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SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF SAN FRANCISCO

THE PEOPLE OF THE STATE OF CALIFORNIA, ex rel. ROB BONTA, ATTORNEY GENERAL OF CALIFORNIA, Plaintiff, **v.** **EXXON MOBIL CORPORATION; AND DOES 1 THROUGH 100, INCLUSIVE,** Defendants.	Case No. **COMPLAINT FOR ABATEMENT, EQUITABLE RELIEF, AND CIVIL PENALTIES; PRELIMINARY AND PERMANENT INJUNCTION** **JURY TRIAL DEMANDED** **(1) PUBLIC NUISANCE;** **(2) GOVERNMENT CODE SECTION 12607;** **(3) WATER POLLUTION;** **(4) UNTRUE OR MISLEADING ADVERTISING;** **(5) MISLEADING ENVIRONMENTAL MARKETING; AND** **(6) UNLAWFUL, UNFAIR, OR FRAUDULENT BUSINESS PRACTICES.**

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TABLE OF CONTENTS

TABLE OF CONTENTS
(Continued)

Page

TABLE OF CONTENTS
(Continued)

Page

TABLE OF CONTENTS
(Continued)

Page

The People of the State of California, by and through Attorney General Rob Bonta, for the protection of the State's[1] natural resources and residents, allege[2] as follows:

INTRODUCTION

1. The plastics industry, through its deceptive public messaging regarding plastic recycling, is responsible for one of the most devastating global environmental crises of our time: the plastic waste and pollution crisis.

2. ExxonMobil, the largest producer of plastic polymers used to manufacture single-use plastics, caused or substantially contributed to the deluge of plastic pollution that has harmed and continues to harm California's environment, wildlife, natural resources, and people. ExxonMobil not only promotes and produces the largest amount of plastic that becomes plastic waste in California, it has also deceived Californians for almost half a century by promising that recycling could and would solve the ever-growing plastic waste crisis. All the while, ExxonMobil has known that mechanical recycling, and now "advanced recycling," will never be able to process more than a tiny fraction of the plastic waste it produces.

3. Even as it ramped up plastic production and deceptively promoted recycling as a cure-all for plastic waste, ExxonMobil knew that the consequent amount of plastic waste would continue to rise, inevitably leading to ever-increasing plastic pollution of the environment, harming California's iconic coastlines, waterways, wildlife, and residents. ExxonMobil knew that once plastic enters the environment it is extremely costly and difficult to eradicate and that plastic predictably disintegrates into microplastics—tiny plastic bits measuring five millimeters or less—which pose an even greater threat of harm to the environment and all living things, including human bodies. For decades, ExxonMobil has dumped the cleanup and environmental costs of its plastic production on the public, and Californians are paying the price.

/ / /

[1] In this Complaint, the term "State" refers to the State of California, unless otherwise stated. The term "California" refers to the area falling within the State's geographic boundaries, unless otherwise stated. The State expressly disclaims injuries arising on federal land and tribal lands held in trust by the United States and does not seek recovery or relief attributable to these injuries.

[2] The allegations herein are based on information and belief unless otherwise indicated.

4. Plastics are made from fossil fuels like natural gas or petroleum. ExxonMobil, one of the world's largest oil and gas companies, provides fossil fuel inputs for plastic production. As a vertically integrated company, ExxonMobil also has a chemical division that converts its fossil fuels into plastic monomers and polymers, such as ethylene, propylene, polyethylene, and polypropylene, which are commonly made into consumer products and packaging, including single-use plastics (i.e., use once and dispose). Those consumer products include plastic bottles, bags, snack wrappers, straws, cups, balloons, and other products that become plastic waste and plastic pollution in California and elsewhere. ExxonMobil stands at the top of the plastic-production pyramid, as the world's largest producer of single-use plastic polymers, and ExxonMobil continues to grow its plastics production—guaranteeing the plastic waste and pollution crisis will continue to grow.

5. As a leader in the plastics industry, ExxonMobil has aggressively promoted the development of fossil-fuel-based plastic products and campaigned to minimize the public's understanding of the harmful consequences of these products. It has sought to convince the public through a decades-long campaign of deception that recycling is the solution to plastic waste, despite knowing full well that the infrastructure, market, and technology for plastic recycling, particularly for single-use plastics, are woefully inadequate for the volume of plastic ExxonMobil produces, and that it is technically and economically nonviable to handle the amount of plastic waste it produces. This campaign of deception continues to this day.

6. ExxonMobil's deceptive statements were designed to mislead consumers and the public—including the State, its businesses, and its residents—about the serious adverse consequences that would foreseeably result from continued and increased production of plastic products. ExxonMobil's deceptions undermined consumers' ability to make informed choices to avoid the catastrophic harms we are experiencing. Globally, and in California, single-use plastic chokes our waterways, poisons our oceans, harms already endangered and threatened wildlife, blights our landscapes, contaminates the recycling stream, increases waste management costs, pollutes our drinking water, and expands landfills. While pushing the costs of these harms onto Californians and inflicting environmental injustices on the State's most vulnerable communities,

ExxonMobil's deception has allowed it to continue to profitably and rapidly grow its single-use plastic production business.

7. ExxonMobil must be held accountable for its actions.

PARTIES

I. PLAINTIFF.

8. Plaintiff is the People of the State of California. This civil enforcement action is prosecuted on behalf of the People by and through Rob Bonta, Attorney General of California, under the Attorney General's broad independent powers to enforce state laws (Cal. Const. art. V, § 13), and pursuant to Government Code section 12600 et seq.; Fish and Game Code sections 5650.1 and 5650; Civil Code sections 3479, 3480, 3491, and 3494; Business and Professions Code section 17203, 17204, 17206, 17535, and 17536; and Code of Civil Procedure sections 731 and 1021.8.

II. DEFENDANT EXXONMOBIL.

A. ExxonMobil's Corporate Structure.

9. Defendant Exxon Mobil Corporation is a New Jersey corporation headquartered in Spring, Texas, and has been registered to do business in California since 1972. Exxon Mobil Corporation is a multinational, vertically integrated energy and chemical company and one of the largest publicly traded international oil and gas companies in the world. Exxon Mobil Corporation was formerly known as, did or does business as, and/or is the successor in liability to Exxon Corporation; ExxonMobil Refining and Supply Company; Exxon Chemical U.S.A.; ExxonMobil Chemical Corporation; ExxonMobil Chemical U.S.A.; ExxonMobil Refining & Supply Corporation; Exxon Company, U.S.A.; Standard Oil Company of New Jersey; and Mobil Corporation. On November 30, 1999, Exxon and Mobil merged to form Exxon Mobil Corporation.

10. ExxonMobil Chemical Company and ExxonMobil Product Solutions Company are divisions within Exxon Mobil Corporation, act on Exxon Mobil Corporation's behalf, and are subject to Exxon Mobil Corporation's control.

11. Defendant Exxon Mobil Corporation, including ExxonMobil Chemical

Company, ExxonMobil Product Solutions, and any predecessors, successors, parents, subsidiaries, affiliates, and divisions, are collectively referred to herein as "ExxonMobil."

12. When this Complaint references an act or omission of ExxonMobil, unless specifically attributed or otherwise stated, such references mean that the officers, directors, agents, employees, or representatives of ExxonMobil committed or authorized such an act or omission, or failed to adequately supervise or properly control or direct their employees while engaged in the management, direction, operation or control of the affairs of ExxonMobil, and did so while acting within the scope of their employment or agency.

13. ExxonMobil's Board holds the highest level of direct responsibility for policy within the company. ExxonMobil's Chairman of the Board and Chief Executive Officer, its President, and the other members of its Management Committee have been actively engaged in discussions relating to plastics and the risks of plastic waste and pollution on an ongoing basis, and continue to actively promote the false narrative that recycling can solve plastic waste. The Board opposed a 2022 shareholder proposal to issue a report on how reducing virgin plastic production to reduce ocean plastic pollution would affect ExxonMobil's financial position. The Board opposed a similar shareholder proposal in 2023, stating that proponents of the study wrongly concluded that solutions to plastic waste include "reduced use of plastics," arguing that the proposal "understates the potential of recycling, particularly advanced recycling" to address plastic waste, and claiming that ExxonMobil can "address plastic waste in the environment while driving new economic growth in the United States through recycling—an important 'win-win' that is achievable."

B. ExxonMobil's Segments and Divisions.

14. Exxon Mobil Corporation consists of numerous segments, divisions, and affiliates in all areas of the fossil fuel, petrochemical, and plastics industries with names that include ExxonMobil, Exxon, Esso, Mobil or XTO. ExxonMobil has an integrated business model "involving exploration for, and production of, crude oil and natural gas; manufacture, trade, transport and sale of crude oil, natural gas, petroleum products, petrochemicals, and a wide variety of specialty products." This integration is clear from its SEC filings, where ExxonMobil

includes in its reportable segments Upstream (oil and gas), Energy Products (fuels), Chemical Products (plastics petrochemicals), and Specialty Products (lubricants).

15. ExxonMobil controls and has controlled company-wide decisions, including those of its various segments and divisions, about the quantity and extent of production of products and sales of products. ExxonMobil represents that its success, including its "ability to mitigate risk and provide attractive returns to shareholders, depends on [its] ability to successfully manage [its] overall portfolio, including diversification among types and locations of [its] projects, products produced, and strategies to divest assets." ExxonMobil determines whether and to what extent its segments and divisions market, produce, and/or distribute products, including petrochemical products used to produce plastics, such as ethylene, polyethylene, and polypropylene, and products made from "advanced recycling," such as "certified circular polymers."

16. ExxonMobil controls and has controlled company-wide decisions, including those of its segments and divisions, related to marketing, advertising, and communications strategies concerning plastics and the relationship between plastics, recycling, and plastic-related impacts on the environment and humans.

III. DEFENDANT DOES 1 THROUGH 100.

17. Plaintiff is not aware of the true names and capacities of defendants sued herein as DOES 1 through 100, inclusive, and therefore sues those defendants by fictitious names. Each fictitiously named Defendant is responsible in some manner for the violations of law alleged. Plaintiff will amend this Complaint to add the true names of the fictitiously named defendants once they are discovered. Whenever reference is made in this Complaint to "Defendants" or "ExxonMobil," such reference shall include DOES 1 through 100 as well as the named defendants.

18. At all relevant times, each Defendant acted as a principal, under express or implied agency, and/or with actual or ostensible authority to perform the acts alleged in this Complaint on behalf of every other named Defendant. At all relevant times, some or all Defendants acted as the agent of the others, and all Defendants acted within the scope of their

agency if acting as an agent of another.

19. At all relevant times, each Defendant knew or should have known that the other Defendants were engaging in or planned to engage in the violations of law alleged in this Complaint. Knowing that the other Defendants were engaging in such unlawful conduct, each Defendant nevertheless facilitated the commission of those unlawful acts. Each Defendant intended to and did encourage, facilitate, or assist in the commission of the unlawful acts, and thereby aided and abetted the other Defendants in the unlawful conduct.

20. Defendants have engaged in a conspiracy, common enterprise, and common course of conduct, the purpose of which is and was to engage in the violations of law alleged in this Complaint. The conspiracy, common enterprise, and common course of conduct continue to the present.

21. Defendants also served as the agent, servant, employee, alter ego, co-conspirator, aider and/or abettor of one or more of the ExxonMobil Defendants and acted individually and/or within the scope of its agency, servitude, employment, and conspiracy.

IV. INDUSTRY GROUPS.

22. For decades, ExxonMobil has used and funded numerous industry groups as a mechanism to widely spread deceptive messages about the environmental benefits and recyclability of plastic, including within California.

23. The American Chemistry Council (ACC), founded in 1872 and formerly called the Chemical Manufacturers Association, is an influential industry group that claims to "work[] for a more sustainable future by developing innovative solutions to advance recovery, recycling, and reuse of plastic," among its work in other areas.

24. ExxonMobil has been part of the leadership of ACC for decades. ExxonMobil is currently a member of ACC's Plastics Division. Numerous individuals at Exxon and Mobil sat on the Executive Committees for the Chemical Manufacturers Association. ACC leadership has included members of ExxonMobil's executive team. ExxonMobil employees likewise have held leadership positions with ACC's Plastic Division. From 2008 to 2013, ExxonMobil was the number one financial contributor to the ACC, in some years contributing three times more than

the number two contributor.

25. The Plastics Industry Association (PLASTICS) is another group that represents companies across the plastics supply chain. PLASTICS "protect[s], promote[s], and grow[s] the plastics industry." PLASTICS was previously known as the Society of the Plastics Industry (SPI), until its 2016 name change to PLASTICS. SPI formed in 1937 with the primary purpose of building public acceptance of plastics. Exxon Chemical Company and Mobil Chemical Company and/or officials of those companies were members of SPI, on SPI's executive committee and executive board, executive board members of SPI's Council for Solid Waste Solutions, and headed many committees within SPI, including the Chemical Manufacturers Association Committee, the Environmental, Health, Safety & Operations Committee, State Affairs Committee, and the Federal Government Relations Committee. ExxonMobil is currently a member of PLASTICS. In 2023, an ExxonMobil Senior Sustainability Advisor was Vice Chair of PLASTICS' Recycling Committee.

26. SPI created numerous subdivisions, including The Vinyl Institute, which has advocated for decades on behalf of the polyvinyl chloride (PVC) industry. Since at least 1992, Exxon Chemical US was an affiliate member of The Vinyl Institute. The Vinyl Institute became an independent organization in 2008. ExxonMobil is now a "Supporting Member" of the Vinyl Institute. SPI additionally formed a Plastic Bottle Division and the Council on Packaging in the Environment (COPE, previously known as Council on Plastics and Packaging in the Environment (COPPE)). COPE was disbanded in or around 1996.

27. SPI formed the Council for Solid Waste Solutions (Council) in 1988, which promoted recycling as an alternative to reducing plastics consumption. Exxon and Mobil were both on the executive board of the Council.[3]

28. In 1991, SPI formed the Partnership for Plastics Progress (Partnership), which replaced the Council. The purpose of the Partnership was "to provide coordinated industry-wide leadership at the CEO level and to deal with issues beyond solid waste." The Partnership's goal was "to bring to the fore a well-funded, strategic program of outreach, issues management and

[3] Council for Solid Waste Solutions, *The Urgent Need to Recycle* (July 17, 1989) *Time*.

legislative affairs to ensure that the public at large and key industry constituents understand the vital role that plastics play in our society." Exxon and Mobil were both members of the Partnership.

29. Shortly after the Partnership was created, SPI changed the Partnership's name to the American Plastics Council (APC). In or around 2002, the American Plastics Council merged with the ACC.

30. The Alliance to End Plastic Waste (Alliance) is an organization founded by 28 corporations in 2019, including ExxonMobil. The Alliance purports to "end plastic waste in the environment and advance a circular economy for plastics," and promotes the feasibility of "advanced" and mechanical recycling to achieve these goals. Since 2023, ExxonMobil has employed a full-time "loaned executive" working within the Alliance whose title is "Chief Advisor, Head of Americas."

31. The Recycling Partnership is an organization that encourages local governments to improve their recycling programs, in support of the plastics industry's deceptive narrative that plastics are sustainable and recycling can solve the plastic waste and pollution crisis. ExxonMobil has been a member of the Recycling Partnership since 2018, initially investing $1.5 million into the organization.

32. Another group, America's Plastic Makers, is an industry group that essentially consists of the ACC's Plastics Division, which is made up of ExxonMobil and other businesses in the plastics industry. America's Plastic Makers promotes the exceedingly unlikely claims that one hundred percent of U.S. plastic packaging will be recyclable or recoverable by 2030, and actually recycled, reused, or recovered by 2040, without any reduction in plastic use.

33. ExxonMobil also sponsors the Association of Plastic Recyclers. The Association of Plastic Recyclers proactively holds meetings in California and regularly seeks to influence California laws that are intended to reduce plastic waste and pollution.

V. EXXONMOBIL'S BUSINESS SCOPE AND DEALINGS.

34. ExxonMobil is one of the largest oil and gas companies in the world with $36 billion in profits in 2023, the largest oil and gas company in the United States, and the world's

largest producer of petrochemical polymers used for single-use plastics.[4] These plastics petrochemicals are derived from oil and gas, allowing ExxonMobil to capitalize on being "the largest refiner and marketer of petroleum products" in the United States.

35. A key component of ExxonMobil's overall business is producing chemicals for use in plastics, including ethylene, polyethylene, and polypropylene. ExxonMobil considers the production of these chemicals, which are used in single-use plastic products, as the "core" of its chemicals and products portfolio, with "80% of [ExxonMobil's] growth [being] dependent on single-use plastics applications." In 2023, ExxonMobil had an annual production capacity of 14.5 million tonnes[5] (31.9 billion pounds per year) of polyethylene and polypropylene plastics petrochemicals worldwide, including a production capacity of 7.7 million tonnes per year (16.3 billion pounds per year) in the United States. In 2021, ExxonMobil contributed more "virgin" plastic polymers (plastic material that has not been subject to earlier use and has not been blended with scrap or waste) bound for single-use plastic than any other petrochemical company—over six million tonnes, roughly equivalent to *two trillion* single-use plastic cups in that one year alone.[6]

36. In line with the rapid increase of plastic production globally (see Figure A, below), ExxonMobil is rapidly increasing its production of these plastics petrochemicals. In the past ten years, ExxonMobil has increased its worldwide ethylene production capacity by 32 percent, its polyethylene production capacity by 30 percent, and its polypropylene production capacity by 27 percent worldwide. In the United States, ExxonMobil has increased its plastics chemicals production capacity even more dramatically: ethylene capacity increased 77 percent, polyethylene capacity increased 82 percent, and polypropylene capacity increased 89 percent. See Figure B, below.

[4] Charles and Kimman, Minderoo Foundation, Plastic Waste Makers Index 2023 (2023) (hereafter Minderoo 2023).

[5] Note that ExxonMobil typically reports production in "metric tonnes." "Tonne" is another term for metric ton. One tonne is equal to the weight of 1.1 U.S. tons (2,204.6 pounds). (See Encyclopedia Britannica, *Ton*, https://www.britannica.com/science/ton [as of Apr. 4, 2024].) In some cases, ExxonMobil employs U.S. units (lbs.) when reporting weights. This Complaint converts U.S. tons to tonnes throughout.

[6] Minderoo 2023, *supra*. This estimate assumes it takes about three grams of plastic petrochemicals to produce one plastic cup.

Figure A: Plastics Production Chart and Prediction To 2060[7]

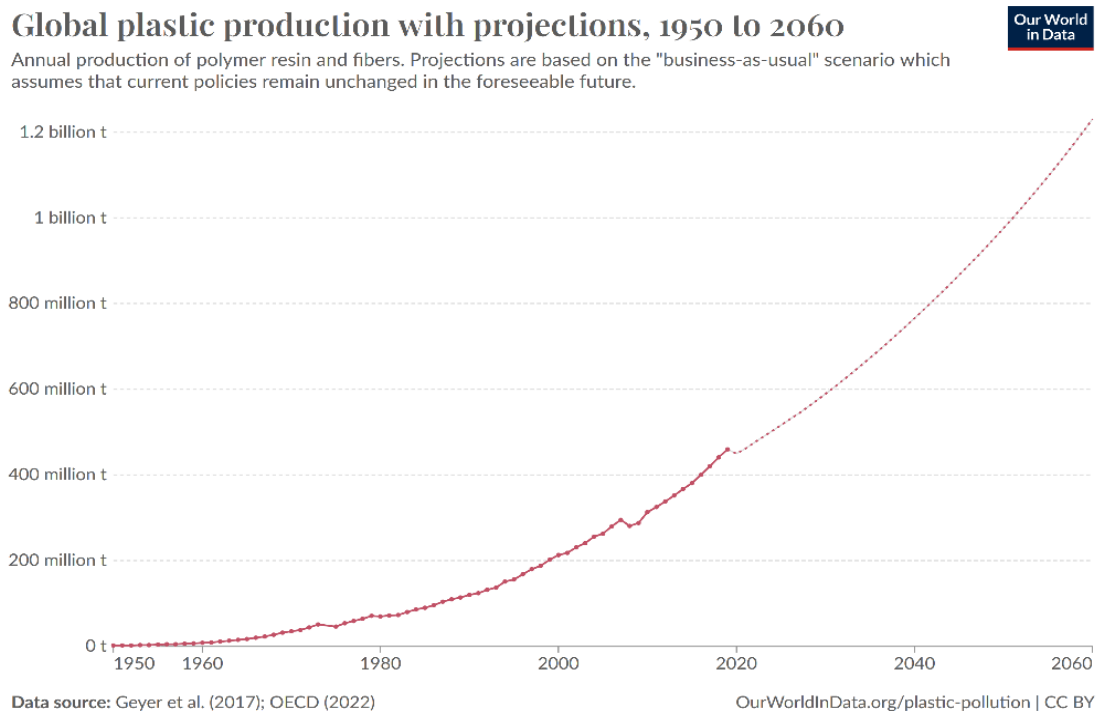

Figure B: ExxonMobil Plastic Chemical Production Capacity – 2014 through 2023

Year	**U.S. Ethylene Capacity** *In Million Tonnes*	**U.S. Polyethylene Capacity** *In Million Tonnes*	**U.S. Polypropylene Capacity** *In Million Tonnes*
2014	3.9	3.3	.9
2015	3.9	3.3	1.0
2016	3.9	3.3	1.1
2017	4.3	4.6	0.9
2018	5.8	4.6	1.1
2019	5.8	5.3	0.9
2020	5.8	5.3	0.9
2021	5.9	5.3	1.1
2022	6.9	6.0	1.6
2023	6.9	6.0	1.7

[7] *Global Plastic Production with Projections, 1950 to 2060*, Our World in Data <https://ourworldindata.org/grapher/global-plastic-production-projections> (as of July 29, 2024).

37. ExxonMobil continues to expand production capacity, including recently doubling its production capacity for polypropylene in Baton Rouge, Louisiana, increasing polyethylene production in Beaumont, Texas by 60 percent, and investing $2 billion in a petrochemical plant in Baytown, Texas as part of a $20 billion "Growing the Gulf" expansion that will significantly expand ExxonMobil's virgin plastic production capacity.

38. ExxonMobil's Baytown Complex is emblematic of ExxonMobil's investment in virgin plastic production, refining 588,000 barrels of crude oil per day (the tenth largest refinery in the world) alongside a chemical plant that is "capable of producing more than eight billion pounds of petrochemical products" per year. In fact, ExxonMobil depends on single-use plastics production and consumption for its rapidly growing and profitable petrochemical business. ExxonMobil sold 32,035 tonnes of its polypropylene for making plastic cups in 2017, roughly equivalent to 8.8 billion single-use plastic cups.

JURISDICTION AND VENUE

39. This Court has original jurisdiction over this action pursuant to article VI, section 10, of the California Constitution.

40. This Court also has personal jurisdiction over ExxonMobil pursuant to Code of Civil Procedure section 410.10. ExxonMobil purposefully availed itself of the California market, and thus of the benefits of the laws of the State, during all times relevant to this Complaint. ExxonMobil's operations, contacts, and ties with California establish California courts' exercise of jurisdiction over ExxonMobil consistent with traditional notions of fair play and substantial justice. ExxonMobil researched, developed, manufactured, designed, marketed, distributed, released, promoted, and/or otherwise sold petrochemical products, including petrochemicals that are used to make plastics and ExxonMobil "certified circular polymers," in California, giving rise to the claims of this suit.

41. ExxonMobil controls and continues to control decisions about the quantity and extent of its petrochemical production and sales and chooses to sell petrochemicals to entities in California; determines whether and to what extent to market, produce, and/or distribute its petrochemical products and markets and distributes petrochemical products in California; and

controls and continues to control decisions related to its marketing and advertising, specifically communications strategies concerning the efficacy of plastic recycling, including "advanced recycling," and the relationship between plastics, recycling, and plastic-related impacts on the environment and humans, and has targeted California with those advertisements and communication strategies.

I. EXXONMOBIL'S BUSINESS TIES TO CALIFORNIA.

42. Significant quantities of ExxonMobil's petrochemical products and plastics made from ExxonMobil's petrochemicals are or have been transported, traded, distributed, promoted, marketed, manufactured, sold, and/or consumed in California, from which activities ExxonMobil derives and has derived substantial revenue—ExxonMobil's U.S. earnings total over $12 billion from chemical products in the past three years.

43. ExxonMobil's petrochemical manufacturing is fused with ExxonMobil's oil and gas production, with more than 90 percent of the company's chemical capacity integrated with ExxonMobil refineries or natural gas processing plants. Historically, ExxonMobil owned 1,501 oil and gas wells in California. Until 2022, ExxonMobil operated another 58,212 wells in California with Shell Oil Company through a jointly owned entity, Aera Energy, LLC; 14,188 of these wells are currently active. Aera produces approximately 125,000 barrels of oil and 32 million cubic feet of natural gas per day and was sold to IKAV Energy in 2022 for $4 billion. ExxonMobil also owns and operates a petroleum storage and transport facility in San Ardo, California. Until February 2024, ExxonMobil operated three offshore oil production platforms off the coast of Santa Barbara, and currently retains a large financial stake in the entity that purchased the platforms, Sable Offshore Corp.[8] In 2021, ExxonMobil Chemical Company acquired Materia Inc., a producer of plastic structural polymers headquartered in Pasadena, California, for $156 million. ExxonMobil also owned and operated an oil refinery in Torrance, California from 1966 to 2016, operated a petroleum refinery in Benicia, California, from 1968 to 2000, and has a long history in California, including operating four manufacturing facilities (two chemical coatings

[8] ExxonMobil sold the platforms to Sable for $643 million but provided Sable a loan of at least $625 million for the purchase.

and two plastic packaging facilities), a plastic production facility for polystyrene foam trays and egg cartons, a plastic production facility for polyethylene films for bags and meat and poultry wrappings, and a polystyrene recycling facility through partial ownership of the National Polystyrene Recycling Company.

44. ExxonMobil, through its chemical division, has a vast customer base for its plastics petrochemicals. Its customers include the largest U.S. suppliers of plastics packaging, including companies that produce single-use plastic bags, bottles, cups, and other food and beverage packaging that are sold nationwide, with products ending up in California under household brand names. For example, Exxon sells its plastics petrochemicals to Berry Global, who sells plastic products to the following national brands:

Figure C: Berry Global Customers

45. ExxonMobil also distributes its plastics petrochemicals to plastics distribution centers located throughout California. These distribution centers act as intermediaries between ExxonMobil and businesses that make and sell plastic products. Through these intermediaries, ExxonMobil's plastics petrochemicals become plastic bags, plastic cups, plastic water and soda bottles, plastic food packaging, and other single-use plastic products (among other applications). Additionally, California business customers have purchased ExxonMobil's "advanced recycling" "certified circular polymers" for use in single-use plastic products. ExxonMobil also regularly participates in trade conferences in California to promote its petrochemical plastics products to intermediaries and other business customers.

46. ExxonMobil uses its intermediaries and business customers to help promote

plastics consumption as environmentally sustainable in an effort to increase or maintain demand for ExxonMobil's plastics petrochemicals. Most recently, ExxonMobil has partnered with several businesses that sell products in California, including a California-based plastics producer, to promote ExxonMobil's "advanced recycling" by issuing press releases to promote the use of ExxonMobil's "certified circular polymers."

47. ExxonMobil views government regulations affecting "production or use of new or recycled plastics" as a significant "risk factor" to its business. Accordingly, ExxonMobil has lobbied extensively against plastics regulations in California, and specifically against legislation holding plastics producers accountable for the environmental impacts of its products.[9] In 2022, ExxonMobil paid $4 million to the American Chemistry Council (ACC) to fight a California ballot measure seeking to establish an extended producer responsibility program[10] for plastic products. Since 2020, ExxonMobil has paid $23.4 million to the ACC to fund national lobbying efforts to promote plastic products across the United States, including within California. Recently, ExxonMobil identified California as a target market for new legislation to promote "advanced recycling" as an alleged solution to the plastic waste crisis. ExxonMobil also targets California with advertising, such as radio spots related to its ongoing efforts to advance plastic-friendly legislation in the State. As recently as within the last year, ExxonMobil targeted online advertisements to Californians regarding "advanced recycling." ExxonMobil has funded numerous lobbying efforts, directly and through trade associations and industry groups, to defeat regulations that would reduce the harm to humans and the environment from its plastic products in California and nationwide.

48. ExxonMobil has also sought to establish business connections under its "advanced recycling" program with California municipalities.

49. Finally, ExxonMobil has supplied substantial quantities of fossil fuel products

[9] Through this Complaint, the People of the State of California are not challenging "lobbying efforts" per se, but rather this action challenges the illegal acts in violation of California law that may be connected to these lobbying efforts. These lobbying efforts also exemplify ExxonMobil's significant contacts with California.

[10] Extended producer responsibility ("EPR") is a policy of assigning the end-of-life responsibilities and costs of a product to the producer of that product.

to California. Currently, ExxonMobil promotes, markets, and sells gasoline and other fossil fuel products to California consumers through approximately 600 Exxon- and Mobil-branded petroleum service stations in California.

50. Venue is proper in this Court pursuant to California Code of Civil Procedure section 394 because Defendants conduct business in San Francisco County and throughout California, and the violations of law and the public nuisance alleged in this Complaint occurred in San Francisco County and throughout California.

II. EXXONMOBIL'S DECEPTIVE MARKETING IN CALIFORNIA.

51. ExxonMobil purposefully directed deceptive conduct toward California by marketing, advertising, and promoting petrochemical plastics products as sustainable. ExxonMobil made statements in furtherance of its campaign of deception about the efficacy of plastic recycling, including about "advanced recycling," and affirmatively promoted recycling technology as able to solve the plastic waste and pollution crisis. ExxonMobil made these statements knowing that plastic recycling is inadequate to stop or reverse the plastic waste and pollution crisis. These statements were designed to conceal and mislead consumers, including the State, its businesses, and its residents about the serious adverse consequences that would result from continued use of plastic products, including ExxonMobil's virgin and/or recycled plastics materials and products containing those materials.

52. ExxonMobil promoted plastic recycling in a manner that directly and foreseeably impacted and continues to impact California, with knowledge that the intended use of its plastic products harmed and will continue to harm California and elsewhere. ExxonMobil purposefully directed its misleading conduct to reach the State, its businesses, and its residents, to promote the continued and unabated use of plastics products, including ExxonMobil's plastics products, in California and elsewhere. These deceptions have resulted in significant injuries in the State while increasing sales to ExxonMobil.

53. Over the past several decades and continuing to the present day, ExxonMobil and/or its agents, servants, alter-egos and/or abettors named above ran extensive print, radio, television, online, social media, and outdoor advertisements in the California market that

deceptively promoted recycling technology as a key solution that would reverse or substantially mitigate those harms.

54. Since at least 1988, ExxonMobil has deceptively promoted recycling as a key solution to the plastic waste and pollution crisis in print publications circulated widely to California consumers, including but not limited to: *San Francisco Examiner*, *Los Angeles Times*, *Sacramento Bee*, *Oakland Tribune* (now known as the *East Bay Times*), *Victorville Daily Press*, *Simi Valley Star Enterprise*, *Lompoc Record*, *Signal*, *Record Searchlight*, and numerous other California newspapers, as well as national publications with strong circulation in California, including but not limited to *The New York Times*.[11] ExxonMobil has also used social media platforms with a significant user base in California, including but not limited to Meta (Facebook), X (formerly Twitter), and YouTube, to spread misinformation about the efficacy of plastics recycling at a scale to address the plastics waste and pollution crisis. As further detailed below, these campaigns have included advertisements containing false or misleading statements, misrepresentations, and/or omissions designed to encourage the consumption of plastics products, including ExxonMobil's plastics products, by falsely reassuring consumers that they can continue using plastics because recycling, including "advanced recycling," is an effective solution to the plastic waste and pollution crisis, and/or misrepresenting ExxonMobil's products or ExxonMobil itself as environmentally friendly.

55. ExxonMobil, through vertically integrated segments and divisions, furthers its campaign of deception by: (1) misrepresenting the recyclability of plastics; (2) omitting or misstating the limited availability and efficacy of plastic recycling; and (3) affirmatively promoting the company's plastic-input products as recyclable and/or made from recycled plastics. ExxonMobil furthers this deception despite knowing the inadequacy and unavailability of plastic recycling at scale and the human and environmental harms that necessarily result from the intended use of ExxonMobil's plastic-input products.

[11] Exxon has a long history, dating back to 1970, of running influential advertising campaigns framed as public interest opinion editorials in major national newspapers including *The New York Times, Washington Post, Wall Street Journal, Chicago Tribune,* and *Los Angeles Times*. For many years, these advertisements ran weekly.

56. ExxonMobil, by and through industry groups and other organizations, worked to conceal and misrepresent the known dangers of plastic; to knowingly withhold material information regarding the consequences of using plastic products, the inefficacy of plastics recycling; the infeasibility of plastic recycling to meaningfully scale, and the proportion of its "certified circular polymers" actually sourced from recycled plastic waste materials; and to spread knowingly false and misleading information to the public regarding the efficacy of plastics recycling at a scale to address the plastics waste and pollution crisis.

57. ExxonMobil, through its own actions and through its membership and participation in industry groups, engaged in this longstanding campaign to promote continued and increased use of plastics products, including ExxonMobil's plastics petrochemical products, which it knew would result in injuries to the State and elsewhere.

58. ExxonMobil and DOES 1-100 (collectively, "Defendants") committed substantial acts to further its deceptive practices in California by making affirmative misrepresentations or omissions to California consumers about the existence, causes, and effects of plastic pollution and the efficacy of recycling; and by affirmatively promoting plastics products, including ExxonMobil's plastics petrochemical products, as safe and environmentally friendly. Defendants committed this deception with knowledge of the extremely harmful impacts that would result from the intended and foreseeable use of those products. A substantial effect of Defendants' actions has and will occur in California, as the State has suffered and will suffer injuries from ExxonMobil's wrongful conduct. ExxonMobil knew—based on information provided to it from its internal research divisions, affiliates, trade associations, and industry groups—that its actions in California and elsewhere would result in these injuries in and to the State. Finally, the harmful effects described herein are the direct and foreseeable results of ExxonMobil's conduct in furtherance of the conspiracy.

FACTUAL BACKGROUND

I. EXXONMOBIL IS SUBSTANTIALLY RESPONSIBLE FOR CAUSING AND EXACERBATING THE PLASTIC WASTE AND POLLUTION CRISIS, WHICH IS CAUSING DEVASTATING HARM.

A. The Plastic Waste and Pollution Crisis.

59. ExxonMobil is the world's largest producer of plastic polymers, the building blocks of single-use plastics that become plastic pollution.

60. The excessive amount of plastic waste and pollution is one of the most serious environmental crises confronting California and the planet today.[12] Plastic pollution is proliferating in oceans, seas, rivers and lakes, accumulating at or near the surface, on lake and ocean bottoms, and along riverbanks and shorelines.[13] And plastic waste has found its way into every corner of the globe—from remote marine environments[14] to the deepest point of the ocean floor, on the highest mountains, in rock formations, and floating in the air.[15] According to the U.S. Environmental Protection Agency's (EPA) latest estimates, approximately 23 percent of global plastic waste was improperly disposed of, burned (creating harmful and toxic emissions), or leaked into the environment in 2019.

61. Widespread production and promotion of single-use plastic has led to persistent plastic leakage into the environment.[16] Around the world each year, an estimated 11 million tonnes of plastic waste become aquatic pollution and 18 million tonnes are polluted to land. Together, that is the equivalent of four garbage trucks of plastic waste polluted in the water or land *every minute*.[17] In the United States—even with its advanced solid waste management system—as much as 1.45 million tonnes of plastic was polluted to the ocean in 2016.[18] Plastic products account for approximately 85 percent of total marine waste and between 70 to 80

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[12] Merkl and Charles, The Minderoo Foundation, The Price of Plastic Pollution: Social Costs and Corporate Liabilities (2022) p. 7 (hereafter Minderoo 2022).

