

**Compilation Memorandum regarding the GCSE Plastics Reports:
France and the United States:
Comparative Law Analysis and Recommendations Regarding Plastic Waste**

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I. Executive Summary

In February 2022, France and the United States announced their commitment to protect our shared environment for future generations against the harm resulting plastic pollution.¹ Both nations stated their united recognition of the transboundary impacts of plastic pollution and the importance of mitigating plastic waste at its source. On March 2, 2022, as reported by the 5th UN Environment Assembly (UNEA-5.2) in Nairobi, both France and the United States, along with 173 other nations, adopted a Resolution to End Plastic Pollution with an international legally binding agreement by 2024, with discussions beginning in 2022.² Significantly, the Resolution to End Plastic Pollution defines “plastic waste” to include “microplastic.” Building upon the historic collaboration between France and the United States regarding plastic waste and learning from the contrasts in their governmental structures and approaches to environmental regulation, this French and United States Comparative Law Analysis and Recommendations Regarding Plastic Waste is offered for use by policy makers in the upcoming negotiations regarding the global plastic waste treaty.

The scourge of plastic waste in our planet’s waters has captured the public’s attention. Understanding the historic limitations of our governments in dealing with what we now recognize as a global crisis is critical to defining and implementing the best plan to better address that crisis.

It is axiomatic that the governmental structures and laws of France and the United States are very different. Not surprisingly, the approaches of these two countries on opposite sides of the Atlantic Ocean to the plastic ocean pollution crisis have also been very different.

One example of such a difference between France and the United States is that the European Union, including France, has already banned many single-use plastic products and imposed restrictions on plastic production including specifications for degradable plastic. In the United States, such bans and restrictions have been imposed by a handful of states and municipalities while the Federal Government remains on the sidelines, if not actually continuing to promote plastic production and consumption.

The reasons for the difference between the French and United States approaches are both structural and ideological.

The French Republic has always had a centralized government. The creation of the European Union has only increased the breadth of legal requirements emanating from the central government. The concept of state and municipal laws does not even exist in France. On the other hand, in the United States, the Federal Government has only the authority delegated to it in the United States Constitution. All other authorities are reserved to the States.

¹Joint Statement Between the United States and France on the One Ocean Summit in France (Feb. 11, 2022), <https://www.whitehouse.gov/briefing-room/statements-releases/2022/02/11/joint-statement-between-the-united-states-and-france-on-the-one-ocean-summit-in-france/>

²Draft Resolution, End Plastic Pollution: Towards and International Legally Binding Instrument (Mar. 2, 2022), https://wedocs.unep.org/bitstream/handle/20.500.11822/38522/k2200647_-_unep-ea-5-l-23-rev-1_-_advance.pdf?sequence=1&isAllowed=y

French environmental law has always approached environmental protection holistically and grounded in the precautionary principle while United States environmental law has focused on limiting activities affecting specific media (i.e. air and water) based on the principle of risk limitation, not risk prevention.

These differences are particularly meaningful when it comes to the plastic ocean pollution crisis. Scientists are making great strides in characterizing the risks waste plastic poses in our environment and risks it may pose for each of us. Normally, as with any newly recognized qualitative risk, until the risk is quantified (which can take many years owing to our regulatory and judicial processes), many of the existing United States laws may not apply to the plastic waste pollution problem, or they will continue to apply to a very limited degree.

The French laws do not have such risk-based jurisdictional limits and include wide-ranging restrictions on the use of plastics.

The French Law against Waste for a Circular Economy (AGEC Law) imposes new financial obligations on manufacturers of plastic items, new bans on single-use plastics, and new enforcement tools. Among the products banned by the AGECE Law are many products containing microplastics, polystyrene fast food containers, plastic fast food cutlery used on site, plastic fast food toys, plastic packaging for mailings, plastic water bottles at public events, and certain non-recyclable plastic packaging.

While similarly comprehensive United States laws to attack plastic pollution have been written, the laws that have been enacted are at the state and local level, and, like the French laws, they attack the demand for plastics in the first place.

California (with the fifth largest economy in the world) was the first state to impose a statewide ban on single-use plastic bags at large retail stores and it has expanded that ban to restrict the commercial use of plastic utensils, straws, and stirrers. New Jersey, New York, Vermont and Washington have followed suit with restrictions of their own. Over two hundred municipalities have enacted similar restrictions of their own.

The laws the United States Congress has considered would, among other things, require that producers of certain plastic packaging, single-use products, beverage containers, and food service products collect, manage, and recycle or compost such products after consumer use; eventually prohibit certain single-use products like plastic utensils; and establish incentives to reduce the production of a variety of plastic products and provide funding to address existing plastic ocean pollution. Whether and when any of these laws might become law, and how they would be implemented, is at best uncertain.

In the meantime, Non-Governmental Organizations have tried to use existing United States laws, particularly those relating to water pollution and solid waste disposal, to achieve in the courts what has not been achieved in Congress. Those efforts are unlikely to have wide-ranging effects. More productive may be the voluntary commitments by industry sectors, such as the packaging industry, pursuant to Ellen MacArthur Foundation, in collaboration with the UN Environment Programme,

Global Commitment to a circular economy for plastics, with more than 500 voluntarily participating organizations (representing 20% of all plastic packaging produced globally).³

But now, the March 2, 2022 UN Resolution to End Plastic Pollution and the process of negotiation itself should assist the United States in developing meaningful plastic waste legislation and regulation consistent with the global agreement targeted for completion in 2024. The European Union and France, with their fairly comprehensive authority specifically targeting plastic waste, can respond as needed to incorporate any modifications to current authority as a result of the UN Resolution.

In the meantime, affecting and effectuating consumer demands with education and attractive alternatives to single-use plastic products and other plastic known to leak into the environment, while encouraging voluntary corporate commitments both in the United States and France, can assist in mitigating plastic waste pollution in advance of any foreseeable governmental initiative.

Recommendations from the French and United States attorneys include, as discussed more fully in Section VII:

First, both teams recommend that their countries support and participate in the UN Resolution to End Plastic Pollution.

Second, for France, general recommendations include: better funding and implementation of the existing comprehensive plastic waste authority that France has already adopted; adaptation of evolving legal and regulatory framework for local authorities that manage and collect domestic and assimilated wastes. Sector specific recommendations include: implementation of a deposit-system in France and new financial rules pertaining to plastic production.

Third, for the United States, general recommendations include: pursue implementation of the four recommendations by the National Academies of Sciences, Engineering and Medicine 2021 consensus paper pursuant to existing legislative authority and recent sustainability programs adopted by the Biden Administration; consistent with NASEM Recommendation No. 4, develop effective federal legislation and policies addressing plastic waste and pollution, consistent with and including authority responsive to the UN Resolution; building on lessons learned from other nations, particularly France, and authority already adopted by individual states and municipalities; proposed legislation, including amendments to existing environmental legislation and regulation, while including all stakeholders; develop quantifiable risk assessment and toxicological evaluation of plastic waste, plastic pollution and microplastic pollution; continue development of U.S. SEC Environment, Sustainability and Governance (ESG) disclosure regulations; and better enforce U.S. SEC climate risk disclosure requirements. Sector specific recommendations include: support of voluntary programs such as the Ellen McArthur Foundation Global Commitment to a circular economy for plastics; and encouragement for all stakeholders to become engaged in further development and implementation of all plastic related negotiations and rulemaking.

³ The Global Commitment 2021, Ellen McArthur Foundation, https://ellenmacarthurfoundation.org/global-commitment/overview?gclid=CjwKCAiA1JGRBhBSEiwAXblwTNenscpqUsEQv79SRUcO8eSzM8HQn2LRzW6xO-54JMtKbAChdPnOxoCqCAQAvD_BwE

II. Introduction⁴

Plastic waste has finally been recognized as a global crisis, with 175 nations, including France and the United States, supporting negotiations toward a 2024 global treaty to end plastic pollution.⁵ The nature of plastic which, by design, is inert to water, food grade acids and bases, and environmental factors, has often allowed plastic waste to evade the reach of environmental legal authority not specifically designed to regulate plastic because plastic fails to trigger regulation due to any hazardous characteristic.⁶ And while the United States is now recognized by the United States Academy of Sciences, Engineering and Medicine as the most significant contributor to global plastic waste, this failure of hazard-based environmental law to affect plastic waste is also recognized in the United States.⁷ Certainly, pursuant to United States law, due to its inert nature, plastic is merely a solid waste that is not hazardous. Solid Waste Disposal Act, 42 U.S.C. § 6901, et seq., 40 C.F.R. §§ 261.2 and 261.3. Outside the actual design and performance criteria for municipal solid waste landfills, 40 C.F.R. Part 258, and solid waste incinerators, 42 U.S.C. 7429, 40 CFR Par 60, Subparts CCCC, DDDD, plastic waste and associated litter are relegated to state and local agencies for management. Because plastic is manufactured to be extremely stable and nontoxic, and is therefore inert and exhibits no hazardous characteristics, it has escaped conventional environmental regulation in the United States as well as most environmental programs internationally.

Environmental laws adopted internationally have often followed the same formula: managing pollution from hazardous materials based upon the level of hazard posed by the hazardous pollutants released from these hazardous materials.⁸ Conventional environmental pollution hazard assessment considers the chemical toxicity of the pollutant expressed in terms of an allowable dose, called a “reference dose,” above which harm would be anticipated.⁹ Based on the reference dose, and assumptions regarding rates of exposure through inhalation, ingestion and dermal contact, allowable concentrations are set for the pollutant in air, water and soil which, assuming the contemplated exposures occurred, would not exceed the reference dose.¹⁰ These allowable

⁴ Contributors to this compilation include: French Team Leader Carine Le Roy-Gleizes, Foley Hoag, Paris, France, with team member and Foley Hoag associate Alice Messin-Roizard; United States Team Leaders Mary Ellen Ternes, Earth & Water Law, LLC and Seth Jaffe, Foley Hoag, LLP with team members: Lynn Bergeson, Bergeson & Campbell (TSCA); Tracy Hester, University of Houston Law (litigation); Jeffrey R. Porter, Mintz (Executive Summary, RCRA, CERCLA and CWA); Daniel Riesel, Sive, Paget & Riesel (state and local law); and Foley Hoag associate Sarah Main.

⁵ Draft Resolution, End Plastic Pollution: Towards and International Legally Binding Instrument (Mar. 2, 2022), https://wedocs.unep.org/bitstream/handle/20.500.11822/38522/k2200647_-_unep-ea-5-l-23-rev-1_-_advance.pdf?sequence=1&isAllowed=y

⁶ Mary Ellen Ternes, *Plastics Global Outlook for Multinational Environmental Lawyers*, Nat. Resources & Env't, Fall 2020.

⁷ Reckoning with the U.S. Role in Global Ocean Plastic Waste (consensus paper), National Academies of Sciences, Engineering, and Medicine (2021), <https://www.nap.edu/read/26132/chapter/1#ii>.

⁸ See e.g., the UN Environment Programme, *About Chemicals and Waste*, unenviornment.org (emphasizing chemical waste causing air, soil and water pollution resulting in exposure to toxic chemicals).

⁹ See e.g., European Commission, Health & Consumer Protection Directorate, *Draft Guidance Document, Guidance for the Setting of an Acute Reference Dose (ARfD)* (May 7, 2001).

¹⁰ See e.g., Ana P. Perez, Natalia R. Eugenio, *Status of local soil contamination in Europe* (2018), European Commission, Chap. 3.4 Site Assessment.

concentrations of chemical pollutants are expressed in environmental media: for air, as micrograms per cubic meter; water, as micrograms per liter; soils as milligrams per kilogram. Plastic has no such reference dose, and currently no possible route to setting acceptable concentrations in the ambient air, water or soil. Thus, whether in the United States or internationally, there are currently no such risk-based threshold concentrations for plastic in the air, water or soil, and therefore no standard approach to addressing plastic waste as an environmental pollutant.

To illustrate, before May 2019, the Basel Convention extended only to hazardous wastes defined by hazardous characteristics, including explosivity, flammability, corrosivity, toxicity and infectious. These hazardous characteristics are the same as the RCRA hazardous waste characteristics (except for the infectious characteristic).¹¹ But because plastic is inert, and not hazardous, regulating plastic waste compels a new approach. With the May 2019 amendments, for the first time, the Basel Convention lists a nonhazardous material, plastic waste which is not reactive, flammable, toxic or corrosive, as nonetheless “hazardous.”

Statutes regulating products also share the same affliction: plastic is too inert to warrant application. For example, in the United States, the Toxic Substances Control Act (TSCA) exempts polymers that are inert “based on level of concern regarding functional groups.”¹² Comparing TSCA to the European Union’s Registration, Evaluation, Authorization and Restriction of Chemical Substances (REACH), companies that import or manufacture plastic are exempted from some duties under the regulation: “Owing to the especially extensive number of different polymer substances on the market, and since polymer molecules are generally regarded as representing a low concern in relation to their high molecular weight, this group of substances is exempted from registration.” European Chemical Agency, *Guidance on Registration 3.0* (Nov. 2016), Section 2.2.3.7 Polymers.

And then there is microplastic pollution. While large pieces of floating plastic are not considered “hazardous,” microplastic derived from large pieces of floating plastic and other sources may eventually be defined in terms of hazard due to physical, and if leachable, chemical toxicity. Microplastic is defined as pieces of plastic less than 5 millimeters in any one dimension and below, down to 1 nanometer.¹³ Microplastic has no specific type, density or form of plastic, other than the dimension of less than 5 millimeters. Due to the definition based on size alone, microplastics can include: nurdles, small round pieces of plastic feedstock which serves as the basic plastic building block in plastic manufacturing, typically several millimeters in size; microbeads, added to consumer products, typically cosmetics, and about the size of a grain of sand; and even nanoplastics, plastic particles less than 0.1 millimeter (100 nanometers).¹⁴

¹¹ Compare Basel Convention, Annex III, List of Hazardous Characteristics and RCRA hazardous waste characteristics, 42 U.S.C. § 6901, *et seq.*, 40 C.F.R. Part 261.3.

¹² 15 U.S.C. §2601 *et seq.*, 40 C.F.R. § 723.250(b) (defining “Polymer”), 40 C.F.R. § 723.250(d) (still covering polymers that are cationic, degradable or unstable, water-absorbing or vulnerable to reactants).

¹³ Richard C. Thompson *et al.*, *Lost at Sea: Where is All the Plastic?* 304 *Science* 838 (2004); National Oceanic Atmospheric Administration (NOAA) Marine Debris Program, Microplastics “One-Pager,” https://marinedebris.noaa.gov/sites/default/files/MicroplasticsOnePager_0.pdf.

¹⁴ See e.g., Brian Pachkowski, PhD, *Microplastics as Contaminants of Emerging Concern* (Jan. 21, 2016), N.J. Dep’t of Env’tl Protection, [https://www.nj.gov/dep/wms/Pachkowski%20-%20NJWMC%20meeting%20\(21Jan16\)%20-%20microplastics.pdf](https://www.nj.gov/dep/wms/Pachkowski%20-%20NJWMC%20meeting%20(21Jan16)%20-%20microplastics.pdf).

Microplastic can be formed when plastic waste in the environment fractures into smaller and smaller pieces, eventually creating microplastic, or it can be released to the environment as microplastic. This process of plastic fracturing into smaller pieces is not chemical degradation. Plastic is made of chains of carbon and hydrogen bound in a lattice structure or matrix similar to a fabric. Chains of carbon and hydrogen in the environment not bound into a plastic matrix naturally degrade through biological or other processes into carbon dioxide and water or metabolized by organisms that may release methane. But when bound into a plastic matrix, these chains of carbon and hydrogen are not available to these natural degradation processes and simply remain bound, even if in smaller pieces of plastic, eventually becoming microplastic. Microplastic is released from sources like tires (24% synthetic rubber, vulcanized into plastic), fabric (rayon, polyester, lycra) and coatings (all marine paint and other latex paint which contains or actually is a polymer).¹⁵ And now, microplastic has been found everywhere, including in us and in our environment, from the snows of Antarctica to the depths of the Mariana Trench.¹⁶ Researchers even named a newly discovered Mariana Trench amphipod *Eurythenes plasticus*, after the microplastic found in its gut.¹⁷

Microplastic is present in ambient air as particulate matter with size of 2.5 microns or less. This air pollutant, PM2.5, is regulated by the United States pursuant to the Clean Air Act as a criteria pollutant. CAA, 42 U.S.C. § 7401, et seq., 40 C.F.R. Part 50. So much microplastic is generated from tire shred that significant percentages of urban ambient air PM2.5 pollution consists of tire shred rather than combustion exhaust.¹⁸ Microplastic is also discharged into surface water from ubiquitous sources such as laundering operations for petroleum-based fibers such as nylon, rayon, polyester, fleece, etc.¹⁹

Because plastic does not degrade, even at the microplastic size, there is growing concern about the harm posed by microplastics in the environment. To evaluate the presence, sources and resulting risk, scientists are developing methods for measuring microplastics in water resources. Research efforts have cataloged global microplastic concentrations in different water types by shapes, polymer types and sizes.²⁰ Microplastic has been documented in runoff from urban, agricultural and recreational activities, industrial releases, atmospheric deposition and wastewater treatment plant effluent and sludge application. This microplastic is bioaccumulated in the food chain at rates

¹⁵ J. Boucher, D. Friot, *Primary microplastics in the Oceans: A Global Evaluation of Sources*, Int'l Union for Conservation of Nature 46622 (2017), <https://portals.iucn.org/library/node/46622>; see also, *The Story of Plastic*, Nat'l Geographic, <https://video.nationalgeographic.com/video/the-story-of-plastic>.

¹⁶ Licheng Peng et al., *Micro- and nano-plastics in marine environment: Source, distribution and threats – A review*, 698 *Sci. of the Total Env't* 134254 (2020), at: <https://www.sciencedirect.com/science/article/pii/S0048969719342378?via%3Dihub>.

¹⁷ Johanna N. J. Weston et al., *New Species of Eurythenes from hadal depths of the Marian Trench, Pacific Ocean (Crustacea: Amphipoda)*, 4748 *Zootaxa* 163 (2020).

¹⁸ J. Panko et al., *Evaluation of Tire Wear Contribution to PM2.5 in Urban Environments*, 10 *Atmosphere* 99 (2019), <https://www.mdpi.com/2073-4433/10/2/99>.

¹⁹ Francesca /De Falco et al., *The contribution of washing processes of synthetic clothes to microplastic pollution*, 9 *Sci. Rep.* 6633 (2019), at: <https://www.nature.com/articles/s41598-019-43023-x>.

²⁰ Albert Koelmans et al., *Microplastics in Freshwaters and Drinking Water: Critical Review and Assessment of Data Quality*, 155 *Water Res.* 410 (2019).

increasing with decreasing size, where the microplastic, when degraded sufficiently, will release toxic additives.²¹

Globally, research continues to define the actual risk of environmental microplastic and exposures. There is concern that human inhalation and ingestion of microplastic may impede biological processes. Scientists have completed studies evaluating the risk from microplastic as a function of size, shape and density, and are searching for a “ecologically relevant metrics” (ERMs) for plastic, i.e., a reference dose, sufficient to allow application of a dose response model that will produce the traditional toxicological endpoints.²² Once such a metric can be developed, these researchers encourage use of existing regulatory approaches to assess risks of plastic-associated chemicals, for example, food safety regulations, TSCA, REACH, the Industrial Chemicals Act, or the Stockholm Convention on persistent organic pollutants (POPs).

Recent ecological studies evaluate the potential for risk based on exposure to both microplastic and nanoplastic through all relevant inhalation, ingestion and dermal exposure pathways potentially resulting in translocation from the intestines into other tissues, oxidative stress, immune response, and particle toxicity. For nanoplastic, scientists are concerned it is so small it might “enter cells via endocytosis, penetrate tissues, move directly from the digestive tract to the circulatory system, and cross the blood-brain barrier.” Last year scientists proposed a provisional quantitative risk assessment of micro- and nanoplastic in surface water recognizing that “although many of the tools required to obtain the necessary information for each of these steps differ from those used for soluble chemicals, the risk assessment paradigm applies evenly well to solid polymer particles. These risk assessments allow quantification of a physical harm quotient for ecological risk as well.” An additional important aspect of all of these studies is characterizing the tendency for persistent organic pollutants (POPs) to adsorb to the surface of plastic particles only to be released into an organism which ingests the plastic, resulting in bioaccumulation of the POPs as well as the plastic.²³

Using the pollutant specific approach, once microplastic “hazard” is defined, and a reference dose, or other effect threshold concentrations are developed, conventional pollution regulatory approaches may become more easily applicable to microplastic pollution in the environment. Thus, existing approaches could be utilized to impose microplastic pollution control and other mitigation methods, including regulation of microplastic “precursors,” i.e., larger pieces of plastic waste which are known to eventually break down into microplastic and nanoplastic.

However, before we have a plastic reference dose, significant developments internationally have focused on mitigating plastic pollution by eliminating sources of plastic waste due to the sheer magnitude of the plastic waste problem.

²¹ Y. Pico, D. Barcelo, *Water – Analysis and Prevention of Microplastics Pollution in Water: Current Perspectives and Future Directions*, 4 ACS Omega 6709 (2019).

²² Albert Koelmans et al., *Risk of Plastic Debris: Unravelling Fact, Opinion, Perception and Belief*, 51 *Envtl. Science & Tech.* 11513 (2017), at: <https://pubs.acs.org/doi/pdf/10.1021/acs.est.7b02219>.

²³ Ellen Besseling et al., *Quantifying ecological risks of aquatic micro- and nanoplastic*, 49 *Critical Reviews in Envtl. Science and Tech.* 32 (2019), <https://doi.org/10.1080/10643389.2018.1531688>; Emily Burns, Alister B.A. Boxall, *Microplastics in the Aquatic Environment: Evidence for or Against Adverse Impacts and Major Knowledge Gaps*, 37 *Envtl. Toxicology and Chemistry* 2776 (2018), <https://setac.onlinelibrary.wiley.com/doi/full/10.1002/etc.4268>.

Global Context²⁴

Prior to the March 2, 2022 UNEP adoption of the Resolution to End Plastic Pollution, three significant developments marked the trend of plastic waste authority with waste minimization at the top of the management hierarchy: China's 2018 "National Sword" policy banning many categories of plastic waste imports and increasing the urgency for enacting effective authority for managing plastic waste for plastic waste producing countries;²⁵ the European Union's 2019 Directive of the European Parliament and of the Council on the Reduction of the Impact of Certain Plastic Products on the Environment (now incorporated into French law);²⁶ and the United Nations May 2019 Basel Amendments limiting transboundary shipments of most plastic waste.²⁷

These global approaches include reconsidering production and distribution assumptions, defining parameters for extended producer responsibility for plastic goods to support their collection post-use, continued use, reuse or upcycling through chemical recycling to create polymer products of equal or higher value, and considering methods to mitigate microplastic pollution. Many countries, as well as the United Nations, European Union and nation parties to international agreements, are adopting bans for single-use plastic products, restrictions on plastic production including specifications for degradable plastic as well as incentives, all supporting a Circular Economy approach.²⁸

In contrast, while pending legislation may indicate a turn in this trend toward a more sustainable circular economy, the United States federal government has appeared to promote continued plastic consumption without limitation while relying almost exclusively on recycling in a Sustainable Materials Management approach, even while individual states, and local jurisdictions are also pursuing plastic bans and other measures. Industry and commercial stakeholders are targeted with this global surge of plastic regulation, particularly the packaging industry which is both a primary contributors to the current volume of plastic waste, as well as an industry committing to significantly more sustainable approaches.

If the UNEP process to develop a global plastic waste treaty by 2024 is successful, the participating nations (including France and the United States) will lead the world toward effective global plastics regulation, which will almost certainly reveal what should already be understood: that both plastic consumers and plastic producers can adapt to a world with less plastic, and more responsible plastic management. An expected significant game changer will be the eventual development of microplastic unit risk quantification, and recognition of the contribution to microplastic pollution by fragmentation of plastic waste articles in the environment and use of plastic products like tires, fabrics and coatings, which may provide a basis for future application of existing conventional pollution legislative, regulatory and litigation approaches.

²⁴ Mary Ellen Ternes, *Plastics Global Outlook for Multinational Environmental Lawyers*, Nat. Resources & Env't, Fall 2020.

²⁵ Sarah J. Morath, *Our Plastic Problem*, 33 Nat. Res. & Env't 45 (Spring 2019)

²⁶ Madeline J. Kass, *Fishing for Plastic: EU Targets Marine Pollution*, 34 Nat. Res. & Env't 58 (Summer 2019)

²⁷ Mary Ellen Ternes, *Plague, Pestilence, Plastic? Maybe Not*, Trends (Sept. 1, 2019)

²⁸ *Special Issue on Designing Law and Policy Towards Managing Plastics in a Circular Economy*, Law Env. and Dev. J., Vol. 15/2 (2019).

China “National Sword,” The Basel Convention Amendments and COVID-19

The China “National Sword” Policy basically eliminating plastic waste imports necessarily stalled the global plastic waste trade for countries from the United States to Australia. The interruption of the plastic waste distribution networks had an immediate effect on all primary plastic waste collectors at the local level around the world, where local jurisdictions were forced to cease collection of plastic waste and abandon their recycling programs. Though at only about 9%, plastic waste recycling rates have never been high, now almost all plastic waste is headed to landfills and incinerators, while more likely leaks to the environment.²⁹ The situation likely worsened considerably upon the January 1, 2021 effective date of the May 2019 Basel Convention Amendments (adding plastic waste to its list of regulated hazardous wastes) along with the COVID Pandemic, which drove generation of massive amounts of pandemic-related plastic containing medical waste. Yet upon adoption of the Amendments, alternative plastic waste destination countries, Malaysia, Thailand and Vietnam also adopted plastic waste import bans.³⁰ This “no place to go” scenario is credited with forcing solutions to this visible plastic waste as well as microplastic pollution which results from fragmentation of waste plastic articles in the environment and unintentional releases of microplastic from tires, fabrics and coatings. Significantly, while transboundary shipments of plastic waste articles have stopped, microplastic pollution continues invisibly and increasingly unabated, like the asymptomatic spread of COVID-19.

United Nations

The March 2, 2022 UN Resolution to End Plastic Pollution as adopted by 175 nations, including both France and the United States followed earlier reports from June 2, 2021, that 78 UN Member States endorsed “The Ocean Day Plastic Pollution Declaration” as part of the UN General Assembly’s High-Level Meeting on Oceans.³¹ This global plastic waste treaty, targeted for completion 2024, is expected to include legally binding commitments limiting plastic waste leakage into the environment, allow for individual nation plans while imposing goals for reduction, reuse, recycling and management implementing elements of circularity specific to plastic materials, especially extended producer responsibility.

The Basel Convention governs transboundary movements of hazardous waste and their Disposal. While France is a member party of the Basel Convention, the United States is not, though both countries are members of the OECD. In May 2019, the Basel Convention was amended by the Parties to the Convention. The Parties adopted amendments to Annexes II, VIII, and IX, effective January 1, 2021, which subject the majority of exports of plastic waste (including unused scrap) to the Convention’s prior informed consent requirement starting January 1, 2021. The Convention’s non-party trade restrictions prohibit Parties from trading in covered waste subject to prior informed consent with non-Parties, except under the terms of an agreement or arrangement

²⁹ Cheryl Katz, *Piling Up: How China’s Ban on Importing Waste Has Stalled Global Recycling*, Yale Environment 360 Digest (Mar. 7, 2019), at: <https://e360.yale.edu/features/piling-up-how-chinas-ban-on-importing-waste-has-stalled-global-recycling>.

³⁰ Sabaa A. Kahn, *Basel Convention Parties Take Global Lead on Mitigating Plastic Pollution*, Vol. 23 Am. Soc. Int. Law. Issue 7 (Aug. 26, 2019).

³¹ See *The Future of Plastics: A New Global Treaty?* Center for Climate and Energy Solutions (C2ES) Blog, August 31, 2021.

provided for by Article 11 of the Convention. With the Basel Amendments now in effect, parties can no longer import plastic waste listed as hazardous waste from non-parties; parties cannot ship listed hazardous waste to and from nonparties without bilateral or regional agreements equivalent to Basel. EU and Basel parties cannot export hazardous waste from OECD to non-OECD countries requiring reconfiguration of all high-volume plastic waste generators trade routes.³²

The United Nations launched its Global Chemicals Outlook on March 11, 2019 which emphasizes full material disclosure of plastic products, sound recycling and waste management, and sustainable product design. Transparency will minimize potential future releases of chemicals from plastic, such as phthalates, phenols, flame retardants, heavy metals, polyfluoroalkyl substances (PFASs) and polycyclic aromatic hydrocarbons (PAHs), and to support generation of more inherently valuable secondary raw materials in a sustainable and safe circular economy.³³ The UN's future focus will include releases of chemicals, waste leakage and microplastic, from all aspects of the plastics and plastic waste life cycle.

Working with the United Nations, the Center for International Environmental Law (CIEL) developed a possible framework drawing on a broader lifecycle approach for a "Convention on Plastics and Plastic Pollution" based on elements of the Montreal Protocol on Substances that Deplete the Ozone Layer. This approach would include on "new global architecture to address marine plastic litter and microplastics" including "legally binding governance strategies and approaches."³⁴

European Union. The European Union has been leading the way on sustainability and circularity. On March 11, 2020, the EU adopted its new Circular Economy Action Plan, covering: electronics, batteries, vehicles, packaging, plastics, textiles, construction, buildings, food, water, nutrients. This new Plan is intended to: ensure less waste and more value, enhance waste policy to support waste prevention and circularity in a toxic free environment, create a secondary raw materials market, address waste exports, and lead efforts at the global level and monitoring progress. This measure specifically targets microplastics as well, particularly from unintentionally released microplastics from tires and textiles. Goals include: risk assessment regarding microplastics in the environment, drinking water and foods; sourcing, labelling and use of bio-based plastics ensuring genuine environmental benefits beyond mere reduction of fossil fuel; and ensuring biodegradable and compostable labelling does not mislead consumers "to dispose of it in a way that causes

³² Basel Amendments, May 2019 listing of plastic waste, now effective, at: <http://www.basel.int/Implementation/Plasticwastes/Overview/tabid/6068/Default.aspx>;

Ad-Hoc Open-Ended Expert Group (AHOEEG) on Marine Litter and Microplastics; Rotterdam Convention; Stockholm Conventions.; Sabaa A. Kahn, *Basel Convention Parties Take Global Lead on Mitigating Plastic Pollution*, Vol. 23 Am. Soc. Int. Law. Issue 7 (Aug. 26, 2019)

OECD response to Basel Amendments, <https://www.oecd.org/environment/waste/global-forum-on-environment-plastics-in-a-circular-economy.htm>

³³ *United Nations Global Chemicals Outlook II, From Legacies to Innovative Solutions, Synthesis Report* (2019) (implementing the 2030 Agenda for Sustainable Development at the fourth session of the UN Environment Assembly).

