and bioaccumulative chemicals which leach into the environment and concentrate in human body tissue. Using and re-using plastic materials for as long as possible can increase the risk to consumers. The plastics degrade over time, exposing people to significant amounts of phthalates, PFAS, and other toxic components. We enthusiastically support re-use and re-fill systems and process innovations based on other materials such as glass, metal, and paper.

*B2.1: “Provide funding to communities to create and implement plans to facilitate reuse that have a greater need for support.”*

It is difficult to comprehend the meaning of the above sentence.

In the following paragraph, however, EPA states that there should be funding (from where?) for community re-use and refill initiatives, especially in communities “with environmental justice concerns.” If this initiative is geared toward *extending the use of plastic materials* in these most underserved and overburdened communities, then this will only heighten the risk of cancers and other health effects for Black, Brown and low-income people. This is not environmental justice. If this section is meant instead to prolong the use of glass and other non-plastic materials, then we support the effort.

*B2.2 Research and identify obstacles to reuse and propose innovative, viable solutions. (p. 24) “Faced with large volumes of mixed plastic waste that has little or no market value, many jurisdictions are assessing existing and new avenues to support reuse where appropriate. This action promotes continued work to identify obstacles and friction points that limit the viability of reuse systems, identify possible existing solutions, as well as to encourage new innovative solutions to those obstacles.”*

We agree that there are “large volumes of mixed plastic waste that has little or no market value.” Re-use of these plastic wastes is not in the public interest, for reasons mentioned above. However, our organizations would enthusiastically support efforts to develop re-use systems for glass, metals, and other materials.

*B3. Facilitate more effective composting and degradation of certified compostable products.*  
(pp. 24 and 25)

EPA’s next two pages focus on how to advance programs and infrastructure for composting of \*plastics.\* Composting plastics raises significant human health and environmental problems given the limited decomposition of these plastics, their tendency to leach toxic chemicals, and their proliferation of microplastic materials in the environment. EPA’s interest in offering plastics composting “in communities with environmental justice concerns” strikes us as something that could do more harm than good. We do not support saddling environmental justice communities with “plastic composting” facilities on top of all the other burdens they face from plastics production and incineration. And we urge EPA not to magnify the harm to these communities by perpetuating the single-use plastic lifestyle under the guise of its compostability. It is also worth noting that some compostable products that end up *in the trash* (which is where most of them land) can release even more greenhouse gases than their non-compostable counterparts.

It is interesting that EPA would choose to devote its limited resources to something as questionable as composting plastics. More than two-thirds of Americans do not even have access to composting for food waste, which we know is environmentally sound and critically important in fighting climate change.

These statements in B3.4 are accurate: “...*Contamination can be a major problem in the quality of final compost products. Plastic products can contaminate compost, resulting in plastic and microplastic pollution when compost is applied to the soil.*”

However, “compostable product standards” won’t make the problem go away, it will just put a green sheen on the process. EPA is misguided here:

*“Compostable product standards are necessary to prevent contamination from entering the system.”*

*B3.5: Evaluate claims made by companies about the degradability of plastic products to eliminate “greenwashing” and misleading claims by marketers.*

Our organizations appreciate EPA’s cautions about misleading claims by marketers. We share these concerns.

*B4. Increase solid waste collection and ensure that solid waste management does not adversely*



*impact communities, including those overburdened by pollution. (p. 26)*

This section includes multiple sub-parts on awareness, availability, and funding for solid waste collection.

Of particular interest is B4.4: *Perform an environmental justice assessment for non-hazardous solid waste management facilities, including recycling facilities, incinerators, landfills, and chemical recycling facilities, and for other emerging or novel processes. (p. 27)*

Our organizations appreciate the increased attention to the significant public health burden borne by communities in the vicinity of solid waste incinerators, so-called “chemical recycling” facilities, and other waste management infrastructure. At the same time, we are wary of tactics to stall EPA engagement and to justify inaction. EPA already has the data showing that these processes are heavily polluting and burden environmental justice communities with an elevated risk of cancer and other illnesses as well as the health and safety concerns from chemical leaks, fires, and explosions.

