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The Plastics Plot:

The Corporate Disinformation Tactics Behind Plastics Pollution

Introduction

The plastics crisis is often framed as a technical challenge — one of poor waste management, lack of innovation, or irresponsible individual behavior. These perceptions are the result of carefully crafted, sometimes decades-long messaging by the plastics industry. Beneath this surface, there lies a systematic pattern of disinformation that shapes how pollution is defined, understood, debated, and governed. These are not isolated instances of misleading claims. They are coordinated and amplified narratives that delay policy action, distort public understanding, redirect attention away from effective solutions, and ultimately prolong the human rights,[1] environmental, and health harms posed by plastic pollution.

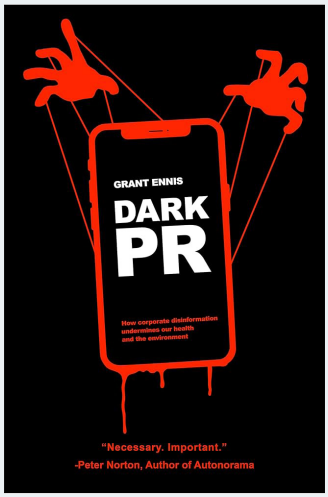
Disinformation is widespread in today's society and is an increasing threat to sound policymaking. The term disinformation implies the deliberate fabrication of information to deceive people, as opposed to misinformation, which is false information generally spread without malicious intent.[2] The United Nations (UN) Human Rights Council recognized that disinformation is a "profound impediment" to the enjoyment of human rights and that its impact "cannot be underestimated."[3]

Environmental disinformation has long been deployed across sectors. Industries, including fossil fuels, tobacco, plastics, and chemicals, have repeatedly employed tactics to manufacture doubt and spread disinformation in order to avoid regulation of their harmful products.[4] Identifying, understanding, and exposing these strategies and narratives is not just an academic exercise; it is essential for distinguishing between evidence-based arguments and disinformation in order to inform more effective policymaking, accountability, and justice. (For more on the rapidly evolving threat of disinformation, see Box 1).

Banner demonstration calls out Big Oil's chokehold on Global Plastics Treaty talks in Geneva, Switzerland
© Samuel Schalch / Greenpeace

To analyze these dynamics, this brief draws on *Dark PR: How Corporate Disinformation Undermines Our Health and the Environment* by Grant Ennis. The book distills decades of corporate disinformation tactics into nine recurring frames, exposing the strategic patterns used to shape public perception and political debate around harmful products and practices.[5] These intentional shifts in framing change the way we define and think about these problems as a society and therefore undermine political will to adopt effective solutions. Ennis writes that "Understanding the *cross-industry* nature of corporate framing, rather than seeing each industry's discourse in isolation, is essential to fighting corporate influence."[6] This brief examines some of the ways these recurring narrative patterns are used by the plastics industry to influence discourse around addressing the plastics crisis.

Analyzing industry messaging frameworks is timely — the science repeatedly affirms the health harms of plastics and there is global momentum for policy solutions.[7] One of the central questions at the heart of the Global Plastics Treaty negotiations is whether plastic pollution can be addressed without reducing plastic production. Pressure from the plastics industry is high. The evidence is clear: reducing production of plastics is essential for addressing the plastics crisis,[8] along with investing in true solutions such as non-plastic reuse and refill systems.[9]



Cover of Dark PR
© Grant Ennis

Plastics disinformation has been embedded in the industry's public relations (PR) strategies for decades. These frames and their deployment have been refined and amplified despite growing scientific evidence on the harms of plastic pollution. This brief shows how the industry systematically uses these frames to divert attention away from reducing production or to render it politically or economically unthinkable. By introducing a shared vocabulary for understanding these devious frames, this brief aims to:

- support policymakers to design effective, truly science-based solutions to the plastic crisis,
- empower civil society and rights holders to strengthen their efforts, and
- serve as a starting point for legal and regulatory scrutiny of corporate misconduct.

A thought starter on legal pathways to hold producers accountable is also presented in Box 3.

Nine Devious Frames

Plastics are a global issue. The full lifecycle of plastics, from fossil fuel extraction through production and end of life/waste management, introduces health, waste, and environmental challenges. The plastics industry may use disinformation frames to simplify or "flatten" the issue, especially for non-specialist audiences. The simplified framing can obscure the relationship between their plastic products and the health, human rights, and environmental problems they cause. Although many of the examples presented in this brief stem from the United States (US), critically, these frames are recycled around the world.

Using Ennis's framework, we map the ways the plastics industry uses these nine recurring frames to deliberately influence debates around the plastic crisis and delay regulation of their harmful products.[10]

Table 1: Summary and Definitions of the Nine Devious Frames.[11]

1	**Denialism**	Denying that the problem exists.
2	**Post-Denialism**	Arguing that what's bad is actually good.
3	**Normalization**	Presenting the problem as inevitable or part of everyday life.
4	**Silver Boomerang**	Championing pseudo-solutions that reproduce or worsen the problem.
5	**Magic**	Making false (often techno-centric) promises that never seem to materialize.
6	**Treatment Trap**	Focusing on managing the symptoms rather than preventing root causes.
7	**Victim Blaming**	Shifting blame from the political root causes of the problem onto individuals.
8	**Knotted Web**	Arguing that the problem is complex and there is no clear solution.
9	**Multifactoralism**	Suggesting that the solutions that don't work on their own will work when deployed together.

Plastic water bottle production facility
© warloka79 – stock.adobe.com

These frames serve three core functions for the industry:

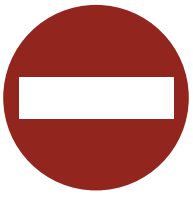
- Protect legitimacy
- Promote false solutions
- Deflect responsibility

By attempting to *protect the legitimacy* of their products, the plastics industry narratives work to deny or reframe the harms of plastics, despite mounting evidence,[12] or normalize their role in society. By promoting *false solutions*, the industry shifts the focus to responses that appear credible but ultimately will not solve the problem unless accompanied by a large reduction in the production of plastics. Finally, industry tries to *deflect responsibility* for the problem with narratives that redirect attention away from the true source of the crisis toward individuals, complexity, and a combination of the two, thereby diluting accountability. In practice, the frames often overlap and reinforce one another.

Protect Legitimacy

Frame 1: Denialism

"Plastics Are Not Harmful"



At its most fundamental level, plastic disinformation begins with denial. This frame seeks to cast doubt on the existence, scale, and seriousness of the harms caused by plastics. The industry selectively presents evidence, downplays risks, and asserts safety despite mounting scientific concern.

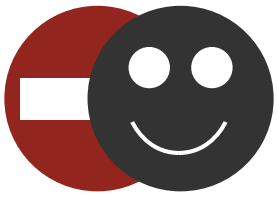
Independent research shows that there are more than 16,000 chemicals used or present in plastics. Researchers have demonstrated that more than 4,200 of these chemicals cause harm to human health, while most others lack sufficient hazard information to determine their level of harm.[13] Despite this, the plastics industry attempts to deny this problem exists by claiming that plastics are safe, creating doubt about their products' harmful impacts.

A good example of this comes from the National Association for PET Container Resources (NAPCOR), the trade association for the polyethylene terephthalate (PET) plastic packaging industry in the US, Canada, and Mexico — whose stated mission includes promoting the use of PET packaging and overcoming hurdles to its successful introduction, use, and recycling.[14] In its marketing materials and its Positively PET campaign,[15] NAPCOR states that PET plastic is safe. In one blog, they specifically cite that virgin (new) PET plastic does not contain certain endocrine-disrupting chemicals like bisphenols and phthalates.[16] On a webpage entitled "Myths and Facts," they double down with an uncited claim that "PET has never contained bisphenol-A (BPA), nor will it ever."[17] Even if these claims did reference scientific research, it would be essential to determine whether they came from industry-backed or funded science, which often favors their interests.[18]

However, independent science has found that PET can contain bisphenol A (BPA), one of the most well-known and researched endocrine-disrupting chemicals,[19] even if it is not intentionally used in the manufacture.[20] Recycled PET can also contain significantly higher levels of BPA.[21] Studies have also found that PET water bottles can leach phthalates — associated with reproductive impacts, neurodevelopmental issues, and behavioral changes[22] — into water.[23] In addition, research has shown that virgin PET contains antimony, a chemical associated with liver disease, heart disease, and other health impacts.[24]

Importantly, manufacturers do not always claim plastics' safety in those exact terms. The industry often declares that plastics comply with all government regulations in an attempt to indirectly indicate that they are safe.[25] When companies make statements in that regard, individuals and even lawmakers tend to believe that there is nothing to worry about. However, it is well established that government regulations do not always reflect the state of the science or the safest recommendation[26] and are often influenced by the industry itself.[27]

Frame 2: Post Denialism
"Plastics Are Good"



As the science on the environmental and health impacts of plastics becomes undeniable, the plastics industry shifts their narrative to a post-denial framing. Plastics are presented as beneficial for modern life, economic development, and even environmental protection.

"Post-denialism undermines political will for change by arguing that the bad is good... sugar is good for us, dangerous roads are better, and global warming is amazing. Corporations turn debates around, tricking us into thinking that erosions to our well-being are somehow improvements, and this prevents us from making real improvements."[28]
Grant Ennis

Ads from the "Plastics Make it Possible" campaign, 1993
© American Plastics Council - Courtesy of Science History Institute

The conversation no longer begins with plastic waste piling up in landfills or leaking into oceans. Instead, it begins in a hospital ward, where sterile plastic syringes, blood bags, and protective equipment are framed as life-saving tools[29] (also see the Plastics Industry Association's "Plastic Saves Lives" campaign[30]). In the supermarket, flexible films are presented as essential for keeping food fresh longer and reducing spoilage, with industry groups like the Plastics Industry Association arguing that plastics play a critical role in tackling food waste.[31] And on a planetary scale, there are claims that plastics even help combat greenhouse gas (GHG) emissions. Industry messaging increasingly highlights their role in enabling renewable energy systems from wind turbine components[32] to insulation and lightweight materials,[33] framing plastics as indispensable to the energy transition itself.

This tactic has been in circulation for decades. Following the introduction of more than 500 pieces of plastic legislation in the early 1990s, the American Plastics Council launched a US$100 million national advertising campaign-buy across the US featuring the slogan, "Plastics make it possible." Industry quickly credited the campaign with changing the minds of at least 54 million Americans.[34] The campaign, which continued through the 2000s, initially emphasized how plastic has changed grocery shopping, depicting a scene of grocery shopping in pre-industrial times, contrasted with modern-day grocery shopping, where plastic is prevalent.[35] Another ad shows the ways that plastics can help keep people protected, including through helmets.[36] The campaign has been revitalized several times since then, including in 2017, where it was used to highlight the role of plastics in firefighting and other helping professions.[37]

In this frame, the problem is no longer there — plastics are portrayed as great. The logic is that if plastics save lives, reduce emissions, and enable modern society, then reducing their use becomes impractical and even irresponsible.