³⁴ *UN Environment Assembly Third Session, Marine Litter and Microplastics Resolution*, U.N. Doc. UNEP/EA.3/Res.7 (Jan. 20, 2018), <https://papersmart.unon.org/resolution/uploads/k1800210.english.pdf>; EIA and CIEL, *Toward an International Legally Binding Agreement on Plastics and Plastic Pollution* (2017), <http://sdgtoolkit.org/wp-content/uploads/2017/11/TOWARD-AN-INTERNATIONAL-LEGALLY-BINDING-AGREEMENT-ON-PLASTICS-AND-PLASTIC-POLLUTION-REFERENCES.pdf>.

littering or pollution due to unsuitable environmental conditions or insufficient time for degradation.”³⁵

The European Green Deal was introduced on December 11, 2019. This package of measures is meant to deal with the challenges posed by climate change and environmental degradation, which create an “existential harm” for Europe and the rest of the world. The goals of the European Green Deal will be further detailed below.

Several strategies and action plans resulted from the European Green Deal, including the Chemical Strategy for Sustainability, which was published on October 14, 2020. The Chemical Strategy for Sustainability aims to reach a toxic-free environment. As it will be discussed, the strategy explicitly targets plastics.

The 2020 Circular Economy Action Plan relies on a June 5, 2019 Directive mandating reduction of the impact of certain plastic products on the environment, as well as the 2018 Strategy for Circular Economy (COM (2018) 28 final).³⁶ The 2019 Directive launches rules mandating reductions in single-use plastics including: cotton buds, cutlery, plates, straws, drink stirrers and sticks for balloons, and drink containers. The 2019 Directive also mandates consumption reduction targets, where producers are to reduce the costs of waste management for food containers, packets, wrappers, drinks containers, cups, tobacco products with filters, wet wipes, balloons and lightweight plastic bags. Further the 2019 Directive sets: collection target of 90% for drinks bottles by 2025; labelling requirements for sanitary towels, wipes and balloons; requirement that collection cost of fishing gear be placed on producers of gear.³⁷

The 2018 Strategy for Circular Economy focuses on green product- and process-based models, waste regeneration systems, efficiency optimization, management services and industrial symbiosis models. Of specific interest for the chemical industry are industrial parks, which provide common services (e.g., energy and waste management) to various production facilities, enhancing resource efficiency and environmental performance. Examples of business models that may be more sustainable are those which produce less waste such as chemical leasing (sell painting services, not paint, supporting an inherent incentive to use the least amount of paint possible). Also, the EU’s 2018 strategy contemplates scaling up effective corporate governance and sustainable supply chain management. This expanding policy builds on the EU’s 2018 revision to its definition of “extended producer responsibility” which is now proposed to mean:

a set of measures taken by Member States requiring producers of products to bear financial or financial and organisational responsibility for the management of the waste stage of a product’s life cycle including separate collection, sorting and treatment operations. That obligation can also include organisational responsibility and a responsibility to contribute to waste prevention and to the reusability and

³⁵ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, *A new Circular Economy Action Plan For a Cleaner and more competitive Europe*, Section 3.4, COM(2020) 98 final (Mar. 3, 2020). <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1583933814386&uri=COM:2020:98:FIN>.

³⁶ Directive (EU) 2019/904 of the European Parliament and of the Council, OJ L 155, 12.6.2019, p. 1.

³⁷ Kass supra, all at: https://ec.europa.eu/environment/waste/plastic_waste.htm.

recyclability of products. Producers of products can fulfil the obligations of the extended producer responsibility scheme individually or collectively.³⁸

Individual Countries

As of July 2018, the United Nations reported that one hundred and twenty-seven out of 192 countries reviewed (about 66%) have adopted some form of legislation to regulate plastic bags, including restrictions on the manufacture, distribution, use, and trade of plastic bags, taxation and levies, and post-use disposal. While variable, the most common form is the restriction on free retail distribution. Twenty-seven countries have enacted legislation banning either specific products (e.g. plates, cups, straws, packaging), materials (e.g. polystyrene) or production levels; twenty-seven countries assess taxes on the manufacture and production of plastic bags; and thirty countries charge consumers fees for plastic bags at the national level. Regarding extended producer responsibility (EPR), forty-three countries have included elements or characteristics of extended producer responsibility for plastic bags within broader legislation, while sixty-three countries mandate EPR for single-use plastics, including deposit-refunds, product take-back, and recycling targets. Regarding microbeads, several countries have banned microbeads, while the European Union has also started a process to restrict the intentional addition of microplastics to consumer and professional use products.³⁹

Given the diversity of applicable regimes when it comes to environmental law, the comparison below focuses on French and U.S. legislation and litigation as they pertain to plastic pollution. France is a member of the EU and has very developed environmental laws. Both systems being quite different, the analysis aims to highlight similarities and differences and how each system could adopt legal mechanisms inspired from the other to improve plastic pollution legislation.

With this Introduction, below the authors compare and contrast the environmental laws, or related laws that may impact environmental policy, of France and the United States. Further, the authors will review scientific data collected by French and United States scientists regarding the prevalence of plastic waste and plastic particles along the coast lines of each country and offer available observations regarding impact of legal authority on the presence or absence of plastic waste.

III. Comparison and Description of French and U.S. Governmental and Approach Relevant to Plastic Waste

A. Comparison of French and U.S. Governmental Structure and Approach Relevant to Plastic Waste

1. International and National Law

³⁸ Directive (EU) 2018/851 of the European Parliament and of the Council (May 30, 2018), amending Directive 2008/98/EC on waste, Paragraph 14.

³⁹ UN Environment Programme, *Legal Limits on Single-Use Plastics and Microplastics, A Global Review of National Laws and Regulations*, p. 3 (Dec. 5 2018), https://wedocs.unep.org/bitstream/handle/20.500.11822/27113/plastics_limits.pdf?sequence=1&isAllowed=y.

A comparison between French law and law of the United States at the national level is starkly impacted by several constructs. First, France is subject to the decisions of the European Union, where the United States is left to its own two-party system which often struggles to enact meaningful legislation. Second, the European Union follows, and France embraces, the “precautionary principle.”⁴⁰ In contrast, the United States implements environmental statutes that in some cases merely reference an “adequate margin of safety,” or prevention of “unreasonable risk”, “unreasonable adverse effects,”⁴¹ or “imminent and substantial endangerment.”⁴² Third, the United States signs, but the Senate has failed to ratify, significant international environmental agreements.⁴³ Thus, France more often ratifies important treaties, leaving the United States as a mere observer.

While in recent years the United States has appeared to lag behind the rest of the world regarding environmental issues such as climate change, historically the United States had been recognized as a leader in environmental regulation. In the 1970s the government considered existing industry in developing national media-specific, health-based environmental legislation intended to reach environmental quality goals with an adequate margin of safety. This approach considered the pollutant inventory represented by then existing industry and prioritized pollutants for regulation based on the pollutants’ prevalence or ubiquity and hazardous characteristics (corrosivity, reactivity, toxicity and ignitability).

The legacy of this approach is that while individual pollutant sources may comply with their environmental permits, harm to the environment may still occur. For example, not all pollutant generating activities may be subject to permitting (e.g., “de minimis” sources, or unregulated legacy pollution sources such as roadside lead deposition from years of leaded gasoline usage). Not all pollutants are recognized by the existing authority (e.g., consider emerging contaminants,

⁴⁰From the Rio Declaration on Environment and Development of 1992: “Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation” See: The precautionary principle: protecting public health, the environment and the future of our children, at: https://www.euro.who.int/__data/assets/pdf_file/0003/91173/E83079.pdf

⁴¹ See e.g., Science and decisions: Advancing Risk Assessment, ch. 2, Evolution and use of Risk Assessment in the Environmental Protection Agency (referencing the Clean Water Act, § 405(d)(2)(D), the Clean Air Act §§ 108, 109, the Toxic Substances Control Act § 2(b)(3) and the Federal insecticide, Fungicide and Rodenticide Act §3), at: <https://www.ncbi.nlm.nih.gov/books/NBK214619/>

⁴² The National Response Plan, 40 C.F.R. Part 300.

⁴³ Regarding global agreements, The United States has signed but not ratified: the UN Convention of the 1992 Law of the Sea; the 1993 Convention on Biological Diversity (the United States is the only member of the United Nations which has yet to ratify this treaty); the 2001 Stockholm Convention on Persistent Organic Pollutants; the 1992 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (signed, not ratified). See Tara Lohan, *4 Major Environmental Treaties the U.S. Never Ratified – But Should*, The Revelator (Aug. 2, 2021), <https://therevelator.org/environmental-treaties/>. The United States has both signed and ratified: the Vienna Convention for the Protection of the Ozone Layer (1985) and Montreal Protocol on Substances that Deplete the Ozone Layer (1987); the United Nations Framework Convention on Climate Change (UNFCCC) (1994); International Convention on the Control of Harmful Anti-Fouling Systems on Ships (2012) and London Convention (1975); International Convention for the Prevention of Pollution from Ships and subsequent six Protocols (MARPOL 73/78) (1983); Minamata Convention on Mercury (2017); the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (1973), as well as many bilateral or multilateral treaties regarding environmental cooperation, migratory birds, fish, polar bears, boundary waters and exploration. See <https://www.epa.gov/international-cooperation/selected-multilateral-environmental-instruments-force-us#vienna> and <https://www.fws.gov/laws/lawsdigest/treaty.html>.

the thousands of polyfluoroalkyl compounds that are not considered PFOA and PFOS, and plastic waste). The permitted limits applicable to the regulated pollutants and pollutant emitting activities may not be sufficiently stringent to ensure that environmental quality goals are met. Environmental quality goals may simply be incomplete or inadequate. Or, perhaps the existing authority is not uniformly enforced.

For many reasons, the United States struggles to respond to emerging environmental issues, such as new pollutants or newly recognized harm from historical pollutants. The United States environmental approach is not easily adapted to address newly identified or recognized risks. The United States struggles to adopt new environmental legislation, because in the United States' increasingly polarized political system, it is difficult to gain enough bipartisan support to adopt legislation that may be necessary to address emerging issues. Moreover, shifting administrative directions make it difficult to gain regulatory traction to implement responsive regulatory programs pursuant to existing legislative authority. The United States Executive Branch is just now shifting direction once again from a conservative deregulatory agenda to a more progressive regulatory agenda.⁴⁴

The effect in the United States of this failure to move forward with new legislation and sensible regulation is to shift the forum for resolving risk from government authority and the legislative and administrative process, to common law authority and the judicial process. Currently, in the United States, other than the few cases where pollution by plastic waste is specifically at issue (such as, e.g., violation of a Clean Water Act permit limiting discharges of visible plastic), or cases involving violations of state or local plastic bans, the courts are the current forum where common law claims arising from harm to public health and the environment from plastic pollution will likely be heard until the issues are addressed with legislation and regulation. When the uncertainty and risk presented by the judicial forum rise to a sufficiently significant level such as to manifest material risk to companies engaged in the production of products which contribute to the plastic waste problem, then perhaps there will be sufficient political will to enact adequate legislation and adopt reasonable regulation that may mitigate pollution by plastic waste. The United States experienced a similar trend of litigation first then legislation with other pollutants including, e.g., asbestos and polyfluoroalkyl substances.

Meanwhile, in France, French environmental law was built around several axes. French environmental law has provided authority when it created the Regulated Facilities regulation, waste law and natural protection regulations. These were milestones in what is now French environmental law. In addition to its own development, French environmental law also evolved according to European environmental law (*i.e.* directives and regulations). In this way, European environmental law lead to evolutions in French environmental law, as well as the opposite (French Regulated Facilities regulation was a premise of what is now the Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control)). French environmental law has an integrated approach, rather

⁴⁴ Compare Gelton and Graham, *Deregulation Under Trump*, Regulation, Summer 2020, at: <https://www.cato.org/regulation/summer-2020/deregulation-under-trump>, v. Tracking regulatory changes in the Biden Era, Brookings Institute, (Nov. 18, 2021), at: <https://www.brookings.edu/interactives/tracking-regulatory-changes-in-the-biden-era/>.

than one that regulates each specific kind of environment (air, water *etc.*) like the U.S environmental law approach.

In this context, the governmental process has been engaged to confront plastic waste, beginning with the governing provisions of the European Union through to authority adopted by the French Government.

2. State and Local Law

A comparison between French local law relating to the regulation of plastic waste and the local law of the several United States is really a discussion of the difference between a highly centralized government and a federal system of government.

Apart from federal law, law in the United States is enacted by the several states and their subdivisions, primarily municipalities. As indicated in our review of Federal law, there is an absence of comprehensive regulation of plastic waste in the U.S. As a result of this absence and the growing awareness of plastic waste pollution, there has been a relatively recent flurry of state and local legislation and regulations attempting to preclude the use and disposal of certain plastic articles. This local law effort has been confined to plastic that is often identified with throw away items such as bags, straws and takeout food containers. Even so limited, some local law efforts have been met with preemptive state legislation enacted pursuant to an alleged need for uniformity.

American local law has not and cannot deal with the root problems of plastic waste which require the strict regulation of certain plastics that resist recycling or reuse.

The French Republic has a long legal history of top-down centralized government. This form of government has gained additional top-down regulation through the rise of the European Union. Indeed, this difference in governmental form makes any local law comparison difficult, at best. This hardship is even highlighted in the choice of words. While the term “local law” makes sense for a U.S. context, it does not when it comes to French local regulations. There is no such thing as a local law in France, as the only law is the one adopted by the Parliament. Local authorities adopt regulations, and not laws. Although any such comparison does highlight the weaknesses of the American national or federal effort. On the French side, local initiatives could be more developed. Yet the lack of financial and legal tools do not incentivize local initiatives, which furthermore reinforces the centralization.

The 2020 enactment of the Law Against Waste for A Circular Economy (the AGECL law) is France’s recent significant effort to regulate waste including plastic waste. This comprehensive legislative scheme is consistent with France’s centralized government structure. Only in some precise instances do mayors exercise police authority over environmental derelictions. This illustrates the marked contrast to the American effort where the regulatory initiative, so far, emanates from local legislative bodies.

B. France

Two different governmental authorities implement plastic waste policies and collaborate on the issue. First, the European Union level enshrines guiding principles [1.] and then French authorities apply these principles and create new ones [2.].

1. European Level

- a. European Union Jurisdiction

To begin with, guiding principles determine the European Union (EU) jurisdiction. They lead its environmental policy, and distinguish it from Member States' own environmental policies. In this way, the precautionary principle, the prevention and correction of pollution at its source principle, and the polluter-pays principle all ground the European environmental policy. Long-term environmental action programs establish future actions to implement in environmental policy, thus applying these principles. These programs belong to cross-sectorial strategies and are discussed during international environmental negotiations.

Indeed, the EU has a jurisdiction on all areas of environmental policy, such as air and water pollution, waste management (including plastic waste) and climate change according to articles 11, 191 and 193 of the Treaty on the Functioning of the European Union (TFEU). The subsidiarity principle does limit the EU jurisdiction. Indeed, when the EU does not have an exclusive jurisdiction, action is implemented by the most efficient governmental body instead of the EU (Member states' national, regional or local bodies). This broad jurisdiction explains the importance of the EU, both on the international scene and on the internal one, making it a key actor on environmental policy.

Three main branches implement this policy within the EU: the legislative branch, the executive branch and the judicial one.

The legislative branch comprises of two bodies. The European Parliament constituted of MPs directly elected by citizens of the EU Member States, which shares legislative power with the Council of the European Union (often referred as the Council). The latter is composed of Ministers of every Member State, which meet according to policy issues discussed (for instance the Environment Council). The Council is in charge of discussing, amending and adopting laws. Ministers thus commit in the name of their governments to the actions they have agreed on in the meeting.

The European Commission comprises the EU's executive branch. It is the politically independent executive body responsible for drawing up proposals for new European legislation and to implement European Parliament and Council of the EU decisions.

The Court of Justice of the European Union (CJEU) is the judicial body of the EU in charge of interpreting and applying EU laws and ensuring their enforcement by Member States and their institutions. The specificities of each branch are detailed below.

- b. European Legislative Branch

The European legislative branch is in charge of passing bills and enacting legislation within the jurisdiction of the EU. The EU uses several legislative procedures to do so. They vary according to proposition type and object. The vast majority of European legislative acts are adopted by both the European Parliament and the Council, and in only some specific cases by only one of these bodies. Member States' national Parliaments have to be consulted in two precise contexts. First, when the European Commission itself proposes a bill, and second when an EU treaty amendment is at stake, treaty amendments requires the approval of all Member States.

More precisely, the European Commission holds the legislative initiative when the European Parliament and the Council of the EU discuss and adopt legislative acts. These acts can be directives or regulations.

Directives are indirectly applied by Member States and imply transposition acts in national law. In other words, to be effective at the national level, EU countries must adopt a national act to transpose it. This national measure must achieve the objectives set by the directive. National authorities must communicate these measures to the European Commission. Transposition must take place by the deadline set when the directive is adopted (generally within two years). In French law, some directives can have a direct effect if they meet precise conditions defined by the French Administrative Supreme Court.

Regulations, on the other hand, are directly enforceable by Member States. So, on the plastic waste subject, European legislation can have an indirect or direct effect, but will still influence applicable French law.

In addition, the European Commission may adopt two types of legally binding acts to implement EU laws previously mentioned. On the one hand, it may supplement delegated act supplement or amend non-essential parts of EU legislative acts (*e.g.* in order to define detailed measures), while, on the other hand, implementing acts set conditions that ensure EU law is uniformly applied. These acts can also affect plastic waste policy, as they may specify its content or application.

Preparatory acts precede these texts and are meant to elaborate European legislation. They can be legislative proposals of the European Commission, common positions of the European Council, resolutions and initiatives of the European Parliament, notice of the Social and Economic Committee of the Regions. They do not have any binding effect but may influence legislation while it is still in its elaboration process. Furthermore, European institutions can enact recommendations, notices, strategies and communications, which are still not legally binding. These documents thus have an indirect effect on policy issues, such as the plastic waste one, but could be consequential when choosing policy orientation.

c. European Executive Branch

i. *European Commission*

The European Commission is in charge of elaborating and implementing EU policies. A team of commissioners, directed by a president, manages this work. Commissioners work on specific political priorities defined by the president of the Commission. There is usually one commissioner per policy area. To this extent, the Commission works in the same way as a national government,

with a head of government and numerous members of this government. The Commission chooses policy guidelines, including plastics legislation.

Several directorates, which are part of the Commission, can deal with plastic waste-related issues such as the Directorate-General for Environment and the Directorate-General for Climate Action.

ii. European Executive Agencies

In addition, several EU agencies play a technical, scientific or administrative role and may be related to plastic waste, such as the European Environment Agency or the European Chemicals Agency.

The European executive is independent from Member States' governments and relies on its own agencies. It thus decides, independently, of the plastic-related policies implemented by the EU.

iii. European Judicial Branch

The CJEU ensures the deference to EU law regarding interpretation and application as prescribed by the treaties. In doing so, the CJEU (i) controls the legality of EU institutions' acts, (ii) ensures that Member States respect their obligations as set by treaties, and (iii) interprets EU law when national courts refer to the CJEU under the preliminary ruling procedure.

The Court is the EU judicial authority and ensures, alongside national courts, the enforcement and uniform application of EU law. The court includes two jurisdictions: the Court of Justice, which deals with most significant cases, and the General Court in charge of the others.

2. French Level

a. National Level

i. French Constitution

According to the first article of the French Constitution, France is an “*indivisible Republic*” meaning that it is a unitary State, and not federal one. Its organization is also decentralized. These notions are detailed below.

The French Constitution establishes two powers and one authority. The executive branch includes the President of the Republic (Title II of the French Constitution) and the Gouvernement (officially translated as “Government”) (Title III of the French Constitution), and the legislative branch includes a Parliament composed of the National Assembly and the Senate (Title IV of the French Constitution). The President of the Republic grants the independence of the judicial authority (Title VIII of the French Constitution).

Fundamental principles of Environmental Law are now enshrined in the Constitution, which implies the existence of a French Environmental Constitutional Law. More precisely, the Constitution's preamble includes the Charter for the Environment of 2004, which enshrines the right to live in a healthy environment (article 1), the prevention principle (article 3), the redress

principle (article 4) and the precaution principle (article 5). The constitutional and normative values of the Charter have been recognized, implying that, firstly, supreme courts ensure their entire effect, and that, secondly, the legislative branch is obliged to implement them, or at least respect them when discussing bills.

ii. Legislative Branch and the Law

The adoption of the Charter for the Environment led to the amendment of article 34 of the Constitution, which establishes Parliament's jurisdiction. The article thus provides that "*the law determines fundamental principles of environmental preservation,*" providing a precise role for Environmental Law discussion.

The legislative part of the Environmental Code was codified in 2000; it now includes numerous provisions aimed at reducing plastic pollution. The code includes seven books: common provisions; physical environment; natural areas; natural heritage; prevention of pollution, risk and nuisances; Overseas and Antarctica.

iii. Executive Branch and Regulation

The President of the Republic, the Prime Minister and the Government comprise the executive branch. They hold wide prerogatives regarding environmental regulation, which includes plastic waste.

The President of the Republic (article 13 of the Constitution) and the Prime Minister (article 21 of the Constitution) adopt decrees that are either discussed at the Council of Ministers or simply adopted by these actors.

Regulation is significant in Environmental Law due to its technical nature. The regulatory part of the Environmental Code includes most regulations applicable to plastic waste.

The Minister in charge of the environment (currently the Minister of the Ecological Transition) holds a prominent position. He or she prepares and implements the Government's policy relating to sustainable development, environmental protection, nature and biodiversity valorization, green technologies, energy transition and energy as a whole (especially their pricing), climate, natural and technological risks prevention, industrial safety, transportation and transportation infrastructure, facilities and housing. The Minister also carries out the waste reduction and treatment policy, which includes the fight against food waste and the policy towards a circular economy.

The Minister is also the head of the administration and has authority over the General Directorate of Risks Prevention (Wastes and Circular Economy Branch) and on the Directorate of Waste and Circular Economy in charge of elaborating and implementing the plastic waste treatment and reduction policy.

Due to the technical nature of the discipline, the Minister in charge of the environment also holds authority over agencies and public institutions having jurisdiction over plastic waste issues (such

as the Ecological Transition Agency, the French Office for Biodiversity or the Center for Studies and Expertise on Risks, Environment, Mobility and Planning).

iv. Judicial Authority

Case-law is consequential in Environmental Law and in plastic waste issues. Other than the specific position of the French Constitutional Supreme Court, France has two orders of jurisdiction: judicial and administrative judges.

(a) Constitutional Judge

Because of the constitutional enforceability given to the Charter for the Environment, the Constitutional Supreme Court plays a major role in environmental protection. The judge thus reviews the conformity of laws with the Constitution, either before their enactment (using an *a priori* control system) or after their enactment (using an *a posteriori* control named “priority preliminary ruling on the issue of constitutionality”).

The constitutionality review is centralized and not diffuse, even if in some circumstances the Supreme Courts of each order of jurisdiction (the French Judicial Supreme Court and the French Administrative Supreme Court) also can review the constitutionality of enacted laws.

(b) Administrative Judge

In France, the Government and local authorities are controlled by a specific judge: the administrative judge. The French Administrative Supreme Court is the highest court of this order; administrative courts are trial courts, and administrative appellate courts hear appeals.

The existence of an administrative jurisdiction is grounded in the necessity to judge and control the administration to resolve disputes between the administration and its users. This specific jurisdiction ensures the protection of general interest, even if that may be over private interests.

The administrative judge reviews the legality of acts passed by governmental and local authorities, acts, thus including those taken when preventing and managing plastic waste.

The administrative judge also controls the Government and local authorities’ liability if they committed a fault in their public service mission.

(c) Judicial Judge

Within the judicial jurisdiction, the civil judge, hearing disputes between private individuals, natural or legal people, has to be distinguished from the criminal judge imposing criminal sanctions when people commit environmental offenses. The French Judicial Supreme Court ensures that private law is uniformly applied.

On the civil jurisdiction side, judicial courts include trial courts and appeal courts, which hear appeal cases. Commercial disputes are heard by commercial courts in front of commercial trial courts.

On the criminal jurisdiction side, there are three types of criminal courts, which are specific judicial court formation. The degree of the offense and of the consequential sanction determine the competent criminal court. Police courts rule on minor offenses. No environmental offence is, to date, a crime under French Law. Police courts and criminal courts ruling, except for criminal sentences, can be appealed in front of the criminal division of the appeals court.

For the most complicated cases, a judicial court specialized in complex offences of the Environmental Code has been designated in every appeal court circuit. Moreover, a judicial court has also been designated to hear some environmental civil disputes, such as damages related to the ecological prejudice (detailed in VI).

b. Local Level

i. *Devolution*

Devolution is an organizational structure of unitary States consisting of the implementation of administrative authorities representing the central State in local districts.

In Environmental Law, devolution is at stake at the regional level with the Regional Direction of Environment, Planning and Housing (DREAL) supervised by the region Prefect. DREAL offers legal, technical and administrative support to the region and district Prefects.

Devolution is also implemented at the district level with the creation of interministerial district directions (for instance the Territory and Sea District Direction), which is also under the district Prefect authority. The district Prefect is a significant entity in Environmental Law as it exercises special administrative police powers. The Prefect issues environmental permits regarding regulated facilities (a specific classification covering all facilities that could harm environment), and provides planning approval, which includes waste elimination plans.

ii. *Decentralization*

Unlike devolution, decentralization consists of the transfer of power from the central Government to local Governments such as regions, districts and cities. As a consequence, if the State decides of most environmental issues, and in particular of plastic waste prevention and management, decentralized authorities implement policies supporting centralized decisions.

Cities have significant jurisdiction over general administrative police and special environmental administrative police (as for instance domestic waste and assimilated waste: wastes from economic activities that can be collected with domestic waste, taking into account their characteristics and the quantities produced) collection or specific administrative waste police.

Districts and regions have limited jurisdiction. For instance, Districts and Regions draft local Prevention and waste management plans. The use of contracts, notably with the establishment of contracts for State-region projects, is a growing trend dealing with environmental issues.

C. United States

Plastic waste policies are set at all levels of government in the United States to the extent allowed by their authority. This includes the three branches of the United States government, the Legislative [1.], Executive [2.] and Judicial [3.], as well as the state branches of government and local and tribal authorities [4.].

1. Legislative Branch

The United States Constitution creates three branches of government, which function in a system of checks and balances to ensure separation of powers. The legislative branch is made up of the House of Representatives and the Senate. These two houses are referred to together as Congress. The individual Representatives and Senators, collectively known as Congressmen, who are members of the House of Representatives and the Senate, are elected by the states they represent. The powers of the legislative branch granted by the U.S. Constitution include the power to make all laws, declare war, regulate interstate and foreign commerce and control taxing and spending policies.

The United States Congress has adopted all the federal laws applicable to the environment, such as the Clean Air Act (CAA), 42 U.S.C. § 7401 *et seq.*, the Clean Water Act (CWA), 33 U.S.C. § 1251 *et seq.*, the Safe Drinking Water Act (SDWA), 42 U.S.C. § 300(f) *et seq.*, and the Toxic Substances Control Act (TSCA), 15 U.S.C. § 2601 *et seq.*⁴⁵ In enacting this authority, Congress has delegated implementation of these laws to specific federal departments and agencies to implement, such as the United States Environmental Protection Agency, and others.

2. Executive Branch

The executive branch consists of the Executive Office of the President, their advisors including the Cabinet and other staff, as well as the independent federal departments and agencies, such as the Department of Interior and the Environmental Protection Agency. The executive branch is responsible for implementing the laws enacted by Congress and signed into law by the President. Implementing these laws requires the executive branch to propose and promulgate regulations. The law governing the promulgation of regulation, as well as overseeing implementation of the laws by the federal departments and agencies is the Administrative Procedures Act, 5 U.S.C. 551 *et seq.* (1946).

Congress delegated implementation of Clean Air Act (CAA), 42 U.S.C. § 7401 *et seq.*, the Clean Water Act (CWA), 33 U.S.C. § 1251 *et seq.*, the Safe Drinking Water Act (SDWA), 42 U.S.C. §

⁴⁵ See e.g., Solid Waste Disposal Act (SWDA), 42 U.S.C. § 6901 *et seq.*, as amended, including, but not limited to, the Resources Conservation and Recovery Act (RCRA) of 1976, Pub. Law No. 94-580, and the Hazardous and Solid Waste Amendments of 1984, Pub. Law No. 96-482; the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), 42 U.S.C. § 9601 *et seq.*, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, Pub. Law No. 99-499; the Emergency Planning and Community Right to Know Act (EPCRA), 42 U.S.C. §11001 *et seq.*; the Toxic Substances Control Act (TSCA), 15 U.S.C. § 2601 *et seq.*; the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 7 U.S.C. § 136 *et seq.*; the Clean Air Act (CAA), 42 U.S.C. § 7401 *et seq.*; the Clean Water Act (CWA), 33 U.S.C. § 1251 *et seq.*; the Safe Drinking Water Act (SDWA), 42 U.S.C. § 300(f) *et seq.*; the Oil Pollution Act (OPA) of 1990 (OPA), 33 U.S.C. § 2701 *et seq.*; the Hazardous Materials Transportation Act (HMTA), 49 U.S.C. § 5101 *et seq.* including PHMSA and the regulations adopted thereto at 49 CFR Parts 180-185, 190-199 as applicable as well as Drug and Alcohol Testing.

300(f) *et seq.*, and the Toxic Substances Control Act (TSCA), 15 U.S.C. § 2601 *et seq.* Pursuant to the Clean Air Act (CAA), for example, the United States Environmental Protection Agency (“EPA”) has adopted regulations codified at 40 C.F.R. Chapter 1, Subchapter C, “Air Programs,” Parts 50 – 99. Pursuant to the Clean Water Act (CWA) and the Safe Drinking Water Act (SDWA), EPA has adopted regulations codified at 40 CFR Subchapter D, “Water Programs,” Parts 100-149. Pursuant to the Toxic Substances Control Act (TSCA), EPA has adopted regulations codified at 40 CFR Subchapter R, “Toxic Substances Control Act,” Parts 700-799.