EPA writes that, *“Understanding potential impacts allows EPA to discourage or disincentivize any technologies or processes that: (i) increase air pollution; (ii) increase the generation of hazardous wastes; (iii) fail to use a circular economy approach that is restorative or regenerative by design; or (iv) maintain or increase pollution in communities that are already overburdened.”*

This is a valid and important assessment, but the associated actions are weak. EPA says it would “discourage or disincentivize” harmful technologies. We need more information about what this entails and how it would be achieved. We are relying on the EPA to protect people from the toxic air and water pollution emitted by these plastics waste facilities.

*B4.5: Assess the social costs of plastic waste (including litter cleanup) and how those costs could be reduced via reduction/prevention solutions.*

We are not sure why EPA is making this study a strategic priority.

*B4.6: Explore the development of an accredited, voluntary third-party certification program for plastic recyclers to increase the safe and effective management of plastic recyclables in the United States.*

It is not clear whether EPA is referring to mechanical recycling or to so-called “advanced recycling” pyrolysis incineration. In either case, it is misleading to speak of “the safe and effective management of plastic recyclables” given that plastics are made from toxic and highly flammable chemicals. Please see prior explanations.

*B4.7: Standardize measurement and increase data collection (for solid waste management) (p. 28)*

This data will help us understand the magnitude of the plastic pollution crisis.

*B5. Increase public understanding of the impact of plastic mismanagement and how to appropriately manage plastic products and other waste. (p. 28)*

This is misleading. The problem with plastic is not that it's mismanaged but that it is toxic and there is no good way to manage it, from start to end. Please see earlier sections of these comments.

*"Consumers play a pivotal role in determining how plastic products are used and disposed of."*

This is misleading. Plastics are ubiquitous, and the American public has little choice but to perpetuate the throwaway plastics lifestyle. Moreover, we do not have any plastic disposal option that does not pollute the air, water, or climate, and that does not endanger human health.

This next subsection focuses on improvements in consumer messaging about waste.

*B5.1: Identify effective ways to increase public understanding of waste reduction, materials reuse, and composting options.*

(This is followed by bullets on the need to educate consumers about what to do with their trash, including recycling, reduction, re-use, and composting.)

This feels like the cart before the horse. Consumers generally do not have waste-disposal options, particularly with respect to plastic trash. Most plastic ends up in landfills or incinerators or in nature. EPA appears to be focused on teaching consumers to handle their waste correctly, whatever that entails, yet it is the petrochemical corporations that have created the plastic pollution problem and should be held responsible.

*B5.2: Increase awareness among businesses of the Federal Trade Commission's Guides for the Use of Environmental Marketing Claims ("Green Guides"). (p. 28)*

This subsection includes, "Businesses should make greater use of the Green Guides to make truthful claims."

We agree that the Green Guides are important. At the same time, we would suggest that

(1) EPA should discontinue its own role in perpetuating the greenwashing myths about plastics' sustainability and circularity, and

(2) voluntary efforts by consumers or businesses are not enough to address deceptive marketing claims about plastics' composition, health effects, climate impacts, and disposal options.

*B5.3: Review plastic resin identification codes to determine if changes are needed to reduce confusion around the recyclability of plastic products. (p. 29)*

This is worth pursuing. As all participants (besides the plastics trade association) agreed in the Federal Trade Commission Workshop of May 23, 2023, the resin codes are misleading and need to be revamped or removed. One option is to include in large lettering the words, “not recyclable.”

We agree with EPA on the need to “ensure that the codes used reflect the purpose for which they were created and do not perpetuate consumer confusion around what is recyclable.”

*B6. Explore possible ratification of the Basel Convention and encourage environmentally sound management of scrap and recyclables traded with other countries. (p. 29)*

In the text that follows, EPA tiptoes around the notion of the United States supporting and perhaps even ratifying the Basel Convention. Our organizations firmly support the ratification of the Basel Convention and its plastic scrap amendments. Presently, U.S. exporters are ignoring Basel due to our failure to ratify. We also urge the U.S. government to ratify other international conventions including the Stockholm Convention on persistent organic pollutants.

We note B6.2, “*encourage environmentally sound management practices to support protection of human health and the environment.*”

Is this section about plastic? The word “plastic” is left out.

B6.2 continues,

“...to ensure that environmentally sound management of scrap and recyclable materials can benefit circular economy approaches.”