However, such industry claims generally rely on a limited set of examples that obscure the systemic negative impacts across the full life cycle of plastics. For example, "essential uses" such as healthcare represent only a small fraction (15 million metric tons per year[38]) of the more than 400 million metric tons of plastics produced each year.[39] Moreover, efforts are underway in the healthcare industry to reduce this footprint even further due to the negative impacts of plastics (and associated chemicals) on human health.[40] At the same time, the lifecycle impacts of plastics from fossil fuel extraction to chemical exposure and waste are well documented and continue to grow.[41] And the assertions that plastics reduce carbon emissions or support sustainability often overlook the rapidly expanding carbon footprint of the plastics sector itself.[42] On the claim of reducing food waste, research has also shown that plastic has little to no meaningful effect on extending the shelf life of food, and eliminating unnecessary plastic packaging could reduce CO_2 emissions.[43] Agricultural soils are among the largest recipients of plastic pollution, potentially exceeding oceans,[44] due to inputs such as mulching films, fertilizers, and sewage sludge.[45] This growing use of plastics has significant implications for soil health, and food safety and security.[46]

Ad from the "Plastics Saves Lives" campaign at the fourth round of negotiations for a Global Plastics Treaty
© Cate Bonacini

Frame 3: Normalization

"Plastics Are Everywhere and Unavoidable"

The industry also seeks to normalize plastics by claiming they are everywhere and therefore unavoidable in almost every aspect of life. While the post-denialism frame argues that plastics are beneficial, the normalization frame adds a layer by claiming that plastics are so deeply embedded in modern life that they are extremely difficult, if not impossible, to replace.

For example, Plastics SA, the South African plastics industry association, released a statement pushing back on "anti-plastics sentiment." Their executive director warned that, "Modern life would be impossible without plastics…They are a necessity."[47] This also manifests as probing individuals to imagine what life would be like without plastic, such as in an advertisement campaign that claimed a world without plastics would be one of "accelerated environmental degradation" and "bleak economic prospects,"[48] notably without citing any sources.

These claims ignore that plastic is a relatively recent invention. Plastics were first used widely during World War II in military applications. After the war, the industry expanded, with manufacturers finding new uses for the new materials being developed.[49] Over time, plastics have become more ubiquitous, with the industry often inventing "solutions" to problems that do not exist in order to normalize an increasing amount of plastic in our lives (e.g., wrapping a banana in plastic, despite the peel already functioning as a wrapper,[50] and more[51]).

Reusable metal containers used for street food in Mumbai, India

When plastics are seen as fundamental to everyday life, it is harder to picture a world without them, and therefore hard to imagine and advocate for solutions. It makes the system seem too embedded to change and dilutes political will to try.

But change is possible. Plastic-free systems have already existed or are being imagined and implemented by communities around the world.[52] For example, India has used reusable metal containers for street food for decades, new reuse businesses are being founded from Colombia to Malaysia,[53] and many Indigenous communities have historically had and currently maintain reuse practices.[54]

Box 1: The Amplification of Disinformation in a Changing Digital Landscape

As more people consume digital media, algorithms dictate what people see in their feeds, making it increasingly easy to manipulate their perspectives. Plastics industry watchdogs need to not only understand the messaging frames the industry itself employs but should also be aware of new avenues used to spread information — and disinformation.

Over the last two decades, social media has played an increasingly important role in people's understanding of the world. With the closure and consolidation of news outlets, a growing number of people now live in news deserts (defined as areas with limited or no local news sources).[55] With fewer outlets, more and more people are turning to non-journalistic sources for news — including influencers and social media.[56]

Government and corporate actors have professionalized the manipulation of information on social media, sometimes aided by the design of platforms themselves.[57] Social media enables rapid sharing, algorithmic amplification, and reinforcement through likes and comments, thereby rewarding the spread of stories[58] based on attention rather than integrity. For example, according to one analysis, one in five Americans relies on short-form TikTok videos for their news.[59] Researchers claim that platform design choices lead to an algorithmic spiral that shapes environmental discourse, favoring "known trends, viral formats, or affective hooks," creating a complex ecosystem that ultimately converges on the need to address climate change. However, they also note that TikTok's tendency to favor affective content, rather than scientific depth or nuance, can lead to "algorithmic-driven content recommendations and the prevalence of misinformation can also contribute to the spread of climate change skepticism, confusion, and disinformation."[60]

The advent of artificial intelligence (AI) is now turbocharging the spread of disinformation by upending how content is both created and spread. Generative AI is shifting how users search for information, with an ever-greater reliance on AI results rather than traditional search engines.[61] Some researchers are now positing that large language models (LLMs) are the next frontier in the fight against disinformation.[62] When faced with controversial topics, one study showed AI searches spreading false claims 35 percent of the time.[63]

Researchers are sounding the alarm on what this means for the information ecosystem. One specific way industries can feed disinformation into chatbots is by manipulating the sources of information underlying them, especially those that rely on user-generated content. A recent synthesis report by the communications firm 5W found that platforms such as Wikipedia and Reddit, which together account for 25 percent of ChatGPT citations,[64] do not verify users' identities, thereby allowing the creation of sock-puppet accounts (fictitious accounts used for deception).[65] Dangerously, disinformation on Reddit doesn't stay there — Google has a US$60 million partnership with the platform, allowing it to train its AI models on users' posts,[66] creating the potential for a self-reinforcing loop of manipulated information and amplification. PR firms have also been accused of "wikilaundering" to remove criticism and promote specific views of companies and governments[67] on Wikipedia.

Furthermore, synthetic falsehoods can also be easily seeded and reinforced through content farms (organized groups that produce, disseminate, or amplify content[68]) and bots (specialized computer programs that can autonomously post messages on social platforms[69]), which "use these AI systems to automate the mass production of articles, posts, or social media replies, cheaply recycling materials from chatbots."[70]

There is already ample evidence that companies and governments are employing trolls (someone who posts disruptive content), troll farms,[71] and bots,[72] thus amplifying false narratives, delaying action on real solutions, and sowing discord during times of crisis.[73] Within this new ecosystem — where devious tactics now include not only what is being said about plastics, but how and where these messages are spread — information integrity and media literacy take on heightened importance.

Promote False Solutions

Frame 4: Silver Boomerang

Championing Pseudo-Solutions That Reproduce or Worsen the Problem

Whenever the harms of their products are widely acknowledged or difficult to dispute, and after the industry has reframed the material as essential, they again shift the narrative — this time toward solutions. With the silver boomerang frame, industries actively promote responses to the crisis. These solutions often appear reasonable, forward-looking, and even ambitious. But, like a boomerang, the solution is thrown outward as progress and ultimately returns to sustain the status quo.

In the context of plastics, the most prominent example of this frame is recycling. The "three arrows" symbol was initially developed as a marketing tool for the paper industry, symbolizing recycling. In 1988, the Society of the Plastics Industry (now Plastics Industry Association) created the 1–7 system, which places the chasing arrows along with a number on plastic products.[74] Despite concerns, even from some within the industry, that this would not be useful for recycling, the industry pushed it forward, often promoting this system as a less profit-threatening alternative to policies such as bans on plastics.[75] As a result, people largely understood the symbols to mean that an object was recyclable,[76] and for decades, there has been a positive public perception of recycling.[77] In a 2020 interview with *National Public Radio* in the US, a former president of the Society of the Plastics Industry said, "If the public thinks that recycling is working, then they are not going to be as concerned about the environment."[78]

However, plastics recycling has not proven to be as effective as the industry presents. According to one study, "While recycling is widely touted as a promising pathway to achieving a plastic waste-free future, there remain substantial barriers to making this a reality." For example, "The complexity and diversity of plastic compositions, exacerbated by chemical additives blended for versatility, lead to a low recycling rate due to the difficulty in recycling different grades together without degrading properties."[79] Further, according to the *Financial Times*, "a steep increase in petrochemical production in China and the US has led to a global oversupply of industrial chemicals used in plastics, sending the price of new material so low that its recycled alternative has become uneconomical to use."[80]

Recycling sorting facility, Ukraine
© romaset- stock.adobe.com

Box 2: Plastic Waste by the Numbers[81]

Global plastic production nearly doubled between 2000 and 2019, rising from 234 to 460 million metric tons, while plastic waste increased from 156 to 353 million metric tons.

9% recycled	**nearly 50%** landfilled
19% incinerated	**22%** mismanaged through dumping, open burning, or leakage into the environment

A recent Center for Climate Integrity investigation into company archives showed that plastic producers have long known that recycling was unlikely to keep plastic out of landfills and the environment but continued promoting it publicly.[82]

The plastics industry set these goals knowing they would be very difficult to meet, according to a representative of DuPont. "It is no secret that the quantitative goals industry originally set for itself for economically recycling plastic containers extracted from municipal waste streams were extremely ambitious…"[83]
Center for Climate Integrity

Beyond "traditional" recycling methods, similar "silver boomerang" dynamics are visible in the promotion of "advanced" or chemical recycling technologies, which are often promoted by major petrochemical companies, despite it being unviable. ExxonMobil, Dow, and Chevron Phillips Chemical each aim to process over one billion pounds of plastic waste, while Shell originally set a target of over 2 billion pounds by 2025 through its new facilities.[84] Alongside these investments, companies have launched sophisticated communication strategies to build legitimacy for the technology.[85] A notable example is Dow's partnership with Kimberly Hilton, a social media science influencer known as "Chemical Kim." Hilton has been brought in to develop content on topics including "advanced recycling."[86]

Interestingly, in 2023, Shell withdrew its ambitious chemical recycling targets, citing "lack of available plastic waste feedstock, slow technology development, and regulatory uncertainty."[87] However, despite multiple nonprofit analyses between 2020 and 2023, which consistently reported on the economic and technical unviability of chemical recycling,[88] and a recent independent study which found that life cycle assessments of chemical recycling technologies consistently underestimate their negative health and environmental impacts,[89] the industry continues to showcase it as a solution.

The promise of recycling and such technological fixes offers comfort by implying that the system is working and that no fundamental change is needed. But this reassurance comes at a cost. As concerns are blunted, plastic consumption continues and grows. The result is a self-reinforcing cycle: the more people believe the system works, the more plastic is produced and used. In this way, the silver boomerang does not just fail as a solution, it returns to deepen the crisis it claims to solve.