[13] Corcoran et al., *An Anthropogenic Marker Horizon in the Future Rock Record* (2014) 24 GSA Today 4.

[14] Trainic et al., *Airborne Microplastic Particles Detected in the Remote Marine Atmosphere* (2020) 1 Communications Earth and Environment 64.

[15] World Health Organization, Dietary and Inhalation Exposure to Nano- and Microplastic Particles and Potential Implications for Human Health (2022) pages 13-44.

[16] Organization for Economic Cooperation and Development (OECD), *Plastic Pollution is Growing Relentlessly as Waste Management and Recycling Fall Short, Says OECD* (Feb. 22, 2022) <https://www.oecd.org/environment/plastic-pollution-is-growing-relentlessly-as-waste-management-and-recycling-fall-short.htm> (as of July 29, 2024).

[17] Lau et al., *Evaluating Scenarios Toward Zero Plastic Pollution* (2020) 269 Science 1455.

[18] Law et al., *United States' Contribution of Plastic Waste to Land and Ocean* (2020) 6 Science Advs. 2375.

percent of all waste that ends up on land or in marine environments combined.[19]

62. In California, from 1990 to 2022, an astounding 2.7 to 3.3 million tonnes of plastic waste escaped into California's environment. In 2022 alone, estimates of the amount of plastic waste leaked to land and into the ocean in California ranged from 121,324 to 179,656 tonnes—the equivalent of dumping 20 to 30 garbage trucks of plastic waste *per day* into California's landscapes and waterways.

63. The steep increase in plastic production over the past 60 years, as depicted in Figure A, created a dramatic increase in plastic waste: in the United States, plastic increased as a percent of municipal solid waste (by mass) from 0.4 percent in 1960 to 12.2 percent in 2018.[20] An estimated 44 million tonnes of plastic waste were generated in the United States in 2019. Meanwhile, the plastic recycling rate in the United States in 2019 was estimated to be a mere five percent. As new plastic production relentlessly rises, the generation of plastic waste inevitably increases.

64. Nearly two-thirds of total plastic waste comes from products that are discarded within five years of purchase, such as packaging (40 percent), consumer products (12 percent), and textiles (11 percent).[21] Single-use plastics—plastic packaging, bags, straws, and disposable plasticware and utensils—represent the largest plastics application, and account for one-third of all plastics consumed globally.[22]

65. Single-use plastics comprise most of the plastic waste that escapes and/or is discharged into the environment.[23] Rising production of single-use plastics and the consequent rise of plastic waste and pollution has contributed to such phenomena as the "great Pacific garbage patch," consisting of several vast swirling gyres of floating plastic pieces dispersed over

[19] U.S. Environmental Protection Agency, Draft National Strategy to Prevent Plastic Pollution (2023).

[20] Com. on the U.S. Contributions to Global Ocean Plastic Waste, Nat. Academy Sciences, Engineering, and Medicine, Reckoning with the U.S. Role in Global Ocean Plastic Waste (2022) page 3. (Additionally, the generation of municipal solid waste in the United States has increased significantly over the past 60 years).

[21] Organization for Economic Cooperation and Development (OECD), *Plastic Pollution is Growing Relentlessly as Waste Management and Recycling Fall Short*, *supra*.

[22] Minderoo 2023, *supra*, page 17.

[23] *Ibid*.

a huge surface of the Pacific Ocean and throughout the upper portion of the ocean column.

66. Plastic pollution has pervasive consequences at the local, regional, and state levels in California, for the environment, the state's unique natural and recreational resources, the economy, and potentially for human health.[24] Plastic pollution causes substantial, persistent, and ongoing harm to California's unparalleled coastal recreational resources, residents, tourism, and local economies.[25] Plastic waste visibly pollutes California's beaches, rivers, waterways and marine environments, fouls recreational areas, and threatens marine life and sensitive habitats and ecosystems.[26]

Figure D: Ballona Creek leading to Santa Monica Bay (Photo Credit: Bill MacDonald, Algalita Research Foundation)

67. Plastic waste has devastating effects on California's wildlife. Plastic waste entangles and endangers California marine life, including seals, sea birds, sea turtles, whales, and dolphins, resulting in hindered movement, decreased feeding ability, injury, and death.[27] Plastic

[24] Cal. Ocean Protection Council and Nat. Oceanic and Atmospheric Admin. Marine Debris Program, California Ocean Litter Prevention Strategy: Addressing Marine Debris from Source to Sea (2018) page 10 (hereafter, OPC 2018).

[25] *Id.* at page 38.

[26] *Id.* at page 10.

[27] *Id.* at page 37.

waste is ingested by California raptors and sea birds, with devastating impacts on bird fitness and survival. Plastic waste smothers sensitive coastal and wetland habitats,[28] including coral reefs and salt marshes, and disrupts growth and surface cover.[29] Plastic debris inhibits the growth of aquatic vegetation, decreasing spawning areas and habitats for fish and other living organisms, threatening marine biodiversity and the food web.[30]

68. Even managed plastic waste contributes to plastic pollution of the environment. As plastic waste degrades in landfills, microplastics are released into the surrounding environment, including contamination of soil, groundwater, and surface water by air and by leachate.[31]

69. Once plastic waste enters the environment as pollution, it is long-lived, cumulative, friable, and mobile, and can have substantial negative impacts on a wide range of freshwater, marine, and terrestrial species. Removing plastics from the environment becomes difficult and costly as plastics fragment into smaller and smaller pieces.

B. The Microplastics Pollution Crisis.

70. Plastics do not biodegrade.[32] Exposed to the elements, plastics that have leaked into the environment inevitably disintegrate into smaller and smaller pieces until they eventually become "microplastics," tiny plastic bits measuring five millimeters or less, that are readily transported by air, wind, water, and the fecal matter of organisms that ingest them. Microplastic pollution has been identified as one of the most widespread and long-lasting anthropogenic changes to the surface of the Earth, and a great threat to a wide range of species and ecosystems.

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[28] *Id.* at page 5.

[29] *Id.* at page 37.

[30] Thevenon et al., Internat. Union for Conservation of Nature, Plastic Debris in the Ocean: The Characterization of Marine Plastics and their Environmental Impacts, Situation Analysis Report (2015) page 17.

[31] Leachate is a solution or product obtained by leaching, especially from landfills or other sources.

[32] Plastic materials do not exist in nature, and therefore there are no naturally occurring organisms that can break them down effectively or at all. It is estimated that under normal conditions in nature, plastic bottles will begin to break down only after 500-700 years; plastic bags will begin to break down only after a thousand years, and even then, the process will be very slow.

71. Microplastics have been detected in the deep sea, in freshwater bodies, and groundwater; in soils and in sediments; on mountaintops; and in the air we breathe. Microplastics are ingested by marine organisms,[33] and have been found in fish and other aquatic species, with observed adverse effects including altered feeding habits, tissue inflammation, impaired growth, developmental anomalies, and reductions in reproductive success.[34]

72. Microplastics can be particularly dangerous to wildlife; when eaten, microplastics have been found to accumulate inside an animal's body, causing a variety of critical health issues. Microplastics have been found to both absorb and adsorb[35] toxic chemicals that are harmful to aquatic life. Laboratory studies show that chemicals released from microplastics can transfer up the food chain, potentially affecting the health of species at all levels of the ecosystem.

73. On land, microplastics have been found in the guts and feces of a variety of land-based wildlife, including birds, small mammals, and insects. Ingestion of microplastics has negative impacts on the health of these species, including reducing fitness and altering immune system functions.[36]

74. Microplastic pollution has been identified as an emerging global threat to terrestrial ecosystems, remaining persistent and mobile in soil environments. Microplastics affect soil biota, decrease seed germination, and inhibit plant growth and productivity. Microplastic contamination of agroecosystems can reduce food yields, and negatively impact food chain components and food security. Once dispersed into the environment, microplastics are almost impossible to eradicate.

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[33] OPC 2018, *supra*, at pages 5, 10.

[34] Sarkar et al., *Microplastic Pollution: Chemical Characterization and Impact on Wildlife* (2023) 20 Internat. J. Environmental Research and Public Health 1745; see also Besseling et al., *Effects of Microplastic on Fitness and PCB Bioaccumulation by the Lugworm* Arenicola marina (L.) (2012) 47 Environmental Science & Technology 593; Cal. Ocean Protection Council, Statewide Microplastics Strategy (2022) page 4 (hereafter OPC 2022).

[35] "Adsorb" means to take up and hold or attach to the surface of another substance.

[36] Sarkar et al., *supra*.

C. Microplastics Likely Have Negative Human Health Consequences.

75. As studies emerge regarding the effects of microplastics on human health, they point to potentially dire consequences. Humans are exposed to microplastics predominantly through inhalation of tiny plastic particles suspended in indoor and outdoor air, and through ingestion of microplastic particles found in water, food, and other beverage sources.[37] A 2018 study of 259 bottled water samples across 19 different locations in nine countries, including the U.S., found 93 percent were contaminated with microplastic—on average, 10.4 microplastic particles per liter.[38] Other studies have found microplastics in globally sourced tap water samples, American-made beer, and commercial sea salt.

76. Once inhaled or ingested by humans, microplastic particles have been found to lodge in the respiratory or digestive tract.[39] Particles can then be absorbed through the small intestine and lungs and distributed throughout the body to other organs via the circulatory system. Microplastics have been found accumulating in the human gut, lungs, and bloodstream. Even more alarming are recent discoveries of microplastics in the human reproductive system, such as the male testis, mammary glands (breastmilk), and placental tissue. Studies are finding evidence that microplastics can enter human cells and can even cross the blood-brain barrier in mammals.

77. Microplastics' physical presence in the human body has been associated with chronic inflammation, oxidative stress, and cytotoxicity (potentially increasing cancer risk). Studies also indicate that chemicals adsorbed by microplastics consumed by people through food or other routes of exposure can desorb in the human body and have toxic impacts. Some chemical additives to plastic, such as phthalates, bisphenol A (BPA), and per- and polyfluoroalkyl substances (PFAS), are recognized as toxic chemicals that impact the endocrine, reproductive, and other systems.[40]

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[37] World Health Organization, *supra*, at pages 13-44.

[38] Mason et al., *Synthetic Polymer Contamination in Bottled Water* (2018) 6 Frontiers in Chemistry 407.

[39] World Health Organization, *supra*, at pages 13-44.

[40] UNEP, From Pollution to Solution: A Global Assessment of Marine Litter and Plastic Pollution (2021).

78. A recent study found that patients with carotid artery plaque in which microplastics were detected had a higher risk of a composite of myocardial infarction, stroke, or death (from any cause) than those patients in whom microplastics were not detected. Other studies indicate that microplastics particles can be vectors for disease or other toxic transmission because they can adsorb and transmit human pathogenic microbes, parasites, or other contaminants when inhaled or ingested by humans.

79. Published research also points to wide-ranging potential neurotoxicity, pulmonary toxicity, hepatoxicity, cardiotoxicity, reproductive toxicity, and nephrotoxicity in human beings resulting from microplastics exposure. While the full health effects of human exposure to microplastics and the potential for accumulation of microplastics in human tissues remain unknown, the existing research indicates potentially severe, and even deadly, impacts.

D. ExxonMobil Substantially Contributes to the Plastic Waste and Pollution Crisis.

80. ExxonMobil produces the primary chemicals and polymers used to produce plastic and styrofoam products such as bottles, cups, plates, utensils, take-out containers, and packaging designed for single-use that are sold throughout the United States and in California. ExxonMobil considers the production of these polymers as the "core" of its chemicals and products portfolio and sees 80 percent of its growth potential as "dependent on single-use plastics applications."

81. ExxonMobil produces more virgin polymers bound for single-use plastic production than any other petrochemical company,[41] and is the world's largest contributor to single-use plastic waste.[42] ExxonMobil's polymer products are used to make the plastic items most commonly and consistently picked up on California shorelines, including food wrappers and takeout containers; caps and lids; plastic bags; cups, utensils and plates; straws and stirrers; and beverage bottles. These are among the top 10 categories of debris items consistently picked up on California beaches and riverbanks on Coastal Cleanup Day over the past 34 years. ExxonMobil's

[41] Minderoo 2023, *supra*.
[42] *Id.* at page 12.

polymer products are also used to make six-pack beverage rings and mylar balloons, items that commonly blight California shorelines and parks.

82. The inescapable consequence of ExxonMobil producing billions of pounds of plastic is the plastic waste and plastic pollution crisis. There is a direct relationship between the rise in plastic production and the rise in plastic pollution—a recent comprehensive study of plastic pollution audits in *Science Advances* found "a 1% increase in [plastic] production, result[s] in approximately a 1% increase in branded plastic pollution." The study compiled over 1,500 audits of over 1.8 million plastic items and concluded that waste management is insufficient to stop plastic pollution. Instead, "reduced plastic production is a primary solution to curb plastic pollution," and that, in particular, "[p]hasing out single-use and short-lived plastic products by the largest polluters would greatly reduce global plastic pollution."

83. California has identified source reduction as one of the top priorities for addressing this plastic pollution crisis.[43] Source reduction will reduce the burden on waste management systems and prevent plastic waste from reaching the environment.[44]

84. California has borne the burden of the harmful economic, environmental, and potential human health impacts of ExxonMobil's deceptions, which have resulted in the deluge of plastic waste, while ExxonMobil has recorded record profits ($36 billion in profits in 2023). Indeed, as stated above, ExxonMobil recently opposed a shareholder proposal to issue a report on how reducing virgin plastic production to reduce ocean plastic pollution would affect ExxonMobil's financial position in 2022.

II. FOR DECADES, EXXONMOBIL DECEPTIVELY PROMOTED MECHANICAL RECYCLING AS THE SOLUTION TO THE PLASTIC WASTE AND POLLUTION CRISIS.

85. Particularly after the Great Depression, Americans were not accustomed to the concept of throwing anything away. To change this behavior, in the 1950s and 1960s, ExxonMobil's predecessor companies actively sought to normalize single-use plastic products. They were successful. Demand for plastic products began to rise but so did the inevitable

[43] OPC 2022, *supra*; OPC 2018, *supra*. Source reduction refers to a net reduction in the generation and production of plastic waste. See Public Resources Code section 40196.

[44] OPC 2022, *supra*; OPC 2018, *supra*.

pollution. By the late 1960s and 1970s, the public began demanding action to reduce or eliminate production of plastic products. In response, ExxonMobil's predecessors participated in industry-wide efforts to promote so-called "solutions" to plastic waste such as landfilling and incineration. When these efforts were unsuccessful at quelling public outcry, a small number of petrochemical companies including Exxon and Mobil began a decades-long campaign that began in the 1980s to convince the public that mechanical recycling would solve the plastic waste and pollution crisis. This campaign, which is ongoing today, succeeded in convincing the public that plastics were recyclable. This gave ExxonMobil cover for decades to continue producing more and more plastic unchecked. All the while, the plastic recycling rate has never broken nine percent, even when the U.S. was exporting massive amounts of plastic waste to China under the guise of recycling.

A. ExxonMobil Encouraged the Public to Live a Throw-Away Lifestyle and Normalized the Consumption of Unnecessary Single-Use Plastics to Fuel Demand for ExxonMobil's Plastic Products.

86. ExxonMobil and the plastics industry have promoted plastics to Americans for decades. The Society of the Plastics Industry (SPI), of which Exxon and Mobil were each members (before they merged to become ExxonMobil), formed in 1937 for the primary purpose of building public acceptance of plastics.

87. Initially, SPI and the plastics industry promoted the durability of plastics.[45] However, "it didn't take long for the industry to recognize that disposables were the route to growth, and for a prosperous public to get comfortable with the idea of throwing plastic packaging away."[46] When disposable plastic cups first became available, people would save and re-use them, but the industry confidently predicted that "[i]t is only a matter of time until the public accepts the plastics [sic] cups as more convenient containers that are completely discardable."[47] Manufacturers of all kinds marketed the disposable commodity "under the alluring dual banner of cleanliness and convenience."[48]

[45] Freinkel, Plastic: A Toxic Love Story (2011) page 145.
[46] *Ibid.*
[47] Rogers, Gone Tomorrow: The Hidden Life of Garbage (2005) page 122.
[48] *Id.* at page 115.

88. The plastics industry decided to convince the public that plastic products were necessary. "Not a single solid market for plastics in existence today was eagerly waiting for these materials."[49] But as time went on, plastics replaced natural materials and often became the only choice available to consumers, regardless of actual consumer preferences.[50]

Figure E: Life Magazine Depicting the Throw Away Culture That Was Promoted from 1955 Previewing a Consumer Market and Society Flooded with Single-Use Plastic

89. "At the SPI's [ ] 1956 national conference, participants were told that 'developments should be aimed at low cost, big volume, practicability, and *expandability*.' In short, the producers' aim should be for their products to end up 'in the garbage wagon.'"[51] Reusable packages could account for thousands of units sold, but those "used once and thrown

[49] Freinkel, *supra*, at page 142 (quoting a June 1956 article in the trade journal *Modern Plastics*).

[50] Rogers, *supra*, at page 123.

[51] Allen et al., 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 (Feb. 2024) page 5 (quoting *Plastics in Disposables and Expendables* (1957) 34 Modern Plastics 93 [emphasis in original]).

away" represent "an everyday recurring market measured by the *billions* of units." The same speaker praised the industry seven years later for "filling the trash cans, the rubbish dumps and the incinerators with literally billions of plastic bottles, plastic jugs, plastic tubes, blisters and skin packs, plastic bags and films and sheet packages—and now even plastic cans. The happy day has arrived when nobody any longer considers the plasticss [sic] package too good to throw away."

90. Both Exxon and Mobil have been leaders in plastic production since at least the 1960s. Mobil (pre-merger) formed the Mobil Chemical Company in 1960, a new division of Mobil that was tasked with carrying out the company's petrochemical activities. By 1966, Mobil, the "leading producer of polyethylene film[,] . . . had already developed an extensive line of substitutes for paper packaging. Its bag-on-a-roll had replaced paper sacks in grocers' produce sections and its Hefty trash bags helped alter people's longtime habit of lining their garbage pails with newspaper."[52]

91. As of 1969, Mobil invented a range of consumer products that used its plastic polymers, most of which were intended to be thrown away, ranging all the way from plastic squeeze bottles to automobile parts." This included selling polystyrene "Mobilfoam" egg cartons and developing BICOR ("a Mobil-developed family of oriented polypropylene films"), a replacement for cellophane. Around this time, Mobil began a heavy marketing campaign to promote plastics. Mobil's advertisements appeared as announcements on NBC's *Today* and *Tonight* shows, offering coupons for purchase of Hefty trash can liners.

92. By the 1970s, Mobil owned ten plastics packaging plants in the United States. Mobil's plastic production facilities included a polystyrene plant in Bakersfield, California and a polyethylene film plant in Woodland, California. Additionally, Mobil's ethylene plant in Beaumont, Texas, produced a key building block for plastics. Mobil added a polyethylene plant in Beaumont in the mid-1970s. Mobil boasted it was "number 1 in disposable plastics."

93. In the late 1970s, Mobil invented even more additional plastic products designed to replace existing products made out of other materials—plastic grocery sacks, plastic shopping bags, and containers for fast food. Mobil additionally created disposable foam plates

[52] Freinkel, *supra*, at page 143.

and drinkware under the Hefty brand as well as a new stretch film—Mobilrap X stretch film. In 1971, Mobil held a "Bag Your Trash" promotion in 60 cities to encourage the use of plastic trash can liners. Mobil encouraged the public to purchase and/or use these and other plastic products, all of which were designed for a single use and then tossed.

94. Mobil also created novel plastic products that did not necessarily have an existing equivalent, but nevertheless provided a use for Mobil's burgeoning plastic production. Examples include Mobil's "Guestware," a line of disposable polystyrene avocado-green dinnerware designed to be presentable for guests without the work of washing dishes, or the "Hefty Fashion Plate," a premium version of the regular Hefty disposable plates. Through the creation of such products, Mobil encouraged consumers to habitually rely on and dispose of plasticware rather than reusable products, sustaining Mobil's plastic business.

95. Exxon and Mobil promoted the use and disposal of plastic products through the Society of the Plastics Industry (SPI). SPI, at its annual meeting, reported that it deployed a female employee to women's groups in the Midwest to explain the benefits of plastics. The plastics industry's efforts were specifically directed to making plastics more appealing, encouraging a "throw away" culture, and focusing on anti-litter laws to shift the plastic waste and pollution crisis to consumers.

96. Mobil expanded its production and promotion of plastic products marketed for single use in the 1980s and 1990s. By the late 1980s, Mobil was leading the plastics industry's replacement of paper grocery bags with plastic grocery sacks and led the industry in the manufacture and sale of pallet-wrap stretch film. Mobil sold more than 20 billion plastic bags a year as of 1987.

97. Mobil enlisted children participating in Boy Scouts of America to sell Hefty trash and kitchen bags and distribute coupons for future purposes, as a fundraiser for their scouting troops. A scientist from Exxon met with more than 2,000 students and other community members to teach the students that plastic packaging is better for the environment than other materials. The industry also made efforts to disseminate pro-plastics and plastic recycling information to educators and students. For instance, the Council for Solid Waste Solutions

proposed two programs to inform teachers how to educate students about plastics in an effort to ward off teachers' and students' "efforts to boycott—and even ban—some plastics products, based on misleading and incorrect information." In another instance, the Vinyl Institute published a booklet entitled "Plastics in the Waste Stream: Options for Practical Solid Waste Management" for teachers to utilize.

98. Mobil acquired U.S. marketing rights for Baggies food storage bags in 1983, which it previously produced for Colgate Palmolive. Mobil also developed new films for wrapping candy bars, chips, and snack foods, changing the way these common products were packaged for decades in the future. Thirty-five percent of the sales of Mobil's new oriented polypropylene (OPP), originally designed for packing candy, snacks, and similar items, were for "products that didn't even exist five years ago." Mobil asserted that OPP was environmentally friendly because it did not take up much space in landfills. Yet, Mobil's production of OPP was growing by eight percent a year and Mobil predicted that its worldwide production would exceed 400 million pounds a year by 1994 despite knowing that these products would end up in landfills.

99. Mobil continued to expand its lines of single-use plastic dishes, such as Hefty plates with new designs and patterns, the sturdier "Placesetter" line of dishes, and hinged-lid polystyrene containers for food items. In 1985, Mobil worked with McDonald's to develop a menu item based on specialized Mobil polystyrene packaging—a dual-chambered container that had a "hot side" for the burger itself and a "cool side" for the lettuce and tomato toppings.

100. Mobil purchased Tucker Housewares, manufacturer of plastic houseware products, in 1990. In 1991, Mobil marketed 35 new products, including resins (a substance typically converted into polymers) and new packaging films. And in 1993, Mobil created a new line of plastic, microwaveable containers. Mobil also continued to market and expand sales of its existing product lines, expanding manufacturing capacity for its Hefty bags, plastic grocery bags, and foam plates.

B. ExxonMobil Knew that Its Promotion and Production of Plastic Products for a Throw-Away Lifestyle Caused a Solid-Waste Crisis Without a Solution.

101. Exxon's and Mobil's success in promoting disposable products and single-use

plastics in the 1950s and 1960s resulted in foreseeable consequences.[53] By the late 1960s, ecological concerns threatened the plastics industry.[54] "Ecological concerns increased so steadily after the first Earth Day of 1970 that insiders feared the crisis might 'really end the industry.' Plastics' reputation was worsening even as the stuff itself flowed from refineries and molding plants at an ever increasing rate."[55] In 1971, author Barry Commoner wrote about the indestructability of plastics: "it was 'sobering,' he wrote, 'to contemplate the fate of the billions of pounds of plastics already produced.'"[56]

102. Indeed, by the early 1970s, disposable and single-use plastics were named as a cause of the developing plastic waste and pollution crisis.[57] As plastic waste seeped into the environment, a worried public began pushing for restrictions and bans. Plastics industry insiders denied blame for the plastic waste and pollution crisis. Yet the industry, including Mobil and Exxon, realized that they needed to convince the public that the problem was under control—or at least make the public *believe* that this was the case.

103. Otherwise, Exxon, Mobil, and other plastics producers could face restrictions on productions. *Modern Plastics*, a prominent plastics industry journal, warned companies of the possibility that "well meaning but misinformed authorities step in with homemade remedies and regulations," and advised industry to figure out its own solution to avoid the pushback on plastic.[58] SPI echoed this sentiment and encouraged its members, including Exxon Chemical and Mobil Chemical, to band together:

> We don't want to sound like the prophet of doom, but we do feel it is necessary to alert you to what we, as an industry, might face in the months ahead. It is even more important that we unite all our forces to present a solid front in each and every area critical to the industry's continued success.

104. The plastics industry engaged in a public relations campaign to improve public

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[53] Allen et al., Center for Climate Integrity, *supra*, at page 7.
[54] Meikle, American Plastic (1995) page 253.
[55] *Id.* at page 264 (citing Swissair advertisement as quoted in *Answering the Critics* (May 1980) 57 Modern Plastics 34).
[56] *Ibid*.
[57] Allen et al., Center for Climate Integrity, *supra*, at page 6.
[58] Meikle, *supra*, at page 265 (quoting Frados, *There's Something in the Air* (1966) 4 Modern Plastics 89).

perception of plastic and plastic waste. Mobil and Exxon actively denied, through SPI, that plastics materials caused environmental pollution or harm.

105. Alarmingly, internal documents from 1973 between SPI and its Public Affairs Council reveal that the industry called individuals and groups concerned about plastic waste and harms its "enemies":

> [W]e completed the most extensive study of what the various publics think of plastics…. It was aimed at our environmental problems, of course—better defining them, determining what **segments of the population are our "enemies"** and where they get their misinformation…. We have been able to pinpoint problem areas, problem people and problem press, and have begun our programs to get at the minority which may mold majority opinion if ignored.

106. To assuage the public outcry, Mobil advertised in 1973 that "the plastics industry is at work on a number of projects designed to turn waste into something useful. One promising project involves mixing plastic scraps in concrete. The result is a material that's as strong as conventional concrete, but up to 15 percent lighter." The project Mobil referred to was a bridge reinforced with 30 percent plastic waste that eventually collapsed into a river.

107. In the 1970s, Mobil's Plastics Division formed an "Environmental Protection Group," headed by Robert Barrett, to "develop and disseminate facts" about its plastic products to consumers and environmental groups, in response to what Mobil called "misinformation about plastic packaging materials." Specifically, Mobil planned to undermine legitimate concerns by the public that burgeoning production of single-use plastic products would lead to environmental harm, by misleading the public into believing that solutions existed to address the waste created by Mobil's products. But, as explained below, Mobil knew that the most developed solutions to addressing plastic waste at the time—incineration and landfilling—risked further harm to the environment.

1. By the 1970s, the plastics industry was aware of the ocean plastics pollution crisis.

108. The plastics industry, including Exxon and Mobil, was aware of ocean plastics pollution by the 1970s, and began attempts to show the public that it was working with nonprofits to study the issue. Yet, Exxon's and Mobil's public response was to blame others for the issue

while not taking any action.

109. By the 1970s, scientists were publishing studies and reports on the presence of ocean plastics pollution. A 1976 study discovered plastic in nine species of seabirds in Monterey Bay, California.[59] "Industrial pellets predominated in these birds, but they were also found to contain pieces of food wrap, foamed polystyrene, synthetic sponge and pieces of rigid plastic."[60]

110. The plastics industry was also aware of ocean plastics pollution by the early 1970s. In 1972, Edward J. Carpenter, of Woods Hole Oceanographic Institute, announced that he had discovered small pieces of plastic in the Long Island Sound "at a density of one to twenty samples per cubic yard of water."[61] Carpenter—not wanting to embarrass the plastics industry and hoping to work together to solve the problem—privately approached SPI's new executive vice president, Ralph L. Harding, Jr., to inform Harding that his discovery indicated that a plastic processer was dumping polystyrene resin in the Long Island Sound.[62] SPI then warily cooperated with Carpenter to identify the culprit and end the spills.[63]

111. Additionally, Exxon, Mobil, and the plastics industry knew as early as the 1970s that plastics break down into the environment. SPI reported that degradation of plastic occurs when plastic is hit with ultraviolet radiation from sunlight, certain temperatures, moisture, air, and microorganisms.[64] SPI also acknowledged that "foam products will break down and ultimately disintegrate with exposure to sunlight and weather."

112. Exxon, Mobil, and other SPI members additionally realized by the 1970s that the disintegration of plastics into the environment could have potentially serious environmental implications. As SPI explained, "[w]hen a material degrades, it releases products of decomposition that could contaminate water supplies." Moreover, Exxon and Mobil understood that the consequences of this environmental contamination were unknown, even as both expanded

[59] Ryan, *A Brief History of Marine Litter Research*, in Bergmann et al., Marine Anthropogenic Litter (2015) page 8 (citing Baltz & Morejohn, Evidence from Seabirds of Plastic Particle Pollution of Central California (1976) 7 Western Birds 111).

[60] *Ibid.*

[61] Meikle, *supra*, at page 268.

[62] *Ibid*.

[63] *Ibid*.

[64] Glauz et al., Society of the Plastics Industry and Society of Plastics Engineers, The Plastics Industry in the Year 2000 (Apr. 1973) page 8.

their production of plastics, as "[t]he possible biological consequences of widespread, uncontrolled degradation in this way need to be assessed."

113. In 1973, the American Petroleum Institute, headed by Robert Barrett, studied or funded publications for the National Academy of Sciences workshop called "Inputs, Fates, and Effects of Petroleum in the Marine Environment."[65] While the workshop's focus was not on plastics, one paper stated, "'[i]n coastal waters, polystyrene spherules are abundant. . . . Bacteria and polychlorinated biphenyls (PCB's) are found associated with these particles, and the particles are ingested by a number of aquatic organisms.'"[66] "These studies provided early evidence not only that plastics were accumulating in the ocean, but also that these plastics could serve as aggregators of other contaminants, making them more hazardous."[67] The National Academy of Sciences also held another workshop in 1973 investigating marine litter, titled Assessing Potential Ocean Pollutants.[68] The report stated, "'[p]lastic objects are prominent in reports of litter sightings although they are a minor component of the total refuse generated.'"[69]

114. By the 1980s, SPI and the plastics industry as a whole were well aware of the ocean plastics pollution crisis.

115. By 1987, Congress was drafting bills to address ocean plastics pollution. The plastics industry was also monitoring congressional and state endeavors to address the issue. This included a letter SPI sent to its members discussing possible amendments to House of Representatives bill 940 ("Plastic Pollution Research and Control Act of 1987") that would require the U.S. Environmental Protection Agency (EPA) to report information to Congress, including: "(1) an identification of the types and classes of plastic materials in the marine environment which are from land-based sources [and] (2) steps being taken by EPA to reduce the amount of plastic materials that enter the marine environment from those sources."

116. The plastics industry was aware of ocean plastic pollution, but failed to offer

[65] Center for Internat. Environmental Law, Fueling Plastics: Plastic Industry Awareness of the Ocean Plastics Problem (2017) page 2.
[66] *Ibid*.
[67] *Ibid*.
[68] *Ibid* (citing Nat. Academy of Sciences, Assessing Potential Ocean Pollutants (1975) p. 423).
[69] *Id.* at pages 2-3.

any workable solutions. Acknowledging the growing problem, SPI testified in 1987 at a U.S. Senate hearing on plastics pollution in the marine environment. SPI's Vice President of Government Affairs, Lewis R. Freeman testified that "SPI recognizes that the problem of proper disposal, particularly in the oceans, can sometimes create environmental problems." The Vinyl Institute, "as a division of [SPI], . . . [also] participate[d] in a number of industry wide programs established to address the issue of plastics in solid wastes, including the issue of marine pollution."

117. By 1988, the ocean plastics pollution crisis was so pronounced that SPI collaborated with the Center for Marine Conservation and the National Oceanic and Atmospheric Administration to publish "A Citizen's Guide To Plastics In The Ocean: More Than A Little Problem." The guide explained that the "[p]lastic debris found in the marine environment generally falls into two categories: manufactured plastic articles and plastic resin pellets." Further, the guide admitted that "[p]lastic trash in the ocean poses a growing threat for marine wildlife, and a problem for communities and use groups who depend on the ocean."

118. In the 1990s, the fact that plastics were escaping into the ocean was receiving increased attention. In 1990, SPI met with the EPA about EPA's concerns that plastic pellets were found in various U.S. coastal environments, suggesting wide contamination in the marine environment. EPA requested SPI's assistance surveying various plastics manufacturers, processors, and pellet transporters to assess how plastics are making their way into the environment. SPI planned to meet to discuss potentially taking voluntary action to address the issue and assumed that EPA would otherwise force the industry to do so.

119. Shortly after this warning, SPI launched "Operation Clean Sweep" to encourage the plastics industry to prevent losing pellets in the environment. Exxon hosted an "Operation Clean Sweep" conference on this issue in 1992. But the initiative was largely performative, only requiring participating companies to "watch videos, sign a form and promise not to lose any pellets," without any follow-up measures to ensure the project's success.[70]

[70] Sullivan, *Big Oil Evaded Regulation and Plastic Pellets Kept Spilling*, NPR (Dec. 22, 2020) <https://www.npr.org/2020/12/22/946716058/big-oil-evaded-regulation-and-plastic-pellets-kept-spilling> (as of July 29, 2024).

120. Mobil published an ad in *The New York Times* in 1994 titled "The coast (should be) clear." While Mobil admitted that "[m]illions of pounds of debris wind up on beaches," it continued to blame others for the debris, claiming "[d]ebris can come from the sea—trash dropped overboard from fishing vessels or ships—or it can come from the land-drainage system overflows or beach-goers." Mobil discussed its "support" of a nonprofit organization, the Center for Marine Conservation, since 1986 by donating "several million trash bags to carry off the debris."

2. Exxon and Mobil first proposed landfilling and/or incineration of plastic waste.

121. Against immense public backlash to plastic litter and under threat of regulation, the plastics industry proposed two potential "solutions" in the 1970s: landfilling and incineration. Landfilling addressed plastic litter and solid waste, while incineration addressed the public's unease with making plastic packaging from petrochemicals during the 1970s energy crisis. Perceiving an urgent need to quell public outcry, Exxon and Mobil falsely claimed that plastic waste was being handled. Exxon and Mobil evidently calculated that it was safer to assert that landfilling and incineration were both capable of safely addressing plastic waste—even while knowing this was not the case—rather than risk being forced to slow their growing plastics businesses.

122. Throughout the 1970s, SPI and Mobil touted landfilling as a solution to the solid-waste crisis and plastics as environmentally beneficial. The President of SPI said plastics made ideal landfill material because "they don't biodegrade," they "just sit there." SPI also reported that "non-degradable plastics contribute to the stability of landfill, in contrast with many other degradable materials which create problems such as settling, leaching, water pollution, and production of methane gas." Mobil echoed this message in multiple publications. "[P]lastic doesn't rot. It doesn't produce methane gas that can cause fires and explosions or contaminants than can pollute underground waters. In fact, plastic makes a good fill material." Mobil also advertised that "non-degradable polyethylene bags offer environmental advantages when disposed of in dumps and landfills." Similarly, Mobil publicized that polystyrene foam in landfills

"compacts easily and will not contribute to either air or water pollution."

123. Along with landfilling, the industry, including Exxon and Mobil, favored burning plastic waste, known as waste-to-energy incineration, as a means to address solid waste and the energy crisis,[71] even though this form of disposal involved clear environmental consequences, such as air pollution. According to a report produced for SPI in 1973, "The disposal of plastics via energy recovery and environmental incineration are two objectives that really should be one. Use of the energy generated during incineration of a plastic product is merely the ultimate in using petroleum in an effective manner for the public good." SPI's President further explained, "we'd rather see plastics . . . go into a municipal power incinerator which was a power plant." In 1970, SPI published a paper stating that incineration is "the most feasible method of solid waste disposal now, and that it will be for the foreseeable future."