3. Judicial Branch

The judicial branch consists of the U.S. Supreme Court and those federal inferior courts established by Congress. There are 13 United States Courts of Appeal, and 91 United States district courts. These federal courts referred to as Article III courts, meaning Article III of the Constitution, which also governs the federal circuit and district courts and judges. Congress can enable Article III courts with jurisdiction to hear complaints arising from the Constitution or federal law, as well as disputes between citizens of different states or countries.

The federal courts review claims arising pursuant to the federal environmental statutes, whether through appeal of an administrative decision pursuant to the Administrative Procedures Act pursuant to 5 U.S.C. §§ 701-706, or through a citizen suit seeking to enforce the environmental laws where such citizen suit claims are allowed. See e.g., CAA 42 U.S.C. § 7604 (providing authority for citizen suits against CAA violators), and § 7607 (providing authority for citizens to challenge EPA actions).

4. States and Local Authorities including Tribes

The individual states of the United States operate in a similar manner as the United States, in that instead of a president, they elect governors, as well as state representatives for each state’s House of Representatives, and state senators for each state’s Senate, making up each state’s legislative body. The legislatures of each state enact legislation at the state level, and create executive agencies mirroring the federal agencies.

Individual states also adopt their own individual environmental laws. However, each state may also be delegated with authority to implement the federal environmental laws.

Local authorities include county, municipal and tribal authorities. In some cases tribes may have been granted “treatment as state” for purposes of implementing a federal environmental law, and thus may be on equal footing as a state in implementing that delegated federal environmental law. In some cases as well, municipalities may be granted with authority to implement portions of environmental laws. However, for the most part, local county and municipal authorities must comply with both the state and federal environmental laws to the extent they are applicable.

IV. Inventory, Description and Comparison of Existing Applicable French and U.S. Environmental Laws That May Impact Plastic Waste

A. Comparison of French and U.S. Environmental Laws Relevant to Plastic Waste

France has recently enacted laws phasing out many applications of single use plastics and prohibiting the use of microplastics altogether. These laws, the AGECL law and the EGALIM law, are discussed herein. There are no such analogous federal laws in the United States.

In addition to this wide-ranging national effort to minimize the opportunity for plastics to enter the environment, certain French laws discussed below also could apply to the disposal of plastics in the environment though likely not as effectively as the prohibitions discussed above.

Regarding products specifically, the U.S. TSCA statute can be compared to the European Union's REACH regulation, Regulation 1907/2006, applies to the import, manufacture, and use of substances, mixtures, and articles in the European Economic Area (EEA). Plastics, defined as polymeric materials, are in scope of the REACH regulation and, similar to the U.S. TSCA, plastics are currently exempt from registration and for evaluation by the European Chemicals Agency (ECHA) and/or the Member States. EU importers and manufacturers of polymers, however, are required to register the constituent monomers and additives if certain criteria are met. This has left the authorities with limited information on polymers on the market to identify risks created by plastics to human health and the environment.¹

As part of implementing the European Green Deal, the European Commission (EC) published its Chemicals Strategy for Sustainability Towards a Toxic-Free Environment on October 14, 2020. The strategy impacts over 40 pieces of chemicals legislation in the EEA and provides insight on those that will be amended or created in the future. The strategy document confirms the issue caused by the information gap left by the registration exemption and states that the EC will make a proposal to extend the duty of REACH registration to certain polymers of concern.

Even with this known gap, the regulation offers important opportunities for managing risks posed by plastics that are not available pursuant to existing United States legislation. REACH has various restrictions on Substances of Very High Concern (SVHCs) that are used as stabilizers, extender oils, flame retardants, or softeners in plastic products. This limits SVHC content within plastic articles, protects users from potential exposure during use, and also improves mechanical and chemical recyclability at the end of life.

ECHA has created a REACH restriction proposal for intentionally added microplastics that is set to become EU law in the near future. The restriction bans the use of microplastics in some industries and creates reporting requirements for others. Once implemented, this proposal is expected to prevent the release of 500,000 metric tons of microplastics over 20 years.

In addition, when comparing France and the U.S., there is no specific regulation on plastic emissions created by plastic manufacturing in the EU, as there is in the US, where the Clean Air Act regulates air pollution emitted by organic chemicals manufacturing (including plastic).

B. French Environmental Laws

This section will discuss all existing laws and regulations that could affect plastic waste in general, as issued by the European authorities (1.) and by the French authorities (2.). These laws and regulations impact plastic waste but do not regulate them directly.

1. Issued by European Authorities

Only European regulations that are of direct application in French law are examined herein. Most directives, except a few, have already been transposed and are considered part of French law. This section only presents those directives that have not yet been transposed into French law.

As previously mentioned, the EU has a jurisdiction over all environmental policy areas, while respecting the subsidiarity principle. The EU regulates waste and common market policies. In this respect, the texts presented below can either affect plastics considered as either wastes or as products.

a. Waste Approach

The EU possesses a waste transfer supervision and control system that operates within its borders and with members of the European Free-Trade Association (EFTA), of the Organization for Economic Co-operation and Development (OECD) and Contracting Parties of the Basel Convention. The Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 *on shipments of waste* prescribes such provisions.

This regulation sets control procedures for waste transfer from within the EU or passing by third countries. It includes waste imported to the EU from third countries, and the opposite. Waste passing by the EU on its way to third countries are also included, and the opposite as well. The regulation sets general requirements regarding information or notification procedures, which includes a preliminary consent.

This text includes the Basel Convention and the revision of the OECD 2001 decision on transboundary waste transfer for waste recovery⁴⁶ in EU law.

Consequently, the Commission Delegated Regulation (EU) 2020/2174 of 19 October 2020 includes the most recent evolutions of the Basel Convention. Since January 1st, 2021, plastic waste export from the EU and import to the EU of some specific waste categories⁴⁷ fall under the notification and consent writing procedure. However, plastic waste falling under quite different conditions⁴⁸ and exported to third countries are prohibited.

The Regulation (EU) 2019/1021 of the European Parliament and of the Council of 20 June 2019 *on persistent organic pollutants (POP)* aims to protect human health and the environment by limiting or eliminating these substances⁴⁹, or waste resulting from their use. This regulation also applies the precautionary principle.

⁴⁶ For example when waste are treated to be reused or transformed in fuel.

⁴⁷ Plastic waste falling under the AC300 and Y48 sections coming from and going to third countries to which the OECD decision apply.

⁴⁸ Plastic waste falling under the A3210 and Y48 sections and to which the OECD decision does not apply.

⁴⁹ As defined by the Stockholm Convention on POP and by the Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on Persistent Organic Pollutants.

POP accumulate in living organisms and create risks accordingly. They can be carried beyond national borders by air, water or migratory species to places that never used them. Plastic waste can be contaminated by POP and would then have to be dealt with in accordance with this regulation.

The regulation sets two series of measures.

First, measures focused on product fabrication control, market launch and use. In principle, production and launch on the market of POP is prohibited, unless Member States do not have any local safe, efficient and affordable alternative.

Second, measures aim at diminishing, reducing to the bare minimum and eliminating pollution, including waste contaminated by POP. Member States, which produce or own waste, must avoid their contamination by POP. In most cases, contaminated waste has to be quickly eliminated or reused so that POP can be destroyed or transformed. Member States have to closely scrutinize production, collection and transport of contaminated waste for them to be traceable.

b. Product Approach

The Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 *concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)* provides a complete legal framework for chemical production and use in the EU. It transfers public powers to industries. These actors are indeed liable to scrutinize the safety of imported, manufactured, sold and used chemicals whether on their own, in mixtures or contained in articles.

This regulation applies to all chemicals, whether they are produced, sold, used on their own or combined. It does not apply to waste, which already falls under another, stricter, regulation.

The law also includes some obligations that companies must comply with: an obligation to register all chemicals they produce or import information in a central database, and an obligation to identify and manage all risks related to products they create and sell.

This regulation provides national authorities' prerogatives to limit the production and utilization of some substances if they consider that risk management is insufficient.

The Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 *on classification, labelling and packaging of substances and mixtures (CLP)* harmonizes chemical substances' classification, packaging and labeling. Producers, importers and users must sort and label their products before launching them on markets. One of the main goals of the regulation is to determine whether a chemical substance's properties must be classified as hazardous and thus must be presented as such. The regulation notably includes physical, health, and environmental hazards.

Once a substance is classified, identified hazards have to be communicated to other supply chain actors, including consumers. Labels highlighting classified hazards enable users to be aware of risk management precautions that they need to implement.

The Regulation (EC) No 1935/2004 of the European Parliament and of the Council of 27 October 2004 *on materials and articles intended to come into contact with food* defines general requirements for these substances. It aims at achieving a high standard of consumer protection by regulating food and drinks packaging; the regulation includes plastics in this regard.

This regulation sets a general inertia requirement implying that production respects good practices guidelines ensuring the objects' normal or predictable use. As a consequence, any material or article intended to come in contact with food must be sufficiently inert for substances not to be transferred to food. These substances must not be transferred in amounts that could harm human health, significantly change products' composition, or affect food organoleptic properties.

Specific requirements also apply to plastics and recycled plastics, which must include positive lists of all authorized substances, purity criteria or specific use conditions.

This regulation also prescribes that products that come in contact with food must be declared conformed to the regulation and labeled accordingly.

The Regulation (EC) No 2023-2006 of the European Commission of 22 December 2006 *on good manufacturing practice for materials and articles intended to come into contact with food* establishes rules on good manufacturing practice for the groups of materials and articles listed in Annex I to Regulation (EC) No 1935/2004. It covers objects such as containers, packaging, paper, cardboard, ink and adhesives, which could come into contact with food. The regulation therefore applies to plastics.

This regulation applies to all sectors and all stages of manufacture, processing and distribution of materials and articles. As a consequence, businesses must: conform with good manufacturing practices; establish, implement and apply an effective and documented quality assurance system; establish and maintain an effective quality control system; establish and maintain appropriate records, either in paper or electronic form, of the specifications, formulas and safe processing of the individual products and the various manufacturing operations involved.

These regulations only address consumers' health and safety. No specific prescriptions are established at the European level to limit emissions from plastic manufacturing regulated facilities while important work is done for other specific activities.

The Directive (EU) of the European Parliament and of the Council of 16 December 2020 *on the quality of water intended for human consumption (recast)* has been partly transposed in French law. It introduces new regulations to protect human health from polluted waters intended for human consumption by ensuring they are "wholesome and clean". Some hygiene requirements are also set for materials that come in contact with drinkable water, which can apply to plastics. Plastics can thus fall under the scope of this regulation.

In this regard, EU countries guarantee that materials used for water treatment, storage or distribution do not harm either, directly or indirectly, human health, or affect water color, smell and taste. Microbe development and water pollution must respect standards set for a precise water use.

2. Issued by French Authorities

a. Preventing: Waste Limitation

Waste prevention was introduced into French law in 1975. Article 3 of the Charter for the Environment also prescribed this principle as it states, “*Everyone shall, in the conditions provided for by law, foresee and avoid the occurrence of any damage which he or she may cause to the environment or, failing that, limit the consequences of such damage.*” Prevention applies to all waste, including plastic waste.

The first National Plan of Waste Production Prevention was a voluntary commitment of the Minister of the Environment in February 2004 that induced a great impetus in French Environmental law. The Waste Action Plan for 2009-2012 then fixed a 7% goal of domestic waste (and assimilated waste) reduction per inhabitant over the period 2008-2013.

Since 2015 and the enactment of the Energy Transition for a Green Growth Law, French waste prevention policy is now embedded in the circular economy principle and the efficient use of resources framework. These policies aim to shift the French economic model towards a less resource-intensive economy while still maintaining growth.

This trend accelerated with the publication in 2018 of the Circular Economy roadmap presenting concrete action to shift from the current “produce, consume, throw away” economic model to a circular one. This roadmap lists 50 measures aimed at rethinking products’ lifetime from their conception to waste management. Products consumption should itself limit waste. These initiatives lead to the enactment of the Law against Waste for a Circular Economy in February 2020 intended to accelerate the production and consumption models shift to limit waste and preserve natural resources, biodiversity and climate.

i. *In a Broad Manner: In all Environments*

The national waste prevention and management policy is a crucial lever towards the circular economy transition. The Environmental Code prescribes this policy.

This policy establishes waste reduction **quantitative goals**, which are included in the prevention principle.

This national policy targets a 15% domestic waste (and assimilated waste)⁵⁰ reduction per habitant and a 5% drop per production unit in waste amounts created by economic activities in 2030 compared to 2010 levels (especially in construction and public works). These two waste categories include plastic waste, hence the importance of such a policy. In addition, voluntary

⁵⁰ The waste produced by inhabitants and collected from houses is referred to as household waste. Waste of a similar nature as household waste but collected from professionals (offices, schools, administrations, small businesses, communities, etc.) is referred to as "assimilated waste". See e.g., <https://environment.brussels/state-environment/report-2011-2014/waste/focus-tonnage-household-and-assimilated-waste>.

experimentations may include deposit measures to reuse packaging and products in order to stimulate eco-conception and reuse.

France has also adopted a national policy trajectory aimed at increasing the share of reused packaging launched on the market compared to single-use ones. The goal is to reach a 5% share of reused packaging launched on the market in 2023⁵¹, and 10% in 2027. Reused packaging has to be recyclable. The Product-service systems (PSS) are supported so that objects last for a longer time and gain in overall efficiency. As packaging is made of plastics, this trajectory would affect them.

In addition, a product-based approach also sets a 50% goal of reducing non-recyclable products launched on the market before 2020.

National policies also set **qualitative goals**. For instance, a policy intends to deal with planned obsolescence by informing consumers. Specifically, labels can highlight the product lifetime which incentivizes producers to sell longer-lasting objects.

Finally, and in accordance with European regulation, France has implemented since 2008 planning measures designed to prevent waste creation. These measures, once again, do not address plastic waste specifically but still affect them.

At the national level, France established a National Waste Prevention Plan in 2004. This has included continuing and new measures to implement the Plan. The Plan includes those measures designed to reduce waste production and those intended to prevent and reduce the impact of some plastic products on environment, in particular on aquatic environments and on human health. The current National Waste Prevention and Management Plan for 2021-2027 updates waste prevention and management measures according to the aforementioned circular economy reforms implemented since 2017. The Plan contains five key pillars: (i) include waste prevention as soon as products and services are designed, (ii) extend products' lifetimes by encouraging their maintenance and repair, (iii) develop "*réemploi*" (any operation by which substances, materials or products that are not waste are reused for a similar purpose as the one for which they had been conceived) and "*réutilisation*" (any operation by which substances, materials or products that have become waste are reused again)⁵² practices, (iv) fight and reduce waste and (v) involve public actors in this waste prevention action.

Several plans are adopted and implemented at the local level.

A Regional Waste Prevention and Management plan covers each region. These plans implement the goals set by the National Plan described above. Regional Plans include prevention, waste recycling and valorization objectives as well as long term (six to twelve years) waste prevention and management planning. The plan also mentions the need to create or adapt infrastructure.

⁵¹ Expressed in sales unit.

⁵² French Environmental law distinguishes reuse methods that include both "*réemploi*" and "*reutilization*". The difference between them lies in the waste status of the object, and thus a necessary additional step in the case of "*réutilisation*" for it not be a waste anymore.

Domestic and Assimilated Waste Prevention Local Programs set reduction and prevention goals since January 1st, 2012. Local authorities in charge of domestic waste (and assimilated waste) treatment and collection adopt such programs.

ii. In Marine Environment

As a preliminary remark, at the international level, numerous international conventions, to which France is a Contracting Party, aim to protect the marine environment. Even if international treaties and agreements ratified or approved lawfully by France have a superior authority to French laws (article 55 of the French Constitution), they do not have, in themselves, a direct effect in French law.

France is a party to several treaties aimed at protecting the marine environment from waste and pollution. These are identified in annex (**Annex I**).

At the National level, the Law on Water of the January 3, 1992 protects water and marine environments. In particular, water resources have to be managed in a balanced and sustainable manner to ensure water protection. Resources must also be protected from any kind of pollution (discharge, spill, emission, direct or indirect dumping) that could deteriorate water quality by changing their physical, chemical, biological or bacteriological properties. This includes both surface and underground waters, as well as marine waters close-by to national waters. In this regard, a balanced management has to achieve the satisfaction of safety, health, civil security and drinking water requirements.

This law aims to prevent any pollution that could affect marine resources, among those generated by plastic waste. The Environmental Code protects both freshwaters and marine waters.

Regarding freshwater, the principle of a balanced and sustainable management of water resources (thus aiming to limit plastic waste pollution) is mainly implemented by two planning tools at the basin-level. On the one hand, Directive Water Planning and Management Schemes (SDAGE) determine water planning at the level of each basin, while, on the other hand, Water Planning and Management Schemes (SAGE) deal with basins of a minor hydrographic dimension.

SDAGE defines what should be a balanced management of water resource in the basin, noting that continental France counts six basins, while Corsica and overseas territories each count a SDAGE. The basin committee drafts the SDAGE and defines guidelines and contributes to the implementation of national policies respecting sustainable development and the preservation of marine resources.

According to environmental goals, the SDAGE defines gradual reduction measures, the elimination of harmful dumping, and water quality objectives.

The Law on Water also created SAGE. The Law defines what should be a balanced management of water resources in the sub-basin. SAGE prescribes priority use of water resources, the distribution of global volumes of pumping per use or the definition of appropriate measures to preserve water quality according to the several water uses.

Overall, substances included in plastics can damage water quality according to criteria established by the SDAGE/SAGE, and by drinkability standards set by the Directive (UE) 2020/2184 of the European Parliament and of the Council of 16 December 2020 on the quality of water intended for human consumption.

Regarding marine water, as for freshwater, the protection of the former is subject to two planning documents. First, a national framework resulting in a National Strategy for Sea and Seafront, and a local framework implemented by seafront strategic documents.

France developed the National Strategy in February 2017. It provides a legal framework for public policies related to sea and seafront, and more broadly for all actors of the marine and seafront economy. This National Strategy sets four long-term complementary goals: ecological transition for sea and seafront, development of a sustainable blue economy, preservation of marine ecosystems, conservation of an attractive seafront and a good image of France.

A list of priority actions defines these long-term goals. They include those intended to protect the environment, resources and ecological balances. In this respect, a “*particular attention is paid to the fight against pollution, especially of land origin (in particular waste), to the reduction of light and noise pollution, to the improvement of the quality of coastal waters in connection with water policy, to measures to protect species and habitats and to the development of engineering for the restoration of marine ecosystems*”. This National Strategy contributes to a better understanding of the environment, to the conservation of marine ecosystems and to the reasoned development of marine activities.

Seafront strategic documents are the local equivalent of the National Strategy. Four seafronts are designated in continental France and overseas. Seafront strategic documents define sea and seafront management principles and measures to implement them accordingly to the National Strategy guidelines. The implementation at the local level takes into account the economic, social and ecological contexts of the particular seafront. The definition of these strategic goals and the corresponding indicators are also mentioned, as well as the assessment method and an action plan.

In addition, the “*Grenelle*” Law of July 12, 2010 enacted a corpus of principles aimed at protecting and preserving the marine environment, that are now prescribed by the Environmental Code. Marine environment is part of the common national natural heritage. Protection of the marine environment, biodiversity conservation and its sustainable exploitation that respects marine ecosystems are of general interest.

Moreover, protection and preservation of the marine environment aim to avoid the deterioration of this environment. When possible, the restoration of marine ecosystems in places where they have suffered degradations should be implemented. Finally, disposal into the marine environment should be gradually eliminated to ensure the absence of any significant risk to marine biodiversity, marine ecosystems, human health or legitimate sea uses.

This Law defines pollution as the direct or indirect introduction, induced by human activity, of waste creating, or which could create, harmful effects for living resources and marine ecosystems, and notably, creating biodiversity loss and risks for human health.

For each marine region or sub-region, an action plan for marine environment is adopted. It includes environmental goals and associated indicators to reach the planned ecological and marine states. Some action plans establish a reduction goal of inputs caused by waste dumping in marine waters, including plastic micro particles.

Regarding ship waste, The Transport Code now includes the requirements of the Directive (EU) 2019/883 of the European Parliament and of the Council of 17 April 2019 on port reception facilities for the delivery of waste from ships. It aims to protect the marine environment against waste pollution from ships using European ports by improving the port reception installations. This legislation can be summarized in two key points.

First, ships must pay an indirect license-fee meant to cover this regime cost that allows them to store their waste in ports (whether they actually exercise their right or not). This license-fee will also apply to fishing and recreational crafts to avoid the abandonment of fishing nets and waste.

In some cases, if a ship disposes of an exceptional amount of waste, an additional fee may be required to ensure that waste disposal does not create disproportionate costs for the port recovery system.

Second, French authorities must ensure that port installations meet three criteria. First, they must ensure that ports can receive waste types and amounts from ships usually using ports. Second, they must not collect excessive license-fees that could dissuade ships from using these ports. Finally, Member States must confirm that ports deal with ship waste in an environmental-friendly way according to the Directive 2008/98/CE on waste management and to other European laws regulating waste.

iii. In Atmospheric Environment

Plastics can be present in the atmosphere. Two types of regulation aim to protect air quality: one included in the regulated facilities regulation, and the other regarding fine particles, which can result from some micro-plastics (especially PM_{2.5}⁵³).

First, facilities classified for environmental protection are subject to an integrated regulation that limits any kind of pollution in all environments, including the atmosphere. The object of this regulation is to keep these facilities under the administrative scrutiny as they present harms or inconvenience for general interests protected⁵⁴ by the Environmental Code.

⁵³ A Ministerial Order published by the Minister of the Environment defines PM_{2.5} particles as particles passing through a size-selected inlet, which has a separation performance of 50% for an aerodynamic diameter of 2.5 µm. This definition does not exclude plastics *a priori*.

⁵⁴ *I.e.* neighborhood disturbance, health, safety, public health, agriculture, environmental and landscape protection, rational energy use, sites and monument protection (including archeological heritage).

In this respect, Ministerial or Prefectural Orders can prescribe emission limits for regulated facilities. This includes such a facility dealing with waste and/or plastics. However, no Ministerial Order establishes specific prescriptions for classified plastic manufacturing facilities subject to authorization. A Ministerial Order of January 14, 2000 establishes general requirements applicable to facilities classified for environmental protection subject to declaration under heading no. 2660 or 2661 (Manufacture, regeneration or processing of polymers [plastics, rubber, elastomers, resins and synthetic adhesives]), but these are very general prescriptions.

The Environmental Code contains a specific regulation regarding fine particles. Regulation is based on the harm caused by these particles on human health. Fine particles stay in the upper parts of the human respiratory system. The filtration of the respiratory system and cough can eliminate them. Yet, a correlation has been established between high PM₁₀ rates and the rise of hospital admissions and death. Finest particles (smaller than 2.5 microns, called PM_{2.5}) are the most harmful as they can penetrate the deepest parts of the respiratory systems. By doing so, they can deposit by segmentation or penetrate the bloodstream.

The Environmental Code sets air quality standards applicable to PM_{2.5}. These standards include national reduction exposure goals, an exposure to concentrated pollutants obligation (20 µg/m³ to reach in 2015), qualitative goals (10 µg/m³ on average per calendar year), target values (20 µg/m³ on average per calendar year) and limit values (µg/m³ on average per calendar year since 2015).

The prefect can prescribe appropriate measures to limit the breadth and effects of pollution effects on the population in case of breach of these standards.

b. Managing Waste

The Environmental Code transposed most of European regulation. It determines guiding principles regarding waste management, which includes plastic waste.

First, regarding waste management, the European level defines the principle of waste treatment hierarchy as a main priority.

The first priority is to avoid waste production, implemented by waste prevention measures (detailed right above). When waste production cannot be avoided, the person in charge of waste management has to, and in order of priority:

1. ***Prepare waste for their reutilization***: The goal is to prepare waste so that it can be reused again without another treatment operation. Waste often includes second-hand objects (electrical appliances, parts of vehicles *etc.*). Waste treatment often requires control, cleaning or repair operations.
2. ***Recycle waste***: This means any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material, but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling

operations. Recycling involves several actions, including the preparation of materials extracted from waste, then developing a recycling raw material (MPR).

3. ***Any other recovery operation***: That is any operation resulting mainly in waste substitution into useful substances or objects that would have been used instead. This particularly includes energy recovery consisting of utilizing waste for fuel to produce energy.
4. ***Disposal***: Elimination is the solution to avoid. Only “final waste,” that is to say waste that cannot be reused or recovered by current technical and economic conditions can be eliminated.

This treatment hierarchy aims to encourage waste recovery and reduce raw materials use. It is a main pillar of waste regulation.

The Second priority is the principle of pollution limitation which guides waste management implementation so that it harms neither human health nor the environment by creating risks for water, air, soil, fauna or flora or by provoking noise or olfactory pollution, or by harming landscapes and sites.

The Third priority is the self-sufficiency principle which requires local levels to have an integrated and efficient final waste treatment network. Final waste can be plastic waste that cannot be recycled or recovered anymore. The self-sufficiency principle has to be implemented by waste planning tools.

The Fourth priority is the proximity principle, which provides that the waste transport network has to be limited in distance and volume. More precisely, this principle ensures that waste prevention and management are implemented the closest they can be to waste production sites. In this respect, environmental issues are appropriately considered, while lasting local jobs are created. This principle is implemented according to waste types, environmental and technical efficiencies and the viability of existing activities. Waste hierarchy, free competition and free circulation of good principles still have to be respected.

The last priority is the polluter-pays principle, which states that any waste owner or producer has to manage the waste properly, or to ensure the waste is being managed properly.

Quantitative goals represent another aspect of national waste prevention and management policy, which address indirectly aim at plastic waste. For instance:

- The 30% decrease in non-hazardous and non-final waste admitted in storage facilities in 2020 compared to 2010. This goal increases to a 50% reduction in 2050. In this context, the storage of non-hazardous and reusable waste is gradually forbidden;
- The 10% decrease in domestic and assimilated waste admitted in storage facilities planned for 2035;
- The energy recovery of at least 70% of waste that cannot be reused by 2025. This goal should be reached by ensuring the energy recovery of waste that cannot be reused considering current technical knowledge. As a result, these wastes are sorted and treated

separately. This energy recovery method relies on solid fuels and should be implemented in energy production facilities, such as heat, electricity or gas production. These facilities should produce energy in the first place, or have to produce energy during their own production process. In the case of the former, these facilities should be of a reasonable size and not to be entirely dependent on waste only, thus implying that they should be able to switch to other fuels if needed.

C. United States Environmental Laws

In the United States all regulatory authority is reserved to the fifty states other than that authority specifically granted to the federal government by the United States Constitution. Article I, Section 8 of the United States Constitution grants the federal government, specifically the Congress, the authority to “regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes.”⁵⁵ These words in the United States Constitution, known colloquially as the Commerce Clause, are the constitutional basis for the federal environmental laws passed by Congress in the 1970s and 1980s including the Clean Water Act, the Safe Drinking Water Act, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and the Resource Conservation and Recovery Act (RCRA).

While none of these federal laws were enacted with plastic waste in mind, they do each contain provisions potentially applicable to plastic waste that finds its way to the ocean as discussed below.

1. The Clean Water Act

Enacted almost fifty years ago when rivers and harbors in the United States were frequently treated as open sewers for anything that could be conveyed to them, the Clean Water Act prohibits the unpermitted “discharge” of any “pollutant” from any “point source” to a “Water of the United States.”⁵⁶

Violations of the Clean Water Act are punishable by civil or criminal penalties of tens of thousands of dollars per day and potential imprisonment for up to six years.⁵⁷

Of greater import in recent years, the Clean Water Act is one of the two federal laws discussed here that contain a citizen suit provision. In the case of the Clean Water Act, any citizen of the United States is authorized to allege any violation of the Clean Water Act and to obtain litigation costs, including attorney fees, as well as injunctive relief.⁵⁸

“Pollutant” is broadly defined in the Clean Water Act to include any “solid waste” “garbage” or “industrial, municipal, and agricultural waste discharged into water.”⁵⁹ “Discharge of a pollutant” means “any addition of any pollutant to navigable waters” or “any addition of any pollutant to the waters of the contiguous zone or the ocean from any point source other than a vessel or other

⁵⁵ U.S. Const. art. I, § 8.

⁵⁶ 33 U.S.C. § 1321(a).

⁵⁷ 33 U.S.C. § 1319.

⁵⁸ 33 U.S.C. § 1365.

⁵⁹ 33 U.S.C. § 1362(6).

floating craft.”⁶⁰ “Point source” is defined to include any “discernible, confined and discrete conveyance.”⁶¹

Owing to the broad definitions of proscribed conduct discussed above, and the possibility of attorney fees, citizen suit activity under the Clean Water Act has increased in recent years, including respecting plastic waste. In 2019 the San Antonio Bay Estuarine Waterkeeper organization filed suit against Formosa Plastics Corp for what it successfully alleged were discharges of plastic beyond those authorized by the Formosa Plastic plant’s Clean Water Act permit. The lawsuit was resolved by a consent decree requiring \$50 million in plant upgrades, attorney fees and penalties. Since then other similar lawsuits have been filed. In April of 2021 Los Angeles Waterkeeper filed suit against Johnson and Johnson for discharges of pollutants including “dust and debris” to a municipal storm sewer that allegedly ultimately conveyed what was in it to a “Water of the United States”. That lawsuit is pending.

We can expect continued testing of the limits of the definition of “discharge of a pollutant” and further negative outcomes for those who operate “point sources” through which plastic passes on its way to the ocean. For this reason, barring other Congressional action, the Clean Water Act will likely continue to be the predominant federal authority for attacking the challenge of plastic waste in our oceans.

2. The Safe Drinking Water Act

The Safe Drinking Water Act was enacted in 1974 (and amended in 1986 and 1996) to protect the quality of water that is or might be designated as a supply of drinking water. The Safe Drinking Water Act authorizes the United States Environmental Protection Agency to set standards for drinking water quality and also to monitor states, local authorities and water suppliers who enforce those standards. EPA is authorized to issue orders requiring compliance with its standards and to seek enforcement of those orders, and penalties, in federal court.⁶²

Plastics, or the constituents of plastics, might cause an exceedance of those standards requiring a water supplier to engage in additional treatment of drinking water in order to meet the standards. However the Safe Drinking Water Act does not provide for recourse against the entity responsible for the presence of the plastics in the drinking water supply. It also does not contain a citizen suit provision like those in the Clean Water Act and RCRA discussed above which makes it less likely to be a tool for attacking plastic waste in our oceans.