Frame 5: Magic

"Future Tech Will Fix the Problem"

Another false solution frame the industry relies on is the idea that a new technology will be deployed in the future to fix the problem. In the case of plastics, the idea is that new plastics made from renewable and/or easily biodegradable materials will solve the problem of plastics' persistence in the environment. These substances, often referred to as "bioplastics" are made (at least partly) from plant-based materials such as starches and sugars, including corn, sugarcane, wheat, or soy.[90] The industry argues that these materials can displace the use of oil and gas as resources, in line with the increasing demand from individuals for more sustainable products.[91]

Bioplastics

In fact, many of the so-called biodegradable plastics do not even biodegrade in real-world conditions such as home composters. Instead, they require industrial composting, which is not available in many parts of the world.[92] This also means that they can contaminate recycling streams and reduce the streams' quality,[93] as well as contribute to pollution in the environment.[94] Bioplastics are portrayed as climate-friendly alternatives that can reduce the GHG emissions of plastics,[95] but this is not necessarily the case.[96] While this may alleviate some GHG emissions associated with fossil fuel production, bioplastics can emit similarly high levels during their end of life when compared to conventional plastics,[97] and they can generate new emissions from land disturbance, intensive agriculture, and other processes associated with the feedstocks.[98]

In addition, bioplastics do not eliminate the issue of plastics' health impacts. They are made with the same process as fossil-based plastics, and multiple studies have found toxicity issues with bioplastics — sometimes even greater toxicity than conventional plastics.[99] They have also been shown to produce microplastics as well, and in a recent study, researchers found that mice exposed to microplastics from these bioplastics had liver and ovary abnormalities.[100] When a future solution is presented that requires little change in current practices, it lessens the pressure for policy change in the present. This "magical" solution allows the plastics industry to kick the can down the road and continue business as usual, harming human health and the environment around the world.[101]

Biodegradable plastic food bags
© MoiraM- stock.adobe.com

Frame 6: Treatment Trap

"Better Waste Management Will Solve Plastic Pollution"

In this frame, plastic pollution is treated as a problem that occurs at the waste management stage only, rather than throughout the entire life cycle. This is a tactic that is the most public-facing and that society is most familiar with.[102] The solutions proposed by the industry are framed as practical, achievable, and necessary responses to the plastics crisis. The emphasis is on improving collection and recycling, cleaning up waste from hotspots (e.g., the Great Pacific Garbage Patch[103]), building waste-to-energy plants[104] (i.e., incineration facilities), and citizen cleanup efforts, thus reducing "leakage" into the environment.

At first glance, this approach appears reasonable. Many parts of the world lack adequate waste management systems,[105] and improving these systems is important. It is equally hard to dispute the importance of clean oceans, rivers, and beaches. This sentiment has helped fuel the public acceptance of industry-sponsored, high-visibility cleanup initiatives that promise to directly tackle the problem.

Projects such as The Ocean Cleanup[106] have captured global attention with ambitious goals to remove plastic already circulating in the oceans.[107] Coca-Cola, consistently identified by Break Free From Plastic as one of the world's largest plastic polluters, including being ranked the top polluter for five consecutive years (2018–2022),[108] is an implementation partner of the Ocean Cleanup to "stem the tide of plastic pollution" entering oceans.[109]

Paint Branch Trash Cleanup in Prince George's County, Maryland

Similarly, Dow Chemical developed a handbook called, *#PullingOurWeight: Your Cleanup Playbook* detailing how staff can partner with community organizations and launch their own cleanups. The program's aim is to, "Do our part (and share our story) to help keep (plastic) waste out of the environment and support the transition to a circular economy that values plastic waste as a resource."[110] Such efforts help shift the focus away from reducing production and onto the treatment frame of managing waste.

"A ban on specific product, whatever it is made of, will not solve the ocean plastic problem. Together with other industry leaders, we must do our part to educate people around the world on responsible management of plastic waste, and the #PullingOurWeight cleanup campaign is just one step."[111]
Dow's campaign playbook

Taken together, the narratives of waste mismanagement and heroic cleanups construct a coherent story that plastic pollution is a problem of where waste ends up, not how it is created. Under this narrative, the responsibility for addressing the plastics crisis is transferred away from the role of the industry in driving plastic production and use. Governments are expected to build and maintain waste systems,[112] but "unlike with paper or metals, there are two insurmountable barriers that prevent plastic recycling from ever working at scale: toxicity and economics."[113]

So instead of being recycled, even when technically possible, plastic waste is exported to countries in the Global South at alarming rates,[114] where communities are tasked with handling the environmental and health consequences of materials they did not use nor produce.[115] Accordingly, images of waterways and waste dumps overflowing with plastic trash[116] contribute to public perception that countries in the Global South are to blame for the plastics crisis, obscuring the role of global production systems and waste colonialism; where high-income countries export large volumes of plastic waste to lower-income nations and then portray those same countries as major sources of pollution.[117]
But as scholar Max Liboiron notes, "The scales of problems and the scales of proposed interventions must match if they are to bear on the same thing. Avoidance, consumer choice, and technological fixes respond to scales that miss one crucial step in plastic pollution: production."[118]
Even with increased investment in waste management infrastructure, systems will continue to be overwhelmed if there is not a reduction in the overall amount of plastic produced.[119]

Deflect Responsibility

Frame 7: Victim Blaming

"Individuals are Responsible for Plastic Pollution"

To distract from the root causes of the plastics crisis and avoid responsibility, industry messaging sometimes shifts to the frame Ennis titles "victim blaming." When the source of harm becomes difficult to deny, responsibility is reframed, and instead of addressing increased production, production design, and corporate decision making, the problem is recast as one of individual behavior.

The shift to individual responsibility is intentional and part of a long-running scheme. Keep America Beautiful, an organization founded by the American Can Company and Owens-Illinois Glass Company and which later grew to include Coca-Cola and other major manufacturers, promoted individual responsibility in its decades of anti-litter campaigns.[120] In 1961, a Keep America Beautiful leader wrote that their campaign was to "help to curb the massive defacement of the nation by thoughtless and careless people," and that "the bad habits of littering can be changed only by making all citizens aware of their responsibilities to keep our public places as clean as they do their own homes."[121] Early campaigns included children, such as "Susan Spotless,"[122] to appeal to the emotions of the public, depicted litter in recreational environments, and framed visible waste as a product of individual thoughtlessness.[123]

This strategy gained further traction with Keep America Beautiful's now infamous "Crying Indian" ad. In it, "Iron Eyes Cody" (a character played by an Italian American, not an Indigenous man[124]) lands his canoe on a riverbank covered in trash. Later, as he looks upon a scene with many cars driving by, a person throws waste out of their car window. He looks at the viewer with a tear falling down his cheek, while the narrator says, "People start pollution. People can stop it."[125]

Keep America Beautiful/Susan Spotless anti-litter advertisement

The ad was part of a campaign paid for by Keep America Beautiful and distributed by the Ad Council,[126] first appearing on television in 1971 before spreading to print advertisements and billboards[127] and making its way into the broader public consciousness.[128] The ad went on to win multiple awards, while generating billions of household impressions and one of the highest viewer recognition rates in television history.[129] The ad is incredibly controversial and is seen as one of the prime examples of manipulative corporate advertising. Because the participating corporations did not transparently disclose their participation, the campaign maintained a veneer of political impartiality.[130] It subtly embeds individual responsibility into people's minds. One author observed that it was effective because it "promoted an ideology without seeming ideological" and "propagandize[d] without seeming propagandistic."[131] Keep America Beautiful — which still operates today — maintains its hold on the American psyche; according to Orion Magazine, 36 percent of respondents to a survey ranked the organization believable, beating out independent environmental organizations.[132]

The moralistic overtones to plastic pollution have spread, and groups that bear resemblance to Keep America Beautiful now appear in countries around the world.[133] Plastics industry groups support these initiatives, for example, Plastics South Africa (SA) sponsored a cleanup week where their sustainability director stated that "Clean-Up & Recycle SA Week is more than just picking up litter; it's about fostering a culture of accountability and respect for our environment,"[134] emphasizing the individual responsibility of picking up trash.

When corporations deflect responsibility onto individuals, they distract people from the root cause of the problem: that the failure of our governments to properly regulate plastics corporations incentivizes them to make more plastics than can be managed.[135]

Frame 8: Knotted Web

"The Issue Is Too Complex"

In this frame, corporations present plastics as a globally entangled issue strategically emphasizing the complexity in ways that make decisive action appear difficult, premature, or even impossible. Terms used to leverage this frame include systems, complexity, webs, and others.[136]

This knotted web frame can lead to policy paralysis, wherein decision makers acknowledge the problem but hesitate to act due to its perceived complexity.[137] This dynamic is particularly visible in international negotiations. For example, in the context of the Global Plastics Treaty, the negotiating committee's mandate is to develop a treaty that covers the full lifecycle of plastics.[138] Discussions often span a wide range of issues from product design and chemicals of concern to waste management, financing, and technology transfer.[139] For example, the International Council of Chemical Associations, which represents the chemical industry globally, frames the issues as "interlinked."[140] This complexity framing is deployed as a tactic to resist the prioritization of upstream measures, such as production reduction, including by defining the plastics life cycle as starting at product design.

"The knotted web frame uses convoluted language to mask the origin of the problem, making it difficult to understand what is actionable and precluding a clear way forward."[141]
Grant Ennis

The UN Environment Programme (UNEP)'s *Turning off the Tap* report echoes this framing (albeit unintentionally) by calling for a complex systems change to address the plastic crisis, without explicitly identifying reductions in plastic production as the central component of that transformation. The report states that systems change involves:

1. "simultaneous action across the life cycle to trigger the change. For instance, investment in increased recycling capacity (downstream) is coupled with incentives to use recycled plastic in new products (upstream) and the manufacture of products (midstream) that are economically recyclable.
2. international action to create a flourishing circular plastics economy globally that benefits all countries. For instance, eliminating the manufacture of a problematic product in one country is less effective if that product can still be exported to a neighbouring country."[142]

Importantly, the knotted web does not rely on false claims. Instead, it presents all parts of the system at once without clarifying which interventions are most effective. This tactic has also been documented by public health researchers tracking devious tactics applied by corporate actors in the food, alcohol, and gambling industries.[143]

Representatives of the International Pollutants Elimination Network (IPEN) demonstrate outside the fifth session of the Intergovernmental Negotiating Committee on plastic pollution
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Frame 9: Multifactorialism

"All These Solutions That Won't Work on Their Own Will Work When Deployed Together"

As the pollution crisis expands, the plastics industry argues that it is hard to attribute its cause to a single source, and that a singular solution (such as reducing plastic production) is too simplistic. This is the multifactorial frame. The plastics crisis is described as having multiple and combined causes and solutions — from poor waste management infrastructure, to individual behavior, to product design — which blur the lines of causality.

The industry claims that solutions that don't work on their own (as shown in the above sections), will work when deployed together. Or, that these ineffective activities work well when combined together as part of a "comprehensive package" of interventions (such as UNEP's systems change proposal). This is often called an "all of the above approach," as seen in climate policy spaces, where oil and gas companies claim we need to deploy all types of energy to fight global warming.[144] The plastics industry similarly deploys this frame by advocating for multiple solutions within the other devious frames but not for addressing the root cause of pollution. Even if any one of the solutions would help with the waste problem, the mix of solutions dilute political focus on the root cause of the crisis: plastic production.