124. According to Mobil, "[a]s we run out of space for landfills, municipal incineration will become an increasingly important means of waste disposal. The new incinerators could also serve as power plants, using trash as fuel to generate electricity. And petroleum-derived plastics will improve the quality of that fuel."

125. To support incineration efforts, Mobil falsely reported that the incineration of plastic waste was not harmful. On July 21, 1987, Mobil published an advertisement in the *Los Angeles Times* titled, "*When it comes to solid waste, America's policies are wanting*," which claimed that "[i]ncineration may be the best hope [to address plastic waste], especially for some areas. While some environmentalists claim that burning trash may produce dioxins and other pollutants, and cause an ash disposal problem, modern incinerators practically eliminate emissions." On February 23, 1988, Mobil published an advertisement in the *Sacramento Bee* titled, "Foam fast-food containers: The scapegoat, not the problem," which falsely claimed that "[p]roper incineration of foam produces virtually nothing but harmless carbon dioxide and water vapor." In a June 26, 1988 *San Francisco Examiner* article titled "*War of words over foam packaging*," the author notes that "Mobil scientists said foam does not give off harmful chemicals when burned properly." Mobil publicly claimed "polyethylene bags can be burned in existing

[71] Allen et al., Center for Climate Integrity, *supra*, at page 8.

municipal incinerators with no operating pollution problems . . . even at triple their normal load, plastics do not increase air pollution or cause operating problems in incinerators." Mobil further publicized that polystyrene foam, "when incinerated, [ ] will not pollute the air" and that the incineration of both polystyrene and polyethylene bags produces mainly carbon dioxide and water vapor.

126. But notwithstanding these representations, the plastics industry was aware that incineration of plastics led to increased production of smoke, air pollution, and deterioration of metal parts of the incinerators themselves. In the industry's internal discussions, Exxon and Mobil, through their agents, servants, alter-egos and/or trade groups, admitted that burning plastic would likely cause environmental harms. A report presented at an SPI 1972 annual meeting stated there were "no prospective customers for the steam" generated through plastic incineration. Despite heralding incineration as the solution to the plastic waste problem, the industry knew there were no markets for energy recovered through incineration and that it would cause air pollution.

C. In Response to Public Pressure Seeking an End to Plastic Waste, ExxonMobil Misled the Public to Believe That Mechanical Recycling Was a Sustainable Solution.

127. For decades, ExxonMobil aggressively touted mechanical recycling—recovering plastic waste by mechanical processes such as sorting, washing, drying, grinding, heating, re-granulating and compounding—to calm public and legislative pressure against the plastic waste and pollution crisis. ExxonMobil promoted mechanical recycling through its predecessors Exxon Chemical and Mobil Chemical, and through activities of its agents, servants, alter-egos and/or abettors. Meanwhile, internal discussions paint a vastly different picture—ExxonMobil always knew that recycling would never solve the plastic waste and pollution crisis and never intended to fund long-term recycling projects. Nonetheless, ExxonMobil sold the false promises of mechanical recycling to fight legislation, distract the public, and blame consumers for the plastic waste and pollution crisis.

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1. Exxon and Mobil promoted mechanical recycling as the answer to plastic waste and pollution in the 1970s but knew mechanical recycling was not a feasible method to handle most plastic waste.

128. ExxonMobil's promotion of incineration and landfilling did not quell public opposition to plastic waste, and legislatures and municipalities nationwide continued to consider restrictions and bans. In response, ExxonMobil shifted its public relations strategy to promote mechanical recycling as the solution to the plastic waste and pollution problem, and employed a threefold strategy to quiet public concern and avoid regulation: first, widely disseminate deceptive messaging about the supposed efficacy of recycling through advertisements and lobbying; second, invest in short-term pilot projects to "prove" that recycling works and promise that it will scale at some indefinite time in the future; and, finally, once public attention dwindles, divest from recycling ventures and continue to produce more plastics, returning to business as usual.

129. Exxon Mobil and the plastics industry knew, however, that recycling was not a feasible solution to the plastics waste and pollution crisis. Referring to recycling at an SPI annual meeting in 1972, one member admitted:

> Gentlemen, before going any further, let me say that despite the extreme pressures on the plastic industry to initiate recycling projects, I cannot in good faith recommend *any* program today which I feel would be worthwhile without creating the risk of a public relations backlash or getting way over our heads financially.

130. SPI also admitted that it did not have the techniques or end markets necessary to recycle plastics from municipal refuse: "Thus, if we were forced to set up redemption centers and take back all of our containers, we would have to turn them over to the Sanitation Department for disposal. Currently, there is no economic value for used plastic containers."

131. Similarly, an internal report that SPI and the Society of Plastics Engineers sponsored in 1973 stated that "[w]hen plastics leave fabrication points, they are almost never recovered. There is no recovery from obsolete products." SPI further reported that, "there are no effective market mechanisms for trade in contaminated, mixed plastics." Industry periodicals repeated this sentiment: "Recycling of wastes is currently believed to be the most acceptable form of disposal; however, this route is known to be especially difficult for plastics" in part because

blended plastics result in degraded quality of plastic after recycling.

132. Recycling most plastics was technologically infeasible, as the plastics industry knew, and subsequent scientific research would confirm. "When recycled, some of the plastic can be remade into similar products; however, most is typically downcycled into a product of a lower quality and is unable to displace products made from virgin plastics [citation omitted]."[72] Even PET, the most easily-recycled type of plastic, quickly degrades through the recycling process.

133. Exxon and Mobil have known about the limitations of plastics recycling for decades. In 1986, the Vinyl Institute, a division of SPI, explained in an internal draft that "recycling cannot be considered a permanent solid waste solution, as it merely prolongs the time until an item is disposed of. At that point, recycled products also become MSW [municipal solid waste] components."

134. At a Vinyl Institute meeting that same year, members discussed a recent study on the economics of recycling. "This study indicates that based on our economic system, on the cost of fuel and transportation, on the economic benefit of downstream markets, on the low cost of plastic feedstocks and the even lower cost of off grade-off spec plastic feedstocks, recycling is not and will never be commercially viable unless it is significantly subsidized by a government entity."

135. Further, the industry knew that recycling post-consumer plastic was costly and difficult, and had little or no end market or economic value, making virgin plastic a cheaper option than recycled plastic. As Mobil stated in its "Primer":

> To get just a small amount of the material you want, you have to sift through tons of trash you don't want. And when you get enough of it, you have to ship it to a plant where it can be scrubbed. Or purified. Or refined. Or upgraded. And then—maybe—you'll have a raw material almost as good as the nice, clean stuff a supplier can deliver to your factory door for a lot less money. Finally, not all plastic submitted for recycling actually makes it through the recycling process—some is lost due to process inefficiencies and yield loss. The National Association for PET Container Resources' (NAPCOR) report from 2018 estimated that nearly a third (~30%) of the volume of plastic bottles collected for recycling were lost during the mechanical recycling process.

[72] Moran et al., San Francisco Estuary Institute, A Synthesis of Microplastic Sources and Pathways to Urban Runoff (Oct. 2021) page 76.

136. Recycling plastics also introduces new toxins into the plastics themselves, which then become part of the new plastic products. Plastics processed for recycling absorb harmful chemicals they encounter in the waste stream, resulting in contaminated recycled products. In addition, the recycling process itself creates toxins when the plastics are heated.

137. Plastics specifically cannot be re-recycled into food-safe products, even if their original use was food-safe, as the mechanical recycling process introduces new toxins into the plastic.[73] European researchers have also discovered toxic flame retardants in plastic food wrap made with recycled plastics.[74] The recycled plastics are thus only acceptable for lower value uses and virgin plastic must be used for food-safe products.

138. Toxins created by the recycling process also create concerns for other products made with recycled plastics, including children's toys. Numerous studies have demonstrated high levels of toxic flame retardants,[75] dioxins,[76] and other harmful chemicals[77] in children's toys made with recycled plastics and/or recycled pellets that may be made into toys and other children's products.

2. Opposition to plastic waste in the late 1980s and early 1990s posed a threat for Exxon's and Mobil's businesses, leading Exxon and Mobil to aggressively promote recycling, despite knowing that recycling was not a viable solution to the plastic waste and pollution problem.

139. Despite ExxonMobil's knowledge that mechanical recycling would not be able to resolve the massive amount of plastic waste generated, Exxon and Mobil sold plastic recycling to the public as the key solution to the plastic waste and pollution crisis. These representations started as early as the 1970s. Mobil deceptively publicized that "waste can be disposed of by recycling. . . . Recycling sounds like an ideal solution. It would get rid of a lot of the trash and

[73] See Environment and Climate Change Canada, Assessing the State of Food Grade Recycled Resin in Canada & the United States (Oct. 2021).

[74] Puype et al., Evidence of Waste Electrical and Electronic Equipment (WEEE) Relevant Substances in Polymeric Food-Contact Articles Sold on the European Market (2015) 32 Food Additives & Contaminants 410.

[75] Guzzonato et al., Evidence of Bad Recycling Practices: BFRs in Children's Toys and Food-Contact Articles (2017) 19 Environmental Science: Processes & Impacts 956.

[76] Petrlik et al., Internat. Pollutants Elimination Network (IPEN), Plastic Waste Disposal Leads to Contamination of the Food Chain (June 2021).

[77] Brosché et al., Internat. Pollutants Elimination Network (IPEN), Widespread Chemical Contamination of Recycled Plastic Pellets Globally (Dec. 2021).

would cut down on the need for dumps, landfills, and incinerators. And it would conserve virgin raw materials."

140. In a 1971 newspaper article, an environmental engineer at Mobil Chemical suggested publicly that recycling was the "probable answer," despite the fact that at the time less than two percent of municipal waste was being recycled. Mobil deceived the public by equating post-industrial recycling feedstock (never-used scrap from the factory floor) with post-consumer recycling feedstock (which is more likely to be contaminated or lower quality after consumer use), telling the public that recycling "is technically possible" but citing only to post-industrial practices. In a similar vein, Mobil also publicly claimed that "[i]t is possible to recycle polyethylene bags," even while it internally acknowledged that recycling post-consumer bags specifically was "uneconomical" and therefore would not actually occur.

141. In the late 1980s, the plastics industry was "under fire" due to the increased public sentiment against plastic, and worked to convince the public that recycling was working in order to allow the industry to continue making plastic products. But, in truth, for the industry "[t]here was never an enthusiastic belief that recycling was ultimately going to work in a significant way."[78]

142. In furtherance of their campaign to convince the public that recycling was the answer to the plastics waste and pollution crisis, Exxon and Mobil, alongside other large petrochemical companies, formed the Council for Solid Waste Solutions (the Council) in 1988.[79]

143. After Exxon, Mobil, and others in the industry formed the Council, they pushed the plastics recycling message with increased coordination and seriousness. The Council spent millions of dollars on advertisements to herald recycling as the solution to plastic waste in hopes to change public perception. For example, the Council took out a 12-page advertisement in the July 17, 1989 edition of *Time* magazine exclaiming, "The URGENT NEED to RECYCLE." But unlike most advertisements, this one did not sell a specific product. Rather, it read more like a

[78] Sullivan, *Plastic Wars: Industry Spent Millions Selling Recycling—To Sell More Plastic*, NPR (Mar. 31, 2020) <https://www.npr.org/2020/03/31/822597631/plastic-wars-three-takeaways-from-the-fight-over-the-future-of-plastics> (as of July 29, 2024).

[79] Council for Solid Waste Solutions, *The Urgent Need to Recycle* (July 17, 1989) *Time*.

public service announcement issued by an official-sounding entity, the "Council for Solid Waste Solutions." On June 29, 1989, Larry Thomas, President of SPI, sent a letter to SPI's members explaining that the *Time* advertisement would "reach a total *Time* readership of 10 million . . . this is an important audience for us. It also is an appropriate venue. It was *Time*, after all, that named as its most recent 'Man of the Year' the planet earth wrapped in plastic"—referencing the cover of the January 2, 1989 edition of *Time*, which did, indeed, name the "Endangered Earth" "Planet of the Year" with a picture of the Earth wrapped in plastic.

144. The Council covered a myriad of topics in the *Time* advertisement, including the alleged environmental benefits of plastic packaging, along with: how Americans have come to depend on plastics; recycling as a smart solution for plastic waste; the Council's and members' efforts to promote recycling and recycling technology; degradable plastics; the plastics industry's intent to accelerate recycling; the uses for plastic "lumber;" and information about the Council itself.

145. A July 1989 article in *Plastics Newsbriefs*, an industry-focused publication of SPI, explained that because "most Americans believe plastics are not recyclable . . . [t]he *Time* piece is designed to show plastics as part of the solution, instead of the problem."

146. Further, in a speech at a 1992 industry conference, SPI's Partnership for Plastics Progress Vice President Donald Shea stated, "[i]f we are to survive the challenges of the so-called 'green revolution,' we must adapt to a new paradigm—a new way of doing business that will ensure the continued growth and expansion of the plastics industry. Shea then discussed the public's growing concerns "about the impact of modern lifestyles on the environment" and how "[c]onsumers are rethinking the products they use and the manufacturing technologies that produce them." The public's negative perception of plastics worried SPI, as it was aware that "[p]ublic perception becomes legislative reality." SPI decided to convince consumers that they could continue to purchase and use the industry's plastic products without compromising their environmental concerns, by convincing the consumers that those plastics could be recycled. SPI did this despite knowing that the infrastructure for recycling did not exist and that, given the economic unprofitability of recycling post-consumer material, it would likely never exist on a

scale sufficient to handle the volume of plastics products the industry was producing.

147. The Council convinced Americans that recycling was the key to allow Americans to continue consuming the plastics that—through the industry's own efforts—had become an essential component of everyday life. As SPI's 1989 *Time* advertisement stated, "[t]he growing movement to recycle plastic waste into new products holds a dual benefit for our consumer society. First, plastics are less expensive than most other materials. Second, the conversion of used plastics into new longer-life products reduces the volume of plastics in the ever-growing municipal solid waste stream."[80] But as Exxon, Mobil, and other members of SPI knew, mechanical recycling was not happening, and would likely not happen at a sufficient rate to meaningfully limit the amount of plastic that would be disposed of in other ways, particularly due to the glut of new, cheaper virgin plastic still being produced.

148. Meanwhile, in 1989, Mobil misleadingly promised the public that it was "venturing into recycling mainly out of a sense of environmental concern. 'We are responsible for that segment of the waste stream, so we're going to see that it's disposed of consistent with' the federal [EPA's] recommendations."

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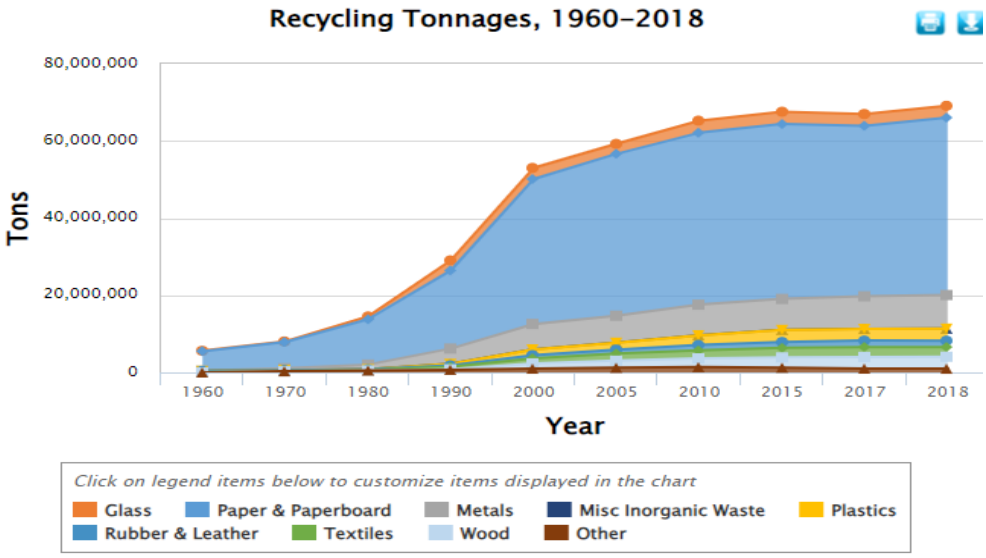
[80] *Id.* at page 17.

149. At the time that Mobil made these statements, the national plastics recycling rate was between just one and two percent. See Figure F.

Figure F: National Recycling and Composting Rates from 1960 to 2018[81]



Recycling and composting as a percentage of generation

	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Paper and Paperboard	17%	15%	21%	28%	43%	50%	63%	67%	66%	68%
Glass	2%	1%	5%	20%	23%	21%	27%	28%	25%	25%
Plastics	Neg.	Neg.	<1%	2%	6%	6%	8%	9%	9%	9%
Yard Trimmings	Neg.	Neg.	Neg.	12%	52%	62%	58%	61%	69%	63%
Lead-acid Batteries	Neg.	76%	70%	97%	93%	96%	99%	99%	99%	99%

"Neg." means less than 5,000 tons or 0.05 percent.

150. Exxon similarly recognized in a 1991 internal document that "[t]he industry needs to improve the public perception of plastics, which are widely regarded as a major contributor to the solid waste disposal problem."

151. But Exxon, Mobil, and the industry knew that plastic recycling would only be minimally successful because, for most plastics, the costs of recycling or recovering used

[81] U.S. Environmental Protection Agency, *National Overview: Facts and Figures on Materials, Wastes, and Recycling* <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials#Trends1960-Today> (as of July 29, 2024).

materials was higher than the cost of virgin equivalents.

152. The industry did not want recycling to succeed: "Virgin resin companies see recycling as 'internal competition. They don't want to see it succeed."[82] Exxon and Mobil had resources to invest in recycling but no financial incentive to do so. Their profits rely on the sale of virgin plastics, the products of fossil fuels.[83]

a. Exxon and Mobil promised lofty plastic recycling targets that they knew were unachievable.

153. Exxon and Mobil, through the Council for Solid Waste Solutions (Council), kicked off the 1990s by announcing a major initiative to promote plastics recycling. In or around early 1990, the Council announced a $13.2 million, 12-month long program to fund research and promote plastics recycling. One highly publicized part of the program launched by the Council was the "Blueprint for Plastics Recycling," a plan through which the Council would encourage recycling, including by encouraging communities to develop plastics recycling programs. The centerpiece of the Blueprint was the Council's goal to increase the U.S. plastic recycling rate to 25 percent by 1995, despite the fact that just over one percent of plastics was being recycled as of 1990, when the program was announced.

154. The Council announced it would spend $20 million per year to develop recycling capacity by providing information to communities about recycling, buying recycled plastic, and other recycling investments. However, the Council recognized that these investments were insufficient to meet the 25 percent recycling goal. In fact, the Council knew from the beginning that it would not meet the goal to increase the plastic recycling rate to 25 percent by 1995, but "[t]wenty-five was felt to be the lowest rate that would be acceptable to the general public and the environmental community." Despite some industry representatives believing 10 percent to be a more reasonable goal, the Council made sure that the 25 percent stated goal was well-known.

155. Despite knowing its deficiencies, Exxon and Mobil continued to invest heavily

[82] Kirschner, *Recycling's Rough Adolesence*, Chemical & Engineering (C&E) News (Nov. 4, 1996) page 20.

[83] Freinkel, *supra*, at pages 192-193 (citing interview with Howard Rappaport).

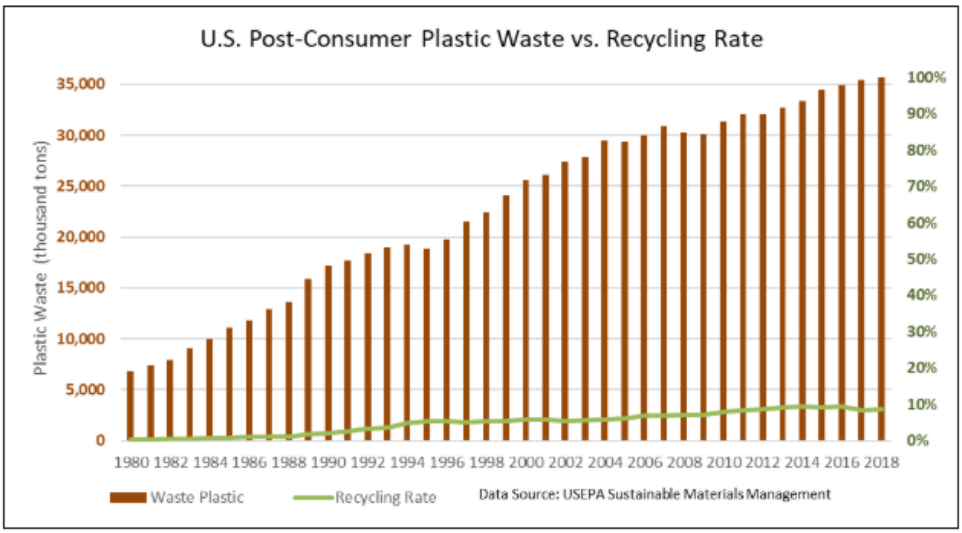
in marketing recycling to the public as the solution to plastic waste. A group of major resin makers that included Exxon and Mobil spent $40 million to promote curbside recycling.

156. The millions of dollars spent promoting recycling as the solution to plastic waste dwarfed Exxon's and Mobil's actual investments in recycling infrastructure. While the Council—comprised of a small number of petrochemical companies including Exxon and Mobil—publicly announced a goal to increase the plastic recycling rate to 25 percent, neither Exxon nor Mobil invested significant funds to increase the feasibility of the alleged goal.

157. The plastics industry concurrently invested in virgin resin, creating an oversupply that drove the price of virgin plastic down. Inevitably, the low price of virgin plastic made recycled plastic even more uncompetitive. Between 1990 and 1996, for every pound of plastic packaging that was recycled, an average of four pounds of virgin plastic was produced.

158. In 1991, SPI and the Council for Solid Waste Solutions announced a goal to raise the post-consumer plastic bottle and containers recycling rate to 25 percent by 1995, but abandoned the goal, which was unmet, in 1995. Meanwhile, the plastic recycling rate in the U.S. has never surpassed nine percent (when massive amounts of plastic waste was exported to China), despite the exponential growth of plastic, meaning more and more plastic fails to be recycled year over year, as shown in Figure G, below.

Figure G: Waste and the Plastics Industry's Alleged Dedication To Make Recycling A Solution To Plastic Waste[84]



[84] Beyond Plastics and The Last Beach Cleanup, The Real Truth about the U.S. Plastics Recycling Rate (May 2022) page 4.

159. The plastics industry, including Exxon and Mobil, recognized, however, that the public was demanding action on the solid waste crisis. In 1991, Mobil published advertisements in national newspapers claiming that the company had "spent hundreds of millions of dollars on environmental efforts" in the last year, including plastic recycling. Mobil informed the public that it was working with supermarket chains to collect plastic shopping bags, which would be recycled in Mobil's plants. These efforts, Mobil explained, "add[] to the momentum the plastics industry has attained as a responsible recycler."

160. At the same time, a 1991 report by the Congressional Research Service noted that serious obstacles to mechanical recycling existed at the time in the areas of resin identification, collection, and sorting, and that according to interviews with industry executives that it made "little sense" to recycle plastics. But the industry nonetheless carried forward, as "the public is generally aware, partly thanks to industry information efforts, that plastics can be economically recycled as materials." SPI internally explained its contradictory practice was intended to appease the public and combat anti-plastic sentiment:

> The public fully embraces only one of the key elements of the integrated waste management package: recycling. Public opinion research conducted for the Council repeatedly has shown that Americans will not support building additional waste-to-energy or landfill capacity until a major recycling effort has been made. . . . **We have got to meet the public on its own terms if we are to secure the acceptance of our products**. In the short term, that means pursuing recycling to the best of our abilities—without promising more than can be economically or environmentally delivered.

Exxon, Mobil, and its industry trade groups knew the public would only accept plastic if they thought it was sustainable. As a result, they promoted recycling as the mechanism to make plastic appear sustainable. SPI stated internally, "we must adapt to a new paradigm—a new way of doing business that will ensure the continued growth and expansion of the plastics industry." The new way of doing business included fooling the public into believing that recycling plastic would solve the plastic waste and pollution problem while increasing the amount of virgin plastic sold to the public.

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b. Exxon and Mobil sought buy-in for their recycling goals by attempting to convince consumers that they were to blame for the plastics crisis.

161. A crucial part of Mobil's and Exxon's strategy to promote plastic recycling was convincing consumers that they were responsible for the proliferation of plastic waste through their own personal habits, rather than through Mobil's and Exxon's efforts to produce an increasing number of plastic products designed for single-use. This strategy shifted attention from Mobil's and Exxon's creation of the plastic to consumers' behavior. Keep America Beautiful, a non-profit organization created by the packaging industry, campaigned against littering and blamed individuals, the "litter bugs," for trash that entered the environment. Keep America Beautiful's focus on littering diverted the public's attention toward individual misbehavior, while at the same time allowing industry to continue producing single-use packaging that, even when properly entered into the waste stream, contributed significantly to plastic pollution.

162. Mobil published advertisements reminding consumers of their role. One in the *Los Angeles Times* stated: "[T]here are no heroes or villains. Every household, like every store or factory, produces its share of refuse. All should shoulder a fair share of the cost of removal."

163. In another, published in the *Sacramento Bee* in 1988 entitled "Foam fast-food containers: The scapegoat, not the problem," Mobil said: "[T]he [plastic waste] problem has to be attacked logically and scientifically, without a helter-skelter rush to anoint villains. For the fact is, there are no villains, and we're all 'guilty.' Every household, every business, every office—indeed, every American—contributes to the refuse stream every day. To zero in on the fast-food business, or the plastics industry is to engage in scapegoating, not problem-solving."

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164. While Exxon and Mobil waged an ongoing campaign to convince the public that plastics recycling would solve the plastic waste and pollution problem, they also continued shifting the blame for dismal plastic recycling rates onto the public:

> Recycling projects initiated by the plastics industry have been announced in many parts of the country. And the opportunities for more plastics recycling ventures are nearly limitless. All that remains to make widespread recycling of plastics a reality is public sector support: more communities and cities must develop programs for separation and collection of recyclable materials. Only then will we be able to ensure a reduction of the growing waste stream.[85]

165. In 1992, the American Plastics Council (APC), of which Exxon and Mobil were members, pledged to educate consumers on "their role in meeting environmental challenges."

166. Exxon, Mobil, and others in the industry recognized that the promotion of recycling was key to allowing consumers to feel comfortable continuing to purchase and dispose of their plastic products—the other side of the coin to blaming consumers for plastic waste. Recycling was a "guilt eraser" that allowed the public to consume plastic products and believe that through recycling, they had the power to ensure that plastic materials would not become pollution and would have a new life as useful products.[86]

c. Exxon and Mobil, through the Society for the Plastics Industry, created and promoted the chasing arrow symbol despite knowing that it was deceiving the public into thinking that all plastics are recyclable.

167. The "chasing arrows" symbol, a logo showing three arrows each folded in the middle and arranged in a triangle was invented in 1970 by a student who won a contest held by a box manufacturer to promote recycling of paper.[87] The chasing arrows symbol is now strongly associated with recycling, and consumers usually assume that the symbol identifies items that can be recycled.[88]

168. In or around 1988, in an attempt to stave off regulation, SPI modified and

[85] Council for Solid Waste Solutions, *supra*, at page 22.
[86] Freinkel, *supra*, at page 162 (citing Roger Bernstein of the American Chemistry Council).
[87] Che, *His Recycling Symbol Is Everywhere. The E.P.A. Says It Shouldn't Be*., N.Y. Times (Aug. 3, 2023) <https://www.nytimes.com/2023/08/07/climate/chasing-arrows-recycling-symbol-epa.html> (as of July 29, 2024).
[88] *Ibid*.

adopted the chasing arrow symbol for plastic containers, including a number in the middle of the three arrows, ranging from 1 to 7, that would correspond to the type of resin the item was made from. This placed responsibility for plastic waste on individual consumers, who would need to know the capabilities of their local recycling facility to recycle each resin number at all times and in all locations, as facilities vary in which resins they accept for recycling. Indeed, there were and still are no western U.S. recycling facilities that can process resin numbers 3 to 7. Nevertheless, SPI's Council on Plastics and Packaging in the Environment (COPPE) assured lawmakers that the codes would "help guide recyclers and promote the practice" by showing the type of plastic that composed an item. Since "[a]lmost all recycling markets are designed to handle one kind of plastic at a time," the industry needed to demarcate the type of plastic on their products in order to group specific types together for recycling. While demarcating the type of plastic on their products makes sense, the use of the chasing arrows, universally understood as the recycling symbol, was unnecessary and misleading.

169. Indeed, in practice, the symbol led consumers to believe that all labeled plastic items were recyclable, due to the chasing arrows symbol. In truth, however, most plastic resins were not able to be recycled because there were no recycling facilities that were capable of recycling most resin numbers.

170. Despite hijacking and promoting the chasing arrows symbol as a purported boost to plastic recycling, the plastics industry knew that the resin identification codes would not improve plastic recycling. Instead, the coding was intended to hide the limits of recycling, delay regulation, and pass responsibility for plastic waste onto consumers. According to the Vinyl Institute in 1986, "efforts to simplify source separation by labeling containers as to their material makeup—a solution growing in popularity with regulators—are of limited practicality."

171. According to Coy Smith, former National Recycling Coalition[89] board member, SPI offered the resin codes to state and local governments as a purported way to address the government's concerns about solid waste while allowing their constituents continued access to

[89] National Recycling Coalition is a non-profit advocacy organization of recyclers, nonprofits, and other groups. See National Recycling Coalition, What We Do, 2023 (2023).

disposable products. The industry "convinced [] states to pass laws—and they did this very quietly—they passed laws that required that symbol with the number on it be put on plastic containers sold in that state…. [F]or most states they did it in, recyclers didn't even know it happened."[90]

172. In states like Iowa, Minnesota, and Ohio, the industry in quick succession managed to convince legislators to mandate plastic container coding and other measures meant to promote plastic recycling, in exchange for abandoning bills prohibiting some or all disposable plastics. By the mid-1990s, SPI's resin code symbol was legally mandated in 39 states. Even the California chasing arrows bill, Assembly Bill 3299, introduced on February 12, 1988, by Assemblymember Killea, was originally written to "require plastic containers and packaging to be manufactured of recyclable or biodegradable plastic." That bill language was removed and the bill was amended in the State Assembly on March 22, 1988, to require only a molded label on plastic products indicating the plastic resin code.

173. As intended, the plastic resin identification codes confused consumers, who believed that any item containing the chasing arrows symbol was recyclable. Two surveys in different states showed that between 53 and 74 percent of consumers believed the presence of the symbol on a product meant it could be recycled where they live. In the early to mid-1990s, a coalition that included plastics recyclers urged SPI to change the chasing arrows symbol to avoid consumer confusion and make it easier for plastic recyclers to process incoming materials. SPI refused to accept the suggestions of the coalition, choosing instead to continue using the chasing arrows symbol that wrongly convinced consumers that plastics separated for recycling would actually be recycled. This consumer confusion, which placed the blame of plastic waste on consumers themselves and thus paralyzed regulatory solutions, was the point.

3. ExxonMobil and the plastics industry successfully fought against plastics restrictions in California and elsewhere with the promise that recycling would make plastics more sustainable.

174. Mobil aggressively responded to regulatory and legislative solutions to reduce

[90] Sullivan, *Plastic Wars* (film transcript) (2020) PBS Frontline <https://www.pbs.org/wgbh/frontline/documentary/plastic-wars/transcript/> (as of July 29, 2024).

the use of disposable plastic products in order to continue growing its plastics production business. Beginning in the early 1970s, SPI aggressively fought a tax on plastic bottles in New York and won.

175. SPI then created a separately-funded Public Affairs Council, the function of which was limited in scope to areas of packaging and solid waste. The Public Affairs Council monitored and reported to its members on state bills related to packaging, solid waste, littering, and other areas of environmental concern.

176. Mobil and the plastics industry mobilized against anti-plastic initiatives "in every state and municipality that offered a serious threat to the industry's sales and profits." Mobil also mobilized its efforts at the federal level. In 1974, SPI boasted that it persuaded the U.S. Food and Drug Administration to bypass a statement on the environmental impact of refillable or disposable plastic bottles, and instead only compared plastic disposables to other disposable materials. The plastics industry aimed to quash challenges to the growth of plastic use and the profits derived from plastics at every level.

177. As part of its strategy to continue promoting the false promise of recycling, the Council also successfully fought plastics restrictions and bans in California. On April 26, 1989, the California State Lands Commission banned the use of polystyrene foam food containers at state-led concession stands and marinas. The Council for Solid Waste Solutions "coordinat[ed] a meeting between industry representatives and the commission to attempt to reverse the prohibition." Indeed, a June 26, 1988 *San Francisco Examiner* article titled, "*War of words over foam packaging*," noted that "Mobil [] spen[t] tens of thousands of dollars in an elaborate public relations campaign to slow the spread of laws that make it illegal to use foam containers."

178. In April and May of 1989, several California cities considered bans on polystyrene packaging. On April 24, 1989, the City of Palo Alto considered ordinances that would (1) ban disposable polystyrene and rigid plastic food service items, (2) require retail stores to offer either paper bags only or a choice between paper and plastic bags, and (3) require that city staff purchase alternatives to polystyrene and disposable rigid plastic food service items. In May 1989, the City of San Ramon considered an ordinance to ban the use of polystyrene foam

food packaging by restaurants and its city administrative offices. The Council for Solid Waste Solutions opposed these ordinances.

179. In May 1989, the County of Santa Cruz considered banning the use of polystyrene foam food packaging. According to the Council, "[i]ndustry representatives have presented the assistant county counsel with information on consequences of such a ban." The Council successfully opposed passage of the ban. The County of Santa Cruz would go without a polystyrene ban for almost two decades—until 2008, when it passed an ordinance banning polystyrene foam packaging in food service.

180. According to the Council for Solid Waste Solutions, "[t]he Sacramento County Board of Supervisors on April 18 [1989] adopted a policy encouraging the public and private use of 'recyclable, reusable, or biodegradable' products made without [chlorofluorocarbons]. In response to testimony and meetings with [the Council for Solid Waste Solutions] and industry representatives, the board amended their original proposal that would have called for a decrease in the use of polystyrene foam products and increased use of biodegradable products." Similarly, "[t]he City of Huntington Beach had directed its citizens' advisory committee to investigate the feasibility of a ban on polystyrene cups made with [chlorofluorocarbons]. Following a meeting with [the Council for Solid Waste Solutions] on May 11, the committee decided to recommend against the ban."

181. In May 1989, Los Angeles City Councilmember Ruth Galanter introduced a polystyrene foam packaging ban. The Council for Solid Waste Solutions made plans to address the councilmember about the proposal. The City of Los Angeles would go without a polystyrene ban for over three decades; it finally passed an ordinance banning polystyrene foam products in 2022.

4. Mobil deceptively advertised the expansion of recycling initiatives but quietly abandoned them a few years later.

182. As described below, Mobil claimed that its plans to recycle plastic bags, its participation in the National Polystyrene Recycling Company, along with its work through the Council for Solid Waste Solutions, showed that the plastics industry was responsibly recycling.

Through these and other efforts, Mobil conveyed that plastic recycling would solve the problem of plastic waste and pollution. These efforts, however, paled in comparison to the huge numbers of virgin plastics the industry was producing. Moreover, Mobil could not sustain these recycling projects for more than a few years. As Exxon Chemical Vice President Irwin Levowitz explained in a 1994 meeting with the American Plastics Council (APC), "[w]e are committed to the activities, but not committed to the results."[91]

a. Mobil's highly publicized efforts to recycle polystyrene failed.