3. Clean Air Act

Microplastic is present in ambient air as particulate matter with size of 2.5 microns or less. This air pollutant, PM2.5, is regulated by the United States pursuant to the Clean Air Act as a criteria pollutant. CAA, 42 U.S.C. § 7401, et seq., 40 C.F.R. Part 50. So much microplastic is generated

⁶⁰ 33 U.S.C. § 1362(12).

⁶¹ 33 USC § 1362(14).

⁶² 42 U.S.C. § 300g-3.

from tire shred that significant percentages of urban ambient air PM_{2.5} pollution consists of tire shred rather than combustion exhaust. J. Panko et al., *Evaluation of Tire Wear Contribution to PM_{2.5} in Urban Environments*, 10 *Atmosphere* 99 (2019), <https://www.mdpi.com/2073-4433/10/2/99>. Microplastic is also discharged into surface water from ubiquitous sources such as laundering operations for petroleum-based fibers such as nylon, rayon, polyester, fleece, etc. Francesca /De Falco et al., *The contribution of washing processes of synthetic clothes to microplastic pollution*, 9 *Sci. Rep.* 6633 (2019), at: <https://www.nature.com/articles/s41598-019-43023-x>

Plastic manufacturing is regulated pursuant to the US Clean Air Act, 42 U.S.C. § 7401 et seq. Specifically, manufacturing plants are regulated as stationary sources of air pollutants, pursuant to applicable provisions of the following programs: Prevention of Significant Deterioration (PSD) and New Source Review (NSR), 40 CFR Part 52; New Source Performance Standards (NSPS), 40 CFR Part 60; National Emissions Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 63; Risk Management Program (RMP), 40 CFR Part 68. These programs limit emissions of particulate, volatile organic compounds and hazardous air pollutants (HAP) generated by the manufacturing processes themselves. However, only the PSD limits for particulate, PM_{2.5}, would actually limit emissions of plastic.

Plastic is also emitted from tire shred. However, while the CAA regulates mobile source emissions from vehicle engines, both on and off-road and on-road, the CAA does not expressly regulate emissions from tire shred as part of mobile source emissions.

4. The Resource Conservation and Recovery Act (RCRA)

The Resource Conservation and Recovery Act (RCRA) was enacted in 1976 as the first step toward a uniform federal program for governing the disposal of solid and hazardous waste. RCRA's reach was expanded in 1984 by the Hazardous and Solid Waste Amendments (HSWA) and then amended two more times in the 1990s.

Among other things, RCRA provides a federal definition of "hazardous waste" and authorizes federal regulations specifying uniform means and methods for the storage, transportation, and disposal or treatment of such hazardous wastes. A waste can be a hazardous waste because its "quantity, concentration, or physical, chemical or infectious characteristics" may either cause or significantly contribute to an increase in mortality or illness or because it poses a substantial hazard to human health or the environment when improperly stored, transported, disposed of or treated.⁶³ These hazards have been identified by the US EPA as ignitability, corrosivity, toxicity and reactivity.⁶⁴ RCRA hazardous wastes include those specifically listed wastes known to exhibit these characteristics as well.

Like the Clean Water Act's definition of "discharge", "disposal" is broadly defined in RCRA to include any "discharge, deposit, injection, dumping, spilling, leaking, or placing of a solid waste or hazardous waste into any water so that such solid waste or hazardous waste or any

⁶³ 42 U.S.C. § 6903.

⁶⁴ 40 C.F.R. Part 261.

constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.”⁶⁵

Historically RCRA has not been considered a tool for regulating the disposal, as defined, of plastic waste, including because it is inert, rather than characteristically hazardous. Nor is plastic listed as a hazardous waste, and thus plastic is not a “hazardous waste”. However, like the Clean Water Act, RCRA also contains a citizen suit provision authorizing any person (compared to any citizen under the Clean Water Act) to allege a violation of RCRA resulting in a “substantial hazard.” In recent years, this has resulted in RCRA claims being made with Clean Water Act claims.

At least one of these cases involves plastics. In 2020 Charleston Waterkeeper sued Frontier Logistics, L.P. the operator of the Union Pier Terminal Facility in Charleston under both RCRA and the Clean Water Act. Charleston Waterkeeper alleged that plastic pellets passing through the Facility found their way into the Cooper River, Charleston Harbor and other waterways and that constituted dumping of a solid waste resulting in a substantial hazard to the environment. A Federal Judge denied Frontier Logistics’ motion to dismiss the RCRA claim on the ground that the plastic pellets were not “solid waste” and did not present a “substantial hazard.” The case is pending.

In 2019 the Conservation Law Foundation alleged that the discharge of treated effluent containing detectable concentrations of nitrogen was also a dumping of “solid waste” presenting a “substantial hazard.” A motion to dismiss that claim was also denied.

Based on these early cases, RCRA could continue to be used as a tool for attacking plastic waste in our oceans, albeit only against those who can be credibly alleged to have engaged in transportation or disposal as defined in the Act.

Additionally, RCRA includes provisions regarding transboundary movement of hazardous waste, implementing its duties as an Organization for Economic Cooperation and Development (OECD).⁶⁶ Transboundary movements of hazardous waste are the focus of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. The United States signed the Basel Convention in 1990. The U.S. Senate provided its advice and consent to ratification in 1992. The United States, however, has not ratified the Convention because it does not have sufficient domestic statutory authority to implement all of its provisions.⁶⁷

In May 2019, the Basel Convention was amended by the Parties to the Convention. The Parties adopted amendments to Annexes II, VIII, and IX, effective January 1, 2021, which subject the majority of exports of plastic waste (including unused scrap) to the Convention’s prior informed consent requirement starting January 1, 2021. The Convention’s non-party trade restrictions prohibit Parties from trading in covered waste subject to prior informed consent with non-Parties,

⁶⁵ 42 U.S.C. § 6903(3).

⁶⁶ See 40 C.F.R. Part 262, Subpart H – Transboundary Movements of Hazardous Waste for Recovery Within the OECD. § 262.80 – 262.84.

⁶⁷ See <https://www.state.gov/key-topics-office-of-environmental-quality-and-transboundary-issues/basel-convention-on-hazardous-wastes/#:~:text=The%20United%20States%20signed%20the,implement%20all%20of%20its%20provisions.>

except under the terms of an agreement or arrangement provided for by Article 11 of the Convention.

While not a party to the Basel Convention, though a member of OECD and G7, the United States EPA sent a July 3, 2019 letter to OECD Secretary-General Angel Gurría recommending an alternative proposal to the Basel Convention's amendments. Specifically, EPA asserted that mismanagement of plastic waste is essentially an issue for non-OECD countries and OECD countries have more of a vested interest in perpetuating existing levels of trade in plastic waste within OECD countries.⁶⁸

While the United States has not adopted specific plastic legislation or utilized its existing authority to adopt specific regulation, the United States EPA has adopted a National Recycling Strategy. While historically, EPA promoted “reduce, reuse, recycle,” the National Recycling Strategy appears true to its name, focusing primarily on recycling, after plastic waste is generated. The five objectives of the Strategy include: Improve Markets for Recycling Commodities; Increase Collection and Improve Materials Management Infrastructure; Reduce Contamination in the Recycled Materials Stream; Enhance Policies to Support Circularity; Standardize Measurement and Increase Data Collection. Even the objective focusing on circularity makes it clear that the circulated contemplated is initiated after the plastic waste is generated, and does not focus on how to prevent generation of plastic waste. This could be because the United States has subscribed to Sustainable Materials Management (SMM), which looks beyond the point of waste generation. The United States SSM approach is described by EPA as a better and broader approach than the circular economy, allowing more flexibility in finding the best resource conservation approaches without being tied to a specific end of life point in time. “SMM casts a far broader net than approaches based on traditional end-of-life waste management and pollution management. SMM allows for a more strategic use of resources and better outcomes. Without considering the entire lifecycle, negative effects can be shifted from one type of impact to another. Well-intentioned strategies can actually increase negative environmental outcomes if the big picture is not completely framed. In using SMM, such issues can be revealed, and the potential trade-offs considered and perhaps even overcome. It is important to note that SMM and other approaches (such as resource efficiency, the circular economy, and the Kobe 3Rs⁶⁹) are slightly different, but all share a broad agreement that materials can be better managed and used, and generally kept in productive use longer. Lifecycle-based decision-making represents a radical change in how environmental, social, and economic impacts and needs are thought of at all levels, from the community to the entire global economy.”⁷⁰

⁶⁸ The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal requires parties to control the transboundary movements of certain materials and hazardous waste covered by the Convention, and to take measures to not allow certain exports if parties have reason to believe the exports would not be managed in an environmentally sound manner. Currently, EPA has authority under the U.S. Resource Conservation and Recovery Act to control transboundary movements of most hazardous recyclables and waste, but not all Basel-controlled waste. The United States signed the Basel Convention in 1990 and the Senate gave its advice and consent to ratification in 1992. The United States should explore options for strengthening U.S. participation in the Basel Convention, including options that would enable ratification

⁶⁹ See the G8 Recycling, Reuse and Recycle Action Plan, known as the “G8 2008 Kobe 3R Action Plan” (utoronto.ca), <http://www.g8.utoronto.ca/environment/env080526-3R.html>.

⁷⁰ Mathy Stanislaus, *A Virtuous Circle*, *The Env'tl. Forum Centerpiece* (Sept./Oct. 2016).

Given the significant issue created by variability in the post-use plastic waste feedstock, which can be mitigated through true circularity within industry sectors which may enhance purity and so chemical recycling, focus on SMM over the circular economy may not be the most efficient approach for plastics. SMM may overlook the precise point in time that circularity is required for meaningful plastics recycling – the point in time immediately post-use. It may be that the closer the collection is to the point of post-use generation, the better chance that specific types of waste plastic can be kept separated to support purity of the feedstock. Thus, while SMM makes sense for most resources, for plastic it seems inferior to a true circular approach.

5. The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as the Superfund Act, was enacted in 1980 (and amended in 1986) to, among other things, create a federal program for cleaning up any contaminated property presenting a risk to human health or the environment, not just former storage, treatment or disposal facilities covered by RCRA.

CERCLA applies to any “release” of any “hazardous substance”. “Release” is even more broadly defined in CERCLA than “disposal” in RCRA and includes any “spilling,” “discharging,” “escaping,” or “disposing into the environment.”⁷¹ “Hazardous substance” is also very broadly defined and “releases” of “hazardous substances” have certainly been associated with leaching from plastics. However, establishing responsible party liability under CERCLA requires “status” as the owner or operator of the contaminated site, either presently or at the time hazardous substances were disposed there, or that one arranged for disposal or treatment of hazardous substances at the contaminated site, or that one transported hazardous substances to the contaminated site.⁷² Generally speaking, one is only authorized to bring an action under CERCLA if one has incurred response costs as defined in the statute.⁷³ Finally CERCLA has no citizen suit provision and the United States Supreme Court has narrowly constrained the right to recover attorney fees under the statute. For all of these reasons, the usual enforcement and pollution mitigation tools from the United States environmental statutes are less available under CERCLA.

However, CERCLA’s own provisions have been used to assess the endangerment posed by plastic in the marine environment. See for example, EPA’s Tern Island Preliminary Assessment, and related Technical Support Document to the Preliminary Assessment of the FWS – Hawaiian Islands National Wildlife Refuge: Tern Island Site in the French Frigate Shoals, Hawaii.⁷⁴ A Preliminary Assessment is part of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process as prescribed by the National Oil and Hazardous Substances Pollution Contingency Plan or “National Contingency Plan” (NCP). The NCP is the CERCLA vehicle available to evaluate releases of hazardous substances, pollutants, or contaminants that

⁷¹ 42 U.S.C. § 9601(22).

⁷² 42 U.S.C. § 9607(a).

⁷³ 42 U.S.C. § 9607 and § 9613.

⁷⁴ See <https://response.epa.gov/sites/9854/files/ternisland-tsd%20final.pdf>

may pose a threat to human health or the environment. In December 2021, the Center for Biological Diversity petitioned EPA Region 9 in December 2012 to assess the sources and hazards posed by plastic pollution to the marine environment. Through its Superfund program and partnership with FWS, EPA completed a PA. EPA's report reviews the potential impacts on island wildlife from the military waste deposited on and around Tern Island, including plastic waste.⁷⁵

Now that President Biden signed the Infrastructure Investment and Jobs Act (IIJA) (Nov. 15, 2021), the "Superfund Tax" is revived. The Superfund Tax is a tax on chemicals created with the passage of CERCLA in 1980, and taxes raised fund the Hazardous Substance Response Trust Fund. The Trust Fund is used to clean up sites posing a threat to the environment. Thus, with the Tern Island PA and the newly funded Hazardous Substance Response Trust Fund, CERCLA may offer a route to mitigation of plastic waste in the environment.

6. Toxic Substances Control Act

The Toxic Substances Control Act (TSCA) is the federal law that regulates industrial chemical substances. TSCA offers extraordinary regulatory and policy opportunities to incentivize, reward, and promote the commercialization of less toxic, more sustainable chemicals and to encourage and promote circularity. This potential is particularly relevant to addressing plastic waste. Despite the fact that TSCA was significantly amended in 2016, TSCA and the U.S. Environmental Protection Agency's (EPA) implementation of it pose challenges that at present prevent the law from realizing its full potential to promote circularity. Provided below are illustrations of these challenges and suggestions for modernizing TSCA policies to encourage chemical recycling practices that promote circularity.

TSCA grants EPA significant authority to regulate industrial "chemical substances,"⁷⁶ a term broadly defined to include "any organic or inorganic substance of a particular molecular identity."⁷⁷ The term "chemical substance," as defined, excludes pesticides, drugs, and food, all regulated under other federal laws.⁷⁸ Biobased chemicals, a broad class of chemicals derived in whole or in part of biological products or renewable domestic agricultural materials, are also subject to TSCA, as they include substances of a particular molecular identity. That these substances may be derived from renewable feedstocks does not preclude TSCA's application to them.

Under TSCA, EPA is tasked with reviewing "new" chemical substances to ensure they pose no unreasonable risks to human health or the environment and reviewing "existing" chemicals in commerce to mitigate any unreasonable risk for existing uses and applications of the chemical that EPA's review identifies. New chemicals are those not listed on the TSCA Chemical Substance Inventory (TSCA Inventory). The Frank R. Lautenberg Chemical Safety for the 21st Century Act (Lautenberg) significantly amended the process by which EPA determines whether new chemicals are likely to pose risk, and the majority of new chemicals now are subject to restrictions.

⁷⁵ See <https://response.epa.gov/sites/9854/files/Tern%20Island%20PA%20for%20OSC.net.pdf>.

⁷⁶ See TSCA § 2(b), 15 U.S.C. § 2601(b). TSCA jurisdiction also extends to "mixtures."

⁷⁷ TSCA § 3(2)(A), 15 U.S.C. § 2602(2)(A); see also 40 C.F.R. §§ 710.3(d), 720.3(e).

⁷⁸ TSCA § 3(2)(B), 15 U.S.C. § 2602(2)(B).

EPA is also authorized under TSCA to regulate the import and export of chemicals, to compel chemical testing, and to impose extensive recordkeeping and reporting obligations applicable to chemical producers, importers, and processors. Because TSCA is a “product” law, it focuses on “front end” issues like pre-market review, import and export requirements, testing, and use conditions. TSCA’s utility as a federal law that optimizes chemical recycling has not been the subject of extensive review or debate. Truth be told, that objective is not core to its mission, and as currently implemented, existing TSCA policies are not aligned with that goal.

A more detailed overview of the law is beyond the scope of this paper.⁷⁹ Background on two key TSCA sections, however, is essential to understanding how EPA’s implementation of TSCA could be revised to incentivize chemical recycling and encourage circularity.

TSCA Section 2(b)⁸⁰ articulates the policy of the U.S. regarding actions under TSCA. TSCA Sections 2(b)(1) and (2), respectively, discuss the need for adequate test data to be developed on the effects of chemicals (and that industry is responsible for such testing) and that adequate regulatory authority should exist to control chemicals that may or do present “unreasonable risks” to health and the environment. Section 2(b)(3) makes clear that this authority “should be exercised in such a manner as not to impede unduly or create unnecessary economic barriers to technological innovation while fulfilling the primary purpose of this Act to assure that such innovation and commerce in such chemical substances and mixtures do not present an unreasonable risk of injury to health or the environment.”

TSCA Section 2(c)⁸¹ states that it is the intent of Congress that, in implementing TSCA, EPA “shall consider the environmental, economic, and social impact” of any actions taken. Read in combination, TSCA Sections 2(b) and (c) make clear that in taking action to control unreasonable risks from industrial chemicals under TSCA, EPA is to consider and balance the risks, costs, and benefits presented.⁸² While not an enforceable TSCA provision, Section 2(b)(3) is a clear statement of domestic policy, which has remained essentially unchanged since 1976, the year TSCA was enacted.

TSCA Section 5 addresses new chemical substances. Under TSCA, a chemical substance is considered either an existing chemical substance or a new chemical substance. Chemical substances listed on the TSCA Inventory are considered existing for TSCA purposes, while those not listed are “new” chemical substances and subject to Premanufacture Notice (PMN)

⁷⁹ Lynn L. Bergeson, Douglas Bryden, and Kindra L. Kirkeby, “Chemical Management: What All Environmental, Energy, and Resources Lawyers Need to Know about TSCA Reform and Why,” American Bar Association Section of Environment, Energy, and Resources, March 30, 2017; Charles M. Auer and Lynn L. Bergeson, “Role of ‘Conditions of Use’ Under Sections 5 and 6 of Amended Toxics Law,” BNA Daily Environment Report, October 14, 2016.

⁸⁰ TSCA § 2(b), 15 U.S.C. § 2601(b).

⁸¹ TSCA § 2(c), 15 U.S.C. § 2601(c).

⁸² TSCA, like its federal counterpart law that regulates agricultural chemicals, the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), is a “risk – benefit” statute, meaning that EPA is required to balance the regulatory costs versus the likely benefits of a chemical regulation. More traditional environmental statutes, such as the Clean Air Act and the Clean Water Act, do not require such balancing.

requirements and review under TSCA Section 5, or they must be exempt from notification based on the availability of one or more exemptions.⁸³

TSCA Section 5 governs the manufacture in and import (considered manufacture under TSCA) into the United States of chemical substances considered to be “new.” Manufacturers of chemical substances considered new must notify EPA of the new chemical substance through the submission of a PMN.⁸⁴ Unless a PMN exemption applies,⁸⁵ a company must submit a completed PMN form to EPA at least 90 days before commencing the manufacture or import of a new chemical substance. EPA is required to make and publish a determination that the substance is not likely to, may, or will present unreasonable risk. The burden of proof rests on the chemical producer.

Chemical safety is considered based on known, intended, and reasonably foreseen “conditions of use,” a concept and phrase new to TSCA since Lautenberg and the source of considerable regulatory and policy confusion. If EPA is unable to make this finding, or lacks sufficient information by which to make this finding, commercialization can only proceed with regulatory limitations on the chemical’s production, distribution, use, and/or disposal, typically expressed in an Order and/or Significant New Use Rule (SNUR). To most industrial chemical stakeholders, SNURs are unwelcome red flags that imply a significant level of hazard and that often make a chemical commercially less desirable and thus less competitive than an unrestricted existing chemical. The EPA new chemical review process by statute takes no less than 90 days, but almost always takes considerably longer, spanning many months or even years. The unpredictability of the process is itself commercially destabilizing and the source of considerable frustration for chemical producers and innovators.

New chemicals are subject to pre-market EPA review and are held to a higher standard than existing chemicals; this is often referred to as the “new chemical bias.” New chemicals are reviewed based on information the chemical innovator shares with EPA in a PMN, supplemented with EPA reviewers’ reliance upon chemical analog information and computer modeling. Even if

⁸³ TSCA § 3(9), 15 U.S.C. § 2602(9); *see also* 40 C.F.R. §§ 710.3, 720.3(v), 720.25(a).

⁸⁴ TSCA § 5(a)(1)(A), 15 U.S.C. § 2604(a)(1)(A). EPA’s PMN regulations appear at 40 C.F.R. Part 720, and several PMN exemptions are contained in 40 C.F.R. Part 723.

⁸⁵ There are exemptions from the requirement to submit a PMN. Exemptions are either “self-executing” or require prior EPA approval. Self-executing exemptions are those that take effect once an entity determines that the exemption applies, and the new chemical substance can be manufactured in the United States without the need for a PMN, provided the company complies with any recordkeeping or other applicable requirements for the particular exemption. Self-executing PMN exemptions include the exemption for chemical substances having no separate commercial purpose, the polymer exemption, and the research and development (R&D) exemption. Other exemptions from the PMN requirement require prior EPA approval. Entities must submit, and EPA must approve, an exemption application before the entity can commence manufacture of the new chemical, subject to compliance with any recordkeeping or other applicable requirements. PMN exemptions that require prior EPA approval include the low volume exemption (LVE), the low release and low exposure (LoREX) exemption, and the test marketing exemption (TME). Eligibility for an LVE is based on the manufacture of a new chemical in quantities of 10,000 kilograms or less per year, while eligibility for a LoREX is based on meeting several regulatory criteria for “low” release and exposure throughout the manufacture, processing, distribution, use, and disposal of the chemical. *See* 40 C.F.R. §§ 723.50(a), (c). One kilogram is equivalent to 2.2 pounds. Once EPA notifies an applicant that its LVE or LoREX application has been granted, or if the 30-day review period expires without notice from EPA, manufacture or import of the chemical substance may commence, consistent with the terms of the exemption. 40 C.F.R. § 723.50(g)(2).

a new chemical substance is, from a potential risk perspective, nearly identical to an existing “unregulated” chemical, EPA’s view is that it is mandated to regulate the new chemical to abate any potential risks EPA identified in its review. The existing chemical that is equally or more likely to pose risk remains unregulated until EPA reviews the existing chemical under TSCA Section 6. Commercially, this different treatment puts new chemicals at a competitive disadvantage when compared with an existing chemical that offers the same commercial functionality. Hence the term “new chemical bias.” This bias also perpetuates the commercial longevity of existing chemicals and the products in which they are found.

Section 5 regulatory limitations are expressed in the form of a Consent Order and/or a SNUR. These limitations take many forms: enhanced worker protective clothing and personal protective equipment requirements, limitations on discharges to water, limitations on workplace exposures, limitations on downstream customer uses, labeling and mandatory communication requirements, and compelled modifications to safety data sheets, among many other measures. Industry has had difficulty communicating clearly to EPA, other stakeholders, and the public why imposition of a SNUR on a chemical is commercially undesirable and the reasons why the imposition of SNUR restrictions is prejudicial to new chemicals.

SNUR’ed chemicals are subject to reporting obligations, export notification requirements, and related TSCA paperwork requirements, all of which invite significant enforcement opportunities in the event they are overlooked. Many of these requirements apply to downstream customers, requirements that are difficult commercial provisions to “sell” to customers, particularly if the incumbent product is not subject to the same obligations.

Increasingly, downstream chemical processors and/or distributors are implementing purchasing policies that disallow and deselect SNUR’ed chemicals. Federal, state, and local procurement regulations also tend to exclude SNUR’ed chemicals. These deselection opportunities are rooted in the misperception that SNUR’ed chemicals are more toxic than the existing chemical the downstream chemical user may be purchasing now. All of these factors contribute to a commercial perception that SNUR’ed chemicals are damaged goods to be avoided. After four decades, this perception is deeply baked into the chemical stakeholder community’s psyche. EPA is dismissive of this perception, but that does not change the reality in the marketplace.

The core of the problem in EPA’s new chemical review process is that it does not in any meaningful way allow for, recognize, or compel the comparative risk of a new chemical in relation to an incumbent chemical that it could replace or with which it could compete in the commercial market. This would seem inconsistent with the national policy goals set out under TSCA Section 2. While the PMN form contains an “optional” pollution prevention (P2) information field, EPA does not systematically analyze relative risk information as a risk factor in its review of new chemicals, and PMN submitters may be unaware of the utility of the P2 option. Unfortunately, the experience of many indicates that even if the P2 information is submitted, the P2 attributes of a new chemical, including diminished toxicity, enhanced performance, and lower energy requirements, are largely ignored for purposes of EPA’s risk analysis of the new chemical. In this context, a greener, better, smarter regulated chemical cannot compete commercially with an existing, more toxic, less efficient existing chemical that is entirely unregulated.

An exemption pertinent to this discussion is TSCA's "polymer exemption," particularly in the context of TSCA's "mixture" exemption and definition of "manufacture," as discussed below. Under the polymer exemption, the manufacture (including import) and distribution of polymers meeting the exemption criteria are permissible commercial activities without the submission of a PMN or an exemption notice prior to commencement of manufacture for a commercial purpose. Eligibility criteria include: polymers with molecular weight (MW) of 1,000 daltons or greater and less than 10,000 daltons are eligible, with restrictions on low MW species and reactive functional groups; polymers with MW of 10,000 daltons or greater, with restrictions on low MW species. Certain polymers are ineligible for the exemption. Certain reporting requirements apply. The polymer exemption, which is aligned with the OECD definition of polymer, is rooted in the belief that polymers meeting these criteria are polymers of low concern and do not warrant new chemical review and EPA's limited resources are better directed to chemicals expected to pose higher risks. Most other chemical control regulations have "polymer of low concern" criteria modeled on the TSCA definition.

In the context of this analysis, one view of the polymer exemption is that the exemption is not all that relevant to plastic pollution because: not all polymers are plastic, and a large percentage of plastic is not restricted under TSCA. If all plastics were subject to TSCA review because it could become microplastic at any point in its lifecycle, then EPA would need to review pursuant to the New Chemicals Program where SNUR conditions may be difficult to design in a workable way. Also, such efforts would leave out plastic pollution from other sources such as medical, food, pesticide and cosmetic applications and all plastic pollution that occurs outside of the United States.

Another construction is that the polymer exemption is relevant to plastic pollution because, under this construction, it "exempts" plastic from TSCA review. Where plastic is exempt from TSCA review, there are fewer barriers to new products. Thus, the exemption supports proliferation of new plastic products with no federal or TSCA review, and no review regarding impact on the environment. Whether these new products are, in fact, new chemical substances that might be subject to new chemicals review but for the polymer exemption, or simply mixtures of existing chemical substances (polymers mixed with various additives) is not clear.

Statements offered to support this construction include the fact that plastic molecular structures are designed in certain structural configurations (up to about seventy separate and discrete forms) as well as with certain additives to achieve the specific performance goals of the final plastic product, including osmosity, flexibility, clarity, or color, utilizing "more than 10,000 substances, of which 55% were used as additives, 39% as processing aids, and 24% as monomers, with overlapping uses." Of these, 2,400 substances meet "criteria for bioaccumulation, persistence, or toxicity set by the European Union." Business interests drive development of a unique patented product to enhance marketing leverage, preserve investment, and ensure protection of the proprietary nature of the product. As industry experts observe, "we have effectively solved each problem 10,000 different ways." Without any agency review requirement or other disincentive, plastic producers have developed about 90,000 different types of plastic, over 12,000 times more diversity than considered by the unrealistically simplistic seven recycling groups.

In response, others note that the polymer exemption has nothing whatever to do with additives. The exemption applies exclusively to polymers that are not already listed on the TSCA Chemical Inventory. Assuming the seventy referenced plastic polymers are already listed on the TSCA Chemical Inventory, then the more relevant exemption would be the so-called “mixture” exemption. The “mixture” exemption allows plastic compounders to develop plastic and additive formulations without pre-market EPA approval. Another rejoinder is that eliminating the polymer exemption for plastic polymers specifically intending to capture plastic polymer and additive compounding would require an entirely new construction of TSCA. Plastic compounding (mixing polymers and additives without chemical reaction, even if the compounded product renders the product more resistant to degradation) is not considered “manufacturing” as defined under TSCA. EPA would need to propose and adopt an entirely new framework that would commit compounders to submit proposed formulations to EPA for review. Some consider such an expansion a bridge too far under present circumstances, while others believe this type of expansion to be precisely the role EPA should serve given the critical need to curtail ongoing contributions to the global plastic waste crisis.

Those concerned about TSCA’s polymer exemption, read in context with TSCA’s mixture exemption and definition of “manufacture, believe TSCA perpetuates the proliferation of maximally diverse plastic polymer products which causes heterogeneity of post-use plastic waste. Heterogeneity of post-use plastic contributes to potential inefficiencies in chemical recycling. Chemical recycling is the process required to produce like-kind plastic products from post-use plastic (referred to as primary recycling or “up-cycling”). Heterogeneity of post-use plastic renders it fit primarily for secondary or mechanical recycling (e.g., road-bed and other different and more degraded uses than the original, which may cause harmful microplastic releases to the environment) and or tertiary recycling, e.g., combustion for energy recovery (that can contribute greenhouse gases and exacerbate climate change). If waste management processes are able to capture post-use plastics for purposes of recycling, such heterogeneity is a key reason efficient chemical recycling - up-cycling – remains challenging. Some believe that targeted SNUR conditions that consider the ultimate fate of the materials the new chemical is used to produce could be developed. Others question the feasibility of SNUR conditions that would protect again plastic litter or microplastic formation.

EPA may consider further limitations on and/or changes in TSCA implementation, regarding the polymer exemption, in the context of the mixture exemption and definition of “manufacture,” to the extent identified or possible end-uses or fates of particular polymers are identified as causative factors contributing to plastic or ultimately microplastic pollution.

EPA could also consider excluding “plastics” from the polymer exemption. This would necessitate developing an actionable, scientific definition of “plastic” based on scientifically supportable criteria for what polymers might contribute to plastic pollution. Taking this action, albeit scientifically challenging, some argue could limit the proliferation of plastic products based on new chemicals, but would not, of course, limit new mixtures of existing plastics. Some believe that such a development could lead to more innovation in mixtures as companies seek to innovate new properties using existing chemicals, thereby exacerbating, rather than addressing the issue.

Regarding TSCA and its challenges to plastic recycling, current EPA TSCA policies impede, or at the least make it difficult, to repurpose waste plastic for chemical recovery purposes in most cases. TSCA is unlikely to create barriers for the mechanical reuse of certain plastic waste streams. For example, reusing a homogeneous, unmodified chemical substance would be permissible. Under TSCA, a plastic recycler that gathers, grinds, washes, or otherwise physically manipulates waste plastic, including melting, would not be considered chemically changing the substances, as the recycled product would retain its specific chemical identity. Under these circumstances, polyethylene terephthalate (PET) bottles may be collected, shredded, melted, and spun into fibers, and still maintain its core PET chemical identity. This would be considered a TSCA-agnostic recycling activity.