In their communications and framing, the plastics industry uses the terminology "all of the above approach"[145] or an "approach that includes all technologies as possible solutions."[146] They advocate for multiple types of recycling[147] or recycling in combination with other measures such as bioplastics and better waste management.[148] When this frame is deployed, the real solution — reducing the volume of plastics being produced — is lost.

The Alliance to End Plastic Waste, an industry-led initiative,[149] has deployed multifactorialism effectively (see image).[150]

3 PEI enablers, consistent to Alliance Plastic Waste Management Framework, are used in Solution Model playbooks

Key enablers

Policy & Business Model

- P.1 Policy & financial interventions
- P.2 Institution financing
- P.3 Market mechanism
- P.4 Stakeholder alignment

Ecosystem

- E.1 Capability building
- E.2 Supporting infrastructure
- E.3 Societal engagement

Innovation

- I.1 Materials & renewables
- I.2 Technology
- I.3 Digital & data management

Note: Non-exhaustive Solution Models (SM) for illustrative purposes; Solution models can be part of one or more segments in the value chain
Source: AEPW; BCG

The "all of the above" approach also serves to make the industry look like they are amenable to everything and therefore great partners in the solutions, while obscuring that in reality they support anything except what is most needed: production reduction.

Conclusion and Recommendations

Solving the plastics crisis, and the environmental and health harms that accompany it, requires first and foremost a drastic reduction in the amount of plastics manufactured worldwide.[151] To achieve this reduction, policies must focus upstream; stopping the buildout of new production facilities, setting a global target for phasing down plastic production in the Global Plastics Treaty, ending harmful subsidies and incentives to the plastics industry, and investing in non-plastic reuse and refill systems. The nine frames discussed above are used by the industry to distract individuals, society, and decision makers from real solutions that would protect people and the planet but hurt these companies' bottom line.

Combating Disinformation

Recognizing this disinformation is critical to designing effective campaigns that address the plastics crisis. It is important for civil society, rights holders, and people and organizations working in the public interest to identify and call out these deceptive tactics and challenge them with authority. By mapping the plastics industry's maneuvers to Ennis's *Dark PR* framework, this brief offers a shared vocabulary for exposing these recurring narratives and redirecting political will toward real, root-cause solutions.

We must continue tracking these disinformation tactics and making them better known to the public. Further investigations would shed more light on the devious strategies the industry uses to delay regulation and dodge accountability and can be used to push for stronger upstream policies. Energy and investments directed towards false solutions or distractions is less energy and financing towards true, effective solutions.

"The masters of these frames don't need to convince everyone all the time. To suppress political will, they just need to convince enough people at the right time."[152]

Grant Ennis

"No Lobbyists Beyond This Point" sign at the Maryland State House

Promoting Information Integrity in Advertising and Policymaking

This is not just a public communications issue. It is also important to challenge these narratives in policymaking spaces to hold corporations accountable. Policymakers have a key role in making sure people have access to accurate and trustworthy information about environmental issues. This starts with including information integrity in environmental laws and policies and treating access to reliable information as a basic right that supports public participation and accountability.[153] Strengthening regulations and scrutiny of industry communication should be a central priority, especially in the context of advertising. The global momentum against fossil fuel ad bans offers much inspiration. For instance, enforcements, callouts, and successful campaigns for fossil fuel ad bans are already underway in ten countries and over fifty cities and municipalities all around the world.[154]

It is also important to address the root causes of disinformation in both advertising and policymaking spaces. This means setting clear rules against greenwashing[155] and mandating that environmental claims are backed by evidence. This includes requiring greater transparency and substantiation for environmental claims related to recyclability, circularity, and technologies such as "advanced recycling." Industry-backed technical studies or lifecycle assessments should not inform policy, or at the least they should be subject to independent review.

Safeguarding Against Corporate Influence in Policymaking

Finally, there is a need to introduce safeguards against the industry's influence in plastics policymaking processes. Conflict of interest and transparency policies — including disclosure of affiliations and lobbying, and banning certain harmful industries from lobbying, marketing, advertising, and making charitable donations — are essential to mitigate the impacts of disinformation on policymaking.

A world in which we "End plastic pollution" — the title of the mandate to negotiate the Global Plastics Treaty[156] — is possible. But we must be able to see past the disinformation and focus on root cause solutions. Only a drastic reduction in plastic production will enable us to protect the planet and its people from the harms of plastics.

Delegates gather for the opening plenary of the fifth session of the Intergovernmental Negotiating Committee on plastic pollution
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Box 3: Legal Pathways to Hold Plastic Producers Accountable

DISCLAIMER: *This section is intended as a thought starter and overview of potential legal pathways that may be relevant to addressing plastic pollution and related harms. It is not a comprehensive litigation guide, legal opinion, or assessment of the viability of any specific claim. The examples and pathways described are illustrative and are intended to support discussion, strategic thinking, and further exploration of accountability options. The suitability of any legal approach will depend on the specific facts, applicable laws, available evidence, procedural requirements, jurisdictional considerations, and the broader political and social context in which a case may arise. Legal doctrines, standards of proof, remedies, and limitations vary significantly across countries and legal systems.*

In addition to being an environmental, human rights, and public health crisis, plastic pollution also raises a question of accountability. While the industry attempts to shift the blame, existing legal frameworks already provide pathways to hold producers responsible across the plastics lifecycle. Since 2023, litigation has emerged in more than thirty countries, targeting both governments and corporations.[157]

These cases broadly fall into two categories:[158]

1. Claims against governments — to compel stronger regulation or challenge rollbacks.
2. Claims against companies — focusing on lifecycle harms and misleading claims.[i]

Examples of Plastic-Related Litigation[159]

- A legal complaint against Coca-Cola, Danone, and Nestlé filed to the European Commission about misleading claims, such as of "100% recycled" content in plastic water bottles.[160]
- A lawsuit against a major plastic pellet producer in the US for Clean Water Act violations, which resulted in a decision requiring a plastic producer to remediate local ecological harms and pay $50 million in damages.[161]
- A decision requiring India's Union Ministry of Health and Family Welfare and Food Safety and Standards Authority to include warning labels about the possible presence of micro- and nanoplastic on bottled water, salt, and sugar sold in plastic packaging.[162]

Although the success of these strategies depends on each legal, geographic, and political context, the following examples are meant to help start conversations about accountability for plastic pollution.

i There is a diversity of players along the plastics life cycle. The idea is to move the claims as upstream as possible, but different claims will be relevant for different actors. In the rest of the section, these companies will be referred to generally as producers.

Public Nuisance

Public nuisance law allows governments, particularly states and cities, to act where activities interfere with public rights, such as access to clean water or a safe environment.[163] The law has historically evolved to respond to new and unexpected harms, making it well-suited to address large-scale environmental challenges like plastic pollution.[164] Plastic waste contaminates ecosystems, clogs infrastructure,[165] and contributes to health impacts at a scale that is widespread. These harms translate into significant public costs, from drainage failures and flooding to ecosystem degradation and health burdens.[166]

Nuisance law could allow governments (and in rare cases individuals[167]) to seek remedies for these harms, including cleanup costs, infrastructure damage, health costs, and ecosystem restoration. Importantly, nuisance law shifts the focus away from municipalities and communities, who are often blamed through the Victim Blaming frame, and back toward producers whose products are inherently harmful.

Products Liability

Products liability law focuses on whether products are safe by design and whether consumers are adequately informed of risks.[168] This pathway is particularly relevant for plastics, which are chemically complex,[169] highly persistent,[170] difficult to recycle,[171] and increasingly linked to environmental and health harms.[172]

Where their products are defectively designed or sold without adequate warnings, producers may be held liable. This shifts the conversation from "how do we manage plastic waste?" to "should these products have been designed and sold this way in the first place?" In doing so, products liability law directly challenges the idea that plastics are simply beneficial materials whose impacts can be managed downstream.

Painting action calls out Big Oil's chokehold on Global Plastic Treaty talks in Geneva, Switzerland
© Samuel Schalch / Greenpeace


Engineer looking over recycled plastic
© visoot - stock.adobe.com

Consumer Protection

Consumer protection law targets misleading and deceptive practices.[173] This makes it a powerful tool against the Silver Boomerang and Magic frames where industry falsely promotes interventions such as recycling or bioplastics as sufficient responses to the crisis.
Legal challenges can focus on whether such claims:

- Create false impressions about environmental performance
- Mislead consumers about the effectiveness of recyclability or sustainability
- Promote ineffective technological solutions

This aligns with a broader global trend of using litigation to challenge corporate disinformation, including in the fossil fuel sector through greenwashing[174] cases and advertising scrutiny.[175]

Building the Evidence

Across these legal approaches, it is a challenge to document and demonstrate the harm and causality of the plastics industry's behavior. Governments and public authorities are uniquely positioned to do this as they already bear the costs of managing plastic pollution.

Tools such as waste audits and brand audits have already shown that plastic waste can be traced back to specific producers and product categories.[176] By combining physical data (volumes of waste) with financial data (costs of management and damage), governments can build a clear evidentiary link between corporate activity and public harm.

Key categories of evidence include (but are not limited to):

- Waste management and cleanup costs
- Infrastructure damage and maintenance
- Environmental degradation and biodiversity loss
- Public health impacts and associated costs
- Economic losses to livelihoods, tourism, and local economies

Human Rights

There could also be contentious cases on plastic pollution grounded in human rights law, given the multiple human rights impacts across the plastics life cycle. For example, according to the UN Special Rapporteur on implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes, "The plastics crisis affects a broad range of human rights, including the rights to life, the highest attainable standard of health, a healthy environment, housing, water and sanitation, adequate food, equality and non-discrimination, as well as rights to information, participation and effective remedy, all of which are protected under international law. It has disproportionate impacts on groups at heightened risk of human rights violations, such as workers, children, women, persons of African descent, Indigenous Peoples, coastal communities, and people living in poverty. Not only present but future generations will be affected if the plastics crisis is not reversed."[177]

In addition to providing remedies, these legal pathways can disrupt the logic of disinformation. These approaches reframe plastic pollution as a lifecycle problem shaped by upstream production, product design, and marketing decisions, rather than a problem that begins when products become waste. Although litigation is not a comprehensive solution and outcomes are often uneven, slow, and subject to constraints, when adequately designed and part of a broader strategy, litigation can play a critical role in shifting responsibility, exposing structural failures, and generating pressure for more comprehensive regulatory responses.

Protest sign in London, England
© chrisdorney - stock.adobe.com

Endnotes

1 Special Rapporteur on the Implications for Human Rights of the Environmentally Sound Management and Disposal of Hazardous Substances and Wastes, The Stages of the Plastics Cycle and their Impacts on Human Rights, A/76/207 (July 22, 2021), https://docs.un.org/A/76/207.