183. In November 1988, Mobil announced that along with plastic manufacturer Genpak Corporation, it would open the nation's first polystyrene recycling plant in Leominster, Massachusetts, which would start by recycling used foam dishes from school, industrial, and institutional cafeterias. The plans were for the Leominster plant to recycle three million pounds of used polystyrene per year.

184. In or around June 1989, Mobil and six other producers of polystyrene announced that they were joining forces to form the "National Polystyrene Recycling Company" (National Polystyrene) which would establish recycling centers for expanded polystyrene (plastic foam), with five such centers opening by the end of 1990. Each of the seven major producers paid two million dollars to start the company. National Polystyrene planned to open recycling centers near Los Angeles, San Francisco, Chicago, and Philadelphia, in addition to existing facilities in Corona, California and Leominster, Massachusetts. Although the involved companies invested $85 million between 1989 and 1997 for recycling facility operations, the National Polystyrene project inevitably failed because the recycled products could not profitably compete with virgin resin.

185. National Polystyrene promised that "1990 is going to be a pivotal year for polystyrene recycling' [. . .]. It will be the year that polystyrene recycling gains momentum.'" In 1990, Mobil published advertisements in national newspapers telling consumers that the National Polystyrene Recycling Company's goal was to recycle at least 25 percent of all food service and

[91] Allen et al., Center for Climate Integrity, The Fraud of Plastic Recycling, *supra*, at page 21.

packaging polystyrene by 1995, or 250 million pounds per year. In or around August 1990, National Polystyrene announced the opening of a second recycling facility, this time in Corona, California, to be operated by TALCO Recycling Inc. beginning in October 1990.

186. According to National Polystyrene, products made out of the used polystyrene would be turned into items with long service lives, keeping the polystyrene out of the waste stream long-term. National Polystyrene also falsely claimed that "most products made from recycled polystyrene can be recycled again and again."

187. Meanwhile, on May 4, 1989, Mobil announced that it would expand a new polystyrene production line at its plant in Joliet, Illinois, expected to be completed in 1991. The expansion would increase the Joliet plant's polystyrene production by 485 million pounds of resin annually and raise Mobil's total production of polystyrene to 625 million pounds per year.

188. But in November 1990, these plans were foiled when a very large consumer of polystyrene, McDonald's, announced that it was switching from polystyrene to paper packaging for its restaurants because its attempts to have its customers separate polystyrene had been largely unsuccessful. This meant that the materials arriving at the recycling plant were contaminated and produced low-quality recycled plastic.

189. In the wake of McDonald's ending its use of polystyrene, National Polystyrene announced that it would instead focus on partnerships with schools and industrial cafeterias, as "students are more dutiful in separating foam trays from other wastes." In East Rockaway, New York and Lexington, Massachusetts, National Polystyrene led students who wished to stop using polystyrene trays in their lunchrooms to believe that allowing the plastics industry to assist them in recycling the trays was more beneficial than switching to a different material. Los Angeles Unified School District, as well as other school districts in California, contracted to provide their used polystyrene trays to National Polystyrene and other polystyrene recyclers.

190. By 1994, just five years after the program started, National Polystyrene had cut its staffing by 25 percent and closed its Hayward, California plant, as it was forced to cut costs in an attempt to compete with virgin resin. National Polystyrene had sold its first plant in Leominster, Massachusetts and that plant had subsequently closed as well. In 1997, National

Polystyrene also closed its plant in Bridgeport, New Jersey, leaving only its plants in Chicago, Illinois and Corona, California. National Polystyrene admitted that the company was still not profitable and had only made money in 1995 and part of 1996. The President of National Polystyrene blamed consumers for recycling's inherent limitations, claiming "[t]he public does not want to buy recycled products."

191. In 1997, a 14-year-old student in North Carolina investigated her school's polystyrene tray recycling program for a class project and discovered that the trays were being dumped into a landfill rather than recycled. The National Polystyrene chairman confirmed that only two percent of polystyrene was being recycled at the time, despite the industry's promise to recycle 25 percent by 1995, and again blamed consumers for "not participating as expected." In 1999, National Polystyrene was sold.

b. Exxon quickly abandoned its polypropylene recycling center.

192. Exxon engaged in similar short-term projects in an attempt to convince the public that plastic recycling would solve the problem of plastic waste and pollution. In 1991, Exxon Chemical Company began construction of a plastics recycling facility in Summerville, South Carolina, with stated plans to recover 20 million pounds per year of post-industrial scrap. In 1994, Exxon sold its South Carolina polypropylene recycling center.[92] Exxon explained that it had built the recycling center to demonstrate a method for recycling polypropylene resin but had sought a buyer "that would continue to operate this facility and integrate it as part of its core business."

193. This recycling "demonstration" bought Exxon cover to continue investing in ramping up plastic production. Indeed, less than a year later after it sold its recycling facility, Exxon Chemical announced that it would build a new polypropylene production line at its Baytown, Texas plant. The new line would raise production by 240,000 tonnes per year to bring Baytown's yearly capacity to 720,000 tonnes. Exxon also announced that it would produce a new

[92] Exxon sold the recycling center to Washington Penn Plastics, which in 2001 formed a joint venture with another local polypropylene recycling plant in an attempt to make operations profitable, as both recycling center owners had found their recycling endeavors unprofitable. (That facility closed in 2008.)

low density polyethylene (called "EXCEED").

c. Mobil misrepresents its ability to recycle polyethylene shopping bags.

194. In 1990, Mobil announced that it would begin a program to recycle polyethylene grocery sacks at its factories in Jacksonville, Illinois; Covington, Georgia; Macedon, New York; and Temple, Texas. Mobil announced it would work with any willing supermarkets to collect plastic bags. Kroger and A&P would participate, as well as Safeway in California, Hawaii, and Nevada. Mobil assured consumers that it was "good for the environment" that so many of them used plastic bags to carry their groceries because the bags would be "recycled into new, useful plastic products." Customers could bring in shopping bags to recycle, as well as other types of plastic bags.

195. In 1992, Mobil announced that it would be able to wash polyethylene at its Jacksonville, Illinois plant prior to recycling, streamlining the recycling process. The following year, Mobil announced that the film it recycled at its Jacksonville, Illinois facility would be used in its new stretch film, Marketwrap, containing at least 20 percent post-consumer material, as well as its Tucker Housewares line, consumer and industrial waste bags, and wood-polymer composite building material.

196. Customers and grocery stores concerned about the environmental impact of plastic shopping bags eagerly took to the new program. Customers of the Lucky grocery store chain in Southern California returned 9.7 million plastic bags during approximately the first year and a half that Lucky started accepting them.

197. As the popularity of the bag return program grew, it became clear that the bags were not being converted into new products as customers were promised. In 1992, Bob Leaversuch, an editor of *Modern Plastics*, explained that the bag return stream, predictably, is a mix of linear-low-density PE and high molecular weight-HDPE, materials having markedly different densities, and flow and physical properties. And the mix of colors and inks used in grocery sacks also yields a reclaimed pellet that is gray-green, and whose reuse potential is therefore limited. Nor can one ignore the potential contaminants, ranging from paper receipts to

pennies left in the bags.

198. As one processor-converter told Mr. Leaversuch, "Our industry is being driven to put recycle-content in our bags, but make no mistake about it, this is difficult and it drives up our cost." It cost 25 cents per pound to process the used bag stream, while equivalent virgin resin can be purchased for 22 cents per pound.

199. Seeing the writing on the wall, in 1995, Mobil sold its entire Plastics Division, which included its facilities for recycling polyethylene grocery sacks in Jacksonville, Covington, Macedon, and Temple.

d. By the mid-1990s, Exxon, Mobil and the plastics industry stopped funding recycling efforts and ramped up production of virgin plastics.

200. By the mid-1990s, the plastics industry had succeeded in convincing the public that it could sustainably use and dispose of plastic products marketed by Mobil and others because the plastics would be recycled. The industry's focus on selling the recyclability of plastics, and thus investments in recycling itself, waned. The American Plastics Council's (APC) senior director of government affairs and state legislation explained: "There's a shift in the political climate …. There's a recognition that the plastics industry has made strides. There is a feeling we are more in alignment, that we're not singled out as the symbol of a throwaway society, a society using too much." As one industry consultant observed: "The environmental pressure is off."

201. Meanwhile, the plastics industry had accurately recognized that recycling was not economically viable. The price of recycled resins could not compete with low-cost virgin resins, and recycled resins were of lower quality. Higher-priced products made of lower-quality recycled resins had difficulty competing with cheaper virgin plastic products, despite customers' desires for recycled products.

202. In the late 1990s, Exxon was producing 1.6 billion pounds of virgin polypropylene at its Baytown, Texas chemical plant. Exxon also produced polyethylene and worked to develop new uses that would necessitate its additional production, such as single-serving milk bottles that consumers could drink on the go. A business research firm conducting a

1995 study of plastic recycling concluded that:

> Recycled resin prices must decrease in order to make them more competitive with virgin resins. Some of the price differentials will be enhanced when economies of scale are reached. Nevertheless, recycled resins are more difficult to process and of generally lower quality than virgin resins because of the presence of contaminants and an array of varying color and other additives…. Enhanced supercleaning and other processes produce high quality resins comparable to virgin materials but at a higher cost.

The firm predicted that a mere 3.4 percent of plastics would be recycled by 1998, a far cry from the 25 percent the industry had promised by 1995.

203. In 1996, Rutgers' Center for Plastics Recycling Research, which opened in response to New Jersey's attempts to ban non-recyclable materials, closed due to "dwindling contributions from the plastics industry, a perceived decline in the necessity and practicality of plastics recycling, and a change in research emphasis by the university and state agencies." Two major recycling centers also closed at or around the same time: Quantum Chemical's plant in Heath, Ohio, and Union Carbide Corporation's plant in Piscataway, New Jersey. After plastics industry lobbyists succeeded in preventing the California legislature from passing a robust plastics recycling law, and after the plastics industry successfully convinced the public that voluntary recycling was the solution to plastic waste and pollution, the industry shifted its focus away from recycling.

204. When the industry urged the public to embrace plastics recycling and to "take responsibility" for consumers' own use of plastic products, the public willingly did so. But the recycling industry never committed to actually recycle these plastic products.

205. In communities near San Diego, local governments that had eagerly set up curbside recycling programs found that no one wanted most of the plastics they collected from residents, except for soda bottles, jugs, and similar items. For recyclers, it was not economically feasible to take other plastics, and those communities considered dumping the purportedly recyclable trash they had collected.

206. In the Twin Cities in Minnesota—two of the first cities to consider plastic bans, which instead accepted the plastics industry's offer of assistance in developing a recycling program—ostensibly recyclable plastic products were "piling up" due to a lack of recycler

demand.

207. For the recycling industry, it was impossible to make plastics recycling profitable. Anticipating that plastic recycling would be mandated, an owner of a Norwalk, Connecticut solid waste consulting company stated, "It's hard to make money on it, but we've got to find ways to minimize the losses." Indeed, an employee of Replatec, a plastic waste company, also stated that "it's not clear that the market for even 'pure' recycled resins will be strong enough to support the cost of sorting and collecting any time soon—even if the industry realizes its goals of developing new uses for recycled material." Likewise, governmental entities were also facing budget crises that affected plastics recycling: "Washington, D.C. halted municipal recycling several times in the mid-1990s, as did New York City for two years starting in 2001. In both cases, local officials argued that they had to suspend recycling to save money."[93]

208. As the Council for Solid Waste Solutions' Ronald Lisemer said, "[t]he industry attitude was, 'We'll set this up and get it going, but if the public wants it, they are going to have to pay for it.'"[94]

209. At an APC meeting in 1994, Exxon staff advised others to avoid being too open about discussing how far from target the industry was from meeting its recycling goals, as the issue was "HIGHLY SENSITIVE POLITICALLY."[95]

210. APC ultimately failed to meet the goals set by its parent organization, SPI, to recycle 25 percent of plastics by 1995. APC denied that it had failed, stating vaguely that "[t]he idea of rates, dates, mandates . . . numerical goals, is all very artificial." APC retreated from SPI's goal, claiming, "the 25 percent target is not as important as it once was" because progress had been made to remove obstacles to recycling. The former director of governmental affairs for Dow Chemical Co., who was also involved with APC, explained that "[SPI was] caught in a rate and date frenzy. . . . There was pressure to set rates and dates because the fear was that if they didn't, the government would set worse ones."

[93] Rogers, *Gone Tomorrow: The Hidden Life of Garbage*, *supra*, at page 180.
[94] Sullivan, *Plastic Wars* (film transcript), *supra*.
[95] Allen et al., Center for Climate Integrity, The Fraud of Plastic Recycling, *supra*, at page 14 (citing Bailey Condrey, *ART Meeting—Houston 1/26/94*, in Notes 1 (1994)).

211. ExxonMobil's campaign of deception—or, "propaganda efforts," as one 1988 article coined it—had succeeded. With the public continually falling victim to ExxonMobil's misinformation, the demand for plastic has steadily increased for decades. Consequently, "U.S. plastics production grew from 3 billion pounds in 1958 to more than 61 billion pounds in 1990, with an average annual growth rate of 10.3 percent."

212. The result foreseeably oversaturated and overwhelmed an ill-equipped waste management system. Over ten years later, in 2000, the plastics recycling rate sat at only six percent and only increased three percentage points, to nine percent, by 2018.[96] According to plastic waste export data, the ostensible increase to nine percent was largely due to millions of pounds of plastic waste being exported each year to China and developing countries, supposedly for recycling but often for incineration or landfilling.[97] Today, the plastic waste exports have declined and the U.S. plastics recycling rate has declined to a dismal five percent.[98]

D. In the 2000s, ExxonMobil Again Promoted Recycling to Distract the Public from Its Contribution to Plastic Pollution.

1. In the 2000s, public knowledge of marine plastic pollution becomes widespread.

213. By the late 1990s and early 2000s, public attention temporarily shifted away from the issues of plastic production and waste management, as ExxonMobil had successfully convinced many members of the public that their plastic waste would be recycled.

214. But the full extent of plastic pollution would not stay hidden for long. In 1997, a sailor and researcher named Charles Moore stumbled upon what later became known as the Great Pacific Garbage Patch—an enormous area between California and Hawaii where pollution had converged and formed a giant plastic soup. The plastic ranged in size from tiny particles to much larger items like bottles and traffic cones.

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[96] U.S. Environmental Protection Agency, *National Overview: Facts and Figures on Materials, Wastes, and Recycling*, *supra*.

[97] Beyond Plastics and The Last Beach Cleanup, The Real Truth about the U.S. Plastics Recycling Rate, *supra*, at page 2.

[98] Nat. Renewable Energy Laboratory, *NREL Calculates Lost Value of Landfilled Plastic in the U.S.* (April 28, 2022) <https://www.nrel.gov/news/press/2022/nrel-calculates-lost-value-of-landfilled-plastic-in-us.html> (as of July 28, 2024); see also Beyond Plastics and The Last Beach Cleanup, *supra*.

215. Moore's discovery inspired him to dedicate his career to studying marine pollution. Other researchers followed suit and the issue received attention from mainstream media. By the mid-2000s, the Garbage Patch had received broad media coverage and scientists had found a total of five similar gyres where trash was concentrated.

216. Scientists studying the impacts of plastic pollution determined that nearly 90 percent of the floating mass of trash was plastic. Scientists also observed that albatross chicks born near the floating trash consumed plastic items that they mistook for the sea life they normally consume and that many of the chicks passed away. Plastic also caused the death of an estimated one million other seabirds and a hundred thousand other sea mammals and turtles every year.

217. Similar to the late 1980s and early 1990s, when ExxonMobil faced public backlash over the volume of plastic waste that its business had created, ExxonMobil had a new public relations crisis. By the mid-2000s, not only was the public aware that plastics produced an enormous amount of waste, but the public now knew that vast amounts of plastic were flowing into the ocean and causing untold damage to the marine environment and wildlife.

218. Patty Long, interim chief executive of the Plastics Industry Association, reflected at an industry event in 2019 that "it's been pretty uncomfortable … as we have watched images of plastic strewn over beaches and pictures of sea animals with ingested plastic."[99]

219. In 2008, the California Ocean Protection Council, a state agency, issued a strategy to reduce marine litter, implementing its 2007 resolution addressing the same concerns.[100] The strategy included reducing single-use plastic packaging, preventing and controlling litter, removing litter, and coordination with other Pacific jurisdictions.[101]

220. In 2004, an oceanographer named Richard Thompson published a scientific article documenting tiny pieces of plastic that he and his colleagues had discovered and collected

[99] Bruggers, *Booming Plastics Industry Faces Backlash as Data about Environmental Harm Grows*, Inside Climate News (Jan. 24, 2020) <https://insideclimatenews.org/news/24012020/plastics-marine-oceans-climate-change-oil-gas-carbon-emissions/ > (as of July 29, 2024).

[100] Cal. Ocean Protection Council, An Implementation Strategy for the California Ocean Protection Council Resolution to Reduce and Prevent Ocean Litter (Nov. 20, 2008) page 6.

[101] *Ibid.*

in the beaches near Plymouth, United Kingdom. Thompson's study stated that the plastic particles—which he called "microplastics"—appeared to be disintegrated fragments of larger pieces of plastic. The number of microplastics from the 1980s and 1990s were much higher than the numbers from the 1960s and 1970s, suggesting a link between plastic production and creation of microplastics. The environmental consequences of the microplastics were unknown, but deemed to warrant further study.

221. Suddenly, the public realized that plastics were actually everywhere and posed a formidable danger.

2. ExxonMobil reuses its old strategy of emphasizing recycling to divert attention from plastic production.

222. ExxonMobil, through its agents, servants and alter-ego industry groups, disputed that plastic production was to blame for marine pollution. ExxonMobil worked to shift any focus from itself as a resin producer to the consumers of plastic products. ExxonMobil claimed that individuals are responsible for pollution through their behavior. Additionally, the American Chemistry Council (ACC) told the press that "[t]he responsibility is with the people who control the material, not those who produce it." ACC further asserted that everyone shares a responsibility to stop litter in order to prevent plastics from polluting the ocean.

223. As in previous decades, ExxonMobil perpetuated the false message that plastics recycling would solve the problem of plastic waste and pollution, in order to distract the public from concern over the environmental harm that plastics cause and to allow ExxonMobil to produce new plastic at accelerating rates. In 2009, the ACC told CNN that most plastics are recyclable and the next year said "Plastics don't belong in the ocean—they belong in the recycling bin. Plastics are a valuable resource—too valuable to waste as litter and as trash." ExxonMobil knew that these statements were false or likely to deceive the public, including knowledge that most plastics could not be recycled at scale, that plastics would end up in the ocean, and that there was no economic market for recycled plastic.

224. ExxonMobil, through the ACC, created new recycling initiatives to deceive the public into believing that recycling could solve the marine pollution crisis. The ACC advertised

that it was working to expand recycling efforts, including recycling of plastic grocery bags, educating children on marine debris, and campaigning to fight litter.

225. ACC organized an Earth Day program with students at 91 Los Angeles afterschool programs to teach students about recycling. The same campaign ran a competition for children's soccer teams in Southern California, challenging teams to collect the most recyclable material in order to educate them on the importance of recycling and reducing litter. The ACC explained that the children should be proud of their efforts because "the plastics they recycled will go on to have second and third lives as useful new products."

226. In 2009, ACC and Keep America Beautiful partnered with California State Parks (Parks) to promote recycling by providing recycling bins and signs at beaches throughout the state. The same program also worked with the City of Los Angeles and the City of Woodland, California to provide similar signs and recycling bins within those cities. ACC participated in the California Coastal Cleanup Day, including donating 100,000 plastic bags for collecting waste. ACC also sponsored a cleanup and recycling education program in San Diego with Parks. However, ExxonMobil and its trade groups simultaneously aggressively pushed the false promise of plastic recycling while continuing to saturate the public with ever-increasing amounts of single-use plastic.

3. ExxonMobil blames Asian countries for ocean plastics, even though the same countries historically imported U.S. plastic waste.

227. Prior to 2017, developed countries like the United States shipped most of their plastic waste to China. But in 2018, China put in place its National Sword Policy, which banned certain types of waste and lowered the acceptable rate of contamination of imports of recyclable waste from five percent to 0.5 percent.

228. Most exporters of plastic waste were unable to meet China's new standards, and, as a result, many of these plastics were landfilled or stored at recycling facilities. No markets existed for plastic waste labeled with resin numbers 3 through 7. Some plastic waste was diverted to secondary markets in different East and South Asian countries. Other countries, like Malaysia, Thailand, and Vietnam, started introducing their own restrictions on the imports of plastic and

other waste after becoming inundated with the materials.

229. In some areas of the United States, municipal recycling services were forced to a halt, finding that the lack of a market for recyclables meant that collection costs could no longer be covered by selling the waste. The City of San Diego was charged over a million dollars by its waste contractor in 2018. Other California municipalities were required to reduce the materials collected. Sacramento, for example, ceased collection of plastics with resin numbers 4 through 7 and told residents to throw those items in the garbage.

230. In 2020, the ACC lobbied the United States to negotiate with Kenya to accept imports of U.S. plastics and plastic garbage, in light of U.S. efforts to restrict use of plastic products at home, and other countries' new unwillingness to accept U.S. plastic garbage.

231. The ACC, however, publicly claimed that marine plastic pollution was due to Asian countries like China, Vietnam, Indonesia, and the Philippines failing to manage their own waste.

232. In or around 2019, ExxonMobil was a founding member of the Alliance to End Plastic Waste (Alliance), an organization formed to promote recycling, waste collection, and cleaning areas impacted by plastic waste. Importantly, the Alliance does not promote projects that limit the production of plastic and does not focus on projects for reuse of plastic. Through the Alliance, ExxonMobil falsely emphasized and continues to emphasize recycling and waste management as solutions to the plastic waste crisis, despite their inability to solve the crisis. ExxonMobil pushed the Alliance to ensure that its mission would not include reducing the production of plastic.

233. Consistent with ExxonMobil's deceptive position that plastic pollution in the ocean is the fault of developing countries with poor waste management infrastructure, rather than the inevitable result of unbridled plastic production, many of the Alliance's initiatives focused on developing countries.

234. ExxonMobil's investments and actions through the Alliance, however, merely create the outward appearance of taking action to address ocean pollution rather than actually providing any relief. As of 2022, the Alliance had only diverted 34,000 tons of plastic waste from

entering the environment, including plastic that was ultimately landfilled or incinerated. This represents a tiny fraction of the Alliance's goal to divert 15 million tons over its first five years,[102] and a negligible portion of the plastic produced by ExxonMobil that enters the ocean annually.

4. ExxonMobil increased its production of virgin plastics in the 2010s.

235. In the 2010s, ExxonMobil made significant investments into ramping up plastic production in the United States. The glut of ethane produced by increased fracking of natural gas, along with growing awareness of climate change and reduced demand for oil and gas as fuel, made plastics an attractive growth area for petrochemicals. In 2018, the International Energy Agency (IEA) reported that petrochemicals, including plastics, consumed 12 percent of oil globally, but that petrochemicals would account for one third and one half of oil consumption by 2030 and 2050, respectively.

236. In 2017, ExxonMobil started producing polyethylene at its plastics plant in Mont Belvieu, Texas. As of 2022, the plant was producing approximately five billion pounds of low-density and high-density polyethylene products each year.

237. In 2019, ExxonMobil also began producing polyethylene at its plastics plant in Beaumont, Texas. In the late 2010s, Exxon additionally expanded its production of plastics in its Baytown, Texas facility.

238. Operation of another plastics facility in San Patricio County, Texas, owned jointly by ExxonMobil and SABIC, a Saudi Arabian diversified chemicals company, began in 2022, increasing ExxonMobil's global polyethylene capacity by 1.3 million tonnes per year.

239. For decades, the deceptive promise of plastics recycling provided ExxonMobil cover in times of public scrutiny of plastic products and allowed it to continue to produce more and more plastic each year unchecked. This deception continues today.

III. IN A MODERN TWIST, EXXONMOBIL NOW DECEPTIVELY PROMOTES "ADVANCED RECYCLING" AS THE SOLUTION TO THE PLASTIC WASTE AND POLLUTION CRISIS.

240. In recent years, images depicting the dire harms and costs of the overproduction

[102] Baker et al., *Inside Big Plastic's Faltering $1.5 Billion Global Cleanup Effort*, Bloomberg (Dec. 20, 2022) <https://www.bloomberg.com/features/2022-exxon-mobil-plastic-waste-cleanup-greenwashing/> (as of July 29, 2024).

of plastic such as beached whales and dead seabirds with their guts bursting with plastic waste have flooded the internet and our collective consciousness. Further, an explosion of scientific research has confirmed that plastic particles have infiltrated our bodies and even the most remote places on Earth.[103] Justifiably, there has been renewed public outcry over the overproduction of plastic and proliferation of unnecessary single-use plastics.

241. ExxonMobil knows that addressing plastic waste and pollution remains a high priority for the public. ExxonMobil comprehensively tracks scientific research, articles, and legislation on plastic waste and pollution, and regularly assesses public opinion about the crisis. Indeed, internally, ExxonMobil notes that "[o]cean plastic waste [is] a top public concern." In response to the Minderoo Foundation's Plastic Waste Makers Index 2021 report that found that ExxonMobil is the biggest contributor of single-use plastic waste, internally, ExxonMobil feared that "[t]he focus may be shifting from the brands/retailers to the producers."

242. ExxonMobil is paying close attention to public opinion because it can hurt ExxonMobil's bottom line. ExxonMobil views public concerns about plastic waste, specifically, about single-use plastic waste, as a "market threat." ExxonMobil considers the production of polyethylene and polypropylene used in single-use plastic applications as the "core" of its chemicals and products portfolio, with "80% of EMCC's growth [being] dependent on single-use plastics applications." Further, the predicted global decline in fossil fuel demand is driving ExxonMobil to urgently move forward with promoting "advanced recycling" to offset sagging fuel sales with profits from plastic sales. Thus, ExxonMobil has a strong financial motive to assuage public concern about plastic waste.

243. ExxonMobil has knowingly disregarded the growing number of studies concluding that a dramatic reduction in plastic production is necessary to address the plastic waste and pollution crisis. Instead, ExxonMobil has turned to its demonstrably false, timeworn playbook of convincing the public that we can recycle our way out of the plastic waste and pollution crisis but with a modern twist: ExxonMobil now claims that "advanced recycling" will address the shortcomings of mechanical recycling.

[103] See Factual Background, Section I.A-C, above.

244. "Advanced recycling" (also known as "chemical recycling")[104] is an umbrella term used by the plastics industry to describe a variety of heat or solvent-based technologies that can theoretically convert certain types of plastic waste into fuels,[105] chemicals, waxes, and petrochemical feedstock, which, after further refinement, can be used to make new plastic. In the United States and globally, pyrolysis is the most common type of proposed "advanced recycling." Typically, in a pyrolysis operation, plastic waste is heated in a standalone chamber until it yields liquids, waxes, and gases. The liquid is composed of an oil mixture called "pyrolysis oil" or "pyoil" that includes naphtha and other hydrocarbons. Naphtha is then "cracked" in a petrochemical processing unit called a steam cracker, which breaks down the naphtha further into various hydrocarbon products including ethylene, and propylene. Ethylene and propylene are then polymerized to make plastic (polyethylene and polypropylene). However, very little of the plastic waste that undergoes pyrolysis and subsequent processing makes it out as new plastic. A 2023 study by the National Renewable Energy Laboratory concluded that pyrolysis and gasification (a similar technology) only retained 1 to 14 percent of the plastic waste inputted.[106]

245. On December 14, 2022, ExxonMobil announced the start of its "advanced recycling" program after a "successful" trial at its Baytown Complex in Texas. ExxonMobil claims that its Baytown Complex can "recycle" 40,000 tonnes of plastic waste per year. ExxonMobil claims that, through Baytown and other future ventures, it will process 500,000 tonnes of plastic waste per year by year-end 2026.

246. ExxonMobil's version of "advanced recycling" involves "co-processing" plastic waste. Similar to standalone pyrolysis units, co-processing uses heat to break down plastic waste. But instead of doing so in a standalone chamber, plastic waste is fed into a preexisting oil refinery processing unit called a coker. A miniscule amount of plastic waste is mixed into a large amount of residual refinery materials (materials such as heavy oils and asphalts produced as byproducts

[104] The plastics industry often uses the terms "advanced recycling" and "chemical recycling" interchangeably.

[105] As explained below, any process that creates fuels from plastics is not considered to be "recycling."

[106] Uekert et al., *Technical, Economic, and Environmental Comparison of Closed-Loop Recycling Technologies for Common Plastics* (2023) 11 American Chemical Society Sustainable Chemistry & Engineering 965, 969.

of the distillation of crude oil in a refinery), and together they undergo the coking (heating) process. The coking process yields mostly pyrolysis oil liquids and a small amount of pyrolysis gas including ethane. Most "advanced recycling" operations that use pyrolysis technologies use naphtha (a component of pyrolysis oil) as a feedstock for steam cracking. However, at its Baytown Complex—the heart of ExxonMobil's "advanced recycling" program—ExxonMobil operates ethane steam crackers, not naphtha steam crackers. ExxonMobil feeds the small amount of pyrolysis gas ethane produced from the coking process, alongside a much, much larger stream of virgin ethane gas, into the ethane steam cracker to produce ethylene and propylene, some of which is then polymerized to make plastic. The Baytown Complex does not feed naphtha into ethane steam crackers. Naphtha produced in the coking process is instead used to primarily produce fuels.

247. ExxonMobil calls the final product of its "advanced recycling" process "certified circular polymers" and has announced the sale of these plastics to large plastic packaging and product manufacturers, including but not limited to, Amcor, Berry Global, Pactiv Evergreen, Pregis, Printpack, and Sealed Air.[107]

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[107] See, e.g., ExxonMobil Chemical, *News Release: Amcor Increases Use of Advance Recycling Materials Leveraging ExxonMobil's Exxtend Technology* (Apr. 12, 2022) <https://www.exxonmobilchemical.com/en/resources/library/library-detail/93281/amcor_release_exxtend_en> (as of July 29, 2024); ExxonMobil, *News Release: ExxonMobil Makes First Commercial Sale of Certified Circular Polymers* (Feb. 24, 2022) <https://corporate.exxonmobil.com/news/news-releases/2022/0224_exxonmobil-makes-first-commercial-sale-of-certified-circular-polymers> (as of July 29, 2024); ExxonMobil Chemical, *Press Release: Pactiv Evergreen and ExxonMobil Collaborate to Leverage Advanced Recycling for Foodservice Industry Packaging* (Sept. 27, 2023) <https://www.exxonmobilchemical.com/en/resources/library/library-detail/109338/pactiv_evergreen_and_exxonmobil_collaborate_to_leverage_advanced_recycling_for_foodservice_industry_packaging_en/> (as of July 29, 2024); ExxonMobil Chemical, *Press Release: Pregis Introduces Circular Innovation to PE Foam Solutions* (Feb. 21, 2024) <https://www.exxonmobilchemical.com/en/resources/library/library-detail/111456/pregis_advanced_recycled_foam_press_release_february_2024/> (as of July 29, 2024); Printpack, *Printpack, ExxonMobil, Pacific Coast Producers Bring Circularity to Fruit Cups* (Aug. 29, 2023) Packaging World <https://www.packworld.com/supplier-news/news/22871469/printpack-printpack-exxonmobil-pacific-coast-producers-bring-circularity-to-fruit-cups/> (as of July 29, 2024); ExxonMobil Chemical, *News Release: ExxonMobil, Cyclyx, Sealed Air, and Ahold Delhaize USA Demo Advanced Recycling for Plastic Waste* (Apr. 27, 2023) <https://www.exxonmobilchemical.com/en/resources/library/library-detail/107131/circularity_demo_press_release_en> (as of July 29, 2024).

248. ExxonMobil boldly heralds this "proprietary advanced recycling technology" as a breakthrough in recycling technology. But this purported breakthrough technology has been available to ExxonMobil to employ in their production operations for decades. In fact, Mobil patented the co-processing of plastic waste in cokers in 1978.[108] And both Exxon and Mobil conducted co-processing pilots in the 1990s, neither of which continued beyond the trial phase as public attention on plastic waste dwindled at that time.

249. Nevertheless, almost half a century after Mobil originally patented the co-processing of plastic waste, ExxonMobil attempts to rebrand this technology as the "new" and "advanced" solution in order to appease renewed public concern over plastic waste and pollution.

250. Internal communications show that ExxonMobil is advocating for public acceptance of "advanced recycling" "to avoid the 'negative' impacts/consequences of the looming implementation/adoption of the circular economy way of thinking." ExxonMobil admits that its driving motivation behind its "advanced recycling" push is that "the public perception benefits received will be invaluable … even if it proves to not be financially sustainable." This startling admission harkens back to former Exxon Chemical vice president Irwin Levowitz's 1994 admission that Exxon was "committed to the activities [of recycling plastic], but not committed to the results."

251. ExxonMobil's aggressive promotion and marketing of "advanced recycling" deceives its customers, investors, and the public at large. This modern-day campaign of deception regarding "advanced recycling" is apparently working. ExxonMobil internally notes that "[r]esearch shows that the public is increasingly aware of plastics issues but favorably receptive to advanced recycling messages." Like its promotion of mechanical recycling decades ago, ExxonMobil's promotion of "advanced recycling" is another deceptive marketing campaign designed to encourage unabated consumption of its plastic products, rather than a real solution to the extraordinarily harmful plastic waste and pollution crisis that ExxonMobil's deception substantially caused and continues to exacerbate.

[108] Yan, Mobil Oil Corporation, Conversion of Solid Wastes to Fuel Coke and Gasoline/Light Oil, U.S. Patent 4,118,281 (Oct. 3, 1978).

A. ExxonMobil Conceals the Technical Limitations of Its "Advanced Recycling" Program.

252. ExxonMobil promotes its "advanced recycling" program as a technological wonder. However, a closer look reveals that ExxonMobil has misled the public about the technical capabilities of its co-processing technology.

1. ExxonMobil destroys most of the plastic waste it co-processes.

253. When a company claims that it "recycles" plastic waste, a reasonable consumer would believe that most of the plastic waste that enters the recycling process would end up as new plastic. In misleading statements in interviews and articles, ExxonMobil repeatedly suggests that most or all of the plastic waste it co-processes in its "advanced recycling" program becomes new plastic. However, as explained below, only a small portion of the plastic waste input actually becomes new plastic. Examples of ExxonMobil's deceptive talking points include:

- "Advanced recycling . . . break[s] down materials to their molecular level. These 'refreshed' molecules then become the raw materials used to make brand-new plastics and other valuable products. It truly gives a new life to plastic waste."[109]
- "[U]nlike mechanical recycling—where each round of recycling degrades the plastic—there are no evident technical limitations regarding how many times a plastic product can be put through advanced recycling processes."[110]
- "That molecule will go into our unit where it will be broken down to its molecular level and that molecule will end up becoming new plastic."[111]
- "Our process is efficient, converting about 90% of the plastic waste into raw

[109] ExxonMobil, *Advanced Recycling: A Different Way to Handle Used Plastics* <https://corporate.exxonmobil.com/what-we-do/materials-for-modern-living/a-different-way-to-handle-used-plastics> (as of July 29, 2024).

[110] McKee, President, ExxonMobil Product Solutions, *ExxonMobil Steps Up Advanced Recycling to Help Address Plastic Waste* (Mar. 30, 2021) <https://corporate.exxonmobil.com/news/viewpoints/steps-up-advanced-recycling-plastic-waste#:~:text=And%20unlike%20mechanical%20recycling%20%E2%80%93%20where%20each%20round,product%20can%20be%20put%20through%20advanced%20recycling%20processes> (as of July 29, 2024).