Chemically reacting the PET, however, by depolymerizing it to convert the PET into another chemical substance or substances, would not be considered TSCA-agnostic. If a new chemical were generated as a result of the depolymerization process, the new chemical would need to be addressed under the TSCA Section 5 regulations summarized above. This would invite all the PMN challenges and commercial uncertainty involved with the PMN review process. The very nature of that process, its length, potentially adverse commercial outcomes, and cost make the commercial feasibility of this type of recycling process untenable.

Other aspects of TSCA illustrate how current EPA policies undermine repurposing materials for chemical production. These examples involve renewable biobased feedstocks. As noted above, TSCA applies to bioproducts used in industrial, commercial, and most consumer products, including fuels. TSCA requires that a company must ensure that any chemical substance it intends to manufacture or import is listed on the TSCA Inventory or be subject to an exemption before commercial production occurs. This requirement is especially relevant to bioeconomy companies. The first step in determining Inventory status is determining the appropriate Chemical Abstracts Index name for the substance. The existence of a Chemical Abstracts Index name or Chemical Abstracts Service (CAS) Registry Number (RN) does not mean that a substance is listed on the Inventory.

For a single, defined substance, such as ethanol, the identity is clear and a search of the TSCA Inventory can readily confirm if the substance is listed and if there are any restrictions to its manufacture, processing, or use. Many biobased substances, however, like the petroleum substances they replace, are not single, defined substances. They are “unknown or variable composition, complex reaction products, or biological materials” (UVCB). For UVCBs, it is not sufficient to search the TSCA Inventory to find an identity that is “close.” UVCBs are typically identified by source and/or process and may include a definition in addition to the substance name. Triglyceride oils provide an instructive example of how the source is included in the substance identity. Corn oil is listed on the Inventory as “Corn oil.” The definition is “Extractives and their physically modified derivatives. It consists primarily of the glycerides of the fatty acids linoleic, oleic, palmitic and stearic. (Zea mays).” (CAS RN 8001-30-7). It is a distinct substance from other vegetable oils, such as soybean oil, with the definition of “Extractives and their physically modified derivatives. It consists primarily of the glycerides of the fatty acids linoleic, oleic, palmitic and stearic. (Soja hispida).” (CAS RN 8001-22-7).

The definitions of these two oils are the same, except for the source names -- *Zea mays* and *Soja hispida*. Even though the two oils are often used interchangeably because they have similar fatty acid profiles, the different sources mean that these substances are considered two distinct substances under TSCA. A manufacturer of one could not rely on the identity of the other for TSCA purposes. The source-based name may also extend into a downstream product. For example, a fatty acid methyl ester (FAME) biodiesel made by the transesterification of corn oil with methanol would be Fatty acids, corn oil, Me esters (CAS RN 515152-40-6), while the soy FAME would be Soybean oil, Me ester (CAS RN 67784-80-9).

These two identities are distinct, and a biodiesel producer would need to ensure that the corresponding FAMEs were listed on the TSCA Inventory before making for commercial purposes biodiesel from either corn or soybean oil. The same is true for novel sources of triglycerides, such as algae, genetically modified microorganisms, or other non-traditional oil sources, even if they are otherwise identical to existing triglycerides listed on the Inventory. The source is included in the name, so each distinct source leads to a distinct chemical identity for products.

This can lead to considerable commercial confusion for TSCA reporting for downstream customers. Without a source-agnostic nomenclature system, manufacturers of biobased chemicals and any of their customers who transform those chemicals may be required to submit PMNs for each substance in the supply chain before commercial manufacturing occurs. Both EPA and industry recognized that there is benefit to both if a system could be developed to draw equivalence without compromising human health and the environment; that recognition led to the Soap and Detergent Association (SDA) nomenclature system. SDA nomenclature allows feedstock flexibility among natural fats and oils and their petroleum-synthetic equivalents, but it only applies to the specific 35 species actually listed in the SDA Nomenclature guidance, created more than four decades ago.

The fact that source is included in the identity of UVCB substances is a problem that extends beyond triglycerides. Mixed biobased hydrocarbon streams from pyrolysis or reforming may be identical to petroleum refinery streams that are listed on the Inventory, but if those petroleum streams include “petroleum,” “crude oil,” or other similar terms in either the name or the definition, manufacturers of the biobased equivalent cannot use the petroleum-based names for TSCA purposes. Despite the passage of time and the inherent incoherence of the regulatory results described above, EPA has resisted requests to update the nomenclature system.

Another TSCA challenge to repurposing materials relates to EPA’s interpretation of TSCA Section 8, a provision that allows EPA to adopt a different approach to TSCA nomenclature through an administrative process that can determine equivalency with existing chemical substances. This would effectively decouple a biobased source and process from the chemical name. TSCA Section 8(b)(3) provides:

(B) Multiple nomenclature listings. – If a manufacturer or processor demonstrates to the Administrator that a chemical substance appears multiple times on the list published under paragraph (1) under different CAS numbers, the Administrator may recognize the multiple listings as a single chemical substance.

This provision was added in 2016 and was intended to facilitate equivalency determinations for existing chemicals that are derived from different feedstocks. Unfortunately, EPA has not sought to incentivize equivalency determinations, likely because it is overwhelmed with other, required implementation priorities.

To address these issues, EPA could consider changing several TSCA chemical policies. First, EPA could redefine unreasonable risk to include whether the new chemical's commercialization has the potential to prevent pollution, reduce exposures, or otherwise diminish the hazard profile of chemicals now in use. This approach is recommended by noted TSCA experts⁸⁶ and, if implemented, would go a long way in addressing the new chemical bias.

Second, EPA could revisit the source-specific nomenclature system. The biobased sector should engage with EPA and other stakeholders to make the TSCA nomenclature more flexible, with a more source-agnostic system that will enable novel sources to be incorporated into the existing supply chains without unnecessary burden on stakeholders. A system where equivalence to existing identities can be determined as part of the PMN review could also be an effective way to facilitate adoption of biobased products into the supply chain without compromising risk to human health and the environment. This would better align U.S. policy with other countries. The European Union (EU) approach to nomenclature is based on alkyl ranges. It decouples the biobased source or process from the produced chemical. Currently, a biobased oil that is imported from the EU into the United States must be renamed at the border. This adds an element of unnecessary burden to the cost of doing business in the United States and invites brand and regulatory confusion. The EU approach is followed by Japan, China, and South Korea. A new approach would benefit the environment by promoting greater use of renewables, such as waste streams and biological sources, or byproducts in chemical manufacture, which in turn would reduce reliance on non-renewable chemical feedstocks.

Third, EPA could take seriously the information submitted in the optional P2 portion of the PMN form. There is little indication how this information is reviewed, let alone relied upon. As part of the national stakeholder dialogue, EPA could solicit and consider the range of factors that might be considered in a P2 assessment and make the "optional" P2 information fields more muscular and a more influential factor in the new chemicals risk analysis.

Fourth, for new chemicals meeting certain defined sustainability criteria, EPA could more affirmatively and more publicly reward submitters. This could include new chemicals resulting from plastic recycling operations in an effort to address the plastic pollution crises. Developing a reduced-risk program similar to the program that now exists for reduced-risk pesticides would elevate EPA's acknowledgment of the essential role chemical innovation plays in a circular economy. EPA could also consider incentivizing SNUR'ed chemicals with an EPA "safer" brand or logo in an effort to lessen the stigma of a SNUR.

⁸⁶ Richard E. Engler, Ph.D. and Jeffery T. Morris, Ph.D., "[Why the US EPA can, and should, evaluate the risk-reducing role a new chemical may play if allowed on the market](#)," *Chemical Watch*, February 22, 2021.

Fifth, EPA's TSCA program office needs more resources, both in terms of financial support and ensuring the technological literacy of those tasked with reviewing new industrial and agricultural/biocidal technologies. EPA scientists are understandably challenged to keep pace with the speed of innovation, but a more focused effort to eliminate the imbalance could resolve the problem. Encouragingly, the Fiscal Year (FY) 2022 budget making its way through Congress in September 2021 includes a significant increase in EPA staffing. To help achieve TSCA's goal of encouraging innovation and our global goal of achieving circularity, let us hope some of these new EPA staff will be deployed to greening industrial chemicals.

TSCA offers powerful opportunities to promote and achieve a circular economy. More is needed to operationalize TSCA to promote chemical reclamation activities to address the plastic waste crises and optimize renewable resources better. Implementing TSCA differently, and with a sharper focus on incentivizing and rewarding greener, less toxic, and more sustainable chemical products, will optimize the utility of these laws in fulfilling their potential to achieve circularity.

7. State and Local General Recycling Laws

The inadequacy of federal legislation capable of regulating plastic waste and the abundant evidence of plastic waste pollution has led municipalities and now some states to regulate plastic waste. Initially, communities tackled the plastic waste problem through recycling, a municipal effort promoted by plastic manufacturers.⁸⁷ However, in addition to the absence of an economic driver for recycling generally, a substantial amount of plastic waste is not susceptible to local recycling. Indeed, fewer than 9% of plastic waste is recycled through conventional recycling processes.⁸⁸ Despite major recycling efforts by municipalities, the bulk of plastic waste not discarded outright has ended up in landfills.

More recently, therefore, communities have enacted municipal legislation to ban or discourage the use of certain plastic items such as single-use shopping bags, straws, takeout containers and eating utensils. This effort has been met in several states by preemptive legislation prohibiting municipalities from enacting such legislation, discussed further below. However, several states have now joined in the effort to control plastic waste.

Regarding recycling, municipalities have turned to legislation to encourage or require recycling solid waste, including plastic. There is significant variation across local laws in the United States regarding the collection and processing of waste, primarily household waste. Some communities employ single stream recycling, collecting all potentially recyclable waste in a single container, while others use multi-stream recycling which involves separating the waste streams before pickup.⁸⁹ Some communities, like Seattle, require recycling and impose penalties on violators,

⁸⁷ See Laura Sullivan, *Plastic Wars: Industry Spent Millions Selling Recycling—To Sell More Plastic*, NPR (Mar. 31, 2020); Mary Ellen Ternes, *Plastics Global Outlook for Multinational Environmental Lawyers*, Nat. Resources & Env't, Fall 2020, at 36.

⁸⁸ U.S. Environmental Protection Agency, *Plastics: Material-Specific Data*, available at <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/plastics-material-specific-data>.

⁸⁹ Compare, e.g., City of Albany (single-stream method), <https://www.albanyny.gov/Faq.aspx?QID=126> with San Francisco (three-stream citywide residential and commercial collection program), <https://www.epa.gov/transforming-waste-tool/zero-waste-case-study-san-francisco>.

while others, like Memphis, provide an opportunity for recycling by providing a specific collection service.⁹⁰

The recycling of plastic waste has not fared well. Three major problems hinder an effective recycling program. First, not all plastics are susceptible of recycling, although the plastic industry has touted the introduction of new recycling processes that might overcome the problem of the inclusion of non-recyclable plastics in the manufacturing process.⁹¹ The second problem is that the collection, cleaning and separation of plastic waste has been found to be more expensive than landfilling or using virgin plastic. *See id.* The cost of recycling of household waste in general and particularly plastics has overburdened municipal resources. Perhaps, the third and overarching problem is that there is no adequate market for recycled plastic waste. A significant blow to plastic recycling was China's 2018 ban on importing plastic waste, which appears to have crippled the plastic waste market.⁹²

States have reacted by enacting legislation or taking administrative action designed to create recycling markets and advance technology. According to the National Conference of State Legislatures ("NCSL"), in 2020, "at least 22 states considered or are considering bills to better understand, invest in and improve on recycling."⁹³ For example, Colorado created the Front Range Waste Diversion Enterprise Grant Program, which will use funds from an increase in user fees at Denver-area landfills to provide grants and technical assistance to increase recycling, composting, and waste reduction.⁹⁴

Oregon and Maine are the only two states in the country to have enacted an extended producer responsibility ("EPR") regulation for packaging, requiring producers to take more responsibility for the end-of-life management of the packaging they produce.⁹⁵ The Oregon legislation, signed into law on August 6, 2021, lays out minimum plastic packaging and food serviceware recycling rate goals for the years 2028, 2040 and 2050⁹⁶ and requires that producers implement a producer responsibility plan, and Maine's bill, signed by the governor on July 12, 2021, establishes a stewardship program in the state for packaging, where producers of products will pay into a fund

⁹⁰ Compare Seattle Municipal Code §§ 21.36.082, 21.36.083 with City of Memphis, *Recycling*, <https://www.memphistn.gov/government/solid-waste-management/recycle-right-memphis/> (noting that, beginning in 2015, the city "began to offer 96-gallon carts to [] solid waste customers.")

⁹¹ See Laura Sullivan, *How Big Oil Misled The Public Into Believing Plastic Would Be Recycled*, NPR (Sept. 11, 2020), available at <https://www.npr.org/2020/09/11/897692090/how-big-oil-misled-the-public-into-believing-plastic-would-be-recycled>.

⁹² See Ternes, *supra*.

⁹³ Jennifer Schultz & Kristen Hildreth, *State and Federal Efforts to Revitalize Recycling* (Nov. 4, 2020), <https://www.ncsl.org/research/environment-and-natural-resources/state-and-federal-efforts-to-revitalize-recycling.aspx>.

⁹⁴ *See id.*; see also Colorado General Assembly, SB19-192: Front Range Waste Diversion Enterprise Grant Program (2019 Regular Session), available at <http://leg.colorado.gov/bills/sb19-192>.

⁹⁵ GreenBlue, *Recent EPR Proposals* (Sept. 29, 2021), <https://epr-frontend.vercel.app/policies>.

⁹⁶ The legislation provides: "It is the goal of the State of Oregon that the statewide recycling rate for plastic packaging and plastic food serviceware be: (A) At least 25 percent by calendar year 2028 and in each subsequent year; (B) At least 50 percent by calendar year 2040 and in each subsequent year; and (C) At least 70 percent by calendar year 2050 and in each subsequent year." Oregon State Senate Bill 582 § 27(b)(2)(a).

based on the amount and the recyclability of packaging associated with their products.⁹⁷ These funds will then be used to reimburse municipalities for eligible recycling and waste management costs and fund investments in recycling infrastructure.⁹⁸

V. Inventory, Description and Comparison of Existing and Proposed French and U.S. Laws that Are Intended to Address Plastic Waste

A. Comparison of Existing and Proposed French and U.S. Laws that are Intended to Address Plastic Waste

Regarding existing authority, the United States addresses environmental pollution through media specific statutes (air, water, waste) which impose regulation of pollutants generally identified based upon their hazard (e.g., whether toxic, ignitable, corrosive or reactive), but also based upon their ubiquitous nature from common activities (e.g., particulate emissions to ambient air from combustion, or total suspended solids to navigable water from effluent discharges). Plastic is inert, and thus regulated only as solid waste and not specifically regulated as its own category pursuant to United States national environmental laws. However, plastic waste would be captured in by air regulation if it were released from a permitted facility as small particulate matter to ambient air (as PM10 or PM2.5), and it would be captured by water regulation if discharged to navigable water as total suspended solids. Plastic waste is also captured by two broad statutes that regulate the disposal of solid material into marine environments. The Save Our Seas Act of 2018 and the Save Our Seas Act 2.0 of 2020 are the only currently enacted U.S. laws that are specifically intended to address plastic waste, though plastics are rarely expressly referenced in the laws themselves. Rather, the Save Our Seas Acts require that the National Oceanic and Atmospheric Administration (NOAA) respond to severe marine debris events, which are typically caused by natural disasters, in a manner that would remove marine debris –conceivably including plastic waste – from the oceans. The Acts seek to strengthen domestic marine debris response capabilities through grants for research and development.

The Save Our Seas Act 2.0 goes further to require exploration of the potential for new international agreements to respond to the challenge of combating marine debris. Neither of the Acts include enforcement provisions nor provide statutory authority for NOAA to promulgate regulations concerning enforcement. As such, current U.S. laws intended to address plastic waste do not regulate the disposal of plastics into the oceans; they certainly don't impose penalties for such disposal. Moreover, no federal agency has yet been tasked with promulgating regulations that would regulate such disposal or impose penalties. Beyond the lack of specific federal regulation, several states have adopted state-specific plastic regulation that imposes many of the specific requirements contemplated internationally, such as single-use plastic and plastic bag bans. Municipalities have also adopted their own specific plastic municipal authority banning such articles and imposing other restrictions.

⁹⁷ GreenBlue, *Compare Proposals: Maine Legislative Document 1541A and Oregon State Senate Bill 582B*, available at <https://epr.sustainablepackaging.org/policies/compare?policy-one=LD1541A&policy-two=SB582B>.

⁹⁸ See 38 M.R.S.A. § 2146; Maine Department of Environmental Protection, *Extended Producer Responsibility Program for Packaging*, available at <https://www.maine.gov/dep/waste/recycle/epr.html>.

France, on the other hand, has enacted sweeping national environmental laws aimed at specifically addressing plastic waste management and prevention. The 2020 Law Against Waste for a Circular Economy (AGEC Law) regulates production and consumption to achieve a circular economy with minimal waste and environmental impact. The AGEC Law aims to eliminate the disposal of plastic, provide consumers with better information about plastics reuse and recycling, minimize waste creation, encourage reuse, reduce or eliminate the planned obsolescence of products, and improve manufacturing processes to create less waste. To drive these objectives, the AGEC Law specifically regulates both plastic waste prevention and plastic waste management.

With regard to waste prevention, the AGEC Law places “polluter-pays” obligations on manufacturers of plastic-containing products, bans single-use plastics, and sanctions environmental offenses through penalties for illegal waste dumping and other enforcement measures. With regard to plastic waste management, the AGEC Law aims to increase the share of reusable packaging used on the French market in phases, with a goal of reducing single-use plastic bottles 50% by 2030 and ending the use of single-use plastic packaging by 2040. Additionally, France’s Integrated Legislation on Regulated Facilities has the potential to further regulate plastic emissions from certain regulated facilities. However, even realistic goals and implementation by environmental authorities and operators at reasonable costs can be criticized. Environmental laws tend to enact ambitious principles that fall short when it comes to implementing them. There is often a gap between measures set by laws and their implementation as both operators and the environmental authorities try to take appropriate actions to implement the new regulation.

Notably, the U.S. has neither adopted reduction targets nor regulations to specifically mitigate plastic waste at its source, though individual states and municipalities have.

Regarding proposed authority, a number of bills have been introduced in the U.S. Congress that would more directly combat plastics pollution, though most would fall short of France’s strict regulation of plastics production, reuse, and recycling. In contrast to France’s AGEC Law, no proposed legislation aimed at addressing plastic waste contains enforcement provisions. Although several bills would direct the United States Environmental Protection Agency (EPA) to promulgate implementing regulations, no proposed legislation aimed at addressing plastic waste expressly directs EPA to take enforcement action against violators or impose penalties for noncompliance.

One bill would mandate the phase-out of certain single-use plastics, although the current version of the bill fails to impose penalties for failure to meet the phased-down targets. Rather, to incentivize reductions in plastic use, the Break Free from Plastic Pollution Act of 2021 would set minimum percentages of products that must be reused, recycled or composted and would establish an increasing percentage of recycled content that must be incorporated into beverage containers. The bill would also mandate the phase-out of certain single-use products, such as plastic utensils, and establish incentives to reduce the production of a variety of plastic products. To incentivize this reduction, the bill would impose taxes on certain non-reusable single-use plastics and provide recycling refunds to consumers. Significantly, the bill would create a temporary moratorium on new or expanded permits for facilities that manufacture plastics until regulations are issued to address pollution from these facilities. If adopted, this bill could effectively regulate plastics emissions at their source.

Another proposed bill, the Plastic Free Waters Act, is the only currently introduced legislation that would prohibit the discharge of plastics into waterways. Specifically, the bill would prohibit the discharge of plastic pellets and other plastics into waters of the United States. Several other introduced bills seek to address plastics pollution through grants and assistance for research, development, and public education campaigns. Still others would impose a virgin waste excise tax, either on manufacturers, producers, or importers of single-use plastics or on the sale of virgin plastic for use in single-use plastics. It is nonetheless important to emphasize that the U.S.'s approach to regulating plastic waste lacks the strict phase-out mandates and penalties that France has adopted.

Thus, given France's specific regulatory focus on plastic products and waste, the U.S. has a way to go to catch up. Neither currently existing nor proposed U.S. legislation sets clear standards for plastic waste reduction and prevention with enforcement mechanisms appropriately designed to discourage continued use of plastic products. Although several proposed bills would impose taxes and fees on manufacturers and consumers in an effort to reduce production and consumption of plastics, these bills require adoption by both the House and Senate before they may be signed into law. To be enacted, these bills must overcome significant bipartisan political barriers. Often, by the time a bill is signed into law, compromises will have been made to garner bipartisan support that may result in lower standards and looser targets. Additionally, the details are often left to federal agencies to specify in forthcoming implementing regulations.

Although the currently proposed bills would seem to signal an interest by Congress to adopt plastics laws – after all, there are almost a dozen introduced bills that would address plastic waste in some fashion – these bills carry varying degrees of support by legislators in their respective chambers. Even if such bills become law and set clear targets for the EPA or other federal agencies to develop implementing regulations, such regulations would be subject to lengthy notice and comment processes prior to promulgation. Members of the chemicals and plastics industry have opposed these bills and could be expected to oppose any resulting regulations that would require the phase-out of the products they produce. At this point, the adoption of a more comprehensive plastics regulatory scheme faces significant political barriers in Congress.

B. French Laws

The Law against Waste for a Circular Economy (AGEC Law) enacted on February 10, 2020 enshrines most provisions relating to plastic waste. This legislation is a significant turning point in French law as it has created numerous prescriptions specifically addressing plastic waste management and prevention. This law transposes the Single use plastic (SUP) European directive and implements the Circular economy action plan propositions.

The Law aims to accelerate changes in production and consumption to limit waste creation and preserve natural resources, biodiversity and climate. Its 130 articles are designed to operate a deep model change by encompassing every form of waste. The AGEC law intends to shift the current linear economy based on production, consumption and disposal into a circular economy.

The AGEC Law contains five main goals. Specifically, it aims to (1) eliminate disposable plastic; (2) provide better consumer information; (3) mitigate waste generation and provide incentives for reuse (4) reduce or eliminate planned obsolescence; (5) improve manufacturing processes so that

they create less waste. It also sets new goals for years to come regarding plastic prevention and management.

The new requirements include:

- New obligations, notably with the creation of new polluter-pays business sectors that include products containing plastic (toys, sports items, hardware, construction materials, cigarette filters, diapers and wipes, among others) and transparency requirements on health and environmental impacts of these products and on waste management.
- New bans on single-use plastics to fight against waste of unsold merchandises (including but not limited to food).
- New tools to better control and sanction environmental offenses (strengthened mayoral powers to fight against illegal waste dumping), as well as support companies in their eco-design processes (notably incentive systems) and support new ways of consuming (information to consumers about product reparability, information on endocrine disruptors, simplification of recycling and development of sales in bulk and returnable items for reuse).

In a general way, the law sets the goal to end the use of single-use plastic packaging on the market by 2040. After 60 years of intense single-use plastic use, this will require a massive shift in industrial operation and consumer behavior. The law sets requirements based on five-year periods. These requirements are based on the “3Rs”: reduce, reuse and recycle plastic packaging. The first decree regards the 2021-2025 period. These decrees will be followed by a 3R strategy on plastic packaging defining measures and actions to implement to reach these goals. The law also sets bans on single-use plastics for series of products that are usually disposed of in the environment.

These measures are now enacted in the Environmental Code. Furthermore, numerous implementing texts (decrees mostly) have already been signed to implement these measures.

Measures regarding plastic waste prevention (**A**) must be distinguished from those regarding plastic waste management (**B**).

1. Plastic Waste Prevention

The AGECE law provides most applicable measures regarding plastic waste prevention (**1**). Furthermore, the legislation regarding regulated facilities can also include prescriptions on plastic emissions (**2**).

a. Measures Included in the AGECE Law and Codified in the Environmental Code

i. *Planning Goals Regarding Plastic Waste*

First, the national policy on waste management and prevention states a qualitative goal regarding plastic pollution.

Public policies set actions to implement, that take health, environmental and economic issues into account in order to fight against plastic pollution and plastic particles exposure. These policies support research and development that rely on local expertise and resources, and encourage healthier alternatives. They encompass a specific policy of supporting companies' conversions when the latter are directly concerned by the impact of these goals.

These are purely declarative prescriptions that are not binding.

The government must account for their implementation in front of the Parliament by providing an evaluation report included in the presentation of the National Waste Prevention Plan established by the Minister of the environment.

Second, the AGEC law sets ambitious plastic waste reduction quantitative goals.

To reach the goal of ending the launch of single-use plastic packaging on the market by 2040, decrees set reduction, “*réutilisation*”, “*réemploi*”⁹⁹ and recycling goals over four periods (2021-2025, 2025-2030, 2030-2035 and 2035-2040). These decrees are established with relevant actors in the field to define realistic 3Rs goals. Previous regulations were especially lacking strategy and coherence, which is not so much the case anymore due to this new implementation approach. This regulation framework is set in the Environmental Code.

The first National Strategy for single-use plastic packaging reduction, “*reutilization*”, “*réemploi*” and recycling regulation should be defined by January 1st, 2022. Actors subject in the definition of first plan include relevant industrial sectors, local governments and consumer and environmental associations. Such a collaborative policy definition involved the consultation of aforementioned actors in 2020. This work led to the publication of the report “What 3R potential by 2025?” in November 2020. Two main parts comprise the report. First, a national chart that reflects the amount of products and plastic packaging used and provides an inventory of their recyclability which sets the perspectives for 2025 according to resins used. Second, an identification, for each product and associated plastic packaging, of the product's economic and environmental impacts, serving as a baseline for the 2025 perspectives.

Two main guidelines resulted from this work.

First, consensus was reached around the goal to achieve 100% recyclable plastic packaging by 2025 goal. This expresses the intent to stop using single-use plastic packaging that cannot be recycled and do not present short term perspectives (as complex plastic packaging, domestic packaging including expanded polystyrene, non-recyclable resins). Furthermore, recycling methods should be developed for some packaging that cannot be recycled at the present time but for which evolutions are on the way.

⁹⁹ As a reminder, French Environmental law distinguishes reuse methods that include both “*réemploi*” and “*reutilization*”. The difference between them lies in the waste status of the object, and thus a necessary additional step in the case of “*réutilisation*” for it not be a waste anymore.

Second, the consensus was also reached on the potential to reduce an average 20% of the amount of plastic used in single-use packaging. The potential is limited for products that require high hygienic standards (such as meat, fish, and dairy products). The potential is, as a consequence, greater for less fragile food. Overall, at least half of the reduction can be achieved by reuse mechanisms, the rest by producing lighter products, substituting materials or suppressing some useless packaging.

On this basis, the first 3R Decree was adopted on April 29, 2021, which sets three goals for the 2021-2025 period. First, it establishes a 20% reduction goal in the share of single-use plastic packaging on the market by the end of 2025. At least half of the reduction should be achieved by “*réemploi*” and “*réutilisation*.” Second, it establishes a goal of eliminating useless plastic packaging by the end of 2025. Third, it establishes a goal of eliminating single-use plastic packaging by January 1st, 2025, which would require that plastic packaging should be entirely recyclable.

France also aims to reduce by half the number of single-use plastic bottles intended for drinking by 2030 (single-use plastic bottles are not considered to be “useless plastic packaging”).

ii. Prevention Measures Aiming at Reducing Plastic Pollution

Prevention measures include a series of new bans that will gradually be implemented. Despite enacting a general regulation on single-use plastics, the legislature chose a sectorial approach detailed below.

Law no. 2018-938 of October 30, 2018 for the balance of commercial relations in the agricultural and food fields and a health and, durable food accessible to all (EGALIM law), bans on single-use plastic objects had been introduced in the Environmental Code. Starting January 1st, 2020, the following items are affected:

- Disposable glasses and plates;
- Rinsed cosmetics used as exfoliating products that include solid plastic particles;
- Still water plastic bottles used in institutional catering;
- Cotton bud for domestic use when their rod is made of plastic.

• **Ban on expanded polystyrene boxes**

Fast food chains often serve their food in expanded polystyrene containers, which are single-use and made of non-recyclable products. These containers have been since January 1st, 2021, both for food consumed on-site and for takeout.

From this date, straws (except for medical use), steak skewers, disposable lids, plastic plates and cutlery, sticks, expanded polystyrene bottles containing beverages, balloons sticks and their mechanisms for non-industrial use are also banned.

• **Ban on plastic tea bags**

Tea bags are very often made of synthetic materials derived from plastics such as nylon or polypropylene. When immersed in hot water, they release micro-plastics. Selling non-biodegradable tea bags will be banned starting January 1st, 2022.

- **Ban on plastic toys offered in some menus**

Fast food chains often include plastic toys in their menus. Such toys are not recyclable and mostly end up being thrown away. They should be banned in menus starting January 1st, 2022. From then on, toys could only be provided if made from a material other than plastic.

- **Ban on plastic confetti**

For several years plastic confetti has been found in soils, where it accumulates for years. In cities, confetti is expensive to clean up and may cause damage to infrastructure that leads to additional costs (blocked sewers, water pollution). It has been banned since January 1st, 2021. Paper confetti can still be used.

- **Ban on plastic packaging mailing regarding newspapers and advertisements**

Plastic packaging for mailing newspapers, magazines and advertisements will be banned starting January 1st, 2022.

- **Ban on plastic packaging for non-transformed fruits and vegetables weighing less than 1.5 kg¹⁰⁰**

This measure aims to reduce the presentation of fruits and vegetables wrapped in plastic packaging. In addition, labels on fruits and vegetables will be banned as well, unless they are made of paper or any other compostable material.

These measures will be enforced starting January 1st, 2022.

- **Ban on plastic packaging for retail businesses specialized or not in the sale of fruits and vegetables in stores, stalls and markets**

This measure applies to unprocessed fresh fruit and vegetables, i.e. fruit and vegetables sold in their raw state or having undergone preparation such as cleaning, trimming, draining or drying. It also specifies the definition of plastic packaging, and establishes the list of fresh fruits and vegetables that are not subject to this obligation because they present a risk of deterioration when sold in bulk.

Most of these measures have been implemented since October 13, 2021 and the remaining will be enforced between June 30, 2023 and June 30, 2026.

¹⁰⁰ 1.5 kg is equivalent to 3.3 lb.

- **Ban on products made of oxo-degradable plastics**

Oxo-degradable plastics are made from oil-based polymers that contain additives (usually metal salts). Such additives speed up their degradation (fragmentation) when exposed to heat and/or light and oxygen.