2 "What Are Climate Misinformation and Disinformation and How Can We Tackle Them?," United Nations Development Program (UNDP) Climate Promise, May 1, 2025, https://climatepromise.undp.org/news-and-stories/what-are-climate-misinformation-and-disinformation-and-how-can-we-tackle-them.

3 Human Rights Council Advisory Committee, *Impact of Disinformation on the Enjoyment and Realization of Human Rights*, A/HRC/61/68 (February 4, 2026), ch. II, para. 5, https://docs.un.org/A/HRC/61/68.

4 Rebecca Goldberg and Laura Vandenberg, "The Science of Spin: Targeted Strategies to Manufacture Doubt with Detrimental Effects on Environmental and Public Health," *Environ Health* 20, no. 33 (2021), 7, https://pubmed.ncbi.nlm.nih.gov/33771171/; Naomi Oreskes and Erik M. Conway, *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Climate Change*, (Bloomsbury Publishing, 2019); Tess Legg et al., "The Science for Profit Model—How and Why Corporations Influence Science and the Use of Science in Policy and Practice," PLOS One 16, no. 6 (2021): 6–9, https://doi.org/10.1371/journal.pone.0253272.

5 Grant Ennis, *Dark PR: How Corporate Disinformation Undermines our Health and the Environment* (Daraja Press, 2023), 25.

6 Ennis, *Dark PR*, 26.

7 "Global Survey Sees Nearly Nine in 10 People Supporting a UN Plastic Pollution Treaty But Will Governments Follow?," World Wide Fund for Nature (WWF), February 22, 2022, https://wwf.panda.org/wwf_news/?5120966/Global-survey-sees-nearly-nine-in-10-people-supporting-a-UN-plastic-pollution-treaty-but-will-governments-follow.

8 Scientists' Coalition for an Effective Plastics Treaty, *Sustainable Production and Consumption Criteria: Pathways for Achieving a Global Primary Plastic Production Reduction* (Scientists' Coalition for an Effective Plastics Treaty, 2025), https://ikhapp.org/wp-content/uploads/2025/06/Article-6-Policy-brief_Scientists-Coalition.pdf; Daniela Durán González, *Reducing Plastic Production to Achieve Climate Goals: Key Considerations for the Plastics Treaty Negotiations* (Center for International Environmental Law, 2023), 6, https://www.ciel.org/wp-content/uploads/2023/09/Reducing-Plastic-Production-to-Achieve-Climate-Goals_Sept21_V5.pdf.

9 Judith Hilton et al., *Making Reuse a Reality: A Systems Approach to Tackling Singleuse Plastic Pollution* (Global Plastics Policy Centre, 2023), 5, https://www.breakfreefromplastic.org/wp-content/uploads/2025/05/Making-reuse-a-reality-report_GPPC.pdf.

10 Ennis, *Dark PR*, 28.

11 Ennis, *Dark PR*.

12 United Nations Environment Programme and Secretariat of the Basel, Rotterdam and Stockholm Conventions, *Chemicals in Plastics: A Technical Report* (UNEP, 2023), xii, https://www.unep.org/resources/report/chemicals-plastics-technical-report; Nihan Karali et al., *Climate Impact of Primary Plastic Production* (Lawrence Berkeley National Laboratory, 2024), https://energyanalysis.lbl.gov/publications/climate-impact-primary-plastic.

13 Martin Wagner et al., *State of the Science on Plastic Chemicals - Identifying and Addressing Chemicals and Polymers of Concern* (PlastChem, 2024), 3, http://dx.doi.org/10.5281/zenodo.10701706.

14 "What is NAPCOR?," National Association for PET Container Resources (NAPCOR), accessed March 26, 2026, https://napcor.com/what-is-napcor/.

15 "Positively PET: The 1 Everyone Can Feel Good About," NAPCOR, accessed April 27, 2026, https://positivelypet.org/.

16 "What Science Tells Us About PET Plastic," *NAPCOR blog*, March 17, 2026, https://napcor.com/blog/what-science-tells-us-about-pet/.

17 "Debunking PET Myths," NAPCOR, accessed April 27, 2026, https://positivelypet.org/myths-and-facts/.

18 Tess Legg et al., "The Science for Profit Model", 6–9.

19 Jodi Flaws et al., *Plastics, EDCs, and Health: A Guide for Public Interest Organizations and Policy-Makers on Endocrine Disrupting Chemicals and Plastics* (IPEN and The Endocrine Society, 2020), 44, https://www.endocrine.org/-/media/endocrine/files/topics/edc_guide_2020_v1_6chqennew-version.pdf.

20 Nicola Dreolin et al., "Development and Validation of a LC–MS/MS Method for the Analysis of Bisphenol A in Polyethylene Terephthalate," *Food Chemistry* 274, no. 15, (2019): 15, https://www.sciencedirect.com/science/article/abs/pii/S0308814618315206.

21 Dreolin et al., "Development and Validation of a LC–MS/MS Method," 1.

22 Andrea C. Gore et al., *Endocrine Disrupting Chemicals: Threats to Human Health* (International Pollutants Elimination Network (IPEN) and the Endocrine Society, 2024), 58, https://ipen.org/sites/default/files/documents/edc_report-2024-final-compressed.pdf.

23 Szilvia Keresztes et al., "Study on the Leaching of Phthalates from Polyethylene Terephthalate Bottles into Mineral Water," *Science of the Total Environment* 458–460, (2013): 1, https://www.sciencedirect.com/science/article/abs/pii/S0048969713004907; Leonard Sax, "Polyethylene Terephthalate May Yield Endocrine Disruptors," *Environmental Health Perspectives* 18, no. 4 (2010): 446, https://pmc.ncbi.nlm.nih.gov/articles/PMC2854718/.

24 Michael Belliveau and Roopa Krithivasan, *Problem Plastic: How Polyester and PET Plastic Can be Unsafe, Unjust, and Unsustainable Materials* (Defend Our Health, 2022), 4, https://defendourhealth.org/campaigns/plastic-pollution/problem-plastic/.

25 "American Chemistry Council Responds to "The Plastic Detox" Documentary," American Chemistry Council, March 16, 2026, https://www.americanchemistry.com/chemistry-in-america/news-trends/press-release/2026/american-chemistry-council-responds-to-the-plastic-detox-documentary.

26 United Nations Environment Programme (UNEP), *Global Chemicals Outlook II: From Legacies to Innovative Solutions*, (UNEP, 2019), 17, https://www.unep.org/resources/report/global-chemicals-outlook-ii-legacies-innovative-solutions; Jennifer McPartland et al., "Charting a Path Forward: Assessing the Science of Chemical Risk Evaluations Under the Toxic Substances Control Act in the Context of Recent National Academies Recommendations," *Environmental Health Perspectives* 130, no. 2 (2022): 9, https://pmc.ncbi.nlm.nih.gov/articles/PMC8865089/; "Chemicals," European Environment Agency, last updated February 20, 2026, https://www.eea.europa.eu/en/topics/in-depth/chemicals.

27 Legg et al., "The Science for Profit Model," 13–14.

28 Ennis, *Dark PR*, 32.

29 "How Plastics Helped Save Millions of Human Lives," Polymet, accessed April 1, 2026, https://www.polymetsa.com/blog/how-plastics-helped-save-millions-of-human-lives.

30 Tony Radoszewski, "Perspective: Plastics Industry Association CEO: Plastic Saves Lives," Plastic News, September 10, 2020, https://www.plasticsnews.com/perspective/perspective-plastics-industry-association-ceo-plastic-saves-lives/; Radoszewski, "Perspective: Plastics Industry."

31 "The Role of Plastic Flexible Films in Reducing Food Waste," Plastics Industry Association, January 13, 2025, https://www.plasticsindustry.org/articles/role-plastic-flexible-films-reducing-food-waste/.

32 "Plastics and Wind Power – Materials for the Energy of the Future," K-Mag, June 4, 2025, https://www.k-online.com/en/media_news/k-mag/sustainability/renewable-energies/wind-power-plastics-global-wind-day.

33 "Plastic Helps Reduce GHG emissions," American Chemistry Council, accessed April 1, 2026, https://www.americanchemistry.com/content/download/3890/file/Plastic-Helps-Reduce-Greenhouse-Gas-Emissions.pdf.

34 "Plastics (Still) Make It Possible," *Plastics News*, August 18, 2011, https://www.plasticstoday.com/plastics-processing/plastics-still-make-it-possible; Steve Toloken, "APC Image Builders Bring Public Around," *Plastics News*, March 8, 1999, https://www.plasticsnews.com/article/19990308/NEWS/303089940/apc-image-builders-bring-public-around/.

35 Analog Indulgence, "Plastics Make It Possible | Television Commercial | 1997," December 28, 2016, https://www.youtube.com/watch?v=Gb860qZ40H4.

36 "Plastic Makes It Possible Advertisement, 1993," Science History Institute, accessed March 31, 2026, https://digital.sciencehistory.org/works/addusgd.

37 Plastics Make It Possible, "Plastics Make It Possible® Honors the Everyday Heroes Who Protect Us... And The Safety Innovations That Protect Them," *PR Newswire*, October 13, 2017, https://www.prnewswire.com/news-releases/plastics-make-it-possible-honors-the-everyday-heroes-who-protect-us-and-the-safety-innovations-that-protect-them-300536264.html.

38 "Towards More Sustainable Use of Plastics in Healthcare," UKRI Innovate UK, accessed April 10, 2026, https://iuk-business-connect.org.uk/news/towards-more-sustainable-use-of-plastics-in-healthcare/.

39 United Nations Environment Programme (UNEP), Secretariats of the Basel, Rotterdam and Stockholm Conventions (BRS) and GRID-Arendal, *Drowning in Plastics — Marine Litter and Plastic Waste Vital Graphics*, (UNEP, 2021), 10, https://wedocs.unep.org/rest/api/core/bitstreams/a8ec430c-b402-4379-845d-e4a02cf6e72c/content.

40 Health Care Without Harm (HCWH) Europe, *Measuring and Reducing Plastics in the Healthcare Sector*, (HCWH, 2021), https://europe.noharm.org/media/4544/download?inline=1.

41 Center for International Environmental Law (CIEL), *Plastic & Health: The Hidden Cost of a Plastic Planet* (CIEL, 2019), https://www.ciel.org/wp-content/uploads/2019/02/Plastic-and-Health-The-Hidden-Costs-of-a-Plastic-Planet-February-2019.pdf.