[111] KPRC 2, *Efforts of Advanced Recycling* (Feb. 16, 2023, updated July 22, 2024) Click2Houston.com <https://www.click2houston.com/video/news/2023/02/16/efforts-of-advanced-recycling-/> (as of July 29, 2024).

materials."[112]

- "It is a facility that is taking difficult to recycle plastics, plastics that would otherwise end up in a landfill or incineration, and we are putting them into this unit producing high quality raw materials that can then be used to make new plastic products."[113]
- The output is "high performance circular polymer. This is one of the beauties of this process. We can take plastic waste in and convert it into materials with the same quality as you have today."[114]
- "For every pound of certified circular plastic our customers buy from us, they can be confident that at least one pound of plastic waste was removed from the environment and from the waste stream."[115]

254. These types of statements misleadingly suggest that ExxonMobil's "advanced recycling" technology achieves 100 percent yield, i.e. that most or all of the plastic waste inputted in the process becomes new plastic or other environmentally beneficial products.

255. However, 100 percent yield to new plastics, or anywhere close to it, is technically impossible, and ExxonMobil knows this. At its Baytown Complex—currently the site of ExxonMobil's only active "advanced recycling" unit—a mere **eight percent** of the plastic waste ExxonMobil co-processes in its cokers and ethane steam crackers becomes new plastics. The remaining 92 percent of the plastic waste co-processed becomes primarily fuels, which are ultimately destroyed after they are combusted. Therefore, ExxonMobil's claims that there are no limitations to endlessly recycling plastic waste are false because 92 percent of the plastic waste is

[112] Zamora, Senior Vice President, ExxonMobil Product Solutions, *ExxonMobil: Bringing Advanced Recycling to Life* (Nov. 14, 2023) Consumer Brands Assn. <https://consumerbrandsassociation.org/blog/exxonmobil-bringing-advanced-recycling-to-life/ > (as of July 29, 2024).

[113] BIC Magazine, *ExxonMobil Starts Up Large-Scale Advanced Recycling Facility in Baytown, Texas* (Apr. 23, 2023) YouTube <https://www.youtube.com/watch?v=psIhotx4oUI> (as of July 29, 2024).

[114] *Ibid.*

[115] See, e.g., Skewes, *ExxonMobil Advanced Recycling Changes Plastic's Destiny*, The Baytown Sun (Apr. 16, 2023) <https://baytownsun.com/local/exxonmobil-advanced-recycling-changes-plastic-s-destiny/article_86e61a0e-da32-11ed-a571-cb855cdf8807.html/> (as of July 29, 2024).

destroyed (not made into new plastics) in each processing cycle. But the low yield is not due to using pyrolysis gas ethane as the feedstock to the crackers. In a potential future "advanced recycling" project at another ExxonMobil Gulf Coast plant site that would employ pyrolysis oil naphtha as the feedstock to naphtha steam crackers, a mere 13 percent of the plastic waste would become new plastics.

256. ExxonMobil, of course, omits this critical piece of information in public statements. ExxonMobil knows that its "advanced recycling" program would not gain traction and public acceptance if it had to admit that most of what it yields is not plastic but rather fuels. The truth is ExxonMobil's "advanced recycling" program is less like a recycling program, and more like a waste disposal or destruction program akin to the incineration solutions advocated by ExxonMobil in the past.

2. ExxonMobil's "certified circular polymers" are effectively virgin polymers due to inherent technical equipment limitations.

257. When plastic is mechanically recycled, the plastic downgrades, and the final product is aesthetically unpleasing or unsafe to use for things like food packaging or medical applications. ExxonMobil claims that its "advanced recycling" technology solves that dilemma, as its "certified circular polymers are identical to polymers produced from virgin raw materials."[116] ExxonMobil has even announced sales to major converters (companies that specialize in transforming raw plastic materials into finished products) and brands touting that its "certified circular polymers" can and would be used in food-safe applications such as fruit cups and food packaging.[117] These "certified circular polymers" would be produced at its Baytown facility.

258. ExxonMobil is correct that its "certified circular polymers" are, in fact, identical to its virgin polymers. But this is not because co-processing magically transforms plastic waste into virgin-like plastics. They are identical because, as explained below, ExxonMobil's "certified

[116] ExxonMobil, *News Release: ExxonMobil Makes First Commercial Sale of Certified Circular Polymers*, *supra*.

[117] Printpack, *Printpack, ExxonMobil, Pacific Coast Producers Bring Circularity to Fruit Cups*, *supra*; ExxonMobil, *Press release: Pactiv Evergreen and ExxonMobil Collaborate to Leverage Advanced Recycling for Foodservice Industry Packaging*, *supra*.

circular polymers" actually contain virtually no waste plastic.

259. Oil and gas refinery and petrochemical units are not designed to process large volumes of plastic waste, which contains a wide range of corrosive additives and contaminants. In order to protect its expensive equipment, ExxonMobil caps the amount of plastic waste it feeds into its cokers at only one to two percent of the total amount inputted, meaning that *98 to 99 percent of the coker's feed is comprised of virgin refinery residual materials*. Accordingly, any pyrolysis oil or pyrolysis gas produced will be overwhelmingly derived from virgin materials. Indeed, an independent study of ExxonMobil's plastic co-processing operations found that feeding only one to two percent plastic waste is such an insignificant proportion of the total flexicoker feed that the plastic waste "should all but disappear in the coking process."[118] The study concludes that ExxonMobil could even feed one percent parking lot dirt into its cokers and not upset the process because of dilution.[119]

260. As noted above, the 40,000 tonnes of plastic waste ExxonMobil purportedly co-processes at Baytown per year yields predominantly pyrolysis oil liquids. It yields a small amount of pyrolysis gas including ethane. ExxonMobil then mixes this small amount of ethane with a much, much larger stream of virgin ethane, and together they are fed into an ethane steam cracker to make ethylene and propylene.

261. According to internal documents, the amount of plastic-derived ethane only constitutes **0.09 percent** of the total ethane stream fed into the ethane steam cracker at Baytown. This means that any plastic made from the resulting ethylene and propylene could only be composed of a maximum of **0.09 percent** plastic waste.

262. However, in May 2024, ExxonMobil stated that it did not process plastic waste at the full 40,000 tonnes/year design capacity of the Baytown "advanced recycling" facility, but rather processed only 22,000 tonnes of plastic waste over 15 months.[120] Based on this actual

[118] Nix, Green Group Consulting, Plastic Recycling – Challenges and Opportunities (Feb. 6, 2023) page 15.

[119] *Ibid.*

[120] ExxonMobil, *Doubling Down on Advanced Recycling in Baytown* (May 6, 2024) <https://corporate.exxonmobil.com/what-we-do/materials-for-modern-living/advanced-recycling-baytown-

(continued…)

operating data, the average amount of plastic made from "advanced recycling," or plastic waste, would only constitute **0.042 percent** of the total amount of plastic produced at Baytown on an annual basis.

263. With a maximum physical content of just 0.042 to 0.09 percent plastic waste, ExxonMobil's "advanced recycling" effectively produces a product that is made almost entirely of virgin (new) plastic, but which it nonetheless markets as being a "circular" plastic polymer. In other words, ExxonMobil's "certified circular polymers" *effectively are* virgin (new) plastics.

3. ExxonMobil's "advanced recycling" technology cannot process large volumes of mixed post-consumer single-use plastic waste.

264. When thinking about the plastic waste and pollution crisis, the public generally is most concerned about post-consumer single-use plastic waste—plastic packaging such as potato chip bags and plastic cups that leak into and visibly pollute the environment. ExxonMobil claims to be able to "recycle" these types of everyday plastic products through its "advanced recycling" program "to help reduce plastic waste in the environment."[121] According to ExxonMobil, "[a]dvanced recycling also helps remove contaminants, and it can accommodate mixed and soiled plastic waste."

265. For example, in a blog post, ExxonMobil describes its "advanced recycling" capability as follows: "Imagine your discarded yogurt containers being transformed into medical equipment for your next doctor's appointment, and then into the dashboard of your next fuel-efficient car."[122] On a radio interview, ExxonMobil claimed to be able to process "motor oil bottles with oily residue in it, the bubble wrap we get in our latest Amazon packages, pet food bags, chip bags, candy wrappers." In a video interview, ExxonMobil states: "What we put on the front end here is a really special unit that gets solid plastic waste and all kinds of different

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unit#:~:text=%E2%80%9CThe%20interest%20from%20our%20customers,sustainability%20pledges%2C%E2%80%9D%20Mastroleo%20said> (as of July 29, 2024).

[121] ExxonMobil, *News Release: ExxonMobil Tests Advanced Recycling of Plastic Waste at Baytown Facilities* (Feb. 25, 2021) <https://corporate.exxonmobil.com/news/news-releases/2021/0225_exxonmobil-tests-advanced-recycling-of-plastic-waste-at-baytown-facilities> (as of July 29, 2024).

[122] McKee, President, ExxonMobil Product Solutions, *ExxonMobil Steps Up Advanced Recycling to Help Address Plastic Waste*, *supra*.

varieties into a unit so that we can process it into a raw material that other units can use."[123]

266. ExxonMobil wants the public to believe that its "advanced recycling" program can process mixed and post-consumer plastics that mechanical recycling cannot.

267. However, pyrolysis "advanced recycling," or "chemical recycling," technology cannot process high volumes of mixed post-consumer plastic waste like potato chip bags and candy wrappers. Indeed, a recent study commissioned by the Association of Plastic Recyclers confirmed that mixed post-consumer film and flexible packaging (FFP) is not currently suitable for pyrolysis "advanced recycling."[124] Despite publicly promoting its "advanced recycling" program as addressing our everyday residential plastic waste, ExxonMobil knows that such plastic waste is too contaminated, has too many additives that can harm refinery equipment, and is too compositionally and chemically variable to safely co-process in cokers and then steam crackers in large volumes.

268. Internally, ExxonMobil flags contaminant management as the "Biggest Challenge" of co-processing plastic waste. ExxonMobil characterizes the "[i]mpacts [of contaminants] on unit operability from processing plastics" as a technical risk.

269. ExxonMobil's own chemical engineers internally caution that contaminants from plastic may pose a performance risk to its equipment.

270. Additionally, an internal ExxonMobil document admits that "[n]ot all post-use plastics are appropriate for chemical recycling" and "[n]ot all post-use plastics are appropriate as feedstock for all chemical recycling product pathways." Because of this, ExxonMobil internally concluded that "[c]ontaminant mgmt. requires tailoring of accessible feed."

271. ExxonMobil's solution to this problem is to only use clean, clear, and compositionally uniform plastic primarily from post-commercial and post-industrial sources—things like clear plastic wraps used by businesses on pallets and bubble wrap.[125] For example, in

[123] BIC Magazine, *ExxonMobil Starts Up Large-Scale Advanced Recycling Facility in Baytown, Texas*, *supra*.

[124] Eunomia Research & Consulting, How to Scale the Recycling of Flexible Film Packaging: Modeling Pyrolysis' Role in Collection, Quantity and Costs of a Comprehensive Solution (Mar. 2024) page 6.

[125] Internal documents show that ExxonMobil is struggling to secure an adequate amount (continued…)

one of its agreements for collecting plastic waste to use as feedstock at its Baytown "advanced recycling" facility, ExxonMobil explicitly directs its partner, Cyclyx, to collect "Post-Use Plastic," which is defined to include pre-consumer material such as clean industrial waste. In addition, in the same agreement, ExxonMobil explicitly specifies that polystyrene—which includes Styrofoam and common items such as red plastic cups and plastic plates—is to be minimized. Polystyrene foam foodware, such as cups and plates, is known to make up a substantial amount of particularly pernicious plastic waste and pollution, leading to several attempts to ban such products in California.[126]

272. Despite understanding the technical limitations of co-processing mixed post-consumer plastic waste, ExxonMobil tailored its public messaging to convince the public that ExxonMobil is addressing post-consumer plastic waste from non-commercial and non-industrial sources. For example, ExxonMobil's partner, Cycylx, proposed a press release that explained that "Cyclyx will source post-use mixed waste plastic for [its circularity center] via *existing commercial and industrial sources*." ExxonMobil's Vice-President for Sustainability struck the words "existing commercial and industrial sources" and explained to Cyclyx that the "language seems a bit restrictive regarding feed sources (i.e. one 'existing commercial and industrial') and could be interpreted as not collaborative with existing municipal waste. I changed the language to something a bit more aspirational and collaborative." ExxonMobil suggested alternative "aspirational" language, which was ultimately used in the final release. The final release reads: "Cyclyx will source post-use mixed waste plastic for [its circularity center] via a range of existing sources and is continuing to expand its collaboration with companies from across the value chain to develop circular solutions for difficult-to-recycle plastic waste."

B. ExxonMobil Deceives Its "Certified Circular Polymer" Customers.

273. As noted above, ExxonMobil's "advanced recycling" program effectively

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of plastic waste suitable for its co-processing operation so that it has actively sought other types of non-single-use-plastic materials such as used cooking oil, artificial turf, and waste tires to co-process in an effort to keep pace with its publicly-stated "recycling" goals and customer demand.

[126] See Factual Background, Section II, above; see also Cal. Coastal Com., *California Coastal Cleanup Day History* <https://www.coastal.ca.gov/publiced/ccd/history.html> (as of July 29, 2024).

produces virgin polymers, because only a tiny amount of plastic waste is fed to the process and only eight percent of that plastic waste is potentially converted to new plastics, resulting in plastic end products with a plastic waste content of about 0.042 to 0.09 percent. In other words, "advanced recycling," at best, results in new plastic products that are 99.958 to 99.91 percent virgin (new) plastic on an annual basis. Nevertheless, ExxonMobil markets these polymers as "certified circular polymers"—brazenly claiming that they were made from plastic waste, even though they may contain very little or no recycled plastic at all.

274. ExxonMobil closely follows announcements by major converters, brands, and retailers about their respective commitments to incorporate more recycled plastic in their product offerings. ExxonMobil is aware that these large companies are willing to pay more money for recycled plastics. Accordingly, ExxonMobil regularly conducts outreach to these companies to persuade them to purchase its "certified circular polymers," including companies based in or that otherwise do business in California. For example, ExxonMobil announced a partnership with Printpack, a packaging converter, and Pacific Coast Producers, a California-based agricultural company that produces various fruit products, to package certain fruit cups using ExxonMobil's "certified circular polymers."[127] These fruit cups, which are deceptively promoted as having "30% ISCC PLUS certified-circular content" have reached California consumers.[128]

275. Over the last few years, ExxonMobil has announced the sale of its "certified circular polymers" to other large plastic packaging and product manufacturers, including but not limited to, Amcor, Berry Global, Pactiv Evergreen, Pregis, and Sealed Air. These announcements give the public the impression that ExxonMobil's "certified circular polymers" from "advanced recycling" have significant environmental benefits, are part of a "circular economy," and "expand the range of plastic materials that society recycles."[129]

276. However, internal documents show that ExxonMobil's sales of its "certified

[127] Printpack, *Printpack, ExxonMobil, and Pacific Coast Producers Bring Circularity to Fruit Cups*, *supra*.

[128] ISCC PLUS certification is discussed in detail in Section III.D, below.

[129] ExxonMobil, *ExxonMobil Makes First Commercial Sale of Certified Circular Polymers*, *supra*; indeed, ExxonMobil uses the terms "circular," "recycled," and "recycled content" interchangeably in its various and many public announcements for its "advanced recycling" technology and products.

circular polymers" are based on the deception that for every ton of plastic waste inputted into its process, nearly a ton of "certified circular polymers" is produced—i.e., 92.6 to 100 percent yield. ExxonMobil then charges a premium to its customers for these "certified circular polymers." As noted above, ExxonMobil destroys or turns into fuel (that will later be combusted) and other non-circular products most of the plastic waste it feeds into its "advanced recycling" operation. If any plastic waste is converted to new "recycled" plastic, at most it will constitute only 0.042 to 0.09 percent of the new plastic sold on an annual basis. Therefore, these customers are essentially purchasing virgin plastics masquerading as "recycled" plastics.

277. Neither the average person, nor California law or federal policymakers, understand this to be "recycling." The definition of "recycling" in the California Public Resources Code explicitly does not include plastic waste processed via pyrolysis or incineration.[130] California Public Resources Code section 40180 clearly defines "Recycling" and specifically states that it does not include "Transformation." Public Resources Code section 40201 states: "'Transformation' means incineration, **pyrolysis**, distillation, or biological conversion other than composting." (Emphasis added.) Likewise, Public Resources Code section 42355.51, subdivision (f), states that "recycling," "recyclable," and "recyclability" do not include transformation, as defined in Section 40201, . . . or production of fuels." In addition, in its Draft National Strategy to Prevent Plastic Pollution, the United States Environmental Protection Agency recently reaffirmed its position that it does not consider plastic waste that is processed into fuels or for energy production as "recycling."[131]

278. ExxonMobil is also misleading its customers regarding the greenhouse gas (GHG) reduction benefits of its "advanced recycling" process. ExxonMobil proactively and repeatedly states that the materials produced through this process have a lower carbon footprint compared to plastic made from fossil fuels.[132] However, a closer examination reveals significant

[130] Pub. Resources Code, § 40180.

[131] EPA Office of Resource Conservation and Recovery, U.S. Environmental Protection Agency, Draft National Strategy to Prevent Plastic Pollution, *supra* ["EPA reaffirms that the Agency does not consider activities that convert non-hazardous solid waste to fuels or fuel substitutes ("plastics-to-fuel") or for energy production to be "recycling" activities."].

[132] ExxonMobil, *ExxonMobil Shares Carbon Footprint Assessment of Proprietary* (continued…)

gaps and misleading claims.

279. ExxonMobil publicly claims that its "advanced recycling" technology enhances the circularity of plastics with reduced GHGs on a feedstock basis, but does not disclose the GHG emissions on the full plastic production basis that is needed to make an accurate comparison. For instance, in its 2023 Advancing Climate Solutions Progress Report, ExxonMobil stated, "Our advanced recycling technology enhances the circularity of plastics with reduced greenhouse gas emissions on a feedstock basis. According to a 2022 carbon footprint assessment by Sphera, every ton of waste plastic processed using our advanced recycling technology results in at least 19% lower greenhouse gas emissions compared to processing the same amount of crude-based feedstocks."[133] Additionally, ExxonMobil states on its website that "waste plastic has a relatively low carbon footprint compared to fossil-based feedstock."[134]

280. Contrary to ExxonMobil's claims, full product life cycle assessments conducted by plastic producers like BASF[135] and SABIC[136] consistently show that the total carbon footprint for producing new olefins through pyrolysis of plastic waste and naphtha steam cracking exceeds that of virgin hydrocarbons. The BASF report found that pyrolysis of plastic waste to produce new plastic can only be claimed to emit less CO_2 (GHG) than production from virgin hydrocarbons if significant hypothetical savings of CO_2 (GHG) emissions from incineration of end-of-life plastic waste are included."[137]

281. A separate Sphera report on plastic film recycling, commissioned by the Consumer Goods Forum (CGF), confirms that GHG emissions from pyrolysis "advanced recycling" and naphtha steam cracking are lower than emissions from virgin plastic production

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Advanced Recycling Technology <https://www.exxonmobilchemical.com/en/exxonmobil-chemical/sustainability/advanced-recycling-technology/carbon#:~:text=The%20following%20conclusions%20are%20from,amount%20of%20fossil%2Dbased%20feedstock/> (as of July 29, 2024).

[133] ExxonMobil, 2023 Advancing Climate Solutions Progress Report (Dec. 15, 2022).

[134] ExxonMobil, *ExxonMobil Shares Carbon Footprint Assessment of Proprietary Advanced Recycling Technology*, *supra*.

[135] BASF, *Life Cycle Assessment (LCA) for ChemCycling and Measurement Program for Pyrolysis Oil* (Dec. 2023).

[136] SABIC, *Certified Circular Polymers via Advanced Recycling of Mixed Plastic Waste* (Mar. 2021).

[137] BASF, *ChemCycling: Environmental Evaluation by Life Cycle Assessment* (May 2020) page 5.

only when the latter includes the hypothetical carbon emissions from incinerating virgin plastic products at end of life.[138] However, when compared to producing and then landfilling virgin plastic products (where end of life carbon emissions are not counted), the report finds that "advanced recycling" emissions are 20 percent higher.[139] The CGF Sphera report indicates that "advanced recycling" emissions are lower than emissions from virgin plastic when 45 percent of virgin plastic is incinerated at end-of-life.[140] The assumption that 45 percent of virgin plastic is incinerated at end-of-life is not credible because it is far higher than the current nine percent plastic incineration rate in the U.S. according to the U.S. Department of Energy.[141] In California, only about one percent of municipal waste is incinerated (transformed).[142]

282. Furthermore, the CGF Sphera report includes the hypothetical carbon emissions from incinerating virgin plastic products at the end of life while omitting GHG emissions from incinerating "advanced recycling" products at end-of-life, skewing the comparison in favor of "advanced recycling." Thus, claims that "advanced recycling" inherently results in lower GHG emissions are based on the inclusion of inflated and deceptive assumptions about end-of-life scenarios.

283. The American Chemistry Council, of which ExxonMobil is a member and provides millions of dollars,[143] also touts the climate change benefits of ExxonMobil's "advanced recycling" process, stating: "In addition, co-processing plastic waste via ExxonMobil's advanced recycling approach results in lower greenhouse gas emissions than using virgin feedstocks when analyzed on an ISO 14067 feedstock basis (ExxonMobil estimates; cradle-to-process unit outlet

[138] Sphera, *Life Cycle Assessment of Chemical Recycling for Food Grade Film, On behalf of the Consumer Goods Forum* (Apr. 7, 2022) page 52 <Life-Cycle-Assessment-of-Chemical-Recycling-for-Food-Grade-Film.pdf> (as of July 29, 2024).

[139] *Ibid.*

[140] *Ibid.*

[141] Milbrandt et al., *Quantification and Evaluation of Plastic Waste in the United States* (Apr. 22, 2022) Resources, Conservation and Recycling page 4 (funded by the U.S. Dept. of Energy).

[142] Cal. Dept. of Resources Recycling and Recovery (CalRecycle), 2022 State of Disposal and Recycling Report (Feb. 8, 2024) page 6 (Figure 1 "Estimated Management of 76 Million Tons of Materials Generated in California in 2022").

[143] See Parties Section III, above.

boundary)."[144]

284. Yet, ExxonMobil will not stand behind its process and product's climate benefits and GHG emission reduction claims. To the contrary, ExxonMobil does not provide the Sphera Co-Processing Life Cycle Assessment Report to the public,[145] and, tellingly, it states elsewhere that its ISCC PLUS "certification" of its "certified circular polymers" is not a claim of GHG benefits.[146] While ExxonMobil publicly claims significant GHG reductions through its "advanced recycling" processes, these assertions are based on selective data presentation and problematic assumptions that mislead consumers.

C. ExxonMobil Deceptively Suggests That Its "Advanced Recycling" Program Will Solve the Plastic Waste and Pollution Crisis, When in Reality It Will Only Account for 1 Percent or Less of Its Total Plastic Production Capacity by 2026.

285. ExxonMobil makes public statements claiming that "advanced recycling" can "scale" to solve the global plastic waste and pollution crisis. Publicly, ExxonMobil claimed that the company's advanced recycling operation was a "proven technology that is scalable."

286. While ExxonMobil makes claims that "advanced recycling" is a revolutionary invention that would "scale" to solve the global plastic waste and pollution crisis, in reality ExxonMobil's "advanced recycling" program will not even make a dent in displacing its own virgin plastic production. And ExxonMobil knows this. Its own chemical engineers point out that because the yield of its "advanced recycling" process is so low, "there will continue to be a growing need for virgin resin even as recycle rates are anticipated to increase."

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[144] American Chemistry Council, *ExxonMobil Working to Advance Plastics Recycling in Houston and Beyond* (June 7, 2022) <https://www.americanchemistry.com/chemistry-in-america/news-trends/blog-post/2022/exxonmobil-working-to-advance-plastics-recycling-in-houston-and-beyond/> (as of July 29, 2024).

[145] Bruggers, *Exxon's New 'Advanced Recycling' Plant Raises Environmental Concerns*, The Guardian (Apr. 10, 2023) <https://www.theguardian.com/us-news/2023/apr/10/exxon-advanced-recycling-plastic-environment/> (as of July 29, 2024); Inside Climate News, *The Missing Equations at ExxonMobil's Advanced Recycling Operation* (Nov. 1, 2023) <https://insideclimatenews.org/news/01112023/missing-equations-exxonmobils-advanced-recycling-operation/> (citing independent chemical engineer who called ExxonMobil's climate estimates "dubious") (as of July 29, 2024).

[146] ExxonMobil, *Expanding the Plastics Life Cycle* (Jan. 8, 2024) <https://corporate.exxonmobil.com/sustainability-and-reports/sustainability/creating-sustainable-solutions/expanding-the-plastics-life-cycle#Strengtheningcircularitywithadvancedrecycling/> (as of July 29, 2024); ISCC PLUS certification is discussed in more detail, *post.*

287. According to documents filed by ExxonMobil with the U.S. Securities and Exchange Commission from 2008 to 2023, ExxonMobil's plastic-making capacity (including polyethylene and polypropylene) increased 56 percent from 9.3 million tonnes in 2008 to 14.5 million tonnes per year in 2023.

288. ExxonMobil proudly boasts that by the end of 2026 it will process 500,000 tonnes of plastic waste per year through its "advanced recycling" program. Based on ExxonMobil's yield of only eight percent to new plastic, only 40,000 tonnes of new plastic would be produced from recycled plastic. This 40,000 tonnes of new plastic made from recycled plastic would only constitute a very small **0.27 percent** of ExxonMobil's total plastic production capacity of 14.5 million tonnes in 2023. This is not surprising given that ExxonMobil has invested an unprecedented $20 billion under its "Growing the Gulf" initiative to expand virgin plastic production capacity, and has only made $154.5 million in capital investments for its "advanced recycling" program. This $154.5 million investment in "advanced recycling" only constitutes **0.77** percent of the $20 billion ExxonMobil invested in ramping up virgin plastic production.

289. And since ExxonMobil's plastic production capacity is anticipated to increase by at least 2.5 million tonnes between 2023 and 2026, to 17 million tonnes per year, the fraction of new plastic made from recycled plastic waste could be even less (0.23 percent) by the end of 2026.

290. Therefore, even if ExxonMobil were somehow able to resolve all the economic and technical issues with its "advanced recycling" program and reach its 500,000 tonnes/year plastic waste processing promise, the impact would be negligible, especially in light of ExxonMobil's intent to continue expanding its virgin plastic producing capacity. The numbers alone show that ExxonMobil's "advanced recycling" program is a public relations stunt, without any prospect of meaningfully reducing the amounts of plastic waste or virgin plastic ExxonMobil produces. Despite deceptively touting its "revolutionary" "advanced recycling" program as a solution to the plastic waste crisis, ExxonMobil continues to knowingly overwhelm the waste management system with ever increasing volumes of virgin, single-use plastics.

291. ExxonMobil appears to have first publicly stated its very small global plastic waste processing goal in October 2021, with an achievement date of the end of 2026. However, there is evidence ExxonMobil is failing to make progress toward even this minor goal. In March 2021, ExxonMobil announced a collaboration with Plastic Energy to initially process 25,000 tonnes per year of plastic waste into pyrolysis oil that would be converted to new plastic in ExxonMobil's refinery in France. The anticipated start date was 2023, but no announcement of the pyrolysis unit startup was ever made. However, on April 11, 2024, ExxonMobil announced that it was shutting down the virgin plastics production unit at the refinery. This indicates that the pyrolysis unit will not be built and operated as promised.

292. In addition, in March 2022, ExxonMobil was reportedly considering its Baton Rouge, Louisiana refinery as a site that it would invest in an "advanced recycling" unit. This claim was repeated by ExxonMobil in public statements in subsequent years, including as recently as November 2023. But in February 2024, ExxonMobil's CEO stated that the investment in the "advanced recycling" unit in the Baton Rouge refinery was uncertain.

D. ExxonMobil's Promotion of Its ISCC PLUS Certification Is Deceptive.

293. ExxonMobil publicly touts that its "advanced recycling" polymers are "certified" by a third party, the International Sustainability and Carbon Certification (ISCC). ISCC is a German-based entity that provides various schemes for "certifying" products as being in line with its requirements. It is an unregulated, entirely voluntary process that is promoted by the chemical and plastics industries. ISCC states that "[w]ith our certification we contribute to environmentally, socially and economically sustainable production" and "[t]hrough the utilisation of recycled materials or materials derived from biological waste, companies can accelerate the transition to a circular economy." However, the ISCC certification scheme employed by ExxonMobil is actually a false and misleading marketing scheme, which ExxonMobil uses to mislead the public into believing that products made with "certified circular polymers" have significant environmental benefits or are made of plastic waste when in fact they likely contain little to no actual "advanced recycling" content.

294. ISCC's members are predominantly from the private sector, including the

chemical and plastics industries. ExxonMobil is a member of the ISCC Association, and has participated on its technical committee. Although ISCC is not new, it has only recently started providing certifications of plastic products via the ISCC PLUS certification scheme, starting in or about 2018-2019.

295. ISCC's certification programs for materials in other sectors have been criticized as inadequate and have even been linked to scams, including in the European biofuels industry. "Critics say [the ISCC] relies on self-reporting from companies and lacks systematic testing of imports into the EU—a setup one analyst described as 'essentially an honor system.'"[147]

296. ExxonMobil obtains ISCC PLUS certificates from an Emeryville, California-based company named Scientific Systems, Inc. dba SCS Global Services. These "certificates" provide minimal information. For example, no information is provided on the plastic waste source (pre- or post-consumer), process amounts, process losses, byproducts produced, or yield of plastic waste to new plastic production that would allow consumers to understand how much plastic waste actually becomes new plastic and whether noncircular byproducts, such as fuels which will be combusted, are produced.

297. These ISCC PLUS certificates purport to represent a certain amount of plastic polymers that have been produced from plastic waste via ExxonMobil's "advanced recycling" facilities. ExxonMobil self-determines the number of certificates that it can sell and then sells these certificates at a premium price to customers, such as plastic packaging companies, that ExxonMobil knows would like to make environmentally friendly claims to the public. ExxonMobil has made numerous false representations to the public, including Californians, that the products "certified" by ISCC contain a certain percentage of "certified circular polymers," sometimes up to 90 to 100 percent. ExxonMobil has also made numerous misleading statements to the public, including Californians, that its ISCC PLUS certification ensures "circularity" and other substantial environmental benefits of the products that result from "advanced recycling."

298. In reality, the ISCC PLUS certification utilized by ExxonMobil allows for little

[147] Moskowitz et al., *How Biofuels Scams Have Undermined A Flagship EU Climate Policy* OCCRP (July 4, 2023) <https://www.occrp.org/en/investigations/how-biofuels-scams-have-undermined-a-flagship-eu-climate-policy> (as of July 29, 2024).

to no physical traceability between its "advanced recycled" polymers to the products that consumers are purchasing. In fact, products marketed as having ISCC PLUS "certified circular polymers" likely contain little to no physical recycled content or environmental benefits at all. This is because the ISCC PLUS certification that ExxonMobil uses allows "mass balance" with "free allocation" or "free attribution."

299. "Mass balance" is an accounting approach used to track the inputs and outputs of a substance throughout a process, such as the "advanced recycling" process. In the context of "advanced recycling," it allows companies to account for the conversion of a mixture of virgin plastic and waste plastic to new plastic and other products through the processing system.

300. "Free allocation" takes "mass balance" into the imaginary realm and divorces the need for end products to reflect the actual amount of physical waste plastic content that the products contain. It is an accounting exercise by which ExxonMobil can choose to allocate all of the waste plastic it puts into the system into one of many different end products, even if no actual waste plastic polymers end up in that product.

301. As some advocates have observed, "The mass balance allocation approach is fundamentally an artificial credit scheme that allows plastics and products companies to claim fictionally high recycled content levels in certain products through the sale of credits."[148]

302. A simple example helps explain the complex scheme. It would be entirely deceptive to brand a bag of coffee as "100 percent decaffeinated" when only one percent of the beans in the bag have been decaffeinated. The same logic applies to plastic packaging. It is deceptive and misleading for companies to claim plastic packaging is made from "100 percent circular" or "100 percent recycled plastic" when the physical content of the packaging is only composed of one percent recycled plastics. Additionally, it would be equally deceptive for a company to decaffeinate coffee at one facility and sell the rights to claim coffee produced at another operation—which hasn't decaffeinated its coffee—is decaffeinated.[149] This is essentially

[148] Just Zero et al., *Modifications to the Safer Choice Standard and Potential Implementation of a Safer Choice Cleaning Service Certification Program (EPA-HQ-OPPT-2023-0520)* (Jan. 16, 2024) page 2.

[149] *Ibid.*

what ExxonMobil does with its "certified circular polymers" under the ISCC PLUS mass balance with free allocation scheme.

303. Figure H, below, demonstrates how the mass balance approach with free allocation enables a company to falsely claim that plastic waste (recycled feedstock) that is made into fuel can be counted by companies as polymer "recycled content" under the ISCC PLUS guidelines.[150] In the hypothetical scenario shown in Figure H, below, 10 units of plastic waste (recycled feedstock) and 90 units of virgin plastic (virgin feedstock) are put into the "advanced recycling" system steam cracker.[151] While the vast majority—9 out of 10 units—of the plastic waste (recycled feedstock) actually become *non*-plastic products (5 units of the 10 units of recycled feedstock become fuel and 4 units of the 10 units become other non-polymer products), only 1 of the 10 units becomes a new plastic polymer. Nevertheless, the ISCC PLUS mass balance with free allocation scheme allows the company, on paper, to "shift" the plastic waste content of the fuel and non-polymer products over to the new plastic polymer product and claim that it is made *entirely* from recycled plastic waste—even though only 1 of its 10 units (10 percent) actually came from plastic waste.

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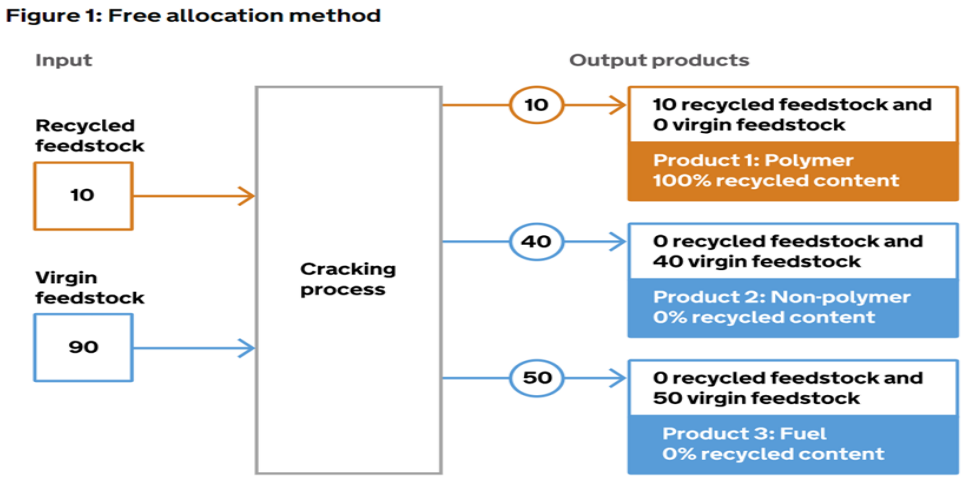
[150] ISCC, ISCC System Documents <https://www.iscc-system.org/certification/iscc-documents/iscc-system-documents/> (as of July 29, 2024); ISCC, ISCC Plus (Mar. 6, 2024) <iscc-system.org/wp-content/uploads/2024/03/ISCC-PLUS_v3.4.2.pdf> (as of July 29, 2024).