This material is mostly used in carrier bags. Producers of this plastic often describe its small environmental footprint. They are presented as degradable products, oxo-degradable or even oxo-biodegradable.

However, several studies have shown that using additives to speed up the degradation of these bags in polyethylene (PE) does not improve their effects on the environment: this plastic is not compostable and may have harmful effects on the environment.

The ban on oxo-degradable plastics has been in place since January 1st, 2021.

- **Ban on plastic water bottles in sites open to the public and in festive, cultural or sporting events**

Each year, about 200 million plastic bottles are disposed of in France. To reduce this number, free distribution of plastic bottles containing beverages in sites open to the public or in professional buildings has been prohibited as of January 1st, 2021. This ban does not apply in buildings that do not have access to drinking water, to public health imperatives, or when a restriction on water intended for human consumption for food use is imposed by relevant administrative authorities.

Moreover, starting January 1st, 2021, contractual clauses requiring the supply or use of single-use plastics in festive, cultural or sportive events are void, except when substitution for these bottles by reusable products is possible.

- **Exemptions for the State from the ban on the purchase of single-use plastic products**

The State and its services can avoid the ban on the purchase of single-use plastics for use in the workplace and in events that they organize. The exemptions are listed by a decree and implemented to prevent health or safety risks.

- **Ban on plastic containers used to warm food intended to infants and young children**

Infants and young children are particularly vulnerable to any endocrine disruptors. Food is an important source of exposure to endocrine disruptors, especially due to migration from food containers.

Plastic containers used to warm or cook baby food will be banned in pediatric and obstetrical services, in maternity wards and in perinatal centers as of January 1st, 2025.

- **Ban on plastic containers used to cook or warm food in school or universities' institutional catering**

By January 1st, 2025 at the latest, plastic containers used to cook or warm food in schools, by universities' institutional catering or sites receiving children aged six or less will be banned.

This ban will take effect on January 1st, 2028 for the smallest local authorities (less than 2.000 inhabitants).

- **Ban on some non-recyclable plastic packaging**

As of January 1st, 2025, packaging made, in whole or in part, of polymers or styrenic copolymers, that are not recyclable and that cannot integrate any recycling branch, will be banned.

- **Ban on the systematic printing of receipts**

On January 1st, 2023 at the latest, unless the client requests otherwise, the following systematic printing and distribution will be banned: (i) receipts in sales area and in sites open to the public, (ii) credit card receipts, (iii) machine receipts and (iv) vouchers and special offers in sales area.

- **Ensure the full application of the ban on disposable plastic bags**

Despite some bans on disposable plastic bags (for shopping bags since January 1st, 2015¹⁰¹ and for all other plastic bags since January 1st, 2017¹⁰²), numerous non-compliant plastic bags are still being distributed. To ensure the application of such bans, the AGEC law banned the importation and production of single-use plastic bags sold in the national market as of January 1st, 2021,

Prevention measures may also utilize mechanisms other than bans.

- **Substitution of disposable cutlery in fast food chains**

Fast food chains will have to provide reusable cutlery for food and beverages consumed on-site by their customers. This measure will help reduce plastic and cardboard consumption. The fast food industry produces 180,000 tons of packaging in France, which is immediately thrown-away after their use. A decree will provide the precise terms and condition of this measure.

This ban will be effective as of January 1st, 2023.

- **Substitution of disposable cutlery in daily meal delivery at home service**

From January 1st, 2022, glasses, cutlery, plates and containers used in a daily meal delivery at home service must be reusable and collected. A decree will provide the precise terms and conditions, and the exceptions due to public health protections, of this measure.

¹⁰¹ Law no. 2015-992 of August 17, 2015 regarding ecological transition and green growth.

¹⁰² Law no. 2016-1087 of August 8, 2016 for biodiversity, nature and landscapes recovery.

- **Oblige sites open to the public to install water fountains**

To drastically reduce waste production at the source, including plastic bottles, sites open to the public (train stations, libraries, schools, universities, hospitals...) will have to install water fountains starting January 1st, 2022.

This measure is the equivalent of the ban on free plastic bottles distribution in sites open to the public.

- **Ban on the “biodegradable” note or any equivalent note on products and packaging**

The French government has concluded that there is no definition of the term “biodegradable” upon which scientists agree. The term “biodegradable” will be banned on products and packaging on January 1st, 2022.

- **Promote loose items to reduce packaging**

In order to avoid excessive packaging and useless packaging, the government is trying to make it easier for consumers to purchase goods without packaging.

Since January 1st, 2021, consumers can bring their own containers into businesses, as long as the containers are clean and adapted to the goods bought. For instance, in the case of sliced bread, a specific container may be required to respect hygiene standards. A poster in the store could guide the consumer in this process.

- **Implement sorting boxes in supermarkets to collect packaging**

Starting January 1st, 2022, checkout areas in supermarkets will be mandated to provide sorting boxes intended to collect waste packaging.

These measures will enable customers to get rid of their waste as soon as they leave the store, and to let distributors handle the recycling process. In this way, distributors and producers will be incentivized to produce less packaging as they will be responsible for managing wastes resulting from their packaging.

Some provisions of the AGEC law aim to regulate the plastic industry, especially plastic granulates and microplastics.

- **Certification of source separation and separate collection of plastics**

A new model certificate of source separation and separate collection of plastics will be used for the first time for certificates issued between January 1, 2023 and March 31, 2023, for waste collected and treated in 2022. This certificate helps producers, owners, waste collectors, and treatment service providers to justify their respect of obligations regarding plastic wastes sorting before the competent control authorities.

- **Regulating production, handling and transport sites of industrial plastic granulates**

Each year 41,000 tons of industrial plastic granulates (equivalent to 11.5 billion plastic bottles) are disposed of in the environment, especially on beaches. These granulates, often shaped as small balls or flakes, are the raw material used in the plastic industry to produce toys, bottles or kitchen utensils for instance. These light granulates can leak from their containers and pollute their environment when they are transported from production plant to transformation plant where they are melted and assembled.

The AGECE law requires that starting January 1st, 2022, all production, handling and transportation sites will have to implement procedures and acquire equipment to avoid microplastic leaks. Such equipment could include filters or systems that enable the collection of these granulates.

An implementing Decree of April 16, 2021 regarding the prevention of plastic granulates loss in the environment requires producers, handlers (industrial facilities using plastic granulates in their production process) and transporters (logistic platforms, harbors) to implement the aforementioned procedures and acquire the necessary equipment.

The Decree also clarifies that the regular inspections prescribed by the AGECE law are, more precisely, audits of granulate emissions prevention procedures. The first audit is required in the year following the implementation of procedures. Audits must be conducted at least every three years. Audits are carried out by a third-party organization, that is to say one independent from the site operator and accredited by the French Committee of Accreditation (COFRAC) or a European equivalent body. The site operator will have to publish a summary of every audit report on its website.

- **Prohibition of any substance containing microplastic (article L. 541-15-12 of the Environmental Code)**

According to the National health and food safety, environment and work agency the size of microplastic is between 5 millimeters and some hundreds of nanometers (70 times smaller than a hair). Microplastics can be found everywhere in the environment: air, housing, waterways, soils and oceans. All living organisms can ingest them, from zooplanktons to whales.

Two microplastic categories can be distinguished. The first is primary microplastics, those that are directly emitted in the environment as particles (washing of synthetic clothes, tires friction, marine coatings, and the like). The second is secondary microplastics, those created by the deterioration of plastic objects.

The AGECE law sets four provisions regarding microplastics.

First of all, in a general way, a ban on the sale of products containing microplastics is prescribed by the AGECE law with some exceptions: *“the launch on the market of any substance in the state of microplastic, as such or in a mixture, intentionally present in a concentration equal to or greater than 0.01%, considered as the ratio of the mass of microplastic to the total mass of the sample of*

material under consideration containing this microplastic, shall be stopped. Natural microplastics that have not been chemically modified or are biodegradable are not affected.”

Only microplastics added intentionally and non-natural ones fall under the prescription.

The law clarifies that this ban applies to:

- Rinsed cosmetics used as exfoliating products that include solid plastic particles, with the exception of particles from natural origin that cannot subsist and propagate chemically active ingredients or affect animal trophic chains since February 12, 2020;
- Medical devices and *in vitro* medical devices starting January 1st, 2024;
- Rinse-off cosmetic products other than those first enumerated first, starting January 1st, 2026;
- Detergent products and cleaning products starting January 1st, 2027 at the latest.

These bans do not apply to microplastics when they are used on an industrial site, in the production of human or animal drugs, when they are under confinement or in waste meant to be incinerated, when the physical properties are permanently changed or when microplastics are permanently incorporated in a solid matrix during their use.

The AGECL law adds that producers, importers or users of any substance containing microplastics must ensure that compliance with all use instructions aimed at limiting their release to the environment is achieved, including at the end of their life cycle. Instructions must be visible, readable and permanent.

Moreover, the AGECL law prescribes the mandatory addition of a plastic microfiber filter on new washing machines. Such fibers are mixed with the rest of the wastewater which eventually enters ocean waters. The law aims to reduce this pollution by requiring that as of January 1st, 2025 both professional and non-professional washing machines will need to have such a filter, or any equivalent solution.

Finally, the law requires the Government to deliver a report on the health, environmental and societal impacts of biosourced, biodegradable and compostable plastics throughout their whole life cycle to the Parliament on January 1st, 2021 at the latest. This report has still not been published. It is supposed to address microplastic dispersal risks on the environment related to the composting of these plastics.

b. Measures Resulting from the Integrated Legislation on Regulated Facilities

The legislation on regulated facilities includes measures aimed at limiting plastic emissions in accordance with the waste prevention principle. Regulated facilities are the object of an integrated environmental regulation, which limits all types of pollution in all environments.

The goal of this legislation is to subject hazardous¹⁰³ facilities to the administrative observation of the State.

In this regard, several activities related to plastics fall under this legislation, including plastic production (industrial production or polymer regeneration¹⁰⁴, polymer transformation¹⁰⁵ and production of organic chemical products¹⁰⁶), plastic waste storage (polymer storage¹⁰⁷, tire storage and products made of at least 50% of polymers¹⁰⁸).

General ministerial prescriptions applied to these activities are not very restrictive on plastic emissions. The prefect can adopt individual prescriptions regulating plastic emissions.

2. Plastic Waste Management

a. Goals and Planning

The AGECE law aims to increase the share of reusable plastic packaging, thus providing a national trajectory. The goal is to reach 5% of reused packaging on the French market by 2023, and 7% in 2027. The law also sets a goal of 100% recycled plastic by 2025 and a goal of reducing single use plastic bottles 50% by 2030.

More precisely, to reach 100% of recycled plastic by 2025, the 3Rs trajectory¹⁰⁹ establishes the following declining goals: at least 77% of collected plastic bottles should be recycled, at least 65% of the weight of collected packaging waste should be recycled (at least 50% for plastic packaging waste), and at least 25% of recycled plastic in PET¹¹⁰ bottles containing beverages should be recycled.

Next, the April 29, 2021 Decree regarding reduction, “*reutilization*,” “*réemploi*” and recycling of single-use plastic packaging for the 2021-2025 period clarifies that the goal is to identify a feasible means of recycling single use plastic packaging on the French market to have an appropriate recycling branch by January 1st, 2025. This recycling branch shall not disrupt sorting and recycling chains and shall not contain substances that could limit the use of recycled materials. To reach this recycling goal, the operators should support recycled materials in plastic packaging, which would also promote the development of recycling branches and the growth of their outlets.

The implementation of an operational recycling branch combines technical and operational knowledge of numerous actors. This enables packaging to go through a virtuous circle which includes its conception, sorting, collection, orientation to a recycling branch *via* sorting centers,

¹⁰³ Including those who can impact neighbors, public health, security and sanitation, agriculture, nature protection, environment, landscape, the use of natural, agricultural or forest soils, the rational use of energy, sites and monuments conservation and archeological heritage.

¹⁰⁴ Section 2660 of the Legislation on Regulated Facilities.

¹⁰⁵ Section 2661 of the Legislation on Regulated Facilities.

¹⁰⁶ Section 3410 of the Legislation on Regulated Facilities.

¹⁰⁷ Section 2662 of the Legislation on Regulated Facilities.

¹⁰⁸ Section 2663 of the Legislation on Regulated Facilities

¹⁰⁹ Reduce, reuse and recycle.

¹¹⁰ Polyethylene terephthalate.

preparation to being recycled, recycling, and finally, materials have to be reintegrated into the production circuit of packaging and products.

The creation of this operational recycling branch supposes to gather economic and technical conditions, such as existing and significant packaging, technical feasibility and both an economic and environmental relevance at each step.

b. Plastic Waste Management Tools

i. *Plastic Waste Management Tools*

(a) Introduction of a Mixed Return System for Reuse and Recycling

The French State and local authorities agreed on a method to reach the ambitious goal regarding plastic bottles collection and recycling.

As previously stated, France aims to collect 77% of plastic bottles containing beverages in 2025 and 90% in 2029, and to reduce by 50% the number of these single-use plastic bottles by 2030. To reach this goal, a return system is set by the AGECL law. Due to a compromise between both Chambers of the Parliament, the system includes two phases.

First, the Agency for Ecological Transition will publish annual reports on performance rates on the subject, which should be improved with the development of sorting instructions on plastic packaging. The Agency also assesses economic, financial and environmental impacts of the return system compared to other collection methods.

Second, if goals are not reached after the publication of the 2023 report, the Government will implement one or several additional measures.

Moreover, other return measures can be imposed on producers in order to meet national and European goals regarding waste prevention and management. Voluntary commitments can also be implemented, as well as additional return measures at the regional level if the region is agreed to such a measure and that 90% of local authorities representing more than two-third of the population ask for it.

A decree defines most of the implementation and management conditions of this measure. It has not been published yet.

(b) The Extended Producer Responsibility (EPR)

In France, the EPR principle has existed since the 1975 law on waste elimination and material salvage. Article L.541-10 of the Environmental Code provides that “*Producers, importers and distributors of these products or of the elements and materials used in their manufacture may be required to provide or contribute to the disposal of their waste.*”

Producers, distributors for the products of their own brands, and importers selling products that create waste must deal with their management, including by financing recycling branches. EPR is grounded on producers' personal responsibility, the EPR can also be implemented in a collective way with eco-organizations.

The EPR branches proved their efficiency for waste prevention and management of some kind of products.

The AGECE law deeply reforms the organization of EPR branches. The goal is not to recycle waste anymore, but to prevent generation of waste in the first place. The law increases the eco-contribution modulation use. The eco-contribution corresponds to the operational costs of separate collection, transportation, cleaning and recovery of wastes subject to the EPR branch, which is set up by the eco-organizations on behalf of their member producers. The eco-contribution can be modulated as an incentive to promote good practices which minimize waste generation. The EPR branches are harmonized regarding their internal organization, operator obligations, branches monitoring and data access.

Most importantly, the AGECE law creates new branches relevant to plastic waste. They include:

- Packaging used to sell products consumed or used by professionals, except for food services, starting January 1st, 2023;
- Toys starting January 1st, 2022;
- Sport and leisure items starting January 1st, 2022;
- Hardware and gardening tools starting January 1st, 2022;
- Non-biodegradable synthetic chewing gums starting January 1st, 2024;
- Single-use clothes, including pre-soaked wipes for body and household use, starting January 1st, 2024;
- Fishing gear containing plastics, starting January 1st, 2025.

The purposes of any specific means of enforcing EPR are extensive: an obligation to implement an eco-design approach, and provide support to “*réemploi*” branches and integration through employment... Eco-contributions which are financial support coming from producers are adjusted according to a *bonus/deduction* system, according to products' environmental efficiency. Such adjustment takes the amount of used materials, the incorporation of recycled materials, the use of renewable energy, the reparability and the possibilities to reuse, reemploy and recycle products into account.

The role of eco-organizations is also strengthened as their implementation is now the rule. An eco-organization is a private company owned by producer and distributors to take charge of the end-of-life of the product they put on the market. Producers that could choose between an individual collection and waste treatment system and the creation of an eco-organization now have to transfer their obligations to the latter against a financial support, except in some circumstances.

C. United States Laws

1. Existing National Laws

a. Save Our Seas Act of 2018

The Save Our Seas Act of 2018 addresses plastic waste by broadly regulating the disposal of solid material into a marine environment. Although plastics are rarely expressly referenced, the act regulates solid waste removal efforts, inclusive of plastics, by amending the Marine Debris Act. The amendments incorporate certain changes to the Marine Debris Program and reauthorize the program through FY2022.¹¹¹ Among other changes to the program, the Save Our Seas Act of 2018 requires that the National Oceanic and Atmospheric Administration (NOAA) respond to severe marine debris events, which are defined as “atypically large amounts of marine debris caused by a natural disaster, including a tsunami, flood, landslide, or hurricane, or other source.”¹¹² “Marine debris” refers to “persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or Great Lakes.”¹¹³ The act does not include enforcement provisions. Nor does the act provide statutory authority for NOAA to promulgate regulations concerning enforcement. Rather, the act provides support for research and development of systems and materials that reduce derelict fishing gear and the amount of solid waste that is generated from land-based sources and enters the marine environment. The act encourages the President of the United States to work with representatives of countries that discharge the largest amounts of solid waste from land-based sources into the marine environment to develop mechanisms to reduce such discharges. Further, the act encourages the President to enter into international agreements that would mitigate the discharge of land-based solid waste into the marine environment and provide technical assistance and investment in waste management infrastructure to reduce such discharges, if appropriate. The act includes Congressional support for the Great Lakes Land-Based Marine Debris Action Plan (NOAA Technical Memorandum NOS-OR&R-49),¹¹⁴ which was developed by NOAA to establish a comprehensive framework to reduce the impact of marine debris. The act states that the framework is vital to the ongoing efforts to remove microplastics and other forms of pollution from the Great Lakes Region.¹¹⁵

b. Save Our Seas 2.0 (Enhanced Global Engagement to Combat Marine Debris Act)

The Save Our Seas 2.0 Act builds on the success of the Save Our Seas Act of 2018. Save Our Seas 2.0 has three main aims: (1) strengthening the United States’ domestic marine debris response capability through the creation of a Marine Debris Foundation, a genius prize for innovation, and new research to address marine debris response issues; (2) enhancing global engagement to combat marine debris, including formalizing a national policy on international cooperation on marine debris issues; enhancing federal agency outreach to other countries; and exploring the potential for a new international agreement to respond to the challenge of combating marine debris; and (3) improving domestic infrastructure to prevent marine debris through new

¹¹¹ The Marine Debris Act is codified at 33 U.S.C. 1952.

¹¹² 33 U.S.C.S. § 1956(6).

¹¹³ *Id.* § 1956(3).

¹¹⁴ See National Oceanic and Atmospheric Administration, *The Great Lakes Land-based Marine Debris Action Plan*, Technical Memorandum Nos-OR&R-49 (May 2014), available at <https://repository.library.noaa.gov/view/noaa/2684>.

¹¹⁵ *Save Our Seas Act of 2018*, Pub. Law No. 115-265, S. 3508, 115th Congress (2017-2018), available at <https://www.congress.gov/bill/115th-congress/senate-bill/3508/text?overview=closed>.

grants for and studies of waste management and mitigation.¹¹⁶ Like the Save our Seas Act of 2018, Save our Seas 2.0 includes neither enforcement provisions nor regulatory enforcement authority.

2. Existing State Plastic Laws

California recently passed Assembly Bill No. 881,¹¹⁷ which is intended to make California's waste management practices more transparent by reclassifying the export of mixed plastic waste as a "disposal" while allowing only truly recyclable plastic to continue to count toward statewide recycling goals. To facilitate enforcement, recycling and composting operations and facilities must submit periodic information to the Department of Resources Recycling and Recovery on the types and quantities of materials that are disposed of, sold, or transferred to other recycling or composting facilities, end users inside or outside of the state, or exporters, brokers, or transporters for sale. Exporters, brokers, self-haulers, and transporters of recyclables or compost must also submit periodic information to the department on the types, quantities, and destinations of materials that are disposed of, sold, or transferred. These reporting requirements are bolstered by a civil penalty scheme.

Looking to bans on single-use plastic, recognition of the seemingly obdurate problems inherent in plastics recycling has led to state legislative initiatives to ban or lessen single-use plastics, California being the most recent.¹¹⁸ Most of these laws consist of either (1) a bag ban that prohibits single-use plastic bags with limited exceptions and imposes fines on vendors for violations; and (2) fee requirements for consumers that impose a surcharge for use of plastic bags.¹¹⁹ The latter surcharge is collected by the retailer and paid to the state, usually to defray the costs of plastic waste remediation. To date, ten states have passed legislation to curtail waste generated by single-use plastic bags: California, Connecticut, Delaware, Hawaii (de facto – all counties have enacted a ban), Maine, New York, New Jersey, Oregon, Vermont, and Washington.¹²⁰

California became the first state to enact legislation imposing a statewide ban on single-use plastic bags at large retail stores in August 2014. *Id.* California recently expanded this regulatory mandate in a new suite of legislation, signed by Governor Gavin Newsom on October 5, 2021. One such piece of legislation, Assembly Bill No. 1276,¹²¹ prohibits food facilities from providing any single use foodware accessory (including, for example, utensils, straws, and stirrers) or standard condiment to a consumer unless requested. A "standard condiment" refers to "relishes, spices,

¹¹⁶ *Save Our Seas 2.0 Act*, Pub. Law. No. 116-224, S. 1982, 116th Congress (2019-2020), available at <https://www.congress.gov/bill/116th-congress/senate-bill/1982>.

¹¹⁷ Available at https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220AB881.

¹¹⁸ See *State Plastic Bag Legislation*, NAT'L CONF. STATE LEGISLATURES (Feb. 8, 2021), <https://www.ncsl.org/research/environment-and-natural-resources/plastic-bag-legislation.aspx>; see also State of California – Office of the Governor, *Governor Newsom Signs Legislation to Tackle Plastic Pollution, Promote a More Sustainable & Renewable Economy and Protect Californians from Toxic Chemicals* (Oct. 5, 2021), <https://www.gov.ca.gov/2021/10/05/governor-newsom-signs-legislation-to-tackle-plastic-pollution-promote-a-more-sustainable-renewable-economy-and-protect-californians-from-toxic-chemicals/>.

¹¹⁹ Jehan El-Jourbagy et al., *Creating an Industrial Regulatory Framework to Reduce Plastics*, 18 Berkeley Bus. L.J. 94, 106-08 (2021).

¹²⁰ See NAT'L CONF. STATE LEGISLATURES, *State Plastic Bag Legislation*, *supra*.

¹²¹ Available at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB1276.

sauces, confections, or seasonings that require no additional preparation and that are usually used on a food item after preparation, including ketchup, mustard, mayonnaise, soy sauce, hot sauce, salsa, salt, pepper, sugar, and sugar substitutes.” To further minimize plastic use, the new law also prohibits single-use foodware accessories and standard condiments from being bundled or packaged in a way that prohibits the consumer from taking only the item desired. The bill requires a food facility using a third-party food delivery platform to list on its menu the availability of single-use foodware accessories and standard condiments and only provide those items when requested by the consumer. Though there are exceptions for drive-throughs and airport restaurants, which may ask a consumer if single-use foodware is necessary, certain other facilities are exempt from the law’s reach entirely, including correctional institutions, health care facilities, and public and private school cafeterias. Those facilities that are subject to the law face a new civil penalty scheme, in which the first and second violations result in a notice of violation, and any subsequent violation is punishable by a fine of \$25 for each day in violation, capped at \$300 annually. Cities and counties are required to enforce these mandates on or before June 1, 2022.

Other states have attempted to curtail plastic waste through legislative measures. Vermont’s 2020 legislation is an example of a comprehensive ban. 10 V.S.A. § 6692 provides, “A store or food service establishment shall not provide a single-use plastic carryout bag to a customer.” The Vermont legislation, like similar statutes, deals with paper bags: “A store . . . may provide a consumer a recyclable paper carryout bag at the point of sale if the bag is provided to the consumer for a charge of not less than \$0.10 per bag.” 10 V.S.A. § 6693. In addition to single-use bags, the legislation attempts to regulate “single-use plastic straws” and “stirrers.” 10 V.S.A. § 6694-95. Section 6694 provides: “A food service establishment shall not provide a single-use plastic straw to a customer, *except that a food service establishment may provide a straw to a person upon request*” (emphasis added).

The Vermont legislation also tackles the ubiquitous and unrecyclable polystyrene single-use food containers frequently used by restaurants and takeout food purveyors, banning such use in food containers, plates, beverage cups, trays and cartons for eggs or other food. 10 V.S.A. § 6691(4)(B). Section 6696 provides that a person “shall not sell or offer for sale in the State an expanded polystyrene food service product,” nor may a store or food service establishment “sell or provide food or beverages in an expanded polystyrene food service product.”

New York’s Senate Bill 1508 banned plastic carryout bags effective March 1, 2020.¹²² The ban exempts, *inter alia*, bags distributed at a meat or deli counter, as well as newspaper bags, trash bags, garment bags, bags provided by a pharmacy for prescription drugs, and restaurant takeout bags.¹²³ The law allows counties the option of placing a 5-cent fee on paper bags, with 2 cents going to local governments and 3 cents to the state’s Environmental Protection Fund. *Id.* Connecticut’s plastic bag ban went into effect on July 1, 2021, at which point the state’s 10-cent

¹²² El-Jourbagy et al., *supra*, at 107 (citing *Plastic Bag Ban and Paper Bag Fee*, NYC 311, <https://portal.311.nyc.gov/article/?kanumber=KA-02484>; Juliana Kim, *What to Know About N.Y.’s Plastic Bag Ban*, N.Y. TIMES (Oct. 20, 2020), <https://www.nytimes.com/2020/10/20/nyregion/what-to-know-new-york-state-ban-plastic-bags.html>).

¹²³ See NAT’L CONF. STATE LEGISLATURES, *State Plastic Bag Legislation*, *supra*.

fee per single-use checkout bag sunset.¹²⁴ Delaware passed a ban effective January 2021 for large stores, and Maine instituted a ban that went into effect July 1, 2021.¹²⁵

Washington similarly enacted a state ban on single-use plastic carryout bags (and imposed an 8-cent fee for large paper carryout bags and thick reusable plastic carryout bags) effective October 1, 2021.¹²⁶ Though the ban has yet to take effect, New Jersey has followed suit: on November 4, 2020, Governor Phil Murphy signed into law P.L. 2020, c117, which prohibits the use of single-use plastic carryout bags in all stores and food service businesses statewide and single-use paper carryout bags in grocery stores that occupy at least 2,500 square feet beginning May 4, 2022.¹²⁷

In some states that have not instituted limits on single-use plastics, cities and counties have passed or attempted to pass their own bag bans and fees. Over 200 municipalities have enacted similar legislation, including Boston, Chicago, Los Angeles, San Francisco, and Seattle.¹²⁸ Cities with both bans and fees include Boulder, Colorado; Montgomery County, Maryland; Portland, Maine; New York City; the District of Columbia; and the island of Oahu. *Id.*

Boston's ban provides, for example, that businesses in Boston need to use compliant reusable, recyclable paper, or compostable bags as of October 1, 2020.¹²⁹ The ban is backed up by penalties after a warning notice is issued for an initial violation, namely, \$50 for the first offense after a warning notice, and \$100 for all subsequent offenses.¹³⁰ The District of Columbia legislation, known as the Anacostia River Clean Up and Protection Act of 2009, was one of the earliest measures seeking to curtail plastic bag usage by imposing a 5-cent fee on "disposable carryout bag[s]," defined to exclude newspaper bags and dry-cleaning bags, among other exceptions.¹³¹ Though retail establishments subject to the legislation may retain 20% of the fee, the remainder must be paid to the Office of Tax and Revenue for deposit into the Anacostia River Cleanup and Protection Fund to pay for public outreach and education, pollution monitoring, and conservation measures.¹³²

Individual states often attempt to legislatively preempt municipal ordinances attempting to mitigate plastic waste with bans on plastic products such as single-use plastics and plastic bags.¹³³

¹²⁴ See Department of Revenue Services of the State of Connecticut, *Single-Use Plastic Bag Fee* (2021), available at <https://portal.ct.gov/DRS/Legislative-Summaries/2019-Legislative-Updates/Single-Use-Plastic-Bag-Fee> (citing Conn. Gen. Stat. § 22a-246a).

¹²⁵ See NAT'L CONF. STATE LEGISLATURES, *State Plastic Bag Legislation*, *supra*; see also Maine Department of Environmental Protection, *Statewide ban on single-use plastic bags goes into effect July 1, 2021* (June 18, 2021), available at <https://www.maine.gov/dep/news/news.html?id=5010879>

¹²⁶ Department of Ecology of the State of Washington, *Washington's Single-use Plastic Bag Ban*, <https://ecology.wa.gov/Waste-Toxics/Reducing-recycling-waste/Waste-reduction-programs/Plastics/Plastic-bag-ban>.

¹²⁷ See New Jersey Department of Environmental Protection, *New Jersey's Ban on Single-Use Plastic Products Takes Effect in One Year* (May 5, 2021), available at https://www.nj.gov/dep/newsrel/2021/21_0505.htm.

¹²⁸ El-Jourbagy et al., *supra*, at 108.

¹²⁹ City of Boston Code, Ordinance Chapter XVII, § 17-19.3.

¹³⁰ City of Boston Code, Ordinance Chapter XVII, § 17-19.4.

¹³¹ See District of Columbia Official Code, § 8-102.01-03, available at https://doec.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/Anacostia%20Clean%20Up%20and%20Protection%20Act%20of%202009_3.20.15.pdf.

¹³² District of Columbia Official Code, § 8-102.05.

¹³³ Sarah J. Morath, *Our Plastic Problem*, Nat. Resources & Env't, Spring 2019, at 45, 47.