42 Karali et al., *Climate Impact of Primary Plastic Production*, 72.

43 WRAP, *Reducing Household Food Waste and Plastic Packaging* (WRAP, 2022), 3, 9–11, https://www.wrap.ngo/sites/default/files/2022-02/WRAP-Reducing-household-food-waste-and-plastic-packaging-Full-report.pdf

44 Luca Nizzetto et al., "Are Agricultural Soils Dumps for Microplastics of Urban Origin?," *Environmental Science & Technology* 50, no. 20 (2016): 10777–10779, https://doi.org/10.1021/acs.est.6b04140; Alice A. Horton et al., "Microplastics in Freshwater and Terrestrial Environments: Evaluating the Current Understanding to Identify the Knowledge Gaps and Future Research Priorities," *Science of the Total Environment* 586 (2017), https://www.sciencedirect.com/science/article/abs/pii/S0048969717302073?via%3Dihub.

45 Food and Agriculture Organization, "Microplastics in Food Commodities a Food Safety Review on Human Exposure Through Dietary Sources", 2022, 18 https://openknowledge.fao.org/server/api/core/bitstreams/1af02111-204a-4fcb-a622-e5edb856074b/content.

46 "Plastic Pollution and Agrifood Systems: Why One Health Matters Now More than Ever," Food and Agriculture Organization (FAO), accessed April 21, 2026, https://www.fao.org/one-health/highlights/plastic-pollution-and-agrifood-systems/en.

47 Plastics SA, "No Plastics? You Sure About That?," press release, July 4, 2025, https://www.plasticsinfo.co.za/wp-content/uploads/2025/07/Plastics-Free-July-2025-Press-Release.pdf.

48 "Life without Plastics," Plastics South Africa, accessed March 26, 2026, https://www.plasticsinfo.co.za/media-room/advertising-campaigns/#life-without-plastics.

49 Beth Gardiner, *Plastic Inc.: The Secret History and Shocking Future of Big Oil's Biggest Bet* (Penguin Random House, 2026), 11–17.

50 Adam Werbach, "The No-Good, Very Bad, Overwrapped Banana," *The Atlantic*, March 8, 2011, https://www.theatlantic.com/health/archive/2011/03/the-no-good-very-bad-overwrapped-banana/72038/.

51 Guardian readers and Tess Riley, "Plastic-Wrapped Bananas and the 'Kiwi Spoon': Your Packaging Peeves," *The Guardian*, August 29, 2017, https://www.theguardian.com/sustainable-business/2017/aug/29/plastic-packaging-peeves-straws-avocados-single-use-waste-supermarkets-your-photos.

52 "Reuse Solutions," Break Free From Plastic, accessed April 10, 2026, https://www.breakfreefromplastic.org/reuse-solutions/.

53 Caroline Wagner, "5 Inspiring Reuse and Refill Projects from the Global South," *Greenpeace*, September 12, 2022, https://www.greenpeace.org/international/story/55497/5-inspiring-reuse-and-refill-projects-from-the-global-south/.

54 Laura Siragusa and Dmitry Arzyutov, "Nothing Goes to Waste: Sustainable Practices of Re-Use Among Indigenous Groups in the Russian North," *Current Opinion in Environmental Sustainability* 43 (2020): 44, https://www.sciencedirect.com/science/article/pii/S1877343520300087; Kamanamaikalani Beamer et al., "Reflections on Sustainability Concepts: Aloha ʻĀina and the Circular Economy," *Sustainability* 13, no. 5 (2021):4–6, https://doi.org/10.3390/su13052984; Juressa Lee, "Statement to INC-3," Aotearoa Plastic Pollution Alliance and Greenpeace, 2023, https://resolutions.unep.org/resolutions/uploads/appa_4.pdf#overlay-context=node/380/revisions/13578/view%3Fq%3Dnode/380/revisions/13578/view.

55 "The State of Local News - 2025," Northwestern University Medill Local News Initiative, October 20, 2025, https://localnewsinitiative.northwestern.edu/projects/state-of-local-news/2025/.

56 Michael Lev and Eric Rynston-Lobel, "With No Local News, Those in News Deserts Turn to Social Media Feeds, Influencers and Gossip," Northwestern University Medill Local News Initiative, February 10, 2026. https://localnewsinitiative.northwestern.edu/posts/2026/02/10/news-deserts-social-media-local-news-medill-survey/index.html; "Do You Know What News Deserts Are?[translation]," Desiertos de Noticias Locales, accessed April 28, 2026, https://desiertosdenoticiaslocales.fundaciongabo.org/index.html; European University Institute, *Uncovering News Deserts in Europe* (European Union, 2024), 204 https://data.europa.eu/doi/10.2870/741398.

57 "Social Media Manipulation by Political Actors an Industrial Scale Problem - Oxford Report," Oxford University. January 13, 2021, https://www.ox.ac.uk/news/2021-01-13-social-media-manipulation-political-actors-industrial-scale-problem-oxford-report.

58 "How Social Media Rewards Misinformation," Yale Insights, March 31, 2023, https://insights.som.yale.edu/insights/how-social-media-rewards-misinformation; Soumaya Awasthi, "From Clicks to Chaos: How Social Media Algorithms Amplify Extremism," Observer Research Foundation, February 13, 2025, https://www.orfonline.org/expert-speak/from-clicks-to-chaos-how-social-media-algorithms-amplify-extremism.

59 Emily Tomasik and Katerina Eva Matsa. "1 in 5 Americans Regularly Get News on TikTok, Up Sharply from 2020," Pew Research Center, September 25, 2025, https://www.pewresearch.org/short-reads/2025/09/25/1-in-5-americans-now-regularly-get-news-on-tiktok-up-sharply-from-2020/.

60 Iliana Loupessis, and Intahchomphoo Channarong, "Framing the Climate: How TikTok's Algorithm Shapes Environmental Discourse," *Telematics and Informatics* 102 (2025): 102329, https://doi.org/10.1016/j.tele.2025.102329.

61 Kate Moran et al., "How AI is Changing Search Behaviors," Nielsen Norman Group, August 15, 2025. https://www.nngroup.com/articles/ai-changing-search-behaviors/.

62 Cory Alpert and David Adams, "We Can't Tell If We're Being Persuaded By a Person Or a Program," The University of Melbourne, May 21, 2025,https://pursuit.unimelb.edu.au/articles/we-cant-tell-if-were-being-persuaded-by-a-person-or-a-program.

63 "Newsguard One-Year AI Audit Progress Report Finds That AI Models Spread Falsehoods in the News 35% of the Time," *NewsGuard*, September 4, 2025, https://www.newsguardtech.com/press/newsguard-one-year-ai-audit-progress-report-finds-that-ai-models-spread-falsehoods-in-the-news-35-of-the-time/.

64 5W, "The 5W Citations Audit," May 2026, https://www.5wpr.com/research/citation-source-audit-q1-2026/.

65 Nestor Prieto Chavana et al., *Identifying Sock Puppets on Wikipedia: A Semantic Approach* (Institute for Strategic Dialogue, 2024), 4 https://www.isdglobal.org/wp-content/uploads/2024/04/Identifying-Sock-Puppets-on-Wikipedia_A-Semantic-Clustering-Approach.pdf; Joseph Cox, "Inside a Reddit Sockpuppet Operation," *Vice*, September 17, 2018, https://www.vice.com/en/article/inside-a-reddit-sockpuppet-operation-spam-upvote-shadowbanned/.

66 David Hamilton, "Reddit Strikes $60m Deal Allowing Google to Train AI Models on Its Posts, Unveils IPO Plans," *AP News*, February 23, 2024, https://apnews.com/article/google-reddit-ai-partnership-a7f131c7cb4225307134ef21d3c6a708.

67 Claire Wilmot, "London PR Firm Rewrites Wikipedia for Governments and Billionaires," *The Bureau of Investigative Journalism*, January 14, 1926, https://www.thebureauinvestigates.com/stories/2026-01-14/london-pr-firm-rewrites-wikipedia-for-governments-and-billionaires.

68 Scottie Barsotti, "Weaponizing Social Media: Heinz Experts on Troll Farms and Fake News," Carnegie Mellon University, Heinz College, October, 2018. https://www.heinz.cmu.edu/media/2018/October/troll-farms-and-fake-news-social-media-weaponization.

69 Scottie Barsotti, "Weaponizing Social Media."

70 Joaquin Matamis, "AI in the Age of Fake (Imagined) Content," Stimson Center, February 27, 2026. https://www.stimson.org/2026/ai-in-the-age-of-fake-imagined-content/.

71 Scottie Barsotti, "Weaponizing Social Media."

72 Zaman M. Rossetti, "Bots, Disinformation, and the First Impeachment of U.S. President Donald Trump," PLoS ONE 18 (2023): e0283971, https://doi.org/10.1371/journal.pone.0283971.

73 International Panel on the Information Environment, *Information Integrity About Climate Science: A Systematic Review* (IPIE, 2025), 1, http://doi.org/10.61452/BTZP3426.

74 Saabria Chaudhuri, "How the 3-Arrows 'Recycling' Symbol Turned into a Tool for Greenwashing," *Fast Company*, September 11, 2025, https://www.fastcompany.com/91401083/how-the-three-arrows-recycling-symbol-turned-into-a-tool-for-greenwashing.

75 Gardiner, *Plastic Inc.*, 102–103.

76 Chaudhuri, "3-Arrows 'Recycling' Symbol."

77 "Accelerating Behavior Change to Achieve a Circular Economy," The Recycling Partnership, 2023, https://recyclingpartnership.org/wp-content/uploads/dlm_uploads/2023/11/Knowledge-Report-Summary_Nov2023.pdf.

78 Laura Sullivan, "How Big Oil Misled the Public Into Believing Plastic Would Be Recycled," NPR, September 11, 2020, https://www.npr.org/2020/09/11/897692090/how-big-oil-misled-the-public-into-believing-plastic-would-be-recycled.

79 Nisha Singh and Tony R. Walker, "Plastic Recycling: A Panacea or Environmental Pollution Problem," npj *Materials Sustainability* 2, no. 17 (2024): https://doi.org/10.1038/s44296-024-00024-w.

80 "Petrochemical Glut Makes New Plastics Cheaper than Recycled," *Financial Times*, January 15, 2024, https://www.ft.com/content/6b3f4405-a994-4fb1-b667-1f49c5357db8?syn-25a6b1a6=1.

81 Organization for Economic Cooperation and Development (OECD), *Global Plastics Outlook: Economic Drivers, Environmental Impacts and Policy Options* (OECD, 2022), 4, https://www.oecd.org/content/dam/oecd/en/publications/support-materials/2022/02/global-plastics-outlook_a653d1c9/Global%20Plastics%20Outlook%20I.pdf.

82 Center for Climate Integrity, *The Fraud of Plastic Recycling: How Big Oil and the Plastics Industry Deceived the Public for Decades and Caused the Plastic Waste Crisis* (CCI, 2024), https://climateintegrity.org/uploads/media/Fraud-of-Plastic-Recycling-2024.pdf.