Again, are we talking about “plastic”? This section advances plastic industry marketing terms but it is unclear what “environmentally sound management” practices are being suggested, and for what materials. “Environmentally sound” and “circular economy” practices do not exist for plastics.

Litter/trash section (pp. 31-36)

Note that much of this section addresses “trash pollution” rather than “plastics pollution” (except in the case of nano/ micro-plastics) but we assume that all the trash and litter references are meant to address plastic waste (?). Please be specific in the Strategy document.

These six pages are devoted to keeping plastic out of waterways or removing it from waterways. They are relatively non-controversial, as nobody is pro-litter. But the language and priorities remind us of plastics industry advertisements from decades ago.

**Objective C. Prevent Trash and Micro/Nanoplastics from Entering Waterways and**

## **Remove Escaped Trash from the Environment (p. 31)**

*“Interventions are necessary to prevent littering and to ensure that trash (including plastic waste) and microplastics do not enter waterways. Such interventions could include implementing programs to reduce littering and illegal dumping; installing trash-capture technologies to collect and remove trash from stormwater, wastewater, and surface waters; and increasing street sweeping to remove trash before it is carried by stormwater or wind into waterways.”*

This is a strange mishmash of ideas on so-called “escaped trash.” We encourage EPA to look higher upstream and to begin to cap and reduce plastic production. Millions of street sweepers would not be enough to solve the plastics pollution problem.

The next paragraphs focus on the “significant knowledge gaps” as to where microplastics and nanoplastics are coming from. This is misleading (see C5.1, below). We suggest focusing on the tremendous amount we *\*do\** know about microplastics and nanoplastics. There is no need for EPA to be starting from scratch given the extensive scientific and policy literature available. While we commend EPA staff for wanting to learn more, we urge the agency not to let studies take the place of action.

We support the specific suggestion in C 2.2 (p. 33) to carry out research “to inform the development of capture technologies; for example, technologies to reduce micro/nanoplastics discharge from commercial and residential washing machines...”

We are wary of some of the messaging and educational campaigns. This is not an effective solution. It seems like low-hanging fruit from an agency that has the scientific aptitude and legal might to advance real solutions.

For example:

*C4.1: Develop messaging and educational materials about the nature and impacts of trash pollution and what targeted audiences can do to help address the problem....there is a need for public outreach education efforts to reduce littering and illegal dumping. (p. 34)*

*C4.2: Research and disseminate information on successful outreach and education practices and programs to motivate positive behavior change. (p. 35)*

Microplastics and nanoplastics:

*C5. Increase and coordinate research on micro/nanoplastics in waterways and oceans. (p. 35)*

*C5.1:” Conduct research and disseminate information on the sources, transport, fate, concentrations, impacts, and remediation of microplastic pollution.*

*It is important to identify and categorize the major sources of micro/nanoplastics and the pathways micro/nanoplastics take to enter waterways.”*

Before EPA gets carried away by the “knowledge gaps,” note that we already know many of the major sources of microplastics in the environment. These include sources that are *heavily promoted* in this EPA Strategy. They also include the *intentional* sources of plastic pollution described earlier.

Some of the largest sources of micro- and nano- plastic pollution are roadways (from the tires and even from the pavement itself when it is made from synthetic rubber and other plastic trash materials); sewage sludge applied to farmlands; agricultural films; plastic coatings for fertilizers, seeds, and pesticides; and the effluent and air emissions from recycling.

*C5.2: Support the development of management practices and technologies to remove microplastics (including microfibers) from effluent and waterways.*

*“Funding and research are greatly needed to support the development of best management practices (BMPs) and technologies to remove microplastics from waterways...”*

While we do not *favor* having plastics and microplastics contaminating our waterways, we would suggest that the EPA redirect its attention and limited resources to upstream solutions. The upstream solutions will be far more effective in solving the downstream problems.

## **What is missing from the U.S. plastics strategy:**

The fossil fuel industry is on target to triple plastics production by 2060 -- not because we need all that extra plastic, but because single-use plastics are a lifeline for oil and gas companies determined not to let climate change and the promise of renewable energy cut into their profits. 2022 was the biggest year in U.S. history for the construction of new ethane cracker plastics-making facilities. The draft National Plastics Strategy seems to ignore this dangerous trajectory.