For example, in 2015, Missouri passed House Bill 722, which prohibits political subdivisions from “impos[ing] any ban, fee, or tax upon the use of either paper or plastic bags for packaging of any item or good purchased from a merchant, itinerant vendor, or peddler.”¹³⁴ In 2017, Minnesota enacted a similar statewide prohibition on city bag bans a day before Minneapolis’ plastic bag ban was set to go into effect.¹³⁵ Idaho also preempts local regulation in 2016 HB 372, which provides that any regulation regarding the use, disposition, or sale of plastic bags or other “auxiliary containers” shall be imposed only by statute enacted by the state legislature.¹³⁶ In Oklahoma, 2019 SB 1001 preempts local government from regulating, taxing, or restricting the sale or use of an “auxiliary container,” such as plastic bags, plastic water bottles, or disposable food containers.¹³⁷ And in 2019, the Tennessee legislature headed off consideration of a plastic bag ban by two liberal leaning cities, Memphis and Nashville. Thus, Tenn. Code Ann. § 7-51-2002 of Tennessee’s legislation explicitly bans the regulation of “auxiliary containers,” which includes “a bag, cup, bottle, can, device, eating or drinking utensil or tool, or other packaging, whether reusable or single use.”¹³⁸ The statute provides that “[a] local government shall not adopt or enforce a resolution, ordinance, policy or regulation that:

- (1) Regulates the use, disposition or sale of an auxiliary container;¹³⁹
- (2) Prohibits or restricts an auxiliary container; or
- (3) Enacts a fee, charge, or tax on an auxiliary container.”¹⁴⁰

A rationale offered for this state restraint of municipal initiatives is the need for state-wide uniformity.

There can be little doubt that state and local efforts to curtail plastic waste will have a beneficial impact. Nevertheless there is no substantial evidence, to date, that these local efforts are a substitute for comprehensive federal legislation.

3. **Proposed National Laws**

Break Free from Plastic Pollution Act of 2021

The Break Free from Plastic Pollution Act was introduced in the 2021 legislative session, with identical bills introduced in the House and Senate. A prior version of the bill had been introduced in the 2020 legislative session, but Congress failed to adopt the bill prior to the end of the Congressional session. The revived version of the bill would amend the Solid Waste Disposal Act to combat plastics pollution from cradle-to-grave and shift recycling and disposal costs from taxpayers to manufacturers. The bill would require that producers of certain plastic packaging, single-use products, beverage containers, and food service products collect, manage, and recycle or compost such products after consumer use. To implement this requirement, the bill would establish minimum percentages of products that must be reused, recycled or composted and would establish an increasing percentage of recycled content that must be incorporated into beverage

¹³⁴ Morath at 47, quoting Mo. Rev. Stat. § 260.283(2) (2018) (internal quotation marks omitted).

¹³⁵ Morath at 47, citing Minn. Stat. Ann. § 471.9998.

¹³⁶ Idaho Code Ann. § 67-2340.

¹³⁷ Okla. Stat. Ann. tit. 27A, § 2-11-504.

¹³⁸ Tenn. Code Ann. § 7-51-2001(1).

¹³⁹ “Auxiliary Container” is defined broadly to refer to almost any commonly used container.

¹⁴⁰ Tenn. Code Ann. § 7-51-2002.

containers. Specifically, the bill would require that manufacturers of plastic beverage containers make the containers utilizing at least 25% post-consumer recycled content from U.S. sources by 2025, 50% post-consumer recycled content from U.S. sources by 2030, 70% post-consumer recycled content from U.S. sources by 2035, 80% post-consumer recycled content from U.S. sources by 2040, and such additional targets thereafter as the U.S. Environmental Protection Agency (EPA) may designate through an administrative rulemaking. After conducting a study to determine the technical and safe minimum post-consumer recycled content requirements for covered products and beverage containers, the EPA may promulgate regulations to adjust these percentage content requirements.

The bill would also mandate the phase-out of certain single-use products, such as plastic utensils and establish incentives to reduce the production of a variety of plastic products. To further incentivize reductions in plastic use, the bill would: (1) establish programs to refund consumers for returning beverage containers; (2) impose a tax on non-reusable carryout bags; and (3) create a temporary moratorium on new or expanded permits for facilities that manufacture plastics until regulations are issued to address pollution from these facilities. The bill would also direct the EPA to publish guidelines for a national standardized labeling system for recycling and composting receptacles. Producers would be required to include labels on their products that would indicate whether the products are recyclable, compostable, or reusable. Finally, the bill would establish limitations on the export of plastic waste to other countries.¹⁴¹ Supporters of the bill assert that it promotes the use of sustainable packaging. Opponents in the chemicals and plastics industry contend that the bill would limit innovation in advanced recycling technologies for recovering plastics waste.¹⁴²

RECYCLE Act

The Recycling Enhancements to Collection and Yield Through Consumer Learning and Education Act (RECYCLE Act) was included in the 2021 infrastructure legislation that recently passed the Senate. The RECYCLE Act seeks to reduce plastic waste through improvements in residential recycling programs and public education. The bill proposes to authorize \$15 million per year over five (5) years in grants to states, local governments, Indian tribes, nonprofits and public-private partnerships to educate consumers and households about their residential and community recycling programs. The bill would direct EPA to develop a model recycling toolkit for these entities to deploy to improve their recycling rates and decrease contamination in the recycling stream. The

¹⁴¹ *Break Free from Plastic Pollution Act of 2021*, H.R. 2238, 117th Congress (2021-2022), available at <https://www.congress.gov/bill/117th-congress/house-bill/2238/text#toc-HBE2F9E78A554400DA40A8DA9D0E4919A>. An identical version of the bill was introduced in the Senate and referred to the Committee on Finance on March 25, 2021. See *Break Free From Plastic Pollution Act of 2021*, S. 984, 117th Congress (2021-2022), available at <https://www.congress.gov/bill/117th-congress/senate-bill/984/text>.

¹⁴² See Inside EPA, *Senate Panel Eyes Potential Solutions to Advancing ‘Circulate Economy’*, (Sep. 24, 2021), available at https://www.newsdesk.lexisnexis.com/click/?p=aHR0cHM6Ly93d3cubmV3c2Rlc2subGV4aXNuZXhpcy5jb20vYXJ0aWNsZS80NTk0MTM3NzIwMy5odG1sP2NpZD1NVVEzTXpFMSZ1aWQ9TVRFM01qUTA&a=45941377203&f=TmV3cw&s=YWxlcnQ&u=SlNIQVJQRUBGT0xFWUhPQUcuQ09N&cn=Rm9sZXkgSG9hZyBMTFA&ci=107315&i=335&si=79364&fmi=654576741&e=SW5zaWRlIEVQQQ&d=117244&t=3&h=1&mbc=Q1QzL2E9NDU5NDEzNzcyMDMmcD0xNGUmdj0xJnM9MSZ4PUNPdIBsLTJWeXBxejVacm9OWFZENIEmdTE9TkQmdTI9dXAtdXJuOnVzZXI6UEE3MzA3OTgw&fi=877162&ai=159350&wa=1&ac=159350_1632564281000&ck=3d3738ec966869a7efb7ae41efe5ac03.

bill also requires the EPA to more frequently review and revise its Comprehensive Procurement Guidelines, which provide recommended practices for federal agencies to purchase recycled products.¹⁴³ Notably, unlike the Break Free legislation, RECYCLE would not impose any regulatory standards on plastic producers.

RECOVER Act

The Realizing the Economic Opportunities and Value of Expanding Recycling (RECOVER) Act was introduced in the House in April 2021. The bill would authorize the EPA to establish a Recycling Infrastructure Program whereby EPA may award financial assistance to states, local governments, and tribal governments to support and expand their recycling infrastructure and programs.¹⁴⁴

Plastic Pellet Free Waters Act

The Plastic Pellet Free Waters Act was introduced in the Senate in April 2021. The bill would require that the EPA issue a rule that would prohibit the discharge of plastic pellets and other preproduction plastic into waters of the United States. If passed, within 60 days of enactment, the EPA must issue regulations that establish effluent limitations for wastewater, spills, and runoff from plastic polymer production facilities, plastic molding and forming facilities, and other point sources associated with the transport and packing of plastic pellets or preproduction plastic materials.¹⁴⁵

REDUCE Act of 2021

The Rewarding Efforts to Decrease Unrecycled Contaminants in Ecosystems (REDUCE) Act was introduced in the Senate in August 2021 and referred to the Finance Committee. A similar version of the bill was introduced in the House in September 2021.¹⁴⁶ The bill would impose a 20 cents per pound fee on the sale of new or “virgin” plastic used for single-use products. Collected fees would go into the Plastic Waste Reduction Fund, which would be used to carry out reduction and recycling activities; plastic waste and marine debris reduction, detection, monitoring, and cleanup activities; and to address environmental justice and pollution impacts from plastic products.¹⁴⁷

Plastic Waste Reduction and Recycling Act

¹⁴³ *RECYCLE Act of 2021*, S. 923, 117th Congress (2021-2022), available at <https://www.congress.gov/bill/117th-congress/senate-bill/923>.

¹⁴⁴ *RECOVER Act*, H.R. 2357, 117th Congress (2021-2022), available at <https://www.congress.gov/bill/117th-congress/house-bill/2357?r=1&s=1>.

¹⁴⁵ *Plastic Pellet Free Waters Act*, S. 1507, 117th Congress (2021-2022), available at <https://www.congress.gov/bill/117th-congress/senate-bill/1507/text>.

¹⁴⁶ *REDUCE Act of 2021*, H.R. 5389, 117th Congress (2021-2022), available at <https://www.congress.gov/bill/117th-congress/house-bill/5389/text?q=%7B%22search%22%3A%5B%22plastic%22%2C%22plastic%22%5D%7D&r=10&s=2>.

¹⁴⁷ *Rewarding Efforts to Decrease Unrecycled Contaminants in Ecosystems Act of 2021*, S. 2645, 117th Congress (2021-2022), available at <https://www.congress.gov/bill/117th-congress/senate-bill/2645?q=%7B%22search%22%3A%5B%22rewarding+efforts+to+decrease+unrecycled+contaminants%22%2C%22rewarding%22%2C%22efforts%22%2C%22to%22%2C%22decrease%22%2C%22unrecycled%22%2C%22contaminants%22%5D%7D&s=1&r=1>.

The Plastic Waste Reduction and Recycling Act was introduced in the House in April 2021. The bill would establish a coordinated federal program to accelerate plastic waste reduction, the Plastic Waste Reduction and Recycling Program. The program aims to improve the competitiveness of the United States' plastics recycling industry in the global recycling economy. The bill would mitigate the harmful effects of plastic waste on the environment by supporting research, development, and demonstration of advanced plastics technologies optimized for recyclability, bio-based plastics, biodegradable plastics, and plant-based textiles. The bill would also create an interagency committee to coordinate agency activity in support of the Program and provide support for recycling research and development.¹⁴⁸

Advanced Recycling Research and Development Act of 2021

The Advanced Recycling Research and Development Act of 2021 was introduced in the House in April 2021. The bill would require the Department of Energy to implement research, development, and demonstration programs aimed at accelerating innovation in energy-efficient recyclable plastics, next-generation plastics, and composites recycling and upcycling strategies and technologies. The goal of these programs would be to increase the value of plastics supply streams and reduce the environmental impact of global plastics consumption. If enacted, the bill would appropriate \$50,000,000 to the Department of Energy to carry out these programs in collaboration with federal agencies and national laboratories.¹⁴⁹

Ocean-Based Climate Solutions Act of 2021

The Ocean-Based Climate Solutions Act of 2021 was introduced in the House in June 2021. The bill would impose a virgin plastic excise tax on manufacturers, producers, or importers of single-use plastic products made in whole or in part of virgin plastic. The tax would not apply to certain medical products that need to be made of virgin plastic for the public health or the health of the user, containers for medication and infant formula, and the packaging of certain hygiene products. The bill would establish a virgin plastic trust fund for purposes of carrying out the programs authorized by the bill. Additionally, the bill encourages the United States Trade Representative and the Secretary of State to negotiate with other nations to establish treaties, environmental agreements, partnerships, or other instruments that effectively reduce global single-use plastic production from virgin polymers to 10% of 2010 levels by 2050.¹⁵⁰

ZERO WASTE Act

The Zeroing Excess, Reducing Organic Waste, And Sustaining Technical Expertise Act (ZERO WASTE Act) was introduced in the House in March 2021. The bill would require the EPA to establish grant products to incentivize waste reduction. The bill would give the EPA authority to

¹⁴⁸ *Plastic Waste Reduction and Recycling Act*, H.R. 2821, 117th Congress (2021-2022), available at <https://www.congress.gov/bill/117th-congress/housebill/2821/text?q=%7B%22search%22%3A%5B%22plastic%22%2C%22plastic%22%5D%7D&r=5&s=5>.

¹⁴⁹ *Advanced Recycling Research and Development Act of 2021*, H.R. 2777, 117th Congress (2021-2022) available at <https://www.congress.gov/bill/117th-congress/house-bill/2777/text?q=%7B%22search%22%3A%5B%22plastic%22%2C%22plastic%22%5D%7D&r=10&s=5>.

¹⁵⁰ *Ocean-Based Climate Solutions Act of 2021*, H.R. 3764, 117th Congress (2021-2022), available at <https://www.congress.gov/bill/117th-congress/house-bill/3764/text?q=%7B%22search%22%3A%5B%22plastic%22%2C%22plastic%22%5D%7D&r=20&s=5>.

award grants to nonprofit organizations and state, local, and tribal governments for projects that utilize certain zero-waste practices, such as source reduction, source separation, and waste prevention. “Zero-waste” is specifically defined as “the conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without (1) burning or otherwise destroying embodied energy; and (2) a discharge to land, water, or air that results in adverse human health or environmental effects.” In addition to these grant programs, the EPA would be required to establish a grant program to incentivize development and implementation of new requirements that reduce the amount of waste disposed of in landfills.¹⁵¹ Thus, while the bill would not directly reduce plastic waste, it could provide funding to nonprofits and governments to implement recycling and waste minimization programs that could effectively reduce plastic waste.

Legislative Branch Appropriations Act, 2022

The Legislative Branch Appropriations Act passed the House in July 2021 and was subsequently received in the Senate and referred to the Senate Committee on Appropriations. The bill provides FY2022 appropriations for the legislative branch, House committees, the Congressional Budget Office, the Government Accountability Office, Capitol Police, and other legislative offices. The bill includes a provision whereby all agencies and offices funded by the bill that contract with food service or other providers would have to coordinate with those providers to eliminate or reduce plastic waste, including reducing use of plastic straws, explore the use of biodegradable items, and increase recycling and composting opportunities. The bill would merely require that such agencies and offices explore the possibility of reducing plastic waste; it would not require that agencies and offices change their procurement practices to favor recyclable materials over plastic products.¹⁵²

BLUE GLOBE Act

The Bolstering Long-term Understanding and Exploration of the Great Lakes, Oceans, Bays, and Estuaries Act (BLUE GLOBE Act) was introduced in the Senate in January 2021. An identical bill was introduced in the House in June 2021.¹⁵³ The bill would focus primarily on data collection and monitoring of the Great Lakes, oceans, bays, estuaries, and coasts to better understand aquatic ecology. The bill would require that the EPA establish at least one “Ocean Innovation Prize” to catalyze the rapid development and deployment of data collection and monitoring technology in these ecosystems. The bill identifies that EPA could provide an Ocean Innovation Prize in the area of plastic pollution detection, quantification and mitigation, which could include, for example,

¹⁵¹ *ZERO WASTE Act*, H.R. 2101, 117th Congress (2021-2022), available at <https://www.congress.gov/bill/117th-congress/house-bill/2101/text?q=%7B%22search%22%3A%5B%22plastic%22%2C%22plastic%22%5D%7D&r=31&s=2>.

¹⁵² *Legislative Branch Appropriations Act, 2022*, H.R. 4346, 117th Congress (2021-2022), available at <https://www.congress.gov/bill/117th-congress/house-bill/4346/text?q=%7B%22search%22%3A%5B%22plastic%22%2C%22plastic%22%5D%7D&r=32&s=2>.

¹⁵³ *BLUE GLOBE Act*, H.R. 3748, 117th Congress (2021-2022), available at <https://www.congress.gov/bill/117th-congress/house-bill/3748>.

quantification of used fishing gear in the oceans.¹⁵⁴ If passed, the EPA would need to establish an Ocean Innovation Prize program that allows funding for plastic pollution mitigation activities.

VI. Comparison, Inventory and Description of Existing and Proposed French and U.S. Laws or Other Authority That May Address Plastic Waste

A. Comparison of French and U.S. Laws that May Address Plastic Waste

A number of French and U.S. national authorities that do not directly regulate plastic may nonetheless impact plastic waste.

One main European Union directive that does not directly regulate plastics may nonetheless affect plastic waste. The Directive (UE) 2020/2184 of the European Parliament and of the Council of 16 December 2020 on the quality of water intended for human consumption is currently being incorporated into French law. The Directive directs EU Member States to ensure that drinking water is “wholesome and clean.” Water must not contain a concentration of microorganisms, parasites or substances that could potentially be hazardous to human health. More precisely, drinking water must comply with requirements related to microbiological and chemical parameters, which could relate to plastics. France is required to “transpose” the directive, through the adoption of a national act implementing the EU authority, by the end of 2022.

Similarly, in the U.S., a bill was introduced in the Senate in June 2021 that would impose a fee on petroleum products that are removed from any refinery, removed from any termination, or which enter the U.S. for consumption, use, or warehousing. This bill, the Save Our Future Act, would also encourage carbon sequestration by providing a rebate of the fee to manufacturers who encapsulate any of the carbon dioxide that would have otherwise been emitted through combustion of the petroleum product in a manner that does not result in the direct emissions of carbon dioxide. Manufacturers of single-use plastics would not be eligible for the rebate. Thus, if the U.S. EPA set an emissions fee rate at a level that would render single-use plastic manufacturing significantly more expensive, the bill could effectively reduce the production of single-use plastics. Several resolutions have also been introduced in the House and Senate that could impact plastic waste, if adopted by the respective legislative body and carried through into enforceable law or regulations. Resolutions are not binding and simply represent a collective policy position on a matter.

Like the resolutions that have been introduced in the U.S. Congress, several French policy texts may also forecast future regulation that could impact plastic waste. First, the EU’s Proposal of a Circular Economy Action Plan devotes a chapter to plastics and states that the Commission will propose binding prescriptions regarding the amount of recycled materials and waste reduction goals for key products such as packing, construction materials, and vehicles. The Action Plan also states that the Commission will address the issue of micro-plastics and create a framework regarding the supply and use of biosourced plastics. Other EU Action Plans may also affect plastic waste if taken up by the Commission as EU directives or regulations and transposed into French law through national legislation. For example, the EU’s Chemical Strategy for Sustainability states

¹⁵⁴ *Legislative Branch Appropriations Act, 2022*, H.R. 4346, 117th Congress (2021-2022), available at <https://www.congress.gov/bill/117th-congress/house-bill/4346/text?q=%7B%22search%22%3A%5B%22plastic%22%2C%22plastic%22%5D%7D&r=32&s=2>.

that plastics should be regulated and investments should be made in sustainable innovations and technologies that enable more waste to be recycled. Additionally, the EU's Zero Pollution Action Plan aims to achieve a 50% reduction in plastic waste in the marine environment and a 30% reduction in microplastic emissions in the environment by 2050. At the national level, several similar French policies aimed at reducing plastic packaging; developing more reusable, recyclable, or compostable packing; and eliminating plastic emissions into marine environments may signal forthcoming legislation that would implement such policies into binding law. Although such policies simply represent voluntary commitments until formally adopted, these policies express a firmer stance on reducing plastic in a marine environment than any similar U.S policies. Certainly, nothing like this collection of policies and proposals appears even to be on the horizon in the United States.

B. French Law

The European Union has adopted directives that are currently being incorporated into French law. One of them forecasts of coming French legislation (1.). Other strategic texts adopted by the EU and France can also help anticipate future binding plastic regulations (2.).

1. Directive to be Transposed

One main directive should be transposed into French law in the near future: the Directive (UE) 2020/2184 of the European Parliament and of the Council of 16 December 2020 on the quality of water intended for human consumption. In addition to what has already been described above, the directive was also designed to improve access to such water and to introduce a risk-based approach that would also make water quality observation more cost efficient.

The Directive directs EU Member States to ensure that water intended for human consumption (drinking water) is "wholesome and clean." Water must not contain a number or concentration of microorganisms, parasites or substances that could potentially be hazardous for human health. More precisely, drinking water must comply with requirements related to microbiological and chemical parameters, which could relate to plastics.

EU Member States manage drinking water intakes, water supply system and private water distribution assessment and risk management. They check whether these potential risks affect water quality by identifying hazards created in the water system and implementing observation measures.

According to the directive, Member States must create data on risk assessment related to water intakes and observation that has been implemented there by July 12, 2027 at the latest.

The Law No 2021-1308 of October 8, 2021 contains various provisions to adapt European Union law in the fields of transportation, environment, economy and finance and allows the French Government to transpose the Directive by the end of 2022.

2. Other Texts Forecasting Future Regulations

Several texts set ambitious goals regarding plastic waste; the ones described in this section are still at the policy proposal stage and consequently forecast future regulation.

At the European level, the European Strategy for Plastics in a circular economy was adopted in 2018. It is part of a Circular Economy Action Plan, which clearly identified plastics as a priority area.

Since then, **the European Green Deal** was introduced on December 11, 2019. The EU stated that climate change and environmental degradation constitute an existential harm to Europe and the rest of the world. The European Green Deal is meant to deal with these challenges by transforming the EU into a modern economy, using its resources efficiently while staying competitive. The EU is intended to ensure that Europe becomes a net-zero economy by 2050 and that it disassociates its growth from the use of resources. Several action plans and strategies have resulted from the European Green Deal. The elements mentioned below may affect plastic waste.

First, the new Proposal of a Circular Economy Action Plan (March 11, 2020) relies on circular economy measures implemented in 2015 while ensuring that regulation is rationalized and adapted to a sustainable future. New transition possibilities should be maximized, while minimizing costs for people and companies.

More specifically, a chapter discusses plastics (§3.4) and states that the Commission will propose binding prescriptions regarding the amount of recycled materials and waste reduction goals for key products (packaging, construction materials, vehicles). This framework should still comply with the activities of the Circular Plastics Alliance.

The Commission will also address the micro-plastics issue and create a framework regarding the supply of biosourced plastics, their labeling and use, as well as the development of biodegradable or compostable plastics.

Second, a **Chemical Strategy for Sustainability** (October 14, 2020) aims to reach to a toxic-free environment with a high degree of both human and environmental health, while strengthening the EU chemical industry competitiveness. In its conclusions, the Council asked the Commission to implement measures included in its strategy regarding the rationalization of the EU legislation related to chemicals. Substances of concern should at least be minimized, while gradually eliminating the most hazardous chemicals that are not essential to society.

The Strategy explicitly targets plastics. Regulation must go along with higher investment in innovation in order to fight against the presence of substances inherited from the past in waste fluxes. This would enable more waste to be recycled. Sustainable innovations and technologies should be implemented to this end. Technologies such as chemical recycling could also play an important role but only if they enable positive global environmental and climate results when considering products' lifecycle as a whole.

In addition, a **Zero pollution Action Plan** (May 12, 2021) sets such an ambitious goal for 2050. Air, water and soil pollution would be reduced to levels that would not be considered as harmful

for public health and ecosystems. These levels should also respect the boundaries with which our planet can cope, thereby creating a toxic-free environment.

Here again plastics are targeted. This plan sets a goal to achieve a 50% reduction of plastic waste in the marine environment, and a 30% decrease of microplastics emissions in the environment. The EU also promotes an international treaty on the prevention and management of plastic pollution. The Commission will reexamine the Marine Strategy Framework Directive by 2023, while taking into account the progress of European legislation on the main sources of pollution and the necessity to reduce plastic waste.

Finally, a **Sustainable blue economy strategy** (May 17, 2021) includes five major pillars: carbon neutrality and zero pollution; circular economy and waste prevention; biodiversity and investment in nature; coastal resilience; and responsible food systems. For the first time, these pillars are considered in a systematic way. In terms of circular economy and waste prevention, the goals are more ambitious than those set in 2008 (*c.f.* less than 20 items of litter for every 100 meter of coastline).

On plastic waste, the Commission will take measures by 2030 to reduce by half the amount of plastic waste disposed and nutrient infiltration into marine waters, as well as the release of chemical pesticides and risks related to them. These measures also include limiting the intentional addition of microplastics, additional measures regarding their labeling, normalization and certification, and an additional regulation of unintentional microplastics emissions to ensure their capture at every step of their lifecycle. Lastly, the measures include a declaration of waste caught in fishing nets to port authorities, a collection of fishing gears made of plastics and their recycling after their use.

On 22 February 2022, the European Commission opened the public consultation phase of a proposal for a regulation that aims to tackle microplastics that are unintentionally released into the environment from tires, textiles and plastic pellets. The initiative will focus on labelling, standardization, certification and regulatory measures for the main sources of these microplastics. The initiative also aims to improve the science on the risks and occurrence of microplastics in the environment, tap water, and food, and to reduce environmental pollution and potential health risks, while respecting the principles of the single market and encouraging competitiveness and innovation.

At the French level, two main policies may forecast future legislative evolutions.

First, the **Biodiversity Plan of the Minister** for the Ecological Transition of July 4, 2018 aims to strengthen French action on biodiversity preservation and to create measures to restore biodiversity when it has been damaged. The second axis of this plan sets an ambitious goal of achieving zero plastic emissions in the marine environment by 2025.

Second, authorities also make **voluntary commitments**. For instance, the **National Pact on Plastic Packaging** commits public and private actors to: create a list of problematic or useless packaging for which elimination measures should be decided; collectively reach 60% of plastic packaging recycled by 2022; develop eco-designed packaging to make plastic entirely reusable,

recyclable or compostable by 2025; and lead awareness and educational campaigns on plastic pollution issues.

Another voluntary commitment of this kind is the “**Zero Waste**” **territories initiative** issued *via* calls for projects to identify voluntary territories willing to reduce their waste and develop circular economy between 2016 and 2019. A hundred and fifty-three territories have been rewarded and benefit from an official recognition, as well as a methodological and financial support.

Besides, three law proposals aimed at fighting plastics have been filed in the National Assembly. The **Law proposal n°3982 aimed at fighting plastic pollution**, adopted by the Senate, proposes to add to Article L. 514-15-12 of the Environmental Code that would ban the marketing of detergents containing plastic microbeads. The **Law proposal n°4827 aimed at providing France with the necessary instruments to fight plastic pollution**, submitted to the National Assembly on December 21, 2021 proposes to ban petroleum-based plastic from January 1st, 2030 and to establish a national "zero plastic oil" strategy. The law proposal also suggests to add a timetable for bans on various products made from petroleum-based plastics to the national strategy for the reduction, reuse and recycling of single-use packaging and to create a National Plastic Agency. Finally, the **Law proposal n°7958 aimed at fighting against plastics that are dangerous for the environment and health**, filed in the National Assembly on January 25, 2022 and referred to the Committee on Sustainable Development and Land Use Planning, aims to: ban food packaging made of polystyrene or equivalent polymers as of January 1, 2025; ban food packaging and containers made of perfluorinated compounds for which health safety has not been established, as of January 1, 2024; improve consumer information by making it mandatory to mark single-use products containing plastic; and allow local authorities to limit the introduction of single-use plastic objects in protected areas.

Law proposals are non-governmental legislation. They are initiated by parliamentarians and must be reviewed by Parliament before they can be enacted. There is therefore a real unknown as to the likelihood of adoption of these texts.

C. United States

The Save Our Future Act was introduced in the Senate in June 2021. The bill would amend the Internal Revenue Code to provide for carbon dioxide and other greenhouse gas emissions fees. A fee would be imposed on petroleum products that are removed from any refinery, removed from any termination, or which entered the United States for consumption, use, warehousing. The bill would require the EPA to establish a fee rate equal to the applicable amount per ton of carbon dioxide that would be emitted through the combustion of the applicable product. For calendar year 2023, the applicable amount is \$54. For 2024, the applicable amount would be equal to the sum of (1) the amount for the previous year (\$54) and 106%, and (2) an inflation adjustment, based on the Consumer Price Index. For each subsequent year, the same equation would apply. The bill would encourage carbon sequestration by providing a rebate of the fee to manufacturers who encapsulate any of the carbon dioxide that would have otherwise been emitted through combustion of the petroleum product in a manner that does not result in the direct emissions of carbon dioxide. Manufacturers of single-use plastics are not eligible for the rebate. Thus, if the EPA set an

emissions fee rate at a level that would render single-use plastic manufacturing significantly more expensive, the bill could effectively reduce the production of single-use plastics.¹⁵⁵

Other authorities include Memoranda of Understanding and Congressional Resolutions. In September 2021, the EPA signed a Memorandum of Understanding (MOU) with the Mississippi River Cities and Towns Initiative (MRCTI) to formalize a local-federal partnership to tackle plastic pollution in the Mississippi River. Approximately 40% of plastic pollution entering the Gulf of Mexico originates from the Mississippi River. To address this issue, the MOU brings together state and local governments, communities, businesses, and residents to identify collective actions to prevent plastic pollution. The MOU also memorializes EPA's support of the United Nations Environment Program in its partnership with MRCTI to study the state of plastic pollution along the Mississippi River. This partnership enables MRCTI and EPA to study additional communities along the Mississippi River and expand on-the-ground efforts to reduce plastic pollution.¹⁵⁶

In February 2021, a resolution was introduced in the House that would call on President Biden to immediately implement a climate agenda at the White House by prohibiting use of petroleum-based products and energy sources. Resolutions are not binding law, but rather, they are akin to policy positions that reflect the collective position of the legislators on a particular issue. This resolution would seek the removal or ban of all equipment, objects, and materials derived from petroleum products, including plastic or laminated identification cards and plastic drinking cups, from the grounds of the White House. Despite the anti-plastic waste provisions embodied in the resolution, the resolution would ultimately support the continued efforts of the petrochemical industry and use of fossil fuels and petroleum products "which have made modern life possible."¹⁵⁷ The resolution has not yet been passed by the House.

In June 2021, a resolution was introduced in the House that would recognize World Ocean Day and the necessity to protect, conserve, maintain, and rebuild the ocean and its resources. The resolution would commit to increasing the investment of federal funds in scientific research and monitoring to better understand changing ocean ecology and to accomplish the goals of the United Nations Decade of Ocean Science for Sustainable Development.¹⁵⁸ Again, while resolutions are not binding law, this policy position, if advanced in the House, would signify federal recognition of the need to eliminate plastic waste in the oceans.

¹⁵⁵ *Save Our Future Act*, S. 2085, 117th Congress (2021-2022), available at <https://www.congress.gov/bill/117th-congress/senate-bill/2085/text?q=%7B%22search%22%3A%5B%22plastic%22%2C%22plastic%22%5D%7D&r=29&s=2>.

¹⁵⁶ U.S. Environmental Protection Agency, *EPA Formalizes Local-Federal Partnership to Protect Mississippi River Communities from Plastic Pollution* (Sept. 17, 2021), available at <https://www.epa.gov/newsreleases/epa-formalizes-local-federal-partnership-protect-mississippi-river-communities-plastic>.