[151] As noted above, however, this hypothetical scenario of 10 percent recycled feedstock is actually not possible for ExxonMobil due to contamination; only a maximum of 2 percent of pyrolysis oil (recycled feedstock) can be fed to steam crackers.

Figure H: Free Allocation/Attribution Mass Balance Method[152]



304. ISCC PLUS certification claims are not independently verified by any government or regulatory authority. Mass balance and free allocation have been widely criticized, including by some members of the plastics industry, precisely because it is deceptive to the public.[153] The U.S. Environmental Protection Agency recently rejected the use of mass balance in meeting its recycled content requirement for plastic products and packaging that seek to participate in the agency's Safer Choice labeling program, which allows manufacturers to affix a "Safer Choice" label on certain consumer products that meet the program's health and environmental criteria.[154]

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[152] HM Revenue and Customs, *Plastic Packaging Tax – Chemical Recycling and Adoption of a Mass Balance Approach* (July 18, 2023) <https://www.gov.uk/government/consultations/plastic-packaging-tax-chemical-recycling-and-adoption-of-a-mass-balance-approach/plastic-packaging-tax-chemical-recycling-and-adoption-of-a-mass-balance-approach#mass-balance-models/> (as of July 29, 2024).

[153] U.S. Environmental Protection Agency, Draft National Strategy to Prevent Plastic Pollution, *supra*; Plastics News, *Chemical Recycling, Greenwashing Claims at Play in Mass Balance Discussions* (July 13, 2023); Morse, *Your 'Recycled' Grocery Bag Might Not Have Been Recycled* (Mar. 20, 2023) Undark <https://undark.org/2023/03/20/your-recycled-grocery-bag-might-not-have-been-recycled/> [verifying recycled content under mass balance relies on "tricky math"] (as of July 29, 2024); Beyond Plastics et al., Chemical Recycling: A Dangerous Deception (Oct. 2023) pages 42-44, 69-77; ECOS, *Determining Recycled Content With the 'Mass Balance Approach'* (Feb. 10, 2021); Last Beach Cleanup et al., *Guides for the Use of Environmental Marketing Claims – Green Guides Review, Matter No. P954501 (Docket FTC-2022-0077)* (Apr. 24, 2023) pages 47-54; Just Zero et al., *Modifications to the Safer Choice Standard and Potential Implementation of a Safer Choice Cleaning Service Certification Program (EPA-HQ-OPPT-2023-0520)*, *supra*.

[154] Lisa Song, *Biden EPA Rejects Plastics Industry's Fuzzy Math That Misleads Customers About Recycled Content*, ProPublica (Aug. 9, 2024), https://www.propublica.org/article/epa-rejects-mass-balance-plastics-recycling-safer-choice.

305. In a study conducted in March 2021, the Association of Plastic Recyclers (APR) found that virtually no adults know what the term "mass balance" means.[155] In APR's April 24, 2023 comment letter to the Federal Trade Commission (FTC) regarding proposed updates to the FTC's Guides for the Use of Environmental Marketing Claims ("Green Guides")[156], APR explicitly stated that "There is particular concern about the use of free allocation methods under mass balance that may overstate the amount of recycled content in a given product."[157] APR went on to state that:

> [The FTC] should not permit recycled claims based on methods such as 'mass balance,' credit trading or similar systems. Consumers purchase a product with recycled content with the implied understanding there are recycled materials in that actual product, and claims must conform to that understanding. Making recycled content claims in on-pack labeling, based on mass balance calculations, is deceptive to the consumer because there is little to no physical traceability to prove that there is *any* physical recycled content in the actual product, which is what the consumer believes to be true.[158]
>
> (Emphasis in original.)

306. Similarly, the National Institute of Standards and Technology (NIST) reported that "[a] key characteristic of MB [mass balance] model is that the physical presence of the desired characteristic in the product is low or unknown."[159] NIST found that mass balance has "many unsettled issues, ill-defined terms, and conflicting objectives with regards to the application of MB [mass balance] certification to polymers."[160]

307. ExxonMobil justifies its use of mass balance as necessary because it is purportedly "impossible" to track molecules that originate from plastic waste. This is false, and ExxonMobil knows it. Internal documents show that ExxonMobil uses scientific analysis and testing to track what happens to the plastic waste it co-processes and steam cracks, including the specific proportion of the plastic waste that makes it out of the process as "recycled" plastic.

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[155] The Assn. of Plastic Recyclers, *Recycling Terms Survey* (Mar. 2021) <https://plasticsrecycling.org/images/library/Recycling-Terms-Survey2021.pdf> (as of July 29, 2024).

[156] The Green Guides are a set of guidelines to help marketers avoid making environmental claims about products that can mislead consumers.

[157] The Assn. of Plastic Recyclers, *Comments of the Association of Plastic Recyclers Regarding Guides for the Use of Environmental Marketing Claims* (Apr. 24, 2023) page 32.

[158] *Id.* at page 2 (emphasis in original).

[159] Nat. Inst. of Stds. and Technology, U.S. Dept. of Commerce, An Assessment of Mass Balance Accounting Methods for Polymers Workshop Report (Feb. 2022) page 7.

[160] *Id.* at page v.

308. Under the false cloak of legitimacy of being "ISCC PLUS certified," ExxonMobil has knowingly deceived the public into believing that its "advanced recycling" operations have significant environmental benefits, creating products that are "circular" and "recycled." ExxonMobil has a massive financial interest in ensuring that mass balance free allocation methods are accepted broadly and even enshrined in law. Indeed, continuing the public deception *is* ExxonMobil's business model.

E. ExxonMobil Knows That Its "Advanced Recycling" Program Is Not Economically Viable.

309. Despite the technical limitations of "advanced recycling," ExxonMobil continues its campaign of deception about the economic viability and commercial scalability of its "advanced recycling" operations. In its 2022 annual report, ExxonMobil boasts that, "We are uniquely positioned with our scale, integration, and technology to expand advanced recycling capacity to help broaden the range of plastics that society recycles." In a social media post, ExxonMobil claims that its "advanced recycling" technology is "commercial and scalable" and that the corporation is attempting to "scale the technology around the world."[161] ExxonMobil further states that it is creating "opportunities to capture value from plastic waste at scale."[162] These representations about the economic viability of "advanced recycling" have been a part of ExxonMobil's strategy since even before its first "advanced recycling" facility at Baytown began operation in December 2022: a 2020 internal ExxonMobil presentation advised executives to "[p]romote advanced recycling as scalable, GHG-advantaged solution to help address plastic waste."

310. ExxonMobil also touts the commercial value of both plastic waste and its recycled plastics. It characterizes discarded plastics as having "enormous benefits" and being "too

[161] ExxonMobil Chemical, Twitter (Aug. 29, 2023) <https://twitter.com/XOM_Chemical/status/1696540786190401804> (as of July 31, 2024); see also *ExxonMobil, Advanced Recycling Technology Supports the Circular Economy for Plastic Around the World* https://www.exxonmobilchemical.com/en/exxonmobil-chemical/sustainability/advanced-recycling-technology/exxtend-goes-global?utm_source=twitter&utm_medium=social&utm_campaign=chemical_exxtend&utm_content=argoesglobal_aug29 (as of July 29, 2024).

[162] ExxonMobil, X (formerly Twitter) (Mar. 31, 2021) <https://x.com/exxonmobil/status/1377352081976094720> (as of July 31, 2024).

valuable to waste." ExxonMobil emphasizes that it needs "more plastic to feed into our Baytown facility," that it wants the plastic waste "out of the landfill" and "into the blue bins so that it's sorted," and it would "love to take it" into its facility. It further claims that recycled plastics are "new valuable products needed for modern life."[163]

311. In reality, "advanced recycling" has never been economically viable for a host of reasons. First, the process of collecting, sorting, transporting, and reprocessing plastic waste is immensely expensive. Increases in diesel prices make the cost of trucking plastic waste even greater. In fact, the uncertainty in feedstock costs has led ExxonMobil to be "very cautious" in its capital expenditures for "advanced recycling" projects.

312. Second, in order to produce recycled plastics, "advanced recycling" requires "very pure," uniform, and high-quality feedstock. ExxonMobil itself has recognized that "[a]ccess to quality feed" is "key" to the "scale up of Advanced Recycling," and that "[r]oadblocks to advanced recycling include the "[s]peed of supply chain development [and] plastic waste quality." The use of a very heterogeneous feedstock creates a challenging obstacle, as even "small amounts of problematic substances … can lead to the failure of a whole process approach."[164] However, homogenous feedstock is difficult and expensive to obtain on a commercial scale. In fact, FCC Environmental Services, a waste management and recycling company, expressed strong concerns with promoting competition between mechanical and chemical recycling facilities for feedstock, and with diversion of plastics from mechanical recycling to "advanced recycling." In October 2023, FCC Environmental Services turned down ExxonMobil's proposal for FCC to clean and sort plastic film waste for feedstock because ExxonMobil's feedstock specifications for their "advanced recycling" process were stricter than those for mechanical recycling, the proposed price did "not make economical sense" to FCC, and FCC thought there was a "very uncertain return scenario" compared to the market for mechanical recycling.

313. Third, the production of higher quality virgin plastic is cheaper. New high

[163] Allen et al., Center for Climate Integrity, The Fraud of Plastic Recycling, *supra*, at page 4 (citing ExxonMobil Facebook post (Sept. 6, 2023) <https://www.facebook.com/ads/library/?id=623208426597156> [as of July 29, 2024]).

[164] Quicker et al., *Chemical Recycling: A Critical Assessment of Potential Process Approaches*,(Mar. 15, 2022) 40 Waste Management and Research 10 pages 1501-1502.

quality virgin plastics use less costly virgin hydrocarbon feedstock, and require much less time, labor, truck transport, processing, and equipment than that needed to produce lower quality recycled plastic. One study found that resins recovered through plastic-to-plastic "advanced recycling" are 1.6 times more expensive than virgin resins.[165] Petrochemical companies therefore have financial incentives to continue making and selling low-cost virgin plastic. And that is what these companies, including ExxonMobil, continue to do and to invest in.

314. Fourth, ExxonMobil and other petrochemical companies' unceasing production of hundreds of billions of dollars of cheap, virgin plastic resins every year—amounting to 460 million tonnes of cheap new plastic production annually in 2019[166]—floods the market and makes higher-cost recycled plastic uncompetitive.

315. The economic problems with recycling plastics are well-known and widespread throughout the petrochemical industry, and are not significantly different for mechanical versus "advanced" recycling. As one industry insider wrote 50 years ago, "[t]here is serious doubt that [recycling plastic] can ever be made viable on an economic basis."[167] Another explained that "chemical recycling" "require[s] greater energy inputs than it save[s]" and is therefore an "energy-loser."[168] Larry Thomas, former president of the Society of the Plastics Industry, observed that the petrochemical industry has no economic incentive to produce recycled plastics when their business is producing "as much oil as you possibly can" and selling virgin material.[169]

316. ExxonMobil has known for at least 30 years that "advanced recycling" could never be economically feasible, and, therefore, would not be scaled up. In a 1994 meeting with

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[165] *Id*. (citing Yadav et al., *Techno-Economic Analysis and Life Cycle Assessment for Catalytic Fast Pyrolysis of Mixed Plastic Waste* (June 5, 2023) 16 Energy & Environmental Science 9.

[166] OECD, *Global Plastics Outlook: Economic Drivers, Environmental Impacts and Policy Options* (Feb. 22, 2022).

[167] Sullivan, *How Big Oil Misled the Public Into Believing Plastic Would Be Recycled*, NPR (Sept.11, 2020) <https://www.npr.org/2020/09/11/897692090/how-big-oil-misled-the-public-into-believing-plastic-would-be-recycled> (as of July 29, 2024).

[168] Allen et al., Center for Climate Integrity, The Fraud of Plastic Recycling, *supra*, at pages 25-26 (citing Griff, *Is Recycling Good for the Environment?* 4 (2003) <https://griffex.com/wp-content/uploads/2020/09/Griff-gpec-and-tables.pdf?c772ab&c772ab> (as of July 29, 2024).

[169] Sullivan, *How Big Oil Misled the Public Into Believing Plastic Would Be Recycled*, *supra.*

APC staffers, Exxon Chemical Vice President Irwin Levowitz called pyrolysis a "fundamentally uneconomical process."[170] This remains true today.

317. Indeed, the economic pitfalls of "advanced recycling" are reflected not only in speeches, studies, and white papers, but also in the consistent failure of "advanced recycling" facilities to demonstrate viability over the past decades. No chemical recycling project in the last 20 years has successfully recycled plastic at a commercial scale.[171] This is not due to any lack of public investment or corporate resources to invest in these projects, if they desire. In fact, since 2017, at least $500 million in public funds have been spent on 51 U.S. "advanced recycling" projects.[172] And U.S. residents pay approximately $4.2 to $5.9 billion each year, mostly in local taxes, for the collection of recycling materials from curbside bins.

318. These investments in "advanced recycling" ultimately did not move the needle to establish "advanced recycling" as economically viable. Internal documents from 2020 show that ExxonMobil's target rate of return on co-processing of plastic waste in a coker would depend largely on the price of plastic waste feedstock and would not be at all profitable above a certain price point. But this price point for plastic waste feedstock was not realistic or possible: in 2021, ExxonMobil was informed that "all-in delivered costs of post-consumer post-use plastics to Baytown facility" would average a significantly higher price per pound even if ExxonMobil invested in a sorting facility. Thus, ExxonMobil is struggling to find affordable, suitable plastic waste feedstock in sufficient amounts to use as feed in its cokers.

319. The lack of profitability from "advanced recycling" plastic waste led ExxonMobil to develop a business model based on the sales of circular credits at a premium over the cost of virgin plastic. But 2021 internal documents show that "advanced recycling" projects would not meet ExxonMobil's profitability requirements unless a substantial "Circular Premium" was charged on the "advanced recycling" product above the cost of virgin plastic produced. In

[170] Allen et al., Center for Climate Integrity, The Fraud of Plastic Recycling, *supra*, at page 26 (citing Condrey, *ART Meeting-Houston*, at 27 (Jan. 26, 1994).

[171] Brock et al., *The Recycling Myth: Big Oil's Solution for Plastic Waste Littered with Failure,* A Reuters Special Report (July 29, 2021) <https://www.reuters.com/investigates/special-report/environment-plastic-oil-recycling/> (as of July 29, 2024).

[172] *Ibid*.

other words, customers would have to pay significantly more for the "advanced recycling" product than for virgin plastic. One way to charge customers for the "Circular Premium" would be to offer customers a "Circular Certificate" provided by ISCC.[173] But ExxonMobil's internal documents reflect that even if customers were willing to pay a substantial "Circular Premium" to purchase a "Circular Certificate," ExxonMobil still had to limit plastic feedstock costs to a specific "breakeven" price range to meet corporate profitability requirements. ExxonMobil is paying multiples of that range for delivery of plastic feedstock.

320. Moreover, ExxonMobil has failed to meet its own internal schedules for starting up and making final investment decisions for a number of potential "advanced recycling" installations. ExxonMobil considers its Baytown facility as small scale, and has so far refrained from "plac[ing] bets on" large or full-scale "advanced recycling" projects, despite ExxonMobil's claims that such projects are economically viable and scalable. In fact, in September 2022, ExxonMobil discussed a delay, or "decompression" of its "advanced recycling" project schedule. ExxonMobil's Baytown project is operating at a loss of many millions of dollars per year. Overall, ExxonMobil projected that its "advanced recycling" projects would operate at a nine-figure net cash loss in 2023, and that its only path to future profitability was to secure steady, low-cost plastic waste feed suitable for its flexicoker unit and to sell thousands of Circular Certificates at a high premium over virgin plastic.

321. ExxonMobil well knows that "advanced recycling" will not be scaled up without profitability, yet ExxonMobil continues to represent to the public that "advanced recycling" is a realistic solution to the plastic waste and pollution crisis. In October 2023, ExxonMobil asserted that growing demand for recycled plastic was driving investment, and that the company's "advanced recycling" operation was a "proven technology that is scalable." A month later, ExxonMobil boasted that it was "looking at potential new [advanced recycling] facilities at other sites in the United States, as well as in Canada, Belgium, the Netherlands and Singapore. All told, we expect to have the capacity to process a billion pounds [500,000 tonnes]

[173] As discussed in Subsection D, above, these certificates are in and of themselves deceptive.

per year around the world by the end of 2026." ExxonMobil's 2026 goal depends on the success of its Baytown "advanced recycling" operations, which ExxonMobil advertises as having the capacity to co-process 40,000 tonnes of plastic waste per year. However, ExxonMobil has struggled to achieve this 40,000 tonnes per year capacity because of technical limitations of co-processing plastic waste in cokers, and has deliberately limited the amount of plastic waste it feeds its cokers to far less than its claimed 40,000 tonnes per year capacity. Consequently, because ExxonMobil is co-processing less plastic waste, it is not producing the anticipated amount of "Circular Certificates" to make its "advanced recycling" program profitable.

322. Thus, despite ExxonMobil's public claims, the company has failed to: (1) produce and sell the planned amount of "Circular Certificates"; and (2) obtain suitable homogenous plastic feedstock within its "breakeven" price range, both of which are required to achieve the profit level that the company requires.

323. In an attempt to address plastic feedstock cost, in February 2021, ExxonMobil and a "chemical recycling" company, Agilyx Corporation (Agilyx), announced a joint venture establishing Cyclyx International LLC (Cyclyx). Cyclyx was established to aggregate and pre-process plastic waste for "advanced recycling" projects. ExxonMobil owns 25 percent of Cyclyx, LyondellBassell owns 25 percent, and Agilyx owns 50 percent. As part of the joint venture, Cyclyx would supply ExxonMobil with plastic waste feedstock. Cyclyx, which calls itself a "[f]or profit corporation acting like a non-profit collaborative for the benefit of its members," advertises its "mission" as to "help increase the plastics recycling rate from 10 to 90% by getting the right feed to the right technology."[174] This goal, however, is not achievable in light of the technical and economic limitations that have persisted for decades.

324. According to ExxonMobil, a Cyclyx Circularity Center would be built to produce feedstock for both mechanical and "advanced" recycling, and would "leverage new technologies to analyze plastics based on their composition and sort them according to customer

[174] BIC Magazine, *Cyclyx, ExxonMobil and LyondellBasell Jointly Pursue Plastic Processing Facility in Houston* (Oct. 19, 2022) <https://www.bicmagazine.com/projects-expansions/renewable-sustainability-h2-esg/cyclyx-exxonmobil-and-lyondellbasell-jointly-pursue-plastic-/> (as of July 29, 2024).

specifications for their highest and best reuse." In an April 27, 2023 press release, ExxonMobil, Cyclyx, and other partners announced their "intention to be the first in the United States to successfully launch a circular food packing proof of concept leveraging advanced recycling." ExxonMobil touted a "successful demo" where "plastic waste was collected from grocery stores, diverting it from landfills." According to ExxonMobil, this "demo" showed that "creating a circular economy is achievable with value chain collaboration" and that "the process is now being evaluated for scale."

325. ExxonMobil and its partners, which now include another petrochemical company, LyondellBasell Industries, announced an expected start-up date for the Cyclyx Circularity Center in 2024, with an investment of approximately $100 million contingent on a final investment decision in early 2023.

326. Internally, however, ExxonMobil questioned Cyclyx's viability. It described Cyclyx as "loss making" and asked, "what is the plan to make it break even." These doubts are compounded by Cyclyx's 2021 report to ExxonMobil, stating that even if ExxonMobil invested in a Cyclyx sorting facility, plastic waste feedstock would cost ExxonMobil an average amount well above the "breakeven" cost. ExxonMobil did not make a final investment decision on funding the Cyclyx Circularity Center until December 2023, after FCC Environmental Services rejected ExxonMobil's proposal.[175] According to ExxonMobil, the center will now have an expected start-up date of mid-2025.

327. Despite ExxonMobil's internal misgivings, Cyclyx's own statements that plastic waste feedstock is not consistently available, and the lengthy delay in funding the Cyclyx Circularity Center, ExxonMobil misleadingly claims that the circularity center "will accept, analyze and process a range of plastic, including difficult-to-recycle materials, such as food packaging, chip bags and bottle caps." However, ExxonMobil knows that it is not possible, either technically or economically, to recycle these materials at a rate even remotely approaching 90 percent, as Cyclyx identifies as its mission. Additionally, an internal document shows that

[175] Kazdin, *Cyclyx Announces Final Investment Decision for Circularity Center*, Recycling Today (Dec. 7, 2023) <https://www.recyclingtoday.com/news/cyclyx-final-investment-decision-circularity-center/> (as of July 29, 2024).

ExxonMobil did not expect to meet its advertised goal of processing 500,000 tonnes, or one billion pounds, of plastic waste by 2026. Instead, it planned to process only a fraction of its stated goal by the end of 2026 and did not even expect to meet its 2026 goal by 2028. Yet ExxonMobil's website still advertises its abandoned goal to "ramp up" its "advanced recycling" "processing capabilities to 500 kTa [0.5 million tonnes], or one billion pounds, of waste plastic by year-end 2026."

328. ExxonMobil also deceives the public about the economic viability of obtaining feedstock for "advanced recycling" through its involvement in the Houston Recycling Collaboration. In January 2022, the Houston Recycling Collaboration was formed by ExxonMobil, the City of Houston, LyondellBasell, Cyclyx International, and FCC Environmental Services through a memorandum of understanding. The claimed goal of the collaboration is to "Collect **all** plastic—no matter the type—from water bottles and bubble wrap to dry cleaner bags and takeout containers" and drop off the collected plastics at "recycling takeback locations to be implemented across the city." The plastics would be collected at facilities including the Kingwood Neighborhood Recycling Center, which would then supposedly provide feedstock to ExxonMobil's Baytown "advanced recycling" plant. In public videos on platforms reachable by Californians, ExxonMobil representatives said the Baytown "advanced recycling" facility needed plastic feedstock and that Kingwood residents can drop their plastics off at the Kingwood collection site, to be transported and recycled at the ExxonMobil Baytown facility. The local television news segment that aired in Houston told residents that plastic waste collected at the Kingwood collection site would be recycled at ExxonMobil's Baytown facility.

329. However, in June through September 2023, an environmental group attached tracking devices to 11 plastic items that they dropped into the collection bins at Kingwood Neighborhood Recycling Center and the North Main Neighborhood Recycling Center. At their final location, all 11 devices led to an open-air waste management site, where all 11 plastic items had been tossed alongside a fence along with other plastic waste—not to Baytown or any other

recycling facility.[176] In response to this report, ExxonMobil repeated its deceptive claim that "[a]dvanced recycling is a proven technology" that can help "address the challenge of plastic waste" and that ExxonMobil was working "to help increase the amount of plastics that enter the ['advanced recycling'] supply chain."[177]

330. Again, ExxonMobil relies on the same public deception playbook: boasting about the technical and economic viability of "advanced recycling," announcing steps towards establishing recycling ventures, then ultimately failing to recycle any substantial percentage of the plastic waste generated by ExxonMobil itself, let alone the plastics industry. However, there is no pathway through which "advanced recycling" can become technically or economically viable.

331. Instead, ExxonMobil tries to generate sufficient income through its "advanced recycling" projects by selling false and deceptive recycling certifications, as described above.

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[176] Bruggers, *Dumped, Not Recycled? Electronic Tracking Raises Questions About Houston's Drive to Repurpose a Full Range of Plastics*, Inside Climate News (Nov. 1, 2023) <https://insideclimatenews.org/news/01112023/electronic-tracking-questions-houstons-drive-to-repurpose-plastics/> (as of July 29, 2024).

[177] *Ibid*.

F. ExxonMobil Targets Its Deceptive "Advanced Recycling" Messages to California Consumers, Businesses, and Law and Policy Makers.

332. ExxonMobil spreads its deceptive "advanced recycling" messages broadly and aggressively on multiple social media platforms, including but not limited to LinkedIn, Twitter, Facebook, Instagram, and YouTube. On Twitter (now called "X"), ExxonMobil made false claims about its technical ability to process post-consumer plastics, despite internally understanding that post-consumer plastics are too contaminated to co-process in significant volumes. For example, on November 24, 2021, ExxonMobil tweeted[178]:

[178] ExxonMobil, X (formerly Twitter) (Nov. 24, 2021) <https://x.com/exxonmobil/status/1463596818521112590?s=20/> (as of July 29, 2024).

333. On November 15, 2022, ExxonMobil tweeted[179]:

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[179] ExxonMobil, X (formerly Twitter) (Nov. 15, 2022) <https://x.com/exxonmobil/status/1592606620231421952?s=20/> (as of July 29, 2024).

334. On March 1, 2023, ExxonMobil tweeted[180]:

ExxonMobil @exxonmobil · Mar 1

What are some examples of hard-to-recycle plastics?

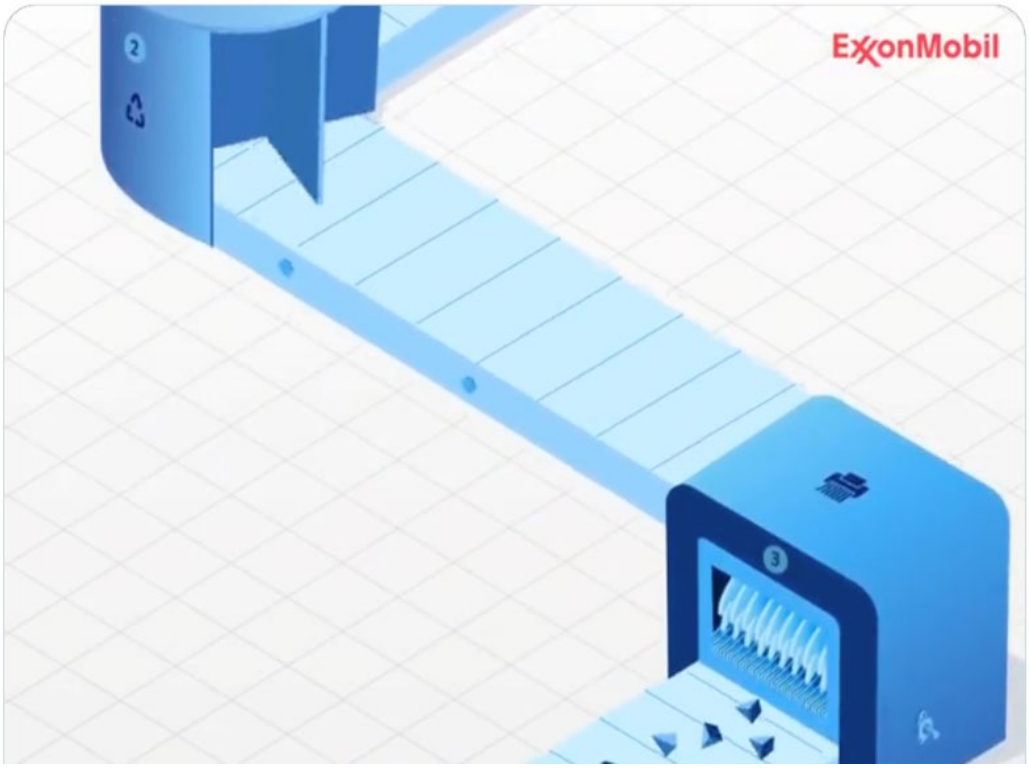
❌ Food packaging

❌ Cosmetics

❌ Products made from a combination of materials like chip bags.

Where traditional **recycling** covers some products, **advanced recycling** could help fill the gaps. See how ⤵

exxonmobil.co/41CvLDq



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[180] ExxonMobil, X (formerly Twitter) (Mar. 1, 2023) <https://twitter.com/exxonmobil/status/1630964258535030789/> (as of July 29, 2024).

335. On August 28, 2023, ExxonMobil Baytown Area tweeted[181]:

336. Similarly, though not pictured:

- On March 7, 2022, ExxonMobil tweeted false claims about its "advanced recycling" program's ability to "recycle" a plastic product "over multiple recycling loops," despite knowing the fact that most, if not all, of the plastic is destroyed or turned into fuel and other non-circular products in the process.[182]

[181] ExxonMobil Baytown Area, X (formerly Twitter) (Aug. 28, 2023) <https://x.com/exxonmobilbta/status/1696261899652931725?s=46&t=OBruA2TmyQn2AZvSTYmlOQ> (as of July 29, 2024).

[182] ExxonMobil Chemical, X (formerly Twitter) (Mar. 7, 2022) <https://twitter.com/XOM_Chemical/status/1500876771310379013/> (as of July 29, 2024).

- On August 29, 2023, ExxonMobil Chemical tweeted misleading claims that "advanced recycling" is "commercial and scalable," and that "it is pursuing ambitions to scale this technology around the world."[183]
- On October 5, 2022, ExxonMobil pushed claims that its "advanced recycling" technology—i.e., co-processing plastic waste in cokers—was a new technology, despite Mobil having patented the technology in the 1970s.[184]

337. On YouTube, ExxonMobil posts numerous deceptive videos expounding the environmental virtues of "advanced recycling." For example, one video dated May 2, 2023, clearly implies that all the plastic waste being brought to the Baytown facility comes out as new plastic.[185] The video also deceptively claims that the "advanced recycling" process decreases the amount of GHG emissions by 19 to 49 percent compared to virgin plastic.[186]

338. ExxonMobil sponsored another YouTube video dated May 1, 2023, featuring its partnership with Cyclyx, Sealed Air, and Ahold Delhaize USA, which makes clear that consumers consider the reusability and recyclability of packaging when making purchases.[187] It then leads consumers to believe that the plastic waste being "recycled" is going directly into the containers they buy at grocery stores.[188] In another video dated February 16, 2024, titled "Recycling is Real," with partners Cyclyx and TenCate, an ExxonMobil representative states, "Advanced recycling is key to taking recycling rates to the next level."[189]

339. ExxonMobil targets Californians with deceptive digital advertisements regarding "advanced recycling." For example, ExxonMobil has paid for Facebook advertisements to Californians falsely claiming that, for "advanced recycling," "every ton of

[183] ExxonMobil, X (formerly Twitter) (Aug. 29, 2023) <https://twitter.com/XOM_Chemical/status/1696540786190401804/> (as of July 29, 2024).
[184] ExxonMobil, X (formerly Twitter) (Oct. 5, 2022) <https://twitter.com/exxonmobil/status/1577705288643256321> (as of July 29, 2024).
[185] ExxonMobil Chemical, *ExxonMobil's Exxtend Technology for Advanced Recycling Virtual Tour* (May 2, 2023) YouTube <https://www.youtube.com/watch?v=pFaJr_4zi3Y/> (as of July 29, 2024).
[186] *Ibid*; see paragraph 273-79, above.
[187] ExxonMobil Chemical, *News Release: Cyclyx, Sealed Air, and Ahold Delhaize USA Demo Advanced Recycling for Plastic Waste*, *supra*.
[188] *Ibid.*
[189] Plastics Industry Assn., *Recycling Is Real: ExxonMobil, Cyclyx, TenCate* (Feb. 16, 2024)YouTube <https://www.youtube.com/watch?v=W7H6OkpO3Z4/> (as of July 29, 2024).

plastic waste we process, society reduces the need to process approximately one ton of fossil fuel derived feedstocks."[190]

340. Internal ExxonMobil documents show that it targets specific media markets including California to push deceptive "advanced recycling" messages as a way to "increase education on what advanced recycling is and how [ExxonMobil] is leading the way."

341. ExxonMobil targets California businesses and businesses that otherwise do business in California with its deceptive "advanced recycling" messaging at trade shows and other events.[191]

342. ExxonMobil directs its "advanced recycling" messages to California to influence legislation in order to further its deceptive marketing. For example, ExxonMobil paid millions to the American Chemistry Council to fight a restrictive ballot measure that would have established an extended producer responsibility program for plastic products in California.

G. ExxonMobil Directs and Colludes with Trade Groups to Amplify Its Deceptive "Advanced Recycling" Messages.

343. As stated above, ExxonMobil is a member of the American Chemistry Council (ACC), the foremost trade group for the plastics industry. According to ExxonMobil's public lobbying reports, ExxonMobil spent tens of millions of dollars on various trade groups and grassroots lobbying. ExxonMobil used these trade groups to advance its deceptive messaging around "advanced recycling," in an effort to mislead the public. Internal documents reveal that a critical component of ExxonMobil's "advanced recycling" program is to amplify its deceptive messaging through trade groups. Additional internal documents show close coordination with key trade groups such as the American Chemistry Council to spread deceptive "advanced recycling" messages.

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[190] See Facebook Digital Ad Library, search "ExxonMobil," Library ID 811271790836528 (as of May 29, 2024).

[191] See, e.g., Spielman, *MD&M West 2024: Record-Setting Rainfall Didn't Keep Attendees Away from the Monday MiniTec Track*, Machine Design (Feb. 6, 2024) [ExxonMobil gave presentation at California medical device conference on the benefits of "advanced recycling"]; Printpack, *ExxonMobil, Pacific Coast Producers Bring Circularity to Fruit Cups*, *supra* [ExxonMobil makes deal for "certified circular polymers" with California-based Pacific Coast Producers].

344. Trade groups have widely spread deceptive "advanced recycling" messages. One of these groups is called America's Plastic Makers. America's Plastic Makers is a campaign of the ACC's Plastics Division, which is made up of ExxonMobil and other businesses in the plastics industry. America's Plastic Makers is behind a concerted effort promoting "advanced recycling" as a "new" solution to the plastic waste and pollution crisis.

345. The ACC's digital advertising on "advanced recycling" continues to accelerate. The ACC spent $97,000 in 2021, $265,000 in 2022, and $526,000 in the first few months of 2023 on Facebook and Instagram ads that falsely promoted "advanced recycling" as part of a "circular economy" for plastics. The ACC often advertises by paying for the advertisements that Americas Plastic Makers runs on online platforms such as Facebook.

346. And Californians are often among the targets for these ads.[192] For example, America's Plastic Makers ran an ad campaign "Paid for by The American Chemistry Council" from February 21-22, 2023 with 50,000 to 60,000 thousand impressions, 16 percent of which were in California. The ad proclaims that "ExxonMobil is turning used plastic into new plastic at its facility in Texas. Follow a chip bag as it goes through one of the largest Advanced Recycling facilities in North America: https://www.youtube.com/watch?v=QTh5ST38flY."[193] That linked YouTube video misrepresents that "advanced recycling" converts plastic waste molecules to become "new plastics," attempting to deceive Californians into believing that an old chip bag will become new plastic.[194]

347. ExxonMobil is a key funder of America's Plastic Makers, just as it was a key funder of the deceptive Council for Solid Waste Solutions in the 1980s and 1990s. Internal documents show that from 2020 to 2023, ExxonMobil gave the ACC $19.4 million to run the

[192] See Facebook Digital Ad Library Report, Spending Tracker (search for "America's Plastic Makers)" <https://www.facebook.com/ads/library/report/?source=nav-header> (as of May 29, 2024, America's Plastic Makers had spent $76,592 on advertisements in California in the past 90 days (Feb. 27, 2024 to May 26, 2024)).

[193] See Facebook Digital Ad Library, Library ID 488499916638064 <https://www.facebook.com/ads/library/?active_status=all&ad_type=all&country=US&view_all_page_id=106244251043808&search_type=page&media_type=all> (as of July 29, 2024).

[194] KPRC 2, *Efforts of Advanced Recycling*, *supra*.