83 Center for Climate Integrity (CCI), *Excerpts of Key Documents Cited in The Fraud of Plastic Recycling*, (CCI, 2024), 21–25, https://climateintegrity.org/uploads/media/Fraud-of-Plastic-Recycling-Documentary-Evidence-2024.pdf.

84 CCI, *The Fraud of Plastic Recycling*, 26–27.

85 "What is Advanced Recycling? Exxon Mobil's Exxtend™ Technology Explained," *ExxonMobil Chemical*, March 26, 2026, https://www.youtube.com/watch?v=TyKRUXS9X0U.

86 Jill Martin, "Closing the STEM Gap and Expanding Sustainability Education through TikTok," *Dow*, February 9, 2023, https://corporate.dow.com/en-us/news/seek-together/dow-and-chemical-kim.html.

87 Shell PLC, *Sustainability Report* (Shell, 2023), 41, https://www.shell.com/sustainability/reporting-centre/reporting-centre-archive/_jcr_content/root/main/section_2106585602/tabs/tab/text_copy/links/item0.stream/1742906426699/4ef5cfa607e5e308ad8a68fc3ddffbe6342f8fa8/shell-sustainability-report-2023.pdf.

88 Global Alliance for Incinerator Alternatives (GAIA), *All Talk and No Recycling: An Investigation of the U.S. "Chemical Recycling" Industry* (GAIA, 2020), https://www.no-burn.org/wp-content/uploads/All-Talk-and-No-Recycling_July-28.pdf; Greenpeace US, Deception by the Numbers: Claims About Chemical Recycling Investments Fail to Hold Up to Scrutiny (Greenpeace US, 2020), https://www.greenpeace.org/usa/deception-by-the-numbers/; Beyond Plastics and International Pollutants Elimination Network, *Chemical Recycling: A Dangerous Deception* (Beyond Plastics & IPEN, 2023), https://www.beyondplastics.org/publications/chemical-recycling.

89 Veena Singla, *Major Gaps in Life Cycle Assessments (LCAs) for Chemical Recycling Technologies*, (NRDC, 2026), https://drive.google.com/file/d/19WFKX-U2GCEkQ50Q-zFlO_uU5VnW8tB24/view.

90 Nanci Ehman and María Cristina Area, "Bioplastics are Revolutionizing the Packaging Industry," *BioResources* 16, no. 3 (2021): 4663, https://bioresources.cnr.ncsu.edu/resources/bioplastics-are-revolutionizing-the-packaging-industry/.

91 American Chemistry Council, "Principles for the Incorporation of Bio-Based Plastics in Manufacturing," accessed April 8, 2026, https://plasticmakers.org/wp-content/uploads/2024/01/Bio-based-Plastics-Principles-Approved-by-PDOC-1.pdf.

92 Laura Collacott, "Where Compostable Packaging Fits in a Circular Economy," Ellen MacArthur Foundation, May 26, 2022, https://www.ellenmacarthurfoundation.org/articles/we-need-compostable-packaging-but-its-still-single-use.

93 Tobias P. Haider et al., "Plastics of the Future? The Impact of Biodegradable Polymers on the Environment and on Society," *Angewandte Chemie International Edition* 58 (2019): 60, https://doi.org/10.1002/anie.201805766.

94 Global Alliance for Incinerator Alternatives (GAIA), *Bioplastic* (GAIA, 2022), https://www.no-burn.org/wp-content/uploads/2022/04/UNEA-publication-packet_bioplastic.pdf.

95 Plastics Europe, "Bio-Based and Biodegradable Plastics," accessed April 8, 2026, https://plasticseurope.org/sustainability/climate/circular-feedstocks/bio-based-and-biodegradable-plastics/.

96 Changing Markets, *Bioplastics: A False Solution to Plastic Pollution?* (Changing Markets, 2020), https://talking-trash.com/case-study/bioplastics-a-false-solution-to-plastic-pollution/.

97 Jiajia Zheng and Sangwon Suh, "Strategies to Reduce the Global Carbon Footprint of Plastics," *Nature Climate Change* 9, (2019): 377, https://www.nature.com/articles/s41558-019-0459-z.

98 CIEL, *Plastic & Climate: The Hidden Costs of a Plastic Planet* (CIEL, 2019), 84, https://www.ciel.org/plasticandclimate/.

99 Beyond Plastics, *Demystifying Compostable and Biodegradable Plastics* (Beyond Plastics, 2024), 16–18, https://static1.squarespace.com/static/5eda91260bbb7e7a4bf528d8/t/668dad2371dd296eabb148c2/1720560936673/070324_Beyond+Plastics+2024+Compostables+Report.pdf.

100 Jing Liu et al., "Long-Term Exposure to Environmentally Realistic Doses of Starch-Based Microplastics Suggests Widespread Health Effects," *Food Safety and Toxicology* 73, no. 16 (2025): 9870, https://pubs.acs.org/doi/10.1021/acs.jafc.4c10855.

101 CIEL, *Plastic & Climate*; CIEL, *Plastic & Health*.

102 Isabel Miguel et al., "Knowledge, Concerns and Attitudes Towards Plastic Pollution: An Empirical Study of Public Perceptions in Portugal," *Science of the Total Environment* 906 (2024): 5, https://doi.org/10.1016/j.scitotenv.2023.167784.

103 NOAA Marine Debris Program, "Garbage Patches," National Oceanic and Atmospheric Administration (NOAA), updated August 27, 2025, https://marinedebris.noaa.gov/discover-marine-debris/garbage-patches.

104 "From Rubbish to Resources: How Waste-to-Energy Plants Contribute to the Circular Economy," European Suppliers of WTE (ESWTE), December 13, 2023, https://eswet.eu/from-rubbish-to-resources-how-waste-to-energy-plants-contribute-to-the-circular-economy/.

105 Kremena M. Ionkova, "Ten Charts that Explain the Global Waste Crisis," World Bank, March 24, 2026, https://blogs.worldbank.org/en/sustainablecities/what-a-waste-3-charts.

106 The Ocean Clean Up, accessed April 7, 2026, https://theoceancleanup.com/.

107 "Cleanup 90% of Floating Ocean Plastic by 2040," United Nations, accessed April 7, 2026, https://sdgs.un.org/partnerships/cleanup-90-floating-ocean-plastic-2040.

108 Break Free From Plastic (BFFP), *Branded: Five Years of Holding Corporate Plastic Polluters Accountable, Brand Audit Report 2018–2022* (BFFP, 2022), 3, https://brandaudit.breakfreefromplastic.org/wp-content/uploads/2022/11/BRANDED-brand-audit-report-2022.pdf.

109 "The Coca-Cola Company and The Ocean Cleanup Join Forces in Vietnam to Tackle Plastic Pollution," The Ocean Cleanup, press release, January 11, 2022, https://theoceancleanup.com/press/press-releases/the-coca-cola-company-and-the-ocean-cleanup-join-forces-in-vietnam-to-tackle-plastic-pollution/.

110 Dow, *#PullingOurWeight: Your Cleanup Playbook* (Dow, 2025), 8, https://corporate.dow.com/documents/science-sustainability/910-00125-01-pullingourweight-your-cleanup-playbook.pdf.

111 "#PullingOurWeight," Dow, 5.

112 Gardiner, *Plastic Inc.*, 87.

113 Greenpeace, *Circular Claims Fall Flat Again* (Greenpeace, 2022), 24, https://www.greenpeace.org/usa/circular-claims-fall-flat-again/.

114 "Global Export Data: 2024 Annual Summary," Basel Action Network, accessed May 28, 2026, https://www.ban.org/plastic-waste-project-hub/trade-data/global-export-data-annual-summary.

115 Gardiner, *Plastic Inc.*, chapter 11.

116 "Photographer Captures Plastic Pollution 'Nightmare' in India Ahead of Earth Day, *ABC News*, April 21, 2021, https://abcnews.com/International/photographer-captures-plastic-pollution-nightmare-india-ahead-earth/story?id=46884654 .

117 BFFP, "Study by European University Blames Global South for Plastic Pollution, Overlooks the Role of Plastic Industry and Waste Trade," press release, September 6, 2024, https://www.breakfreefromplastic.org/2024/09/06/european-study-blames-global-south-for-plastic-pollution/.

118 Max Liboiron, *Pollution is Colonialism* (Duke University Press, 2021), 101.

119 Pew Charitable Trusts, *Breaking the Plastic Wave 2025: An Assessment of the Global System and Strategies for Transformative Change* (Pew, 2025), 21–23, https://www.pew.org/en/research-and-analysis/reports/2025/12/breaking-the-plastic-wave-2025.

120 Finis Dunaway, "The "Crying Indian" Ad That Fooled the Environmental Movement," *Zocalo Public Square*, November 9, 2017, https://www.zocalopublicsquare.org/crying-indian-ad-fooled-environmental-movement/.

121 Finis Dunaway, *Seeing Green: The Use and Abuse of American Environmental Images* (University of Chicago Press, 2015), https://press.uchicago.edu/books/excerpt/2015/Dunaway_Seeing_Green.html.

122 Finis Dunaway, "The "Crying Indian" Ad That Fooled the Environmental Movement."

123 Finis Dunaway, *Seeing Green*.

124 Gardiner, *Plastic Inc.*, 49.

125 Reelblack One, "Keep America Beautiful: The Crying Indian (1970)," July 4, 2020, https://www.youtube.com/watch?v=h0sxwGlTLWw.

126 "Our History," The Ad Council, accessed June 2, 2026, https://www.adcouncil.org/about-us/our-history. The Ad Council oversees advertising campaigns deemed to be in the public interest for nonprofits and the US government. See: https://www.adcouncil.org/.

127 Dunaway, *Seeing Green*.

128 Dunaway, "The "Crying Indian" Ad That Fooled the Environmental Movement."

129 Dunaway, *Seeing Green*.

130 Dunaway, "The "Crying Indian" Ad That Fooled the Environmental Movement."

131 Dunaway, "The "Crying Indian" Ad That Fooled the Environmental Movement."

132 Ginger Strand, "The Crying Indian: How an Environmental Icon Helped Sell Cans — And Sell Out Environmentalism," Orion Magazine, November/December, 2008, https://orionmagazine.org/article/the-crying-indian/.

133 Gardiner, *Plastic Inc.*, 51.

134 Plastics SA, "Clean-Up & Recycle SA Week 2025: Make A Difference Where You Work, Live and Play," July 14, 2025, https://www.plasticsinfo.co.za/wp-content/uploads/2025/08/Cleanup-and-Recycle-SA-Week_final-2025.pdf.

135 Zach Boren et al., "Companies Behind Campaign to 'End Plastic Waste' Produced 1,000 Times More Plastic than it Cleaned Up," *Unearthed*, September 20, 2024, https://unearthed.greenpeace.org/2024/11/20/alliance-to-end-plastic-waste-oil-chemical-exxon-shell-total/.