The vast expansion of fossil-fuel plastics production will impose severe consequences on fence-line communities and will accelerate planetary heating. Yet the U.S. federal government and state governments continue to issue hundreds of permits for new and expanded petrochemical facilities.

We support a cap on plastics production with clear timelines for phasing down petrochemical output, while shifting the world to alternative materials, products, and processes. We need to protect people whose lives are upended by the plastics industry at every stage in the supply chain, from fossil extraction to petrochemical processing, manufacture, use, and disposal. The United States needs to prioritize the public health and human rights of those who suffer the

greatest harm from plastics and other petrochemicals.

We recommend:

- A decision to **stop issuing permits for new and expanded petrochemical facilities**. We support a national commitment to cap and ultimately **reduce the production of plastics** and related petrochemical products. As a starting point to any reductions, we need **metrics and measurements** on the amounts of chemicals and plastic polymers at every step in the value chain.
- An expedited **phaseout of the most dangerous polymers** (including fluoropolymers and chlorinated plastics **such as PVC**) and toxic chemical constituents (such as PFAS chemicals, UV-328, bisphenols, phthalates, brominated flame retardants, and chlorinated paraffins).
- **Full transparency as to the toxic chemical feedstock, plastics constituents and emissions** throughout the plastics value chain, from fossil extraction, production, use, and disposal. The American public has the right to know what risks they are facing from plastics chemicals. This is especially critical for communities at the fence-line of petrochemical cracker plants, plastics incinerators, and other heavily polluting facilities.
- **Prioritizing the public health and human rights** of children, workers, and all people over the interests of the industries responsible for the global plastic pollution crisis. This means protecting Black, Brown, Indigenous, and low-income community members directly impacted by the entire lifecycle of plastic pollution including extraction, refining, production, use and ultimate wastage, landfilling and incineration.
- The **rejection of false solutions** such as pyrolysis and gasification incineration which have been evading pollution control laws by rebranding their heavily polluting incinerators as “recycling.” These facilities release chemicals (such as benzene, dioxins, and heavy metals) known to cause cancer, birth defects, and other serious health harms.
- A **redesign of any necessary plastics with the full product life-cycle in mind** so as to protect frontline communities, consumers, and the climate from harmful chemical constituents and greenhouse gas emissions.
- An **end to federal and state subsidies** for plastics production and incineration. The extent of U.S. government and state governments subsidies to the plastics industry is staggering. Compounding the problem, federal financing signals to state and private sources that these are safe investments, encouraging further public and private capitalization.
- Attention to the **deliberate application of single-use plastic materials to agricultural lands and to marine environments**. The EPA draft Plastics Strategy addresses only the so-called “mismanagement” of plastic wastes that end up in the environment. A growing body of research warns that there may be even more plastic pollution in the soils than in the oceans – and that much of this plastic is intentionally applied. Deliberate environmental pollution with single-use plastics has become a ubiquitous part of terrestrial and marine agriculture.
- An **end to the export of U.S. plastics waste**, which compounds global inequities and

environmental injustices. The draft Strategy timidly suggests that the US might consider supporting the Basel Convention, a question that the U.S. government has been mulling for decades. U.S. waste exporters have been ignoring Basel due to our failure to ratify. We are urging the U.S. government to ratify Basel and its plastic scrap amendments – this should be only a starting place and a bare minimum.

- **Robust enforcement mechanisms and regulations** to protect communities from plastics pollution. We applaud Section A2.4 and urge the EPA to elevate this section of the National Strategy.
- **Shifting the burden to those responsible for the plastics crisis.** Plastics producers continue to entrench national economies deeper and deeper in the carbon lock-in while deflecting responsibility for the human health, environmental, and climate impacts associated with fossil-based plastics. It is time to hold the fossil fuel and petrochemical industries accountable. These companies promote greater reliance on single-use plastics; spread misinformation about plastics recycling, and expose surrounding communities to hazardous chemicals and climate-heating gases. Meanwhile, companies take no responsibility for disposal of plastic waste, which lasts for hundreds of years and never stops emitting greenhouse gas pollution into the atmosphere.
- Acknowledgment that **no end-of-pipe fix is a match for the enormous scale** of the plastics waste crisis, the thousands of types of plastics chemicals, nor the legacy of cancers and other human health outcomes.