"American Plastic Makers campaign [and] national policy advocacy."[195] Since 2023, America's Plastic Makers spent $30 million on an ad campaign promoting deceptions about "advanced recycling."[196]

348. One particular ad has been far-reaching and has been broadcast on major television networks and on YouTube, including in California. There are at least two versions of this ad, one that is 30 seconds long, and the other 15 seconds long. The 30-second ad states, "Imagine a future where plastic is not wasted but instead remade over and over into the things that keep our food fresher, our families safer, and our planet cleaner. To help us get there, America's Plastic Makers are investing billions of dollars to create innovative products and new recycling technologies for sustainable change. Because when you push for smarter solutions, big things can happen."[197] As of July 25, 2024, the 30-second ad has been viewed 8.6 million times on YouTube.

349. The 15-second ad similarly states, "For a cleaner, more sustainable future, America's Plastic Makers are investing billions of dollars to create innovate products and new recycling technologies. Because when you push for smarter solutions, big things can happen." As of July 25, 2024, the 15-second ad has been viewed almost 35 million times on YouTube.

350. Contrary to the ad's misleading claims, plastic cannot be "remade over and over," especially not through ExxonMobil's "advanced recycling" technology. As noted above, ExxonMobil's "advanced recycling" technology is not "new" and destroys most of the plastic waste it co-processes. Like the ad campaign by the Council for Solid Waste Solution that placed deceptive ads in newspapers and magazines in the 1980s, this modern-day ad campaign by America's Plastic Makers, with ExxonMobil at the helm, deceptively seeks to convince consumers that recycling, especially "advanced recycling," will save the day in order to continue

[195] ExxonMobil also gave the American Chemistry Council an additional $4 million in 2022 for the following "deliverable": "Targeted campaign for CA ballot initiative." This was likely referring to the 2022 grassroots ballot initiative in California that sought to create a plastics extended producer responsibility program in the state.

[196] Samuelson, *The Plastic Industry's $30 Million Lie*, HEATED (July 25, 2024) <https://heated.world/p/the-plastic-industrys-30-million?utm_campaign=email-half-post&r=27dq5&utm_source=substack&utm_medium=email> (as of July 29, 2024).

[197] America's Plastic Makers, *Dominoes (30s)* (Feb. 22, 2024) YouTube <https://www.youtube.com/watch?v=rewRKYlRew4&t=30s> (as of July 29, 2024).

saturating the public and the planet with single-use plastic.

IV. EXXONMOBIL'S DECEPTIONS ABOUT PLASTIC RECYCLING CAUSED AND ARE CAUSING FORESEEABLE HARM TO CALIFORNIA'S NATURAL RESOURCES, ECONOMY, AND RECREATION, AND ARE RESULTING IN ENVIRONMENTAL INJUSTICE.

351. ExxonMobil, independently and through its agents, servants, alter-egos and industry groups, has misled consumers, policymakers, and regulators about the viability of plastic recycling as a solution for plastic waste for more than 50 years. Since the early 1970s, as alleged above, ExxonMobil has publicly promoted the lie that recycling would be the solution to the plastic waste problem created by its products, while knowing that it would not. At the same time, ExxonMobil has expanded its plastic production, which has foreseeably led to a plastic waste and pollution crisis across California.

352. ExxonMobil marketed plastics and recycling in a manner that directly and foreseeably impacted and continues to impact California, with knowledge that the intended use of its products harmed and will continue to harm California and elsewhere. ExxonMobil purposefully directed its misleading conduct to reach the State, its businesses, and its residents, to promote the continued and unabated use of plastics products, including ExxonMobil's plastics products, in California and elsewhere. These deceptions have resulted in significant injuries in the State while increasing sales to ExxonMobil.

353. Over the years, ExxonMobil expanded its U.S. plastic production to 7.7 million tonnes per year in 2023. Plastic waste has also grown, for instance, from 8.9 percent of all managed trash in California in 1999 to almost 14 percent of all managed trash in California in 2021. Yet, throughout the half century during which ExxonMobil promised that recycling would provide the solution to the increasing amount of plastic waste generated by its ever increasing plastic production, the rate of plastic recycling in the United States has never exceeded nine percent (and only reached nine percent due to millions of pounds of plastic waste exported each year under the guise of recycling), and currently hovers at around five percent.[198]

[198] Nat. Renewable Energy Laboratory, *NREL Calculates Lost Value of Landfilled Plastic in U.S.*,*supra*; see also Beyond Plastics, The Real Truth About the U.S. Plastics Recycling Rate, *supra*, at page 2.

354. Meanwhile, the public became alarmed by the increasing amount of plastic trash that had begun choking California rivers and shores. In response to Californians' desperation to do something about plastic waste destroying the environment, California Coastal Cleanup Day was born. Volunteers concerned with the devastating effects of plastic pollution on California beaches, waterways, and wildlife have collected and categorized over 65 items of mostly single-use plastic waste on a single day annually from 1988 to present.

355. Since 1985, more than 1.7 million volunteers have removed over 26 million pounds of trash from beaches and inland waterways across California. ExxonMobil's polymer products are used to make the plastic items within the top 10 items collected on California Coastal Cleanup Day. These single-use plastic items found on California beaches are made, in part, from polymers and plastics produced by ExxonMobil and manufactured by ExxonMobil's customer brands. (See Figure C above).

Figure I: Surfrider Foundation Report of Top Beach Cleanup Items in 2023

Surfrider's 2023 Assessment of 685 Beach Cleanups in the United States

356. Studies dating from at least 10 years ago show that plastic accounts for approximately 90 percent of all floating marine debris.

357. ExxonMobil externalized the cost of addressing plastic waste and pollution onto the State, its People, and its ecosystems by expanding its plastic production without regard for the end-life of its product, including the impact of plastic waste and the inability of plastic recycling to meaningfully address the massive amount of plastic waste produced. ExxonMobil's contribution to the plastic waste and pollution crisis through its deceptive messages caused and

continues to cause the State substantial harm. The plastic ExxonMobil produces foreseeably becomes plastic waste and pollution that impairs California's public trust resources, including its tidelands, beaches, oceans, and all of the wildlife dependent upon these and other waterbodies and impedes the public's enjoyment of and ability to recreate in these natural environments.

358. In addition to these harms, plastic pollution also results in concrete economic costs borne by public entities and taxpayers in California.

359. As explained above, there is a direct relationship between the rise in plastic production and the rise in plastic pollution in that "a 1% increase in production, result[s] in approximately a 1% increase in branded plastic pollution."[199]

A. ExxonMobil Substantially Caused and Is Causing Plastic Waste and Pollution That Harms California's Natural and Public Trust Resources.

360. Plastic pollution is pervasive in California. It is found throughout the state, including in the state's rivers, lakes, bays, and ocean waters. Plastic is even found in protected coastal areas, such as the Monterey Bay National Marine Sanctuary and the Bodega Bay State Marine Reserve. California has 105 water bodies that contain so much debris and plastic that they are either already listed as having "impaired" water quality under the Clean Water Act or have been recommended for such a listing in the State Water Resources Control Board's 2024 Integrated Report (pending approval by U.S. EPA), which identifies impaired water bodies. Plastic pollution in the state's public trust lands impairs public trust resources and injures the public's right and ability to freely use them.

361. California's coastal public trust lands support a variety of ecological, socioeconomic, and cultural functions. Coastal wetlands and beaches support biodiversity and perform a variety of important ecosystem services, like buffering wave energy, filtering water, recycling nutrients, and serving as nursery habitat for fish species that are part of larger coastal ecosystems. All of these essential biological functions have been harmed by plastic waste and pollution that ExxonMobil has substantially caused, resulting in harm to the State's ecosystems

[199] Cowger et al., *Global responsibility for plastic pollution*, 10 Science Advances 7 (Apr. 24, 2024).

and wildlife. Extensive research shows that exposure to plastic pollution has had substantial negative impacts on a wide range of freshwater, marine, and terrestrial species.

362. Plastic food packaging has been found in dead seabird stomachs in San Diego and Monterey since the 1970s. As plastic production has ramped up, California's wildlife increasingly suffers from plastic ingestion and entanglement.[200] Wildlife frequently mistakes plastic for food or inadvertently swallows plastic while feeding or swimming.[201] Ingesting plastic can obstruct digestion and lacerate intestines, which interferes with an animal's ability to feed and obtain nourishment.[202] Wildlife also become entangled in plastic, causing animals to drown, choke, or suffer physical trauma, such as amputation and infection, which interferes with feeding and foraging, leading to malnutrition and unnecessary death.[203]

363. The National Oceanic and Atmospheric Administration (NOAA) and the National Marine Fisheries Service (NMFS) reported that, in the last two decades, a total of 1,114 marine mammals in California were entangled in plastic or plastic was found in the animal's stomach.[204] Some examples of marine life entanglement in California include a report that a long-beaked common dolphin was found with a food wrapper lodged in its esophagus, a northern elephant seal nursing its pup was found with a packing strap around its neck, and a leatherback sea turtle was found with plastic sheeting stuck in its gastrointestinal track. A separate study of stranded marine mammals on the central California coast between 2003 and 2015 showed marine debris entanglement was the main trauma category affecting pinnipeds, including California sea

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[200] Donnelly-Greenan et al., Moss Landing Marine Laboratories, Entangled Seabird and Marine Mammal Reports from Citizen Science Surveys from Coastal California (1997–2017), 149 Marine Pollution Bulletin (Aug. 28, 2019) (study in central CA from 1997-2017 finding seabirds entangled in CA primarily from fishing lines; mostly in Monterey Bay NMS).

[201] Warner et al., Oceana, Choked, Strangled, Drowned: The Plastics Crisis Unfolding in Our Oceans (Nov. 2020).

[202] *Ibid.*

[203] *Ibid.*

[204] Fong, *California: Marine Mammals Tangled and Intoxicated by Plastic*, Internat. Marine Mammal Project (Aug. 20, 2020) <https://savedolphins.eii.org/news/california-marine-mammals-tangled-and-intoxicated-by-plastic#:~:text=In%20the%20last%20two%20decades,was%20found%20in%20its%20stomach> (as of July 29, 2024).

lions, elephant seals, and Guadalupe fur seals.[205]

364. California's wildlife is being directly harmed by ExxonMobil's plastic marine debris. Between 2008 and 2012, NOAA reports that marine debris off the coast of California seriously injured or killed 65 Californian sea lions, seven northern elephant seals, three sperm whales, two California harbor seals, and one long-beaked common dolphin.[206] In 2016, the Secretariat of the Convention on Biodiversity reported that marine debris entanglements had been documented for 519 species of animals, including 46 percent of all species of marine mammals.[207] Numerous studies show that plastic accounts for approximately 90 percent of all floating marine debris. ExxonMobil's plastic is killing California's marine life.

365. Marine debris also plagues birds in California. A study of six California counties showed seabirds accounted for 97 percent of all debris entanglement deaths from 1997 to 2017. The most affected species were the common murre, accounting for 23 percent of deaths, Brandt's Cormorant, accounting for 13 percent, followed by the Western Gull (9.6 percent), Sooty Shearwater (8 percent), and Brown Pelican (7 percent).

366. Marine debris also poses harms to California birds through ingestion. Birds that call California home, such as California condors, red-tailed hawks, red-shouldered hawks, great horned owls, and barn owls are known to ingest plastic pollution, some species mistaking it for food.[208] A study of California condor mortality, from 1992 through 2009, revealed that trash ingestion was the leading cause of death in nestlings, accounting for 73 percent of nestling deaths. Plastic pollution is so prevalent in bird stomachs, researchers have coined the term "plasticosis" to describe stomach damage related to ingesting plastic trash. As a consequence of plastic ingestion, a variety of bird species can suffer from nutritional deprivation, damage or obstruction

[205] Barcenas-De La Ceuz et al., *Evidence of Anthropogenic Trauma in Marine Mammals Stranded Along the Central California coast, 2003-2015,* 34 Marine Mammal Science 2 (Oct. 23, 2017).

[206] Carretta et al., Nat. Oceanic and Atmospheric Admin., U.S. Pacific Marine Mammal Stock Assessments: 2018 (June 2019).

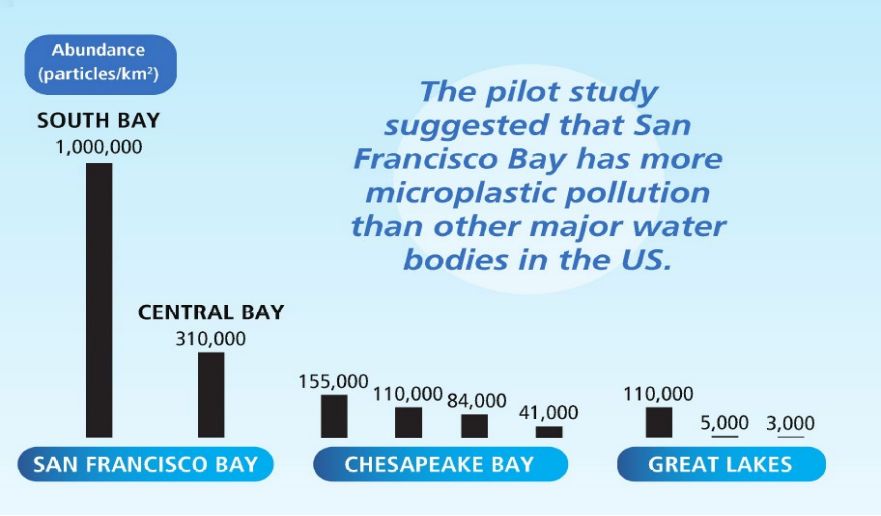
[207] Secretariat of the Convention on Biological Diversity, Marine Debris: Understanding, Preventing and Mitigating the Significant Adverse Impacts on Marine and Coastal Biodiversity (Technical Series No. 83) (2016) page 18.

[208] Leviner, et al., *Documentation of Microplastics in the Gastrointestinal Tracts of Terrestrial Raptors in Central California, USA*, 109 California Fish and Wildlife Scientific Journal 6 (July 10, 2023).

of the gut, and inflammatory responses, leading to reduced food intake, delayed ovulation, and increased mortality. A 2015 study revealed that ingestion or entanglement records for marine bird species had increased from 44 percent to 56 percent since the 1990s, as had the proportions of marine mammal, sea turtle, and marine fish species.[209] The increases in wildlife entanglement and ingestion of plastic coincides with the increase in ExxonMobil's production of plastic since the 1990s.

367. As plastic continues to degrade in the environment, it breaks down into smaller and smaller fragments, eventually becoming what is commonly referred to as "microplastics." Microplastics contaminate every level of the food web in California, and both plastic fragments and the chemicals they carry can bioaccumulate in the food web at multiple trophic levels. A recent study found that surface water "levels of microparticles in the [San Francisco] Bay were some of the highest observed globally," and that "microplastic contamination, a global concern, may be higher in San Francisco Bay than in other urban areas in North America."[210] And a 2019 study found that "between 4.7 and 7.2 trillion microplastics enter San Francisco Bay via [] small tributaries annually."[211]

Figure J: Microplastics in San Francisco Bay Compared to Other Major U.S. Water Bodies



[209] Good et al., *Plastics in the Pacific: Assessing Risk from Ocean Debris for Marine Birds in the California Current Large Marine Ecosystem*, 250 Biological Conservation 108743 (Oct. 2020).

[210] S.F. Estuary Institute and The 5 Gyres Inst., Executive Summary, San Francisco Bay Microplastics Project (2019).

[211] Sutton et al. Understanding Microplastic Levels, Pathways, and Transport in the San Francisco Bay Region. San Francisco Estuary Institute page 49.

368. Exposure to plastic pollution and microplastics negatively impacts California's aquatic plants and wildlife. Studies show that microplastic exposure reduces root growth in aquatic plants native to California, decreases energy reserves in bivalves (mollusks), decreases juvenile growth rates in snails native to California, and can cause injury and inflammatory responses in zooplankton. Other studies show that mussel species had strong inflammatory responses when exposed to microplastic. Research suggests that the allocation of energy to immune responses may have detrimental effects to an organism's health over time. Two studies on Pacific oysters, also found in California, found that microplastic exposure and ingestion affected their physiology, behavior, and negatively affected oyster reproduction. Further, a study of San Francisco Bay found that microplastics pose a statistically significant risk to the health of aquatic ecosystems.[212]

369. ExxonMobil has produced highly-refined white oils for polystyrene production for over a century and is a major producer of styrene copolymers. A study of polystyrene plastic found that plastic particles adhere to primary producers (phytoplankton and algae, which form the basis of the marine food chain) and that plastic is then found in the digestive organs of higher trophic species (i.e., in species that eat primary producers). A study of the remote Bodega Marine Reserve on California's coast found that the organisms sampled had "remarkably higher concentrations of microplastic particles than the environmental samples" (i.e., seawater), and that microplastic density increased with trophic level (position up the food chain). Similarly, a study of Monterey Bay, California, revealed that 58 percent of anchovy fish studied contained microplastics, while 100 percent of common murres studied, a predator of anchovy, contained microplastics.

370. Other studies document that California's wildlife is ingesting microplastics. It was recently discovered that endangered blue whales, humpback whales, and fin whales off California's coast ingest far more plastic than previously understood. A blue whale may ingest 10

[212] Coffin et al., *Risk Characterization of Microplastics in San Francisco Bay, California*, 2 Microplastics and Nanoplastics 19 (July 7, 2022).

million pieces of microplastic in a single day.[213] illustrating the massive presence of plastic in the environment.

371. In an extensive review of scientific literature, a 2021 study by Dr. Matthew S. Savoca et al. at the Hopkins Marine Station of Stanford University found that 386 marine fish species are known to have ingested plastic debris, including 210 commercially important species. The research reveals that the consumption of plastic by fish is widespread and increasing, and that the 210 commercial species that were found to have ingested plastic is likely an underestimate. Over the last decade, the rate of plastic consumption by fish has doubled, increasing by 2.4 percent every year. The Savoca study showed that new species of fish were discovered with plastic inside of them each year.

372. The evidence showing that plastic harms California wildlife is overwhelming. ExxonMobil's rampant plastic production, brought about by its decades-long campaign of deception regarding the recyclability of plastic, has substantially caused and is causing foreseeable harm to California's wildlife. The estimated cost of plastic degradation to the marine environment is $33,000 per tonne of plastic waste,[214] though the true economic cost is likely to be greater. The State, its People, and its ecosystems, bear this cost. The plastic crisis that kills and injures California's wildlife is offensive and indecent, and any reasonable person would be annoyed or disturbed.

B. Plastic Waste and Pollution Substantially Caused by ExxonMobil Harm the Public's Ability to Enjoy and Recreate in California.

373. Plastic pollution of California's environment significantly interferes with the public's enjoyment and use of California's public spaces. Plastic waste and pollution negatively impact the recreational and aesthetic value of California's beaches, coastlines, environments, parks, lakes, rivers, and other waterways, and is costly to remove.

374. The presence of plastic litter and microplastics adversely affects the quality of

[213] Kahane-Rapport et al., *Field Measurements Reveal Exposure Risk to Microplastic Ingestion By Filter-Feeding Megafauna*, 13 Nature Communication 6327 (Nov. 1, 2022).

[214] Coffee et al., UCLA Luskin Ctr. for Innovation, Plastic Waste in Los Angeles County: Impacts, Recyclability, and the Potential for Alternatives in the Food Service Sector (Jan. 2020).

fresh and saltwater bodies of water in California and causes inconvenience and annoyance to any reasonable person. The condition affects a substantial number of people who use California waterways for commercial and recreational purposes and interferes with the rights of the public at large to a clean and safe environment.

375. The various beaches and wetlands that constitute public tidelands support public access and coastal recreational activities like surfing, sunbathing, swimming, birdwatching, and fishing. The Coastal Act mandates that California provide maximum access and recreational opportunities to the public and protect, encourage, and provide lower-cost visitor and recreational opportunities in the interest of environmental justice.

376. Plastic pollution is also damaging public spaces in California. For decades, single-use plastic waste has fouled California's beaches. Since 1985, the California Coastal Commission has organized its annual Coastal Cleanup Day to address litter in California. Since its inception, the Cleanup Day has collected over 26 million pounds of beach debris, approximately 81 percent of which is plastic. Since 1988, plastic waste, including cigarette filters, food wrappers, bags, and bottles have consistently ranked in the top 10 items found on California's beaches during the annual Cleanup Day.

377. Plastic pollution in the marine environment negatively impacts recreational activity in California. Plastic pollution creates a visual and aesthetic problem that impacts local tourism. Litter on beaches and coastlines discourages tourism—in fact, litter is often cited as a primary reason why tourists spend less time at or avoid certain locales. Beach visitors are likely to be concerned about marine debris because it poses potential physical harms from lacerations, bacterial infections, or entanglements during swimming, and because it detracts from the perceived natural beauty of an area.

378. A NOAA study found that Orange County residents avoided going to littered beaches and spent millions of dollars annually driving to cleaner beaches.[215] The study concluded that reducing marine debris by 50 percent would lead to a $67 million benefit to Orange County

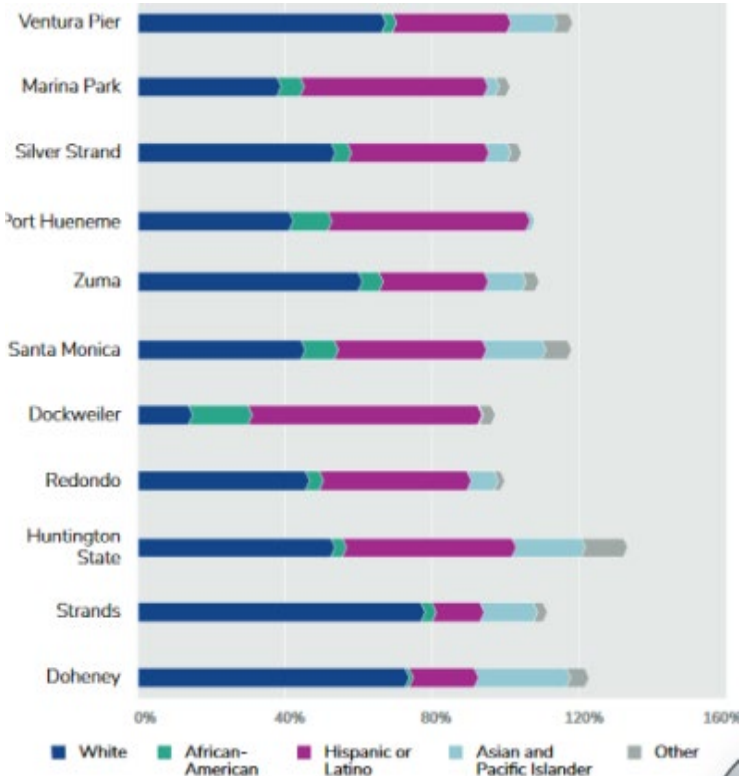
[215] Leggett et al., Industrial Economics, Inc. (prepared for Marine Debris Div., Nat. Oceanic and Atmospheric Admin.), Assessing the Economic Benefits of Reductions in Marine Debris-A Pilot Study of Beach Recreation in Orange County, California (June 15, 2014).

residents over a three-month period. Given the enormous popularity of California beaches, the magnitude of recreational losses associated with plastic debris is substantial.[216]

C. ExxonMobil Substantially Caused and Is Causing Plastic Waste and Pollution That Disproportionately Affects California's Communities of Color and Low-Income Populations.

379. Plastic beach pollution also disproportionately affects Black and Latinx residents in California. A UCLA study found that Dockweiler State Beach was the most popular Southern California beach for Black and Latinx visitors. See Figure K, below. Dockweiler State Beach had the fewest white visitors, and had the poorest visitors of all surveyed beaches, with most visitors' household income being below $50,000 per year.[217] A separate federal study found that Dockweiler had the most trash density—primarily plastic waste—out of every Southern California beach surveyed.[218]

Figure K: Ethnicity of Southern California Beach Visitors



[216] Stickel, et al., Kier Associates (prepared for U.S. Environmental Protection Agency), The Cost to West Coast Communities of Dealing with Trash, Reducing Marine Debris (Sep. 2012) (west coast spends $520 million per year to clean up pollution on coast).

[217] Christensen et al., UCLA Coastal Access Report Southern California Supplement (Jan. 25, 2017).

[218] Leggett et al., Assessing the Economic Benefits of Reductions in Marine Debris: A Pilot Study of Beach Recreation in Orange County, California, *supra*, at page 17.

380. Plastic pollution in California also disproportionately harms subsistence fishing. Chemicals in marine plastic pollution may be ingested by fish, as well as adsorbed onto the plastic which is then ingested and bioaccumulated in fish. Smaller microplastics can be caught in the tissues of the gills, and the simple action of consuming plastic reduces the fish's capacity to ingest nutritious food and therefore lowers the nutritional and reproductive value of the fish.

381. Because plastics disintegrate into infinitesimally small pieces in our waterways, they are ingested by filter-feeding organisms and thus have entered all links of the marine food chain. Californians who consume fish and other seafood, including those who fish for subsistence, thus also consume microplastics.

382. Sea Grant-funded research has examined the demographics of anglers from San Diego Bay, San Francisco Bay, and Central Valley waterbodies. Based on 2015 Census tracts, almost all pier anglers reported under the 200 percent poverty level, defined as a household of four with a total annual income of less than $50,000, with many under the 100 percent poverty level (less than $25,000).

383. The Sea Grant study shows only about 10 percent of pier and shore-based anglers had a college degree, and many never finished high school. By comparison, 50 to 75 percent of private and charter boat-based anglers were college educated and had an annual income greater than $50,000 per year. California pier anglers were predominantly Asian, with Hispanic and Black anglers present in lower yet substantial proportions. White anglers were the smallest demographic of pier anglers and the largest demographic of boat-based anglers.

384. Sea Grant researchers also found that California pier anglers consume more of their catch than private boat, charter boat, and other shoreline anglers combined. The more times an angler fished per week, the higher their consumption rate.

385. Based on this data, the majority of California pier anglers are people of color without a college degree from low-income communities who often eat what they catch. Locally caught fish as the primary protein in a diet is inexpensive but has other costs—higher levels of fish consumption mean higher levels of plastic pollution consumed.

386. Consumption of sport fish is an important food source for Californians.

Approximately 33 percent of recreational and subsistence anglers in Los Angeles County consume their catches.

387. In California, there have for decades been coastal advisories aimed at limiting consumption of nearshore saltwater fish, such as White Croaker (*Genyonemus lineatus*), because of environmental contamination bio-accumulating in their bodies. Microplastic bioaccumulation in fish only stands to exacerbate concern about human consumption of these species.

388. The prevalence of plastic pollution in the marine food chain causes concerning risks for Californians who depend on the ocean for food, such as subsistence anglers, and also for recreational anglers. Furthermore, the relentless influx of plastic polluting vital food sources exacerbates the disparities faced by Black, Latinx, and other Californian people of color, particularly those with lower incomes who rely on these resources for sustenance.

389. ExxonMobil's substantial creation of the plastic waste and pollution crisis through its deception about plastic's recyclability has caused the State enormous harm. Residents cannot enjoy California's beaches, oceans, and other natural and public trust resources, including fish, to their full extent because of plastic pollution.

D. ExxonMobil Substantially Caused and Is Causing Plastic Waste and Pollution That Harm California's Local Coastal Economies.

390. Plastic pollution of California's environment has a range of economic costs to California, including loss of tourism and tax revenue for communities. Plastic waste and pollution also interfere with California's commercial and recreational fishing and boat navigation.

391. Additionally, plastic waste and pollution negatively impacts fish populations that California's fishing economy depends upon. Marine plastic pollution not only reduces the efficiency and productivity of commercial fisheries and aquaculture through physical entanglement and damage but also poses a direct risk to fish and shellfish stocks. A wide range of marine species, including those commonly consumed by humans, ingest plastic pollution directly or indirectly by ingesting plastic-contaminated prey. Plastic contamination in the food chain harms, sometimes lethally, fish and shellfish stocks, which impacts the productivity and profitability of California's fishing and aquaculture industries. Studies have shown that 25 percent

of California's commercial fish supply is contaminated with anthropogenic debris.[219] Another study shows that 25 percent of fish from a creek that flows into San Diego Bay contain microplastics.[220]

E. ExxonMobil Substantially Caused and Is Causing Plastic Waste and Pollution That Results in Significant Economic Harm to California Taxpayers and Public Entities.

392. Plastic pollution of California's environment has caused and continues to cause direct economic harm to public entities and taxpayers in California. The costs of managing and cleaning up plastic waste are largely borne by residents and taxpayers via municipal governments. Those costs have grown over the past three decades, as explained in more detail in the following paragraphs.

393. Through its deception about the capacity of recycling to solve the plastic waste and pollution crisis, ExxonMobil worked to avoid any limitations on or pressures on its business model. California's state and municipal governments and California residents/taxpayers bear the tangible and quantifiable costs of ExxonMobil's campaign of deception.

1. Costs for collecting, hauling, and disposing of plastic waste.

394. California households pay for the collection, hauling, and disposal of plastic waste. Over the past three decades, the amount of plastic waste has skyrocketed due to ExxonMobil's expansion of its plastic production, which, coupled with ExxonMobil's decades-long campaign of deception around recycling, has foreseeably led to store shelves flooded with products in plastic packaging and a plastic waste and pollution crisis. Since plastic recycling is not economically viable at scale, consumers have been forced to pay for disposal of more plastic waste. At the same time, the cost of waste disposal has also increased.[221]

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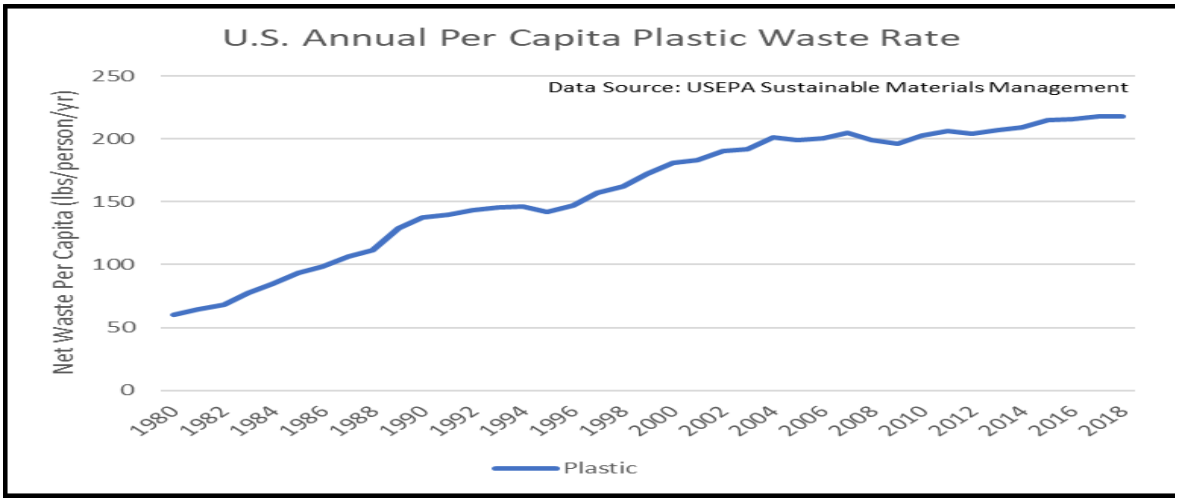
[219] Rochman et al., *Anthropogenic Debris in Seafood: Plastic Debris and Fibers from Textiles in Fish and Bivalves Sold for Human Consumption*, 5 Scientific Reports 14340 (Sep. 24, 2015).

[220] Talley et al., *Natural History Matters: Plastics in Estuarine Fish and Sediments at the Mouth of an Urban Watershed*, PLOS One (Mar. 18, 2020).

[221] Global Disposal, *Rising Waste Disposal and Recycling Costs for California Communities: What You Should Know* (Oct. 21, 2022) <https://www.globaldisposal.com/blog/rising-waste-disposal-and-recycling-costs-for-california-communities-what-you-should-know> (as of July 29, 2024).

395. The U.S. Environmental Protection Agency (USEPA) published plastic waste data at the national level from 1960 through 2018.[222] Figure L, below, shows that the national average per capita plastic waste generation rate increased from 60 pounds per person per year in 1980 to 137.3 pounds per person per year in 2018.

Figure L: United States Annual Per Capita Plastic Waste Rate



396. CalRecycle has published waste characterization reports since 1999. Figures L and M, below, summarize the plastic waste data included in CalRecycle's reports for 1999, 2008, 2014, and 2021. Using California's population data over that period, plastic waste generation per capita grew approximately from 190.78 pounds per person per year in 1999 to 278.21 pounds per person per year in 2021.

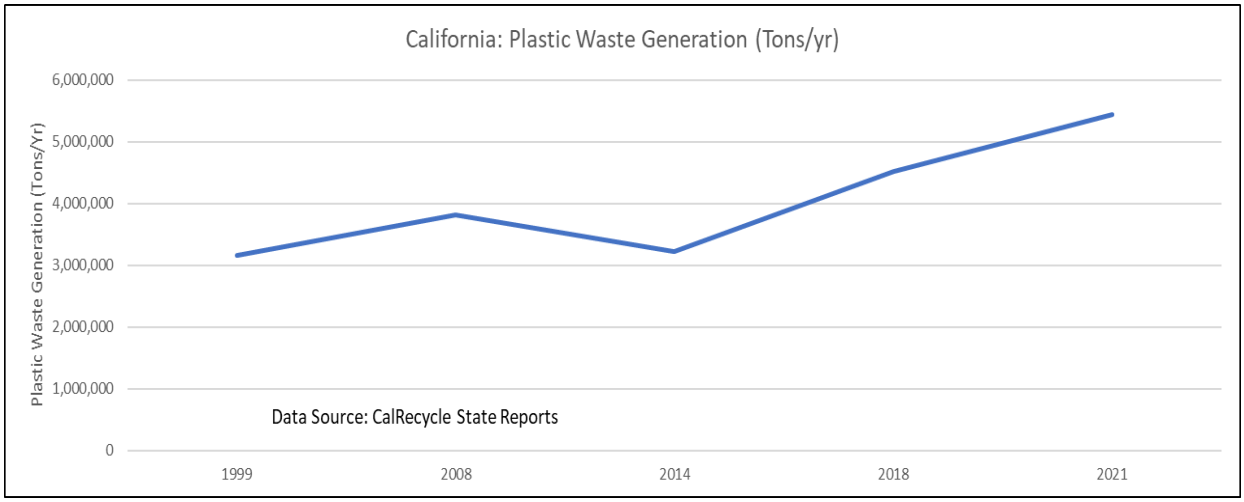
Figure M: Summary of CalRecycle Waste Characterization Data

CA Waste Characterization	**1999**	**2008**	**2014**	**2018**	**2021**
Percent plastic	8.9%	9.6%	10.4%	11.5%	13.7%
Total Plastic Waste (U.S. tons)	3,161,777	3,807,952	3,215,943	4,524,052	5,445,299
Population[223]	33,145,121	36,604,337	38,586,706	39,437,463	39,145,060
Per capita (Pounds/person/year)	190.78	208.06	166.69	229.43	278.21

[222] U.S. Environmental Protection Agency, Studies, Summary Tables, and Data Related to the Advancing Sustainable Materials Management Report.