136 Ennis, *Dark PR*, 105–107.

137 Ennis, *Dark PR*, 106–107.

138 United Nations Environment Assembly of the United Nations Environment Programme, End Plastic Pollution: Towards an International Legally Binding Instrument, UNEP/EA.5/Res.14 (March 7, 2022), para. 3, https://digitallibrary.un.org/record/3999257?ln=en&v=pdf.

139 "International Legally Binding Instrument on Plastics Pollution, Including in the Marine Environment," International Institute for Sustainable Development Earth Negotiations Bulletin, accessed June 2, 2026, https://enb.iisd.org/negotiations/international-legally-binding-instrument-plastics-pollution-including-marine.

140 "ICCA Recommendations for the Organization of Work of the INC," International Council of Chemical Associations, accessed April 28, 2026, https://resolutions.unep.org/resolutions/uploads/icca.pdf.

141 Ennis, *Dark PR*, 105.

142 United Nations Environment Programme (UNEP), *Turning off the Tap. How the World Can End Plastic Pollution and Create a Circular Economy* (UNEP, 2023), 7, https://wedocs.unep.org/rest/api/core/bitstreams/7442944b-8b9d-405d-aea0-5971535c325b/content.

143 Mark Petticrew et al., "'Nothing Can Be Done Until Everything Is Done': The Use of Complexity Arguments by Food, Beverage, Alcohol and Gambling Industries," *J Epidemiol Community Health* 71, no. 11 (2017): 1081, https://jech.bmj.com/content/71/11/1078.

144 Ennis, *Dark PR*, 111.

145 US Congress, Senate, Committee on Environment and Public Works, Examining the Impact of Plastic Use and Identifying Solutions for Reducing Plastic Waste, 117th Congress, second session, 2022, 53, https://www.epw.senate.gov/public/_cache/files/e/3/e30ed419-e4fe-4f69-9fe4-4d192fbab731/1DE79C4D46842CCDA3F0348151686E9AB28411EC10161023A524557F0DB4D998.spw-12152022.pdf.

146 American Chemistry Council (ACC), "ACC Statement on White House's Federal Action Report on Plastic," press release, July 19, 2024, https://www.americanchemistry.com/chemistry-in-america/news-trends/press-release/2024/acc-statement-on-white-house-s-federal-action-report-on-plastic.

147 US Congress, Examining the Impact of Plastic Use, 53.

148 ACC, "Statement on Federal Action Report."

149 "Veolia Founding Member of the New "Alliance to End Plastic Waste (AEPW)," Veolia, accessed April 11, 2026, https://www.veolia.com/en/newsroom/news/plastic-recycling-circular-economy-alliance-to-end-plastic-waste-aepw.

150 Alliance to End Plastic Waste (AEPW), Solution Models - A Holistic Framework to Support Advancing a Circular Economy for Plastic (AEPW, 2024), 7, https://api1.publuu.com/publishers/179931/issues/881761/pdf?&cm=0.

151 Pew, *Breaking the Plastic Wave*, 51–52.

152 Ennis, *Dark PR*, 116.

153 Forum Information Democracy (FID), *Strengthening Information Integrity on Climate Change and the Environment: Report of the Workstream of the Partnership for Information and Democracy Co-Chaired by Armenia and Brazil* (FID, 2026), 33, https://informationdemocracy.org/wp-content/uploads/2026/02/Report-FID---Strengthening-Information-Integrity-on-Climate-Change-and-Environmental-Issues-.pdf.

154 Matt McGrath and Mark Ponyting, "Ban Fossil Fuel Ads to Save Climate, Says UN Chief," *BBC*, June 5, 2024, https://www.bbc.com/news/articles/cv22vl99vwro; Ellen Ormesher, "Amsterdam Defies Last-Minute Lobbying to Become First Capital City to Ban Fossil Fuel Ads," *DeSmog*, January 23, 2026, https://www.desmog.com/2026/01/23/amsterdam-defies-last-minute-lobbying-to-become-first-capital-city-to-ban-fossil-fuel-ads/; Climate Action Against Disinformation (CAAD), *Fossil Fuel Ad Bans: Protecting the Public from Corporate Climate Disinformation* (CAAD, 2024), https://caad.info/wp-content/uploads/2024/09/Fossil-Fuel-Ad-Bans-protecting-the-public-from-corporate-climate-disinformation.pdf.

155 "Guidelines for Prevention and Regulation of Greenwashing and Misleading Environmental Claims," Central Consumer Protection Authority of India, 2024, https://consumeraffairs.gov.in/public/upload/admin/cmsfiles/whatsnews/The_Guidelines_for_Prevention_and_Regulation_of_Greenwashing_or_Misleading_Environmental_Claims,_2024_whatsnews.pdf.

156 United Nations Environment Assembly of the United Nations Environment Programme, End Plastic Pollution, UNEP/EA.5/Res.14.

157 Samvel Varvastian, "The Role of Courts in Plastic Pollution Governance," *International and Comparative Law Quarterly* 72 (2023): 636, https://doi.org/10.1017/S0020589323000179.

158 Environmental Law Institute (ELI), *Current Trends in Toxics Litigation* (ELI, 2026), https://www.eli.org/sites/default/files/files-pdf/Current%20Trends%20in%20Toxics%20Litigation_ELI%20%28March%202026%29_1.pdf; Steven Feit et al., *Making Plastic Polluters Pay How Cities and States Can Recoup the Rising Costs of Plastic Pollution* (Center for International Environmental Law, 2024), 36–53, https://www.ciel.org/wp-content/uploads/2024/06/make_polluters_pay_cities_states_recoup_costs_plastic_pollution_report.pdf.

159 "Plastics Litigation Tracker," New York University School of Law, last updated April 22, 2026, https://plasticslitigationtracker.org/; "Plastic Law: Court Decisions Addressing Plastic," Environmental Law Alliance Worldwide (ELAW), accessed June 2, 2026, https://elaw.org/plastic-court-decisions.

160 "Consumer Groups Launch EU-Wide Complaint Against Major Water Bottle Producers for Greenwashing," BEUC The European Consumer Organization, November 7, 2023, https://www.beuc.eu/press-releases/consumer-groups-launch-eu-wide-complaint-against-major-water-bottle-producers.

161 "2023 Goldman Prize Winner: Diane Wilson," The Goldman Environmental Prize, accessed June 2, 2026, https://www.goldmanprize.org/recipient/diane-wilson/.

162 Mohamed Imranullah S., "Water, Salt and Sugar Packs Must Contain Warning on Presence of Micro or Nano Plastics: Madras High Court," *The Hindu*, February 14, 2026, https://www.thehindu.com/news/national/tamil-nadu/water-salt-and-sugar-packs-must-contain-warning-on-presence-of-micro-or-nano-plastics-madras-high-court/article70631289.ece.

163 Feit et al., *Making Plastic Polluters Pay*, 39.

164 Leslie Kendrick, "The Perils and Promise of Public Nuisance," *The Yale Law Journal* 132, 31 (2023), https://yalelawjournal.org/article/the-perils-and-promise-of-public-nuisance.

165 Resourcefutures, *The Impact of Plastic Pollution on Urban Flooding Events: Estimating the Number of People Impacted Globally* (Tearfund, 2023), 21, https://res.cloudinary.com/tearfund/image/fetch/https://learn.tearfund.org/-/media/learn/resources/research-report/2023/2023-tearfund-research-report-plastic-pollution-and-flooding-full-en.pdf.

166 Philip Landrigan et al., The Lancet Countdown on Health and Plastics," *The Lancet* 406, no. 10507, https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(25)01447-3/abstract.

167 Center for International Environmental Law et al., *Formosa Plastics Group: A Serial Offender of Environmental and Human Rights*, 39–40 (CIEL et al., 2021), https://www.ciel.org/wp-content/uploads/2021/10/Formosa-Plastics-Group_A-Serial-Offender-of-Environmental-and-Human-Rights.pdf.

168 Feit et al., *Making Plastic Polluters Pay*, 46.

169 Laura Monclús et al., "Mapping the chemical complexity of plastics," *Nature* 643, (2025), https://doi.org/10.1038/s41586-025-09184-8.

170 Kate Whiting, "This is how long everyday plastic items last in the ocean," World Economic Forum, November 2, 2018, https://www.weforum.org/stories/2018/11/chart-of-the-day-this-is-how-long-everyday-plastic-items-last-in-the-ocean/.

171 Sarah DeWeerdt, "Why It's So Hard to Recycle Plastic," *Scientific American*, December 13, 2022, https://www.scientificamerican.com/article/why-its-so-hard-to-recycle-plastic/.

172 Philip Landrigan et al., "The Lancet Countdown on health and plastics"; Natural Resources Defense Council (NRDC), "Microplastic Deluge: How these Small plastic Particles Harm our Health and the Environment" (NRDC, 2025), https://www.nrdc.org/sites/default/files/2025-06/microplastic_deluge_how_these_small_plastic_particles_harm_our_health_and_the_environment.pdf.

173 Feit et al., *Making Plastic Polluters Pay*, 50.

174 Sabin Center for Climate Change Law, "Climate Litigation Database: Australian Parents for Climate Action v. EnergyAustralia," accessed May 13, 2026, https://www.climatecasechart.com/document/australian-parents-for-climate-action-v-energyaustralia_da20. As part of a settlement, EnergyAustralia put out a statement acknowledging that environmental harm from GHGs is not negated by carbon offsets, apologized to customers part of the offset scheme, and discontinued it.; Sabin Center for Climate Change Law, "Climate Litigation Database: Greenpeace France and Others v. TotalEnergies SE and TotalEnergies Electricité et Gaz France," accessed May 13, 2026, https://www.climatecasechart.com/document/greenpeace-france-and-others-v-totalenergies-se-and-totalenergies-electricite-et-gaz-france_3e1f. This was the first successful consumer protection case against a major oil and gas company in Europe for their misleading "net zero claims".

175 Climate Action Against Disinformation (CAAD), *Fossil Fuel Ad Bans: Protecting the Public from Corporate Climate Disinformation* (CAAD, 2024), https://caad.info/wp-content/uploads/2024/09/Fossil-Fuel-Ad-Bans-protecting-the-public-from-corporate-climate-disinformation.pdf; Eunseo Hong, "In The Hague, Ban on Big Oil Ads Survives Legal Challenge," *Courthouse News Service*, October 3, 2025, https://www.courthousenews.com/in-the-hague-ban-on-big-oil-ads-survives-legal-challenge/.

176 Break Free From Plastic (BFFP), *The Brand Audit 2023* (BFFP, 2023), 5, https://brandaudit.breakfreefromplastic.org/brand-audit-2023/.

177 Special Rapporteur on the Implications for Human Rights of the Environmentally Sound Management and Disposal of Hazardous Substances and Wastes, The Stages of the Plastics Cycle and their Impacts on Human Rights, A/76/207 (July 22, 2021), para. 9, https://docs.un.org/A/76/207.

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