Thank you for the opportunity to provide comments, and for considering our concerns.

Sincerely,

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Nora Privitera	Chair, Federal Climate Team	350 Bay Area Action
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Eric Engle	Board President	Mid-Ohio Valley Climate Action
Laura Hunt	director	Midlothian Breathe
Cheryl Nenn	Riverkeeper	Milwaukee Riverkeeper
Stephanie Reese	Director	Moms Clean Air Force
Florence Murray	Partner	Murray & Murray
Daniel Rosenberg	Director of Federal Toxics Policy	Natural Resources Defense Council (NRDC)
Joseph Parrish	Medical research	NY Environmental Watch
Ryan Thoresen Carson	Solid Waste Campaign Coordinator	NYPIRG
Kristen Nicole McDonald	Interim Marine Program Director and China Program Director	Pacific Environment
Dianne Peterson	Steering Committee Member	PASUP
Stiv Wilson	CoDirector	Peak plastic foundation
Cheryl Johncox	Regional Coordinator	People Over Petro Coalition
Tammy Murphy	Advocacy Director	Physicians for Social Responsibility Pennsylvania

Dianna Cohen	CEO & Co-Founder	Plastic Pollution Coalition
Emy Rodriguez Rancier	US Program Manager	Plastic Solutions Fund
Julissa Ott	Volunteer Coordinator	Plastic-Free Milwaukee
John Charles Meyer	Executive Director	<a href="http://PlasticFreeRestaurants.org">PlasticFreeRestaurants.org</a>
John Beard, Jr.	CEO	Port Arthur Community Action Network(PACAN)
Serena Moncion	Outreach Coordinator	Potomac Riverkeeper Network
Elizabeth O'Nan	Director	Protect All Children's Environment
Maren Cooke	Director	Putting Down Roots
Sarah Doll	National Director	Safer States
Diane Wilson	Executive Director	San Antonio Bay Estuarine Waterkeeper
Emily Brandt	Secretary	San Joaquin Valley Democratic Club
Pauline Seales	Organizer	Santa Cruz Climate Action Network
Ted Schettler MD, MPH	Science Director	Science and Environmental Health Network
Yvonne Taylor	Vice President	Seneca Lake Guardian
Ara Marderosian	Secretary	Sequoia ForestKeeper
Stephanie Blumenthal	President	Sheffield Saves
Martha Camacho Rodriguez	Director	Social Eco Education (SEE-LA)
Cheyenne Rendon	Policy Officer	Society of Native Nations
Nathan Taft	Senior Digital Campaigner	Stand.earth
Jennifer Savage	Senior Manager, Plastic Pollution Initiative	Surfrider Foundation
Kevin Greene	Zero Waste Committee Chair	Sustainable Tucson
Timothy Edward Duda	Interim Director	Terra Advocati
Robin Schneider	Executive Director	Texas Campaign for the Environment
Alison Waliszewski	Director of Policy and Programs	The 5 Gyres Institute
Lyndsay Tarus	Engagement Coordinator	The Alliance for Appalachia
T. Austin Brown	Attorney	The Austin Brown Law Firm
Christopher Chin	Executive Director	The Center for Oceanic Awareness, Research, and Education (COARE)
Jo Banner	Director/Founder	The Descendants Project
Todd Fernandez	ED	The Earth Bill Network
Jan Dell	Founder and Independent Engineer	The Last Beach Cleanup

Jackie Nuñez	Founder	The Last Plastic Straw
Manuel José Espinosa	Principal	The Phoenix Group
Deborah Kushner	Co-founder and co-facilitator	Third Act Virginia
Joanie Steinhaus	Ocean Director	Turtle Island Restoration Network
Fran Aguirre	Acting President	Unite North Metro Denver
Karen Bueno	Mrs.	United Methodist Church
John Blair	Mr.	Valley Watch, Inc.
john robert alder	member	Veterans For Peace
Mark and Connie Toohey	Volunteers for Environmental Health and Justice	Volunteers for Environmental Health and Justice
Matt Zimbalist	Principal	WasteWhat
alice slater	Board member	World Beyond War,
Yayoi Koizumi	Founder	Zero Waste Ithaca
Emily Parker	Coastal and Marine Scientist	Heal the Bay