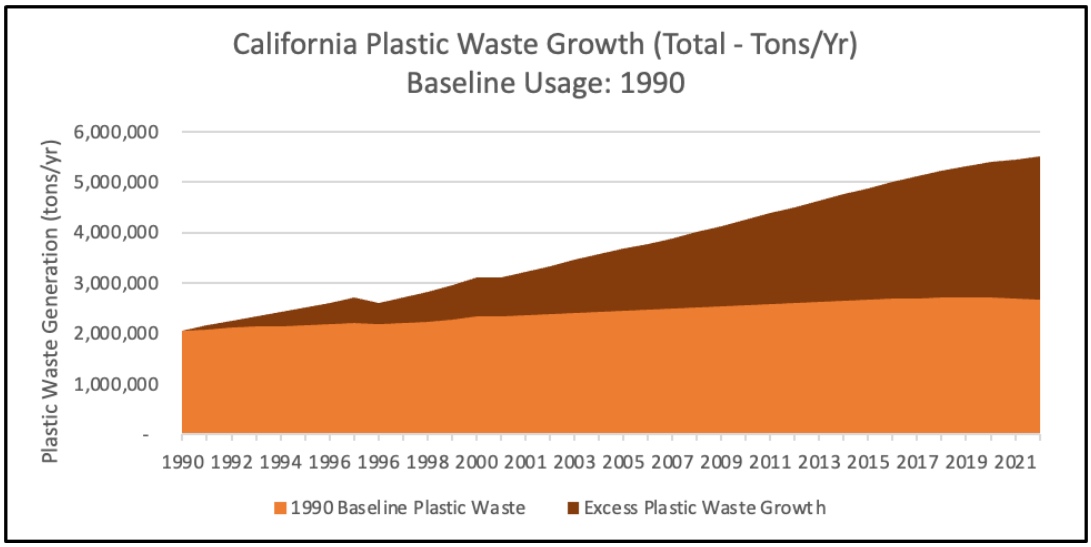
[223] MacroTrends, California Population 1900-2023 <https://www.macrotrends.net/global-metrics/states/california/population#google_vignette> (as of July 29, 2024).

Figure N: Summary of CalRecycle Waste Characterization Data



397. As discussed above, ExxonMobil, independently and through its involvement in plastics industry and front groups, has misled consumers, policymakers, and regulators about the ability of plastic recycling to handle the massive volume of plastic waste since the 1980s, which led to a glut of plastic waste. Figure O, below, the growth in excess plastic waste over the 1990 baseline, shows that between 1990 and 2022, about 47 million tons of excess plastic waste was generated in California.[224]

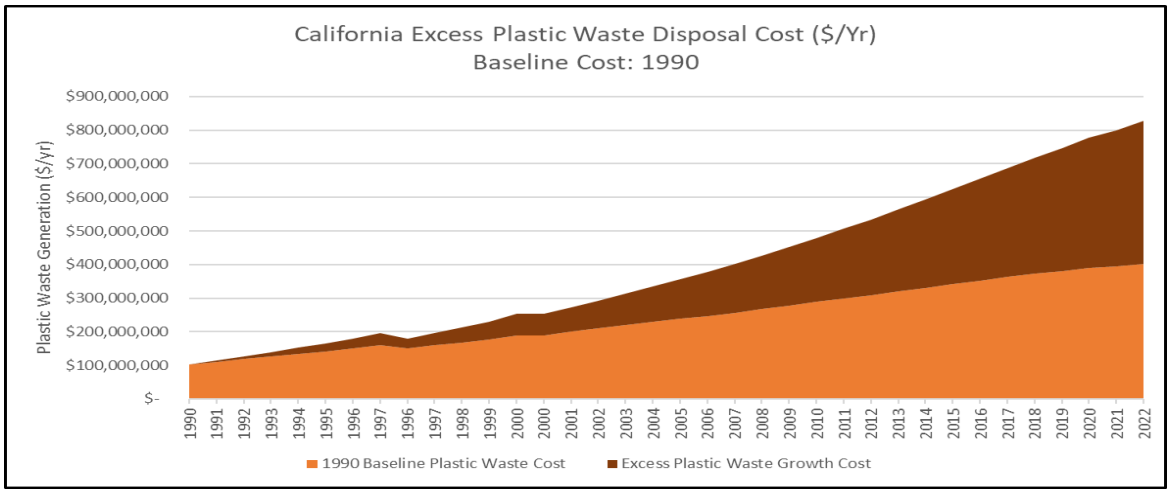
Figure O: California Excess Plastic Waste Growth (1990 to 2022)



[224] This estimate is based on the U.S. EPA 1990 baseline of 137.3 pounds per person per year of plastic waste generation, the CalRecycle 2021 figure of 278.21 pounds per person per year of plastic waste generation, and California's population data. For the purpose of creating a credible, conservative cost estimate, a baseline year of 1990 was assumed for determining the "excess" plastic waste generated since ExxonMobil's plastic recycling campaign significantly increased at that time.

398. Figure P, below, shows the growth in cost to collect, haul, and dispose of California's plastic waste from 1990 to 2022.[225] Over that time, the per U.S. ton cost to collect, haul, and dispose of all waste has risen dramatically. This cost assumes that the average statewide cost to collect, haul, and dispose of waste in 1990 was $50 per U.S. ton and has increased to $150 per U.S. ton[226] in 2022, based on an increase in rate of 200% in waste management costs over that 32-year period. Based on this data and these assumptions, the cost to Californians to collect, haul, and dispose of excess plastic waste from 1990 through 2022 was $5.5 billion dollars (without accounting for inflation).

Figure P: California Excess Plastic Waste Disposal Cost



2. Costs of plastic contamination in California's recycling system.

399. The increasing plastic waste resulting from ExxonMobil's increasing production of new plastic has also led to increased recycling costs for California. In 1989, the California State Legislature signed Assembly Bill (AB) 939 into law, which mandated every local jurisdiction in California to reduce their 1990 baseline waste by 25 percent by the year 1995, and by 50 percent by the year 2000. In 2011, AB 341 established a statewide goal that at least 75 percent of solid waste generated should be source-reduced, recycled, or composted by the year 2020. As a direct result of the 1989 legislation, cities in California were required to design and

[225] *Ibid.*

[226] See, e.g., City of Berkeley, Transfer Station <https://berkeleyca.gov/city-services/trash-recycling/transfer-station>; Del Norte County, Schedule B: Transfer Station Rates <https://recycledelnorte.ca.gov/dist/docs/rates/dnco-rates.pdf> (as of July 29, 2024).

implement curbside recycling programs that required mandatory participation by all residents.

400. Plastic contaminates the processing and sorting of post-consumer materials placed in curbside recycling bins and causes a significant and quantifiable cost. This contamination is the direct result of ExxonMobil's deceptive messages regarding plastic recycling and its promotion of false recyclable labels (such as the chasing arrows symbol, discussed above), which misled consumers to believe that the majority of plastics can be recycled. Based on this misconception, consumers put a wide range of plastics in the recycling bin. These plastics, particularly single-use plastics such as plastic bags and films, contaminate the waste stream with material that is not actually recyclable.[227] A 2019 survey showed that more than half of Californians mistakenly put plastic bags in recycling bins.[228]

401. A contaminated waste stream has economic costs: it increases collection and processing costs and damages sorting systems and equipment.[229] Energy, equipment, trucking, and labor costs and carbon emissions are wasted from collecting and sorting unwanted, worthless items through municipal sortation systems.[230] According to a survey by the industry publication Waste Dive, over 100 cities canceled their curbside recycling systems with contamination cited as a major contributing factor for closure.[231] Contamination harms the ability of sorting facilities to effectively sort other materials such as cardboard and paper that are easily ruined by contact with food-soiled packaging.[232] Collected curbside recycled materials are screened by material recovery facilities (MRF), waste sorting plants that separate and prepare single-stream recycling materials for sale to end buyers. If the screening reveals excessive contamination, the entire truckload may be sent to a landfill. This disrupts California's curbside recycling system, in that large volumes of

[227] Rachelson, *What is Recycling Contamination, and Why Does it Matter?* Rubicon (updated Feb. 6, 2023) <https://www.rubicon.com/blog/recycling-contamination/> (as of July 29, 2024).

[228] Tanimoto, The Recycling Partnership, 2019 West Coast Contamination Initiative Research Report (Apr. 2020).

[229] Oregon Truth in Labeling Task Force, Truth in Labeling Final Report and Recommendations (June 1, 2022).

[230] Rachelson, *What is Recycling Contamination, and Why Does it Matter?*, *supra*.

[231] Waste Dive, *Where Curbside Recycling Programs Have Stopped and Started in the US* (Dec. 18, 2019, updated Jan. 9, 2023) <https://www.wastedive.com/news/curbside-recycling-cancellation-tracker/569250/> (as of July 29, 2024).

[232] Marshall et al., *The Heavy Toll of Contamination*, Recycling Today (May 2017) <https://www.recyclingtoday.com/article/the-heavy-toll-of-contamination/> (as of July 29, 2024).

non-plastic recyclable materials (e.g., cardboard, metal, glass) do not get recycled.

402. Based on the available data and cost assumptions, the cost of plastic contamination from curbside bins over the 1990 to 2022 period is estimated to be $15.7 billion in California (without accounting for inflation).

3. Costs for worker injuries from plastic contamination in California's recycling system.

403. Increased plastic contamination in California's recycling system threatens worker safety. In 2021, refuse and recyclable material collection was considered the seventh deadliest job in the country. According to data collected by the U.S. Department of Labor's Bureau of Labor Statistics in the Census of Fatal Occupational Injuries, refuse and recyclable material collectors had a fatal injury rate of 27.9 per 100,000 full-time equivalent workers.[233] Risks of injury and harm are increased when workers need to sort through increasingly contaminated loads and remove contaminants, such as plastic, from machinery.[234]

404. These increased costs are also the direct and foreseeable result of ExxonMobil's deceptive marketing to the public around the feasibility of plastic recycling to handle the massive amount of plastic waste generated. According to Susan Epps, a leading authority on MRFs safety, who participated in an investigation in 2019 by Waste Dive, "Any time someone puts an item in the recycling stream that's not accepted, it's usually someone else's job to take it out. Any time you touch material you have an opportunity to have an injury. And so, the number of opportunities in these facilities is great." "With fluctuating injury rates, and ongoing fatalities, MRFs remain a key safety challenge." In fact, these recycling facilities have been singled out by the Bureau of Labor and Standards for having some of the highest rates of days away, restricted or transferred (DART) among all occupations in the United States.

405. A July 2022 *CBS Morning News* segment also illustrates the dangers recycling workers face, as well as the increased risk of danger when unrecyclable products are placed in the recycling stream. In the video, a MRF worker explains the multiple harms caused by

[233] U.S. Dept. of Labor, National Census of Fatal Occupational Injuries 2021 (Dec. 16, 2022).

[234] Rachelson, *What is Recycling Contamination, And Why Does it Matter?*, *supra*.

contamination of the recycling stream with flexible plastic packaging. He states that MRF workers must clean plastic waste from the equipment for two hours every day. The MRF worker states that flexible plastic film packaging can cause fires in MRFs. Plastic is highly flammable, and MRFs and plastic recycling facilities can operate with inadequate environmental protections. As shown by a massive fire at a plastic recycling and storage facility in Indiana in April 2023, significant health, social, and economic harms to communities can result from fires fueled by plastic waste.

4. Plastic manufacturing plants and recycling centers disproportionately impact communities of color and low-income populations.

406. Because of ExxonMobil's campaign of deception regarding the ability of plastic recycling to handle the massive amount of plastic waste generated, plastic waste and pollution has overrun the fragile system built to process it. MRFs and plastic manufacturing plants predominantly located in California's most vulnerable and already environmentally overburdened communities are causing an excess of truck impacts, odors, and injury.

407. MRFs and plastics manufacturing plants, which are necessitated by ExxonMobil's campaign of deception around the recyclability of plastic, are often sited in or near marginalized communities of color.[235] For example, plastic manufacturing plants and MRFs[236] are located in the most polluted neighborhoods in greater Los Angeles,[237] which are predominately Latinx and Black.[238] According to CalEnviroScreen 4.0,[239] Latinx populations experience the heaviest environmental burden in Los Angeles. The cities of Compton, Lynwood,

[235] U.S. Environmental Protection Agency, *National Overview: Facts and Figures on Materials, Wastes and Recycling*, *supra*.

[236] Leif, *EPA Leader Connects Recycling and Environmental Justice,* Resource Recycling (May 4, 2021) <https://resource-recycling.com/recycling/2021/05/04/epa-leader-connects-recycling-and-environmental-justice/?utm_medium=email&utm_source=internal&utm_campaign=May+4+RR> (as of July 29, 2024).

[237] Cal. Office of Environmental Health and Hazard Assessment, CalEnviroScreen 4.0 <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40> (as of July 29, 2024).

[238] *Ibid*; Best Neighborhood, *Race Map for Los Angeles, CA and Racial Diversity Data* <https://bestneighborhood.org/race-in-los-angeles-county-ca/> (as of July 29, 2024).

[239] CalEnviroScreen is a tool that measures environmental health in California communities; it functions as an internet mapping tool to analyze colocation of different environmental burdens.

and Carson, for example, have the highest pollution burden scores in CalEnviroScreen and are predominantly made up of Latinx, Black, and Asian-American populations. Los Angeles County has 28 MRFs, 14 of which are clustered along the corridors along the I-5, I-110, and I-710 freeways.

408. Proximity to MRFs is highly correlated with physical respiratory injury in children and noxious odors in neighborhoods such as Oak View in Huntington Beach.[240] This neighborhood is in the 93rd percentile for pollution burden and is 66 percent Latinx according to the CalEnviroScreen 4.0 tool and recent census data.

409. Data shows that these plastic producing facilities and MRFs are located within environmentally overburdened communities and communities of color. These communities also bear the brunt of climate change impacts, which are exacerbated by greenhouse gas emissions attributable to the production, transport, and disposal of plastic and plastic waste. Air emissions (including greenhouse gases, odors, and toxic pollutants from plastics manufacturing facilities and MRFs) will continue to disproportionally impact these overburdened communities as long as Defendants' actions remain unchecked.

5. Costs for plastic litter clean-up.

410. California's local jurisdictions expend significant sums to clean up and prevent plastic pollution from further damaging the environment (plastic comprises an estimated 80 percent of total litter). These clean-up costs include litter remediation efforts such as beach and waterway clean-up, street sweeping, storm drain grate cleaning and maintenance, storm water capture device installation, manual litter clean-up, and public re-education.

411. A 2013 Natural Resources Defense Council (NRDC) report concluded that California local governments spend more than $428 million annually to prevent litter, over 80

[240] The Rainbow MRF in Huntington Beach can be found on the Cal EnviroScreen website here: https://oehha.ca.gov/calenviroscreen, using the SB 535 Disadvantaged Communities overlay, and has been the subject of numerous news articles. See, e.g., Mellen, *After Years of Complaints about Odor Pollution HB School District Settles Suit with Trash Hauler*, Orange County Register (Nov. 17, 2016) <https://www.ocregister.com/2016/11/17/after-years-of-complaints-about-odor-pollution-hb-school-district-settles-suit-with-trash-hauler/> (as of July 29, 2024) (as of July 29, 2024).

percent of which is plastic, from entering waterways.[241] Since 2013, the plastic waste and pollution crisis in California has only intensified. New research suggests costs of litter management to city governments have more than doubled over the last 10 years, and now stand at approximately $1 billion per year total across the state.

412. In order to confront the crisis of rising plastic waste and pollution, the State has undertaken, and continues to undertake, complex and costly monitoring, research, regulatory, mitigation, and remediation efforts. This essential work has caused the State and its taxpayers to incur significant economic harm.

6. Impacts to California's environment forces California to adopt legislation and regulatory programs to combat the increased plastic pollution caused by ExxonMobil's campaign of deception around plastic recycling.

413. ExxonMobil exacerbated the plastic crisis by overproducing virgin plastic while misleading consumers to believe that recycling is a viable waste management strategy and renders single-use plastic sustainable. As a result, the State has been forced to take necessary action to combat plastic pollution and will be required to continue ramping up costly regulatory and remedial activities in the future to address the plastics crisis substantially and proximately caused by ExxonMobil's deception.

414. Implementing regulatory programs to address plastic waste and pollution—both in the past, through the present, and increasingly over the future—requires a significant public cost. This cost will increase as additional regulatory programs needed to fully address the plastic waste and pollution crisis in California are implemented.

415. The California legislature has taken multiple approaches to reducing plastic waste. California's legislature passed Senate Bill (SB) 54 (Allen, Chapter 75, Statutes of 2022) — the Plastic Pollution Prevention and Packaging Producer Responsibility Act—and Senate Bill 343 (Allen, Chapter 507, Statutes of 2021), which restricts the use of recycling claims on products and

[241] Stickel et al., Kier Associates (prepared for Natural Resources Defense Council), Waste in Our Water: The Annual Cost to California Communities of Reducing Litter That Pollutes Our Waterways (Aug. 2013) page 19.

would prohibit the sale, distribution, or import of products with deceptive or misleading claims about recyclability.

416. In addition, Senate Bill 1335 (Allen, Chapter 610, Statutes of 2018) established the Sustainable Packaging for the State of California Act of 2018. Beginning January 1, 2021, a food service business on state property is prohibited from dispensing prepared, ready-to-eat food or beverages that are not packaged in a reusable, recyclable, or compostable manner.[242]

417. Trash, including mostly plastic debris, commonly pollutes State waters, transported by storm water, including through storm drains. The storm drains often convey water directly to water bodies, contributing to the expanded list of California's impaired water bodies. The presence of emerging contaminants, including microplastics in urban runoff, presents significant challenges for storm water capture and use or aquifer recharge through infiltration.

418. The State also bears the cost of addressing the plastic pollution on California's highway system infrastructure, which ExxonMobil substantially and proximately caused and continues to exacerbate. Roadway litter, most of which is plastic, clogs freeways and endangers travelers. Constant maintenance, expensive equipment, and costly public education campaigns are required to keep the highways and roads free of plastic pollution.

419. For example, costly capture devices are required to keep the highway system, an integral part of Californian infrastructure, functional and safe. Procurement and installation of these devices costs approximately $150,000 to $300,000 per acre of watershed. Current estimates show at least 22,000 acres will require capture devices to maintain highways statewide. It would require a minimum of *between $3.3 to $6.6 billion* to address this issue alone.

420. The State must also fund programs to keep its park lands and coastlines free of plastic. Plastic does not biodegrade and lasts forever in a park unit; therefore, constant

[242] See also Assem. Bill 2812 (2015-2016 Reg. Sess.) [recycling in office buildings]; Assem. Bill 901 (2015-2016 Reg. Sess.) [quarterly waste and recycling reporting to CalRecycle]; Assem. Bill 2675 (2014-2015 Reg. Sess.) [state agency purchases of recycled products]; Assem. Bill 341 (2011-2012 Reg. Sess.) [separation of recyclable materials and implementation of solid waste recycling programs, statewide 75 percent recycling goal to be achieved by 2020]; Assem. Bill 939 (1989 as amended) [divert 25 percent of solid waste by 1995 and 50 percent by year 2000].

maintenance must be done to abate the increasing amounts of plastic that enter the environment. Data from citizen clean-ups shows over 50 percent of reported litter collected by volunteers in California state parks contains plastic such as bottles, plastic bags, and food wrappers. While ExxonMobil continues to produce more and more virgin plastic and deceive the public, Californians are left to clean up the mess, year after year.

421. The plastic pollution crisis and growing problem of microplastic pollution in California's environment has necessitated the development of statewide strategies and guidance, including the California Ocean Litter Prevention Strategy[243] and the Statewide Microplastics Strategy, to improve coordination across state agencies to advance solutions and guide State investments to reduce and prevent ongoing plastic pollution.

422. California taxpayers should not bear the entirety of the public investment needed to understand, and ultimately remediate, the multitude of damaging effects of plastics. Instead, this cost should be allocated to those, such as ExxonMobil, that are responsible for creating and intensifying the plastic waste and pollution crisis by its decades-long efforts to deceive the public into believing that we can recycle our way out of this mess while simultaneously continuing to saturate consumers with an increasing amount of single-use virgin plastic materials and products despite the known and foreseeable harms and risks.

CAUSES OF ACTION

FIRST CAUSE OF ACTION

Public Nuisance

(Civil Code Sections 3479, 3480, and 3494)

423. Plaintiff re-alleges and incorporates by reference the allegations in each of paragraphs 1 through 422 as though fully set forth herein.

424. Under Civil Code section 3479, a "nuisance" is "anything which is indecent or offensive to the senses," or "an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property," or "unlawfully obstructs the free passage or use, in

[243] OPC 2018, *supra*.

the customary manner, of any navigable lake, or river, bay, stream, canal, or basin, or any public park, square, street, or highway."

425. Under Civil Code section 3480, a "public nuisance" is "one which affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal."

426. Defendants, individually and in concert with each other, by their affirmative acts and omissions, have created, caused, contributed to, and assisted in creating harmful plastic pollution throughout California, which threatens and harms the environment, wildlife, and communities. These harms are indecent and offensive to the senses, and obstruct the free use of property, so as to interfere with the comfortable enjoyment of life or property, and therefore constitute a nuisance.

427. Defendants caused, assisted in causing and/or contributed to plastic pollution that harms and threatens to harm the California environment, wildlife, natural resources, and communities, by (1) promoting and vastly increasing the production of single-use plastic, while (2) deceptively promoting that recycling would take care of the consequent tremendous increase in plastic waste, and (3) while knowing that increasing plastic waste inevitably leads to increasing plastic pollution and (4) knowing that once plastic enters the environment, it leads to environmental harms, including through microplastic pollution, which poses an even greater threat of harm to all living things.

428. The plastic-related harms that Defendants created, caused, contributed to, and assisted in the creation of have substantially and unreasonably interfered with the exercise of rights common to the public, including the public safety, the public peace, and the public comfort. These interferences with public rights include, among other things, harms caused to animal health; aesthetic and physical harm to public spaces and wildlife; interference with the public recreation and the local coastal economy; disproportionate harms to communities of color; and contamination of groundwater, beaches, and waterways.

429. Defendants caused and/or contributed to the alleged public nuisance by designing, marketing, developing, distributing, selling, manufacturing, releasing, supplying,

using, and/or enabling plastic production and promoting plastic to the public, including Californians, as sustainable through the use of recycling and "advanced recycling"—all while knowing to a substantial certainty that the foreseeable and intended use of these products and recycling or "advanced recycling" would lead to widespread contamination and pollution in California.

430. Defendants and each of them, knowingly, intentionally, and/or recklessly created, caused, or assisted in the creation of a nuisance by falsely promising Californians, for almost half a century, that recycling and "advanced recycling" would take care of the ever-increasing amount of plastic waste generated by Defendants' production, sale, and promotion of its plastic products at all times, up to and including today.

431. The plastic-related harms that Defendants created, caused, contributed to, and assisted in the creation of are present throughout California, and therefore affect a considerable number of persons in California.

432. An ordinary person would be reasonably annoyed or disturbed by these harms.

433. The harms caused by Defendants' nuisance-creating conduct are extremely grave, and far outweigh the social utility of that conduct.

434. The plastic-related harms that Defendants created, caused, contributed to, and assisted in the creation of continue to harm the State and its people into the present day, and will continue to harm the State and its people many years into the future.

435. The State and its people did not consent to Defendants' conduct.

436. The misconduct of Defendants, and each of them, was a substantial factor in bringing about the continuing public nuisance.

437. As a direct and proximate result of Defendants' acts and omissions, the State has been required and will be required to expend significant public resources to mitigate the impacts of plastics-related harms throughout California.

438. As a direct and proximate result of Defendants' acts and omissions, Californians have sustained and will sustain injuries to public safety and welfare; the loss of use and enjoyment of natural resources; and obstruction to the free use of public property.

439. Defendants' acts and omissions have caused or threaten to cause injuries to people, properties, and natural resources in California that are indivisible.

SECOND CAUSE OF ACTION

Action for Equitable Relief for Pollution, Impairment, and Destruction of Natural Resources

(Government Code section 12607)

440. The People re-allege and incorporate by reference the allegations in each of paragraphs 1 through 422 as though fully set forth herein.

441. Government Code section 12607 authorizes the Attorney General to "maintain an action for equitable relief in the name of the people of the State of California against any person for the protection of the natural resources of the state from pollution, impairment, or destruction."

442. The statutory term "natural resource" is defined as including "land, water, air, minerals, vegetation, wildlife, silence, historic or aesthetic sites, or any other natural resource which, irrespective of ownership contributes, or in the future may contribute, to the health, safety, welfare, or enjoyment of a substantial number of persons, or to the substantial balance of an ecological community." (Gov. Code, § 12605.)

443. Defendants, and each of them, have engaged in and continue to engage in, conduct that caused or contributed to the pollution, impairment, and destruction of natural resources, including, but not limited to:

a. Designing, marketing, developing, distributing, selling, manufacturing, releasing, supplying, using, and/or enabling plastic production and promoting plastic to the public, including Californians, as sustainable through the use of recycling and "advanced recycling"—all while knowing to a substantial certainty that the foreseeable and intended use of these products and recycling or "advanced recycling" would lead to widespread contamination and pollution in California;

/ / /

b. Promoting, manufacturing, distributing, marketing and/or selling plastic and especially single-use plastic products without adequate testing or analysis of their impact on communities, and their persistence and disintegration in the environment;

c. Concealing hazard information from regulators and the public;

d. Concealing studies and other documents showing the dangers of plastic and the truth about the ability of mechanical recycling and "advanced recycling" to address the massive volume of plastic waste and pollution generated;

e. Promoting, manufacturing, distributing, marketing and/or selling plastic recycling including "advanced recycling" to the public in California as a means to render plastic, particularly single-use plastic, sustainable, despite knowing that the infrastructure, market, and technology for plastic recycling, particularly for single-use plastics, are and would remain wholly inadequate for the volume of plastic produced and are technically and economically not viable at scale.

444. As a result of Defendants' misconduct, plastics are polluting California's natural resources including, but not limited to: drinking water sources; groundwater; surface water in bays, lakes, streams, and rivers; oceans; air; public parks; as well as soils; and fish and wildlife.

445. As a result of Defendants' misconduct, plastics are polluting "other natural resources" as described in the statute which, "irrespective of ownership contribute, or in the future may contribute, to the health, safety, welfare, or enjoyment of a substantial number of persons, or to the substantial balance of an ecological community."

446. The pollution, impairment, and destruction of natural resources including water, wildlife, and other natural resources is continuing in nature.

447. The harms caused by Defendants can be equitably remediated because reasonable methods exist for treating, remediating, and/or abating that contamination and its attendant hazards to communities and the environment. In addition, plastic contamination

continues to move and spread throughout California, and plastic pollution levels at any given contamination site fluctuate over time, thus pollution, impairment and destruction are ongoing.

448. Defendants' acts and omissions have caused an indivisible harm in California.

THIRD CAUSE OF ACTION

Water Pollution

(Fish and Game Code sections 5650 and 5650.1)

449. The People re-allege and incorporate by reference the allegations in each of paragraphs 1 through 422 as though fully set forth herein.

450. Fish and Game Code section 5650, subdivision (a)(6), prohibits any person from depositing in, permitting to pass into, and placing where it can pass into the waters of the State any substance or materials deleterious to fish, plant life, mammals, or bird life.

451. Fish and Game Code section 5650.1 provides for injunctive relief and civil penalties of not more than $25,000 for each such violation of Fish and Game Code section 5650. Such penalty is in addition to any other civil penalty imposed by law.

452. At all times relevant to this Complaint, Defendants, through their deception, permitted to pass into the waters of the State plastic waste, in violation of Fish and Game Code section 5650, subdivision (a)(6).

453. Defendants, through their deception, continue to permit to pass into the waters of the State plastic waste, in violation of Fish and Game Code section 5650, subdivision (a)(6).

454. Plastic waste is a substance and material deleterious to fish, plant life, mammals, and bird life. At all times relevant to this Complaint, Defendants, through their deception, unlawfully permitted to pass into the waters of the State plastic waste, a substance and material deleterious to fish, plant life, mammals, and bird life, in violation of Fish and Game Code section 5650. Defendants are liable for civil penalties as set forth in Fish and Game Code section 5650.1 for each and every separate violation of any of these provisions of the Fish and Game Code and any permit, rule, regulation, standard, or requirement issued or promulgated pursuant thereto.

/ / /

FOURTH CAUSE OF ACTION

Untrue or Misleading Advertising

(Business and Professions Code section 17500)

455. The People re-allege and incorporate by reference the allegations in each of paragraphs 1 through 422 as though fully set forth herein.

456. Defendants, and each of them, have engaged in and continue to engage in acts or practices that constitute violations of the False Advertising Law, Business and Professions Code section 17500 et seq.

457. Defendants, with the intent to induce members of the public to purchase and utilize plastics products, made or caused to be made and/or disseminated untrue or misleading statements concerning plastics and plastics recycling, which Defendants knew, or by the exercise of reasonable care should have known, were untrue or misleading at the time they were made. Such misrepresentations include, but are not limited to:

a. That single-use plastic is environmentally beneficial or benign;

b. That effective techniques exist for recycling plastic;

c. That the infrastructure, market, and technology for plastic recycling, particularly for single-use plastics, are, or are reasonably expected to become, adequate to address the volume of plastic produced;

d. That recycling plastic is economically viable;

e. That products bearing "mass balance" and "certified circular polymer" certificates are "recycled," "circular," or environmentally beneficial or benign;

f. That products contain a particular percentage of recycled material that they do not actually contain;

g. That "advanced recycling" is new or breakthrough technology;

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h. That "advanced recycling" is a viable, effective, efficient, or scalable method for reducing plastic waste and pollution.

i. That plastics do not create environmental hazards or that such hazards are negligible.

FIFTH CAUSE OF ACTION

Misleading Environmental Marketing

(Business and Professions Code section 17580.5)

458. The People re-allege and incorporate by reference the allegations in each of paragraphs 1 through 422 as though fully set forth herein.

459. Defendants, and each of them, have made environmental marketing claims that are untruthful, deceptive, and/or misleading, whether explicitly or implicitly, in violation of Business and Professions Code section 17580.5.

460. Such misleading environmental marketing claims include, but are not limited to, such deceptive representations as:

a. Marketing plastic as infinitely recyclable;

b. Marketing plastic as universally recyclable and "advanced recycling" as easy and inclusive, when most Californians do not have access to recycling for all products made of plastic and all plastic types;

c. Marketing plastic, particularly single-use plastic, as sustainable based on its ostensible recyclability;

d. Marketing chemical processes such as "advanced recycling" or pyrolysis as a legitimate, clean and/or effective plastic recycling process, when in fact the yield of plastic produced from these chemical processes is approximately eight percent;

e. Marketing chemical processes such "advanced recycling" or pyrolysis as a legitimate effective plastic recycling process, when in fact the process transforms the vast majority of plastic waste into fuel and other non-plastic products and byproducts;

f. Selling "certified circular polymer" certificates through "advanced recycling" based on a 90 to 100 percent yield, with knowledge that the yield was much lower;

g. Claiming mass balance and/or free attribution or free allocation is a legitimate approach to claim "certified" "circular polymer credits" and is a legitimate technique for measuring effective recycling, when in fact it primarily produces fuel, which is incinerated, and other non-circular products;

h. Selling "certified circular polymer" certificates based on false high yields; and

i. Selling "certified circular polymer" certificates based on equivalency with having a certain amount of recycled or waste plastic content.

SIXTH CAUSE OF ACTION

Unfair Competition

(Business and Professions Code section 17200)

461. The people re-allege and incorporate by reference the allegations in each of paragraphs 1 through 422 as though fully set forth herein.

462. Defendants have engaged in and continue to engage in unlawful, unfair, or fraudulent business acts or practices and unfair, deceptive, untrue, or misleading advertising that constitute unfair competition as defined in the Unfair Competition Law, Business and Professions Code section 17200 et seq. These acts or practices include, but are not limited to, the following:

a. Creating or assisting in the creation of a public nuisance in violation of Civil Code section 3479, as alleged in the First Cause of Action;

b. Engaging in conduct that caused or contributed to the pollution, impairment, and destruction of natural resources in violation of Government Code section 12607, as alleged in the Second Cause of Action;

c. Permitting plastic waste to pass into the waters of the State, in violation of Fish and Game Code sections 5650, subdivision (a)(6), and 5650.1, as alleged in the Third Cause of Action;

d. Disseminating untrue and misleading statements to the public in violation of

Business and Professions Code section 17500, as alleged in the Fourth Cause of Action; and

e. Making misleading environmental marketing claims in violation of Business and Professions Code section 17580.5, as alleged in the Fifth Cause of Action.

f. Deceptively promoting the use and consumption of plastics when they knew or should have known that plastics create hazards to communities and the environment, including fragmentation of plastic polymers into microplastics, which leach into air, land, and water.

PRAYER FOR RELIEF

WHEREFORE, the People respectfully request that the Court enter judgment in favor of the People and against Defendants, as follows:

463. Compelling Defendants to abate the ongoing public nuisance their conduct has created in California, including by establishing and contributing to an abatement fund to pay the costs of such abatement;

464. Preliminary and permanent injunctive relief ordering Defendants to cease and desist any and all deceptive public statements related to its plastic operations, including but not limited to referring to its operations and products by the terms "advanced recycling," "chemical recycling," "circular," "certified circular polymers," and "recyclable";

465. Granting any and all temporary and permanent equitable relief and imposing such conditions upon Defendants as are required to protect and/or prevent further pollution, impairment, and destruction of the natural resources of California pursuant to Government Code sections 12607 and 12610;

466. That the Court make such orders or judgments as may be necessary to prevent the use or employment by any Defendant of any practice that constitutes unfair competition or false advertising, under the authority of Business and Professions Code sections 17203 and 17535, respectively;

467. That the Court assess a civil penalty of $2,500 against each Defendant for each violation of Business and Professions Code section 17200 in an amount according to proof, under

the authority of Business and Professions Code section 17206;

468. That the Court assess a civil penalty of $2,500 against each Defendant for each violation of Business and Professions Code section 17500 in an amount according to proof, under the authority of Business and Professions Code section 17536;

469. In addition to any penalties assessed under Business and Professions Code sections 17206 and 17536, that the Court assess a civil penalty of $2,500 against each Defendant for each violation of Business and Professions Code section 17200 perpetrated against a senior citizen or disabled person, in an amount according to proof, under the authority of Business and Professions Code section 17206.1;

470. That the Court award disgorgement in an amount according to proof, under the authority of Government Code section 12527.6;

471. Pursuant to Fish and Game Code section 5650.1(e), granting any and all temporary and permanent equitable relief and imposing such conditions upon Defendants as required to prevent further violations of Fish and Game Code section 5650;

472. Pursuant to Fish and Game Code section 5650.1(a), assessing a civil penalty of twenty-five thousand dollars ($25,000) against Defendants for each violation of Fish and Game Code section 5650, as proved at trial;

473. Pursuant to Fish and Game Code section 5650.1, subdivision (i), assessing a civil penalty of ten dollars ($10) for each gallon or pound of material discharged;

474. Pursuant to Fish and Game Code section 12015, subdivision (a), ordering Defendants to remove any substance placed in the waters of the State, or to remove any material threatening to pollute, contaminate, or obstruct waters of the State, which can be removed, that caused the prohibited condition, or to pay the costs of the removal by the State;

475. Pursuant to Fish and Game Code section 12016, subdivision (a), awarding actual damages to fish, plant, bird, or animal life or their habitat and, in addition, for the reasonable costs incurred by the State in cleaning up the deleterious substance or material or abating its effects, or both.

476. Pursuant to Code of Civil Procedure section 1021.8, Government Code section

12607, Fish and Game Code section 5650.1, and Civil Code section 3494, awarding to the Attorney General all costs of investigating and prosecuting claims aimed at protecting California's natural resources, including expert fees, reasonable attorneys' fees, and costs in an amount according to proof;

477. Ordering that the People recover its costs of suit, including costs of investigation;

478. Order that the People receive all other relief that they are legally entitled; and

479. Awarding such other relief that the Court deems just, proper, and equitable.

REQUEST FOR JURY TRIAL

The People respectfully request that all issues presented by the above Complaint be tried by a jury, with the exception of those issues that, by law, must be tried before the Court.

Dated: September 23, 2024

Respectfully submitted,

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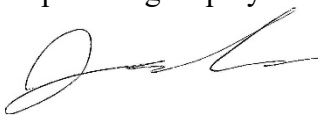

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