¹⁵⁷ *Resolution Calling on President Biden to Immediately Implement His Radical Climate Agenda at the White House by Prohibiting Use of Petroleum-Based Products and Energy Sources*, H. Res. 158, 117th Cong. (Feb. 24, 2021), available at <https://www.congress.gov/bill/117th-congress/house-resolution/158/text?q=%7B%22search%22%3A%5B%22plastic%22%2C%22plastic%22%5D%7D&r=11&s=5>.

¹⁵⁸ *Resolution Recognizing World Oceans Day and The Necessity to Protect, Conserve, Maintain, and Rebuild Our Ocean and its Resources*, H. Res. 465, 117th Cong. (June 8, 2021), available at <https://www.congress.gov/bill/117th-congress/house-resolution/465/text?q=%7B%22search%22%3A%5B%22plastic%22%2C%22plastic%22%5D%7D&r=13&s=5>.

In July 2021, a resolution was introduced in the House that would recognize the duty of the federal government to create a “Green Real Deal” to achieve robust, economy-wide greenhouse gas emissions reductions. To achieve these goals, the resolution asserts that the federal government has a duty to promote the widespread use and development of next-generation recycling and waste management technology, such as plastics-to-fuel initiatives and transforming postconsumer recycled plastic into new materials such as asphalt. The resolution has not yet been passed by the House, but if resolved, would signify the position of one legislative Chamber on the government’s duty to improve the nation’s recycling capabilities.

VII. Comparison, Inventory, and Description of French and U.S. Judicial Review Regarding Plastic Waste

A. Comparison of French and U.S. Judicial Review and Enforcement Authorities

France and the United States both enjoy well-developed systems of judicial review that allow the imposition of liability for improper management of plastic wastes. Fundamental differences between their approaches and structures, however, give each system a comparative advantage for certain claims.

There are at least three significant differences between these French laws and United States law.

First, the laws of France seem much less focused on penalizing pollution once it has occurred than in preventing it to begin with. More precisely, administrative police laws intend to prevent waste, and at the same time set sanctions for breaches of the obligation set in the laws or regulations. The maximum penalties associated with prohibited behavior are much less than the maximum penalties associated with such behavior in the United States. However, given the rarity of criminal prosecutions of environmental laws, this difference is unlikely to meaningfully affect the degree to which the environment is protected.

Second, with very few exceptions, French law regulates and penalizes pollution generally as opposed to the regulation by environmental medium – land, water, air – that is the foundation of United States environmental law. The French legal system has the advantages of specificity and explicit statutory authorization for actions to reduce plastic pollution. Its Environment Code, for example, contains specific criminal prohibitions on the discharge of substances that cause serious and durable harmful effects or substantially degrade fauna, flora, or quality of the air, water, or ground. While its general pollution offense and uncontrolled waste dumping crimes do not require proof of specific intent to cause environmental harm, the Code also includes a graver specific offense for intentional violations of these environmental standards. Ecocide, an offense requiring proof of intent, carries a maximum penalty of ten years imprisonment and a 4.5 million Euro fine. However, French law lacks perspective on these new offences to give a complete analysis of their characterization. Notably, all of these offenses could readily apply to a disposal of plastic wastes that causes significant environmental damage.

Third, the standards of liability under French law are more subjective than the relatively specific standards under United States law.

The United States legal system also has a sophisticated and sweeping range of criminal violations for federal and state environmental requirements. These penalties can apply to a broad range of potential defendants under expansive doctrines such as the responsible corporate officer doctrine, and they can punish regulatory non-compliance that takes place either knowingly or, in some cases, due to simple or gross negligence. But these criminal tools will have limited applicability to plastics mismanagement because the United States has not set specific federal or state discharge limits or disposal prohibitions that impose significant criminal penalties for the improper disposal of plastic wastes absent rare circumstances. This lack of specific discharge limits or disposal standards also hobbles the potential use of U.S. administrative enforcement authorities. France, in contrast, can much more readily bring administrative enforcement actions because of its national statutory and administrative proscriptions for generating, managing, and disposing of plastic wastes.

The United States nonetheless enjoys a comparative advantage in judicial enforcement of tort liability arising from improper plastics management. Tort laws under U.S. federal and state common law offer flexible theories of liability and innovative procedural options that substantially smooth the pathway for waste plastics tort actions. These options include the use of class actions, public nuisance tort actions by private parties who suffer special injuries, class action lawsuits, multidistrict litigation at both the federal and state level, and contingent fees for plaintiffs' counsel. Significant tort actions have already surfaced in U.S. state courts that seek substantial monetary damages and injunctive relief against manufacturers and purveyors of plastic goods. These claims sound in either traditional nuisance, negligence, and products liability claims, or in allegations of misrepresentation and civil fraud for wrongful statements in marketing the products.

These distinctions between the systems may fade as the United States adopts increasingly stringent regulatory requirements for waste plastics and imposes larger financial liabilities for its improper management. France will also likely see greater efforts to impose tort liability. There is also a growing panoply of administrative and regulatory mandates to reduce the production and use of plastic goods and waste plastics. In recent times, the administrative liability of the State and of local authorities has been sought in courts by NGOs. Such claims were based on air pollution and climate laws and regulations, and do not include plastic waste. This is a growing trend which seeks to engage the administrative liability of public authorities. In this way, such future claims could be tied to plastic waste.

B. France

Three types of liability exist when it comes to judicial enforcement of Environmental law. First, criminal liability enforcing Environmental Criminal law provisions (1.); second tort liability considering civil matters related to the environment (2.); and finally administrative liability regarding the administration prerogatives, acts or omissions (3.).

French case law on plastic pollution is limited. However, the Surfrider Foundation, a non-profit organization whose purpose is to protect the ocean, the coastline, all aquatic environments and their users, made several calls at the European Union level claiming breaches of Directive (EU) 2019/904. Considering that the poor implementation of the Single Use Plastics (SUP) European directive undermines the impacts of this legislation and overall efforts of the European Union to put an end to plastic pollution, the NGO challenged the European Commission in November 2021.

The Surfrider Foundation sent an official letter to the Italian Minister of Environment and the Italian Secretary of State for European Affairs on June 22, 2021 calling on Italy to comply with the European regulation. The NGO asserted that as of July 3, 2021 (the deadline for incorporating the SUP European directive at the national level), Italy had not put in place sufficient measures to comply with the applicable European regulation.

Finally, as part of its European “Chasing Pellets” campaign, the Surfrider Foundation called on Belgium to take action, by challenging the Belgian Minister of Environment in September 2021. Belgium is facing chronic plastic pollution of its rivers and coastline due to industrial plastic pellets in Ecaussinnes, in the Belgian Walloon region and in Antwerp, in Flanders.

This trend of calling on institutions and member states of the European Union is growing and could extend to other member states (including France) in the event of breach or non-compliance with the European regulation or in case of implementation of insufficient measures.

1. Criminal Liability

Environmental Criminal law refers to “*all repressive devices set up to protect the various elements which compose the environment by sanctioning human activities threatening or degrading them.*” It is currently burgeoning. In addition to the application of the guiding principles of Criminal law apply, there are numerous specific repressive conditions in Environmental Criminal law as set in the Environmental Code.

a. Research and Notice of Environmental Criminal Offense

The Environmental Code defines, for every field it includes, the procedure that must be followed to challenge a claim (for instance in classified facilities or water offenses).

It must be noted that two alternative procedures to criminal proceedings are applied in the environmental field. The French law provides various criminal procedures applicable to environmental offenses without a hearing.

In recent times, specialized Environmental Criminal jurisdictions have emerged to deal with environmental offenses.

In principle, common law jurisdictions judge environmental offenses; police courts judge minor offenses and criminal courts rule on offenses.

By exception, since 2020, a regional specialized branch in environmental offenses has been designated in every appeal court district, which is attached to a judicial tribunal. This specialized branch hears complex environmental cases (*i.e.* technical cases in which damages are important or widespread), that are set by the Environmental Code. They include offenses subject to the waste legislation. This new branch will include a public prosecutor’s department section, a hearing panel and specialized judges. These judges will receive a special training in environmental issues, especially regarding damages evaluation and causation. They will exercise their jurisdiction over the appeal court area for complex offenses and those that are related to them.

The most technical and widespread cases, such as large pollution caused by a regulated product or environmental and industrial disasters will always fall under the jurisdiction of the two interregional specialized courts in Paris and Marseille. They hear public health and collective accidents cases. In the same way, specialized coastal courts will continue to hear marine pollution cases, while interregional specialized courts will hear organized crime cases that are both complex and have an environmental element.

b. Criminal Offenses

Environmental Criminal offenses prescribed by the Environmental Code are partitioned into three categories.

First, the article L. 231-1s of the Environmental Code prescribes offenses related to harm caused to specific environments, such as marine environments. The Climate and Resilience Law of August 22, 2021 recently enacted these offenses into French law. They strengthen Environmental Criminal law by setting tougher punishments and complete the repressive legislation to prevent and punish more severely and efficiently harms caused to these environments. The new provisions are detailed below.

Article L. 231-1 of the Environmental Code prescribes a general pollution offense. It provides for penalties where, in clear violation of a particular obligation of care or safety provided by law or regulation, discharge into the air, throw, to dump or to let flow in surface or underground waters or in the waters of the sea within the limits of the territorial waters, directly or indirectly, one or more substances whose action or reactions involve serious and durable harmful effects on health, flora, fauna, with the exception of the damage mentioned in articles L. 218-73 and L. 432-2, or serious modifications of the normal water supply regime, which penalties be up to a five-year jail sentence and a one million euro fine.

Article L. 231-2 of the Environmental Code sanctions uncontrolled waste dumping. More precisely, it provides for penalties where there is abandoning, dumping or causing waste to be dumped, under conditions contrary to Chapter I of Title IV of Book V, and the fact of managing waste, within the meaning of Article L. 541-1-1, without complying with the requirements concerning the characteristics, quantities, technical conditions for taking charge of waste and the treatment processes implemented, fixed pursuant to Articles L. 541-2, L. 541-2-1, L. 541-7-2, L. 541-21-1 and L. 541-22, when they cause a substantial degradation of the fauna and the flora or the quality of the air, the ground or water, which penalties can be up to a three-year jail sentence and a 150,000 euro fine.

Finally, the offense of ecocide was introduced by the Climate and Resilience Law. It consists of an infringement of the environment when the two offenses aforementioned are intentional. The sanction is a ten-year jail sentence and a four and a half million euro fine (article L. 231-3 of the Environmental Code).

Article L. 541-46 of the Environmental Code provides that the infringement of the waste regulation is sanctioned by a two-year jail sentence and a €75.000 fine. The infringement includes uncontrolled waste dumping, or the fact to deposit, or make deposit, in conditions breaching waste regulation; breaching requirements concerning characteristics, quantities, technical and financial

conditions and treatment conditions of waste management; breaching waste transfer regulations regarding cross-border fluxes, or breaching the regulation regarding waste containing POP.

As an example, Zero Waste France, an NGO, filed a criminal claim on October 18, 2018 against two companies, McDonald's and KFC, each for one of their restaurant located in Paris. The claim was based on a decree that imposes the source separation of non-hazardous paper, metal, plastic, glass and wood waste in order to promote their reuse and recycling. The NGO alleged the absence of waste sorting in the restaurant, the absence of bio-waste sorting, and the massive use of disposable products contrary to the hierarchy of waste treatment methods. To date, there has been no judgment on this case.

Third, specific provisions aim at the infringement of aquatic areas.

Article L. 216-6 of the Environmental Code establishes that “*the fact of dumping, spilling or letting flow into surface waters, underground waters or marine waters within the limits of territorial waters, directly or indirectly, any substance whose action or reactions could lead, even temporarily, to harmful effects on health or damage to the flora or fauna*” is associated with penalties up to a two-year jail sentence and a €75.000 fine.

Targeting food chain more specifically, the article L. 432-2 of the Environmental Code provides that “*dumping, discharging or allowing any substance to flow into the water [...], directly or indirectly, whose action or reaction has destroyed the fish or has adversely affected its nutrition, reproduction or food value*” is an offense. The offense emphasizes on the effects, rather than on the potential harm, caused to fish or food. It is associated with penalties up to a two-year prison sentence and a €18.000 fine.

Article L. 218-73 of the Environmental Code aims to sanction the threat caused to marine biodiversity. It provides that “*throwing, dumping or allowing to flow, directly or indirectly into the sea or into the part of the marine waterways, canals or bodies of water, substances or organisms harmful to the conservation or reproduction of marine mammals, fish, crustaceans, shellfish, mollusks or plants, or of a nature to render them unfit for consumption*” is an offense associated with a minimum €100.000 fine.

2. Tort Liability

Tort liability refers to the principle that any act or omission causing harm or damage to another is a civil wrong that results in the person's liability. Such wrongs may be remediated.

Three conditions must be satisfied for someone to be found liable: tort, causation and damage.

These principles are applied to waste considering the producer's legal obligations. Indeed, any waste producer or owner is liable for its management until its final destruction or recovery (whether doing it himself, herself, or delegating it), even when waste are transferred to a third party to be treated. Finally, any waste producer or owner must ensure that the person to whom waste are transferred is authorized to deal with those particular wastes.

The breach of one of these legal obligations is a tort for which waste producers or owners can be held liable. Such waste includes plastic waste.

Moreover, without any known waste producer or owner, the owner of the land on which wastes have been dumped on will be liable to manage those wastes (or to ensure they are being managed) until their final elimination. Case law sets precise conditions for the owner of the land to be held liable under Torts law. For instance, the owner must have been negligent towards uncontrolled waste dumping on his or her land, or show that he or she could not ignore, at the date when he or she acquired the land title, the existence of the waste in question and that the waste producer would not be able to satisfy his or her obligations.

Any person responsible for an abnormal neighborhood disturbance can also be found liable. The phrase abnormal neighborhood disturbance refers to nuisances exceeding the normal annoyances that the neighbors must accept (noise, odors, dust, smoke, waste, etc.), according to the nature or location of their land, dwelling or local usage. This type of liability can be applied in the case of plastic pollution. One lawsuit has targeted two companies as a result of the damage caused by plastic waste pollution on vineyards and lodgings: *Montpellier Court of Appeal, February 20, 2014, No. 13/04414*. The companies were required to implement measures suitable to stop the pollution coming from these establishments, and were subject to a fine of 5.000€ each.

In another case, the owner and lessor of an agricultural land petitioned the Court to order the lessee to clean up a parcel of land that had been used as an illegal dump for several years. The land contained various rubble and buried plastic waste. The judge considered that these facts could be qualified as a permanent and irreversible infringement of the rural use of the land, and that the owner was entitled to require its removal. As a result, the Court ordered the lessee to clear the land: *Angers Court of Appeal, March 16, 2010, No 08/01394*.

In addition to the courts, a separate body (*le Jury de déontologie publicitaire*) set up by the Professional Advertising Regulatory Authority's (ARPP) statutes issues opinions on claims relating to advertisements. To be admissible, a claim must relate to a clearly identified advertisement in France and be linked only to the advertisement's content (its message, images, sounds, atmosphere). The claim can be based on the non-observance of any of the ARPP's ethical rules as well as on the provisions of the International Chamber of Commerce (ICC) Code on advertising and commercial communications.

In August 2021, the body considered that an Adidas advertisement failed to comply with the professional ethical rules, because of the misleading environmental claims made in the advertisement: *Jury de déontologie publicitaire, opinion of August 9, 2021, Adidas, n°756/21*. The body considered that the slogan "100% iconic" and "50% recycled" did not allow the consumer to know the total proportion of the shoe that is recycled, even though it is the most relevant data with regard to the claim used. According to the body, the advertising message lacks clarity. With regard to the logo mentioning the text "End Plastic Waste", it considered that "if the plastic used to make the promoted sneakers comes from the recovery of abandoned plastic waste, especially in the ocean, it is clear that it is not recyclable plastic. At the end of its life, the dumped sneaker will therefore add to the mass of non-recycled plastic waste and, presumably, feed the resulting pollution. Therefore, it cannot be claimed that the marketing of these shoes would be a way to 'end' plastic waste."

This opinion is in line with article 12 of the Climate and Resilience Law of August 22, 2021, which prohibits the unproven assertion in an advertisement that a product or service is “carbon neutral” or any equivalent formula. Failure to comply with this prohibition is sanctioned by a fine of 20.000 euros for a natural person and 100.000 euros for a legal person. These amounts may be increased to the full amount of the expenditure allocated to the illegal operation.

Another recent complaint made before this body concerns the compliance with ethical rules of an advertisement of the company Castalie for the promotion of a micro-filtered water fountain. The body noted among other things that the film did not at any time mention the negative environmental impact of the promised devices, neither with regard to its carbon footprint, nor with regard to other factors, and could thus be perceived by the consumer as a way of solving all the ecological challenges facing society. The body considers that the advertising film disregards some of the ARPP’s recommendations: *Jury de déontologie publicitaire, opinion of September 6, 2021, Castalie, n°742/21.*

3. Administrative Liability

a. Administrative Measures and Sanctions

Administrative police powers are utilized to exercise administrative measures and sanctions. Such police powers authorize police with enforcement authority regarding environmental issues and known as “environmental police.” These environmental police include administrative service agents responsible for controlling and ensuring the respect of environmental regulations (thus including plastic waste) and reporting criminal offenses.

Three police authorities have prerogatives that can be applied to plastic waste.

First, mayors hold municipal police powers. These powers are of two kind: general and specific. General police powers aim to ensure public order, safety and health within the local government’s jurisdiction. Mayors can implement administrative measures aimed at stopping dumping of any waste material that could threaten safety and hamper the convenience or safety of a public way, including pollution prevention of any kind.

Special police powers include waste specifically. When waste is abandoned, dumped or managed in breach of the Environmental Code provisions, mayors notify waste producers or owners of the charges laying against them. Mayors can also order a €15.000 fine and give waste owners or producers a notice to implement the necessary operations for the regulation to be complied with in a determined time. If the offenders do not comply with the notice, mayors can order administrative sanctions (such as fines against the waste owner or producer breaching the regulation). The Law against Waste and for Circular Economy of February 10, 2020 strengthened these powers.

Second, prefects also have police powers that could affect plastic waste.

If issues related to waste management or prevention arise in regulated facilities, prefects have jurisdiction over these issues and not mayors. Prefects also have significant police powers regarding regulated facilities, including those producing plastic waste. In this respect, if operators do not have a title (equivalent to an environmental permit) for the facility they operate, or breach the one they have, prefects can give them a notice to respect the regulation. If the regulation is still

disrespected, prefects can implement operational sanctions (suspend or terminate the operation) or financial ones (administrative fines and penalties).

Third, the Minister of the Environment also has special police powers regarding cross-border waste transfer. The Minister can impose waste treatment measures on the person responsible for the transfer when such waste has not reached its destination or has been transferred in breach of the 2006 European Regulation.

An administrative fine of 192,000 euros has been imposed on a French company for illegal waste trafficking. Since China banned the import of plastic waste into its territory in 2018, dozens of illegal recycling plants have sprung up in Malaysia. Refusing to become the world's new landfill, the country refused to accept delivery of several containers that included non-compliant shipments that did not comply with the international Basel Convention. Malaysia ordered that the containers be returned to France. The French Ministry of Ecological Transition sought out the company responsible for sending the containers and fined it in early November 2019.

In some situations, the prefects or ministers have the authority to grant or refuse authorizations for works. Following an inspection carried out in a national nature reserve, an inspector noticed the installation of two fishing structures without authorization. In order to regularize their situation, the owners of these installations requested an environmental permit. This was refused by the prefect, notably because the structures increase pollution by the discharge of plastic materials and because they have an unfavorable impact on natural habitats. The Minister was subsequently seized, and also refused the authorization on other grounds. The Court confirmed the refusal of the permit: *Bordeaux Administrative Court of Appeal, December 15, 2020, No 18BX00079*.

Finally, individuals may challenge the legality of an administrative act before the judge, in order to request its cancellation.

The Constitutional Supreme Court ruled on whether the Law of December 24, 2012 suspending the Manufacture, Marketing, Export and Import of any Food Plastic containing Bisphenol A complied with the Constitution.

The Supreme Court ruled that the legal suspension of the import and placing on the national market of products containing bisphenol A infringes on the freedom to conduct a business in a way that is not manifestly disproportionate to the objective of protecting health that it pursued. Therefore, this suspension was judged to be compliant with the Constitution.

Also, by decision of December 28, 2018, the highest administrative court rejected the appeal of Dopla, Flo Europe, Ilip and Nupik International. These five companies sought the annulment of a 2016 decree relating to the limitation of disposable plastic cups, glasses and plates: *Council of State, December 28, 2018, No. 404792*. In short, the plaintiffs tried to defeat the new environmental regulation by demonstrating its non-conformity to European legislation and French legal principles. However, the Court ruled that the ban on disposable plastic cups, glasses and plates was necessary in view of the imperative need to protect the environment, as well as proportionate and justified in view of the objective pursued by the Parliament to reduce the volume of plastic waste. Consequently, the decree was judged legal.

b. Administrative Liability

The central and decentralized government can be held liable for any of their acts or omissions that caused a damage.

Regarding plastic waste, the administration can be found liable in two situations.

First, the administration can be held liable if it has committed a *wrongful omission* by illegally failing to implement its police powers to manage and/or treat waste.

In a climate litigation case, NGOs argued that the measures adopted by the French State since 2017 were not sufficient to achieve the overall objective of reducing GHG emissions by 40% by 2030, and to ensure compensation for the ecological damage linked to the excess GHG emissions resulting from the State's failure to comply with the carbon budget: *Paris Administrative Tribunal, October 14, 2021, No 1904967, 1904968, 1904972 and 1904976*.

In defense, the Minister of Ecological Transition argued that the State had already taken measures to compensate for exceeding the first carbon budget, and in particular concerning waste, that the Law of February 10, 2020 against Waste and the Circular Economy contains several measures to avoid the production of single-use plastics, as well as to increase the recycling rates of various products (including a target of 100% recycled plastic by 2025). The Minister added that the implementation of these measures, in particular on plastics, would make it possible to avoid (over their life cycle) about 5Mt CO₂eq/year by 2030, and that the recycling rate for plastic had already increased from 25.5% in 2015 to 29% in 2019.

Despite these explanations, the court ordered, for the first time, the French State to repair the consequences of its wrongful action.

In another case, individuals reported nuisances related to a landfill and waste storage center managed by a public entity. They complained in particular about visual pollution due to flying plastics, water and forest pollution and olfactory nuisance: *Lyon Administrative Court of Appeal, August 29, 2019, n°17LY02245*. The Court noted that the damages were not related to the very existence or normal operation or maintenance of the various entities on the site, but were the result of delays by the public entity in regularly maintaining its installations and bringing them up to standard. The Court ruled that the public entity was liable for the damage suffered by the claimants. The judge ordered the public entity to pay 15,000 euros to the claimants as compensation for the damages suffered.

Second, the administration can be found liable if it has committed a *wrongful act* by enacting an illegal administrative act regarding the prevention or management of illegal waste (in accordance with its police powers or its regulation powers). In this case, the illegality always engages the administration's liability, and the administration must remediate the damages caused to the victim.

C. United States

Several existing and potential avenues of litigation may create a risk of liability for plastics producers, distributors, and users in the United States.

1. Criminal Liability

To date, no one has brought a federal or state criminal prosecution in the United States of a plastics producers, distributors, or users based on their alleged improper use or disposal of waste plastics. While environmental criminal indictments have targeted chemical manufacturers who produce plastics precursors and feedstocks or who illegally dumped solid wastes that contained plastics, these lawsuits did not target any specific factors uniquely linked to discarded plastics. For example, no federal or state criminal action has centered on the tendency of waste rubber to accumulate in aquatic environments, bioaccumulate in biological organisms, or degrade into microplastics.

The lack of prior criminal enforcement does not foreclose the possibility of new federal and state prosecutions that rely on expansive readings of existing environmental statutes. For example, persons who improperly discard waste plastics may potentially face criminal liability under several federal laws, including:

- Disposal, storage, or treatment of plastic wastes without a permit under the Resource Conservation and Recovery Act if the discarded plastic also constitutes hazardous wastes. 42 U.S.C. § 6928(d)(2)(A). While most plastics will not meet the regulatory definition of hazardous waste, they can become hazardous if they are mixed with listed hazardous wastes or are derived from hazardous waste feedstocks. 40 C.F.R. §§ 261.21-24, 261.31-33.
- the Migratory Bird Treaty Act (if discarded plastics resulted in the unauthorized taking of a protected migratory bird), 16 U.S.C. §§ 703-712;
- the Endangered Species Act (if discarded plastics caused the taking of a protected species or impaired its critical habitat), 16 U.S.C. § 1531 *et seq.*;
- Section 10 of the Rivers & Harbors Act of 1899 (which imposes strict misdemeanor liability on persons who discharge materials into navigable waters without a permit or authorization from the U.S. Army Corps of Engineers), 33 U.S.C. §§ 403, 407, 411; or
- the federal Clean Water Act (for discharges of plastic pollutants from a point source into waters of the United States without a permit or other authorization from the U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, or relevant states who have received delegation to implement the program). The Clean Water Act allows imposition of misdemeanor criminal liability for simple negligence that causes unpermitted discharges of pollutants – which could include waste plastics – into waters of the United States.¹⁵⁹

¹⁵⁹ U.S. v. Hanousek, 176 F.3d 1116 (9th Cir. 1999); U.S. v. Ortiz, 427 F.3d 1278, 1283 (10th Cir. 2005); U.S. v. Pruett, 681 F.3d 232 (5th Cir. 2012).

In addition to possible criminal liability under federal environmental statutes, state environmental statutes may impose strict misdemeanor criminal liability for discharges of pollutants into waters or resources of the state (if the plastics are mixed with, or constitute, a regulated substance subject to the act).

This list is illustrative only, and it is not an exhaustive catalogue of all possible bases for environmental criminal liability for waste plastics disposers and managers.

2. Tort Liability Litigation

While several lawsuits have targeted plastics discarders or producers for purported regulatory violations or environmental remediation liability, only one lawsuit to date has alleged public nuisance claims: *Earth Island Institute v. Crystal Geyser Water Co.* (Calif. Super. San Mateo Cnty., complaint filed Feb. 26, 2020), No. 20-CIV-01213. This lawsuit targets ten corporations – including Crystal Geyser Water Company, Nestle USA, Inc., Mars Inc., PepsiCo Inc., Proctor & Gamble Company, and others who account for up to 14 percent of the plastic found in ocean waters – with sweeping allegations that the companies conducted a systemic long-term disinformation campaign about the recyclability of their plastic products and the costs incurred by governments and the public. Complaint at 50-60. This lawsuit explicitly parallels similar public nuisance and consumer deception claims brought against companies whose contributions to greenhouse gas emissions had caused damaging climate change as well as earlier public nuisance actions against tobacco companies and marketers.

Earth Island Institute’s lawsuit alleges that large bottling companies should bear liability for damages caused by plastic contained in their products. The complaint alleges, in addition to public nuisance tort, claims arising from negligence, failure to warn product liability, and violations of the California Consumers Legal Remedies Act. Complaint at 60-61. The lawsuit requests that the court order the defendants to disburse funds and resources necessary to remediate the harm that they caused to the environment. It also asks the court to bar the defendants from continuing their misleading claims and labeling of their products. *Id.* The defendants have removed the lawsuit to federal court, and further proceedings will need to await a resolution of the proper forum to hear the case.

3. Regulatory and Administrative Liability Litigation

While toxic tort litigation poses the largest liability risk to the plastics industry sector in general, other lawsuits have relied on alleged regulatory violations at specific facilities to bring citizen suits or enforcement actions. These lawsuits have drawn on a growing collection of federal environmental statutes, including the federal Clean Water Act, the Resource Conservation and Recovery Act, the Rivers and Harbors Act, and other laws.

Clean Water Act - Point Source Discharges. The initial regulatory litigation has centered on alleged discharges of plastics into water from industrial facilities. In *San Antonio Estuary Waterkeeper v. Formosa Plastics Corp.* (S.D. Tex. filed June 27, 2019), No. 6:17-CV-0047, 2019 WL 2716544, Waterkeeper brought a citizen suit action under the federal Clean Water Act to claim that Formosa violated its Texas Pollutant Discharge Elimination System (TPDES) permit by

allowing nurdles (i.e., small plastic pellets) to escape into an adjoining bayou in amounts exceeding its permit limit. The permit contained a narrative water quality standard that mandated “no trace amounts” of floating solids in the plant’s discharges. At a bench trial, the trial court found that Formosa as a “serial offender” that had violated its permit limits for more than 1,000 days. The court also ruled that Formosa’s prior source controls, collection efforts, clean-up techniques, and hired contractors had all failed to control the discharges.

In October 2019, Formosa settled the case by agreeing to pay \$50 million in the largest citizen suit settlement under the Clean Water Act at that time. The settlement agreement obligated Formosa to make engineering changes to halt future plastic pellet discharges into waterways and to institute a monitoring system to track ongoing discharges. Formosa also agreed to clean up plastics that it had previously discharged into an adjoining creek. Joint Notice of Settlement and Commencement of 45-Day Review Period Exhibit A (Consent Decree), *San Antonio Bay Estuarine Waterkeeper v. Formosa Plastics Corp.*, Civ. Act. No. 6:17-CV-47 (S.D. Tex. filed Oct. 15, 2019).

In a similar vein, *Charleston Waterkeeper v. Frontier Logistics, L.P.* (D.S.C. filed March 18, 2020), No. 20-cv-01089-DCN, brought a Clean Water Act and a RCRA citizen suit against a plastic resin package producer. Frontier Logistics allegedly released plastic pellets into the Cooper River and Charleston Harbor on a routine basis, and Waterkeeper had already collected more than 14,000 nurdles from those waters since July 2019 alone. *Id.* at § 2. After the court denied the defendant’s motions to dismiss and strike material claims, Frontier agreed to settle the claim in March 2021 for \$1.2 million. The company also agreed to implement “all commercially reasonable measures” to prevent future releases of plastic pellets, flakes, and powders, under a third-party auditor’s oversight. Joint Motion for Entry of a Consent Order Dismissing Action With Prejudice, Exhibit A at p. 2-3 (March 3, 2021).

Clean Water Act - Total Maximum Daily Load Limits. Under section 303(d) of the Clean Water Act, states must identify water bodies that cannot meet water quality use standards for their designated uses. For these impaired waters, states must set out limits on total discharges of pollutants that the waters can receive without losing their ability to meet their designated use. These Total Maximum Daily Loads (TMDLs) effectively provide a basis to impose additional restrictions on pollutant discharges into impaired waterbodies even if all point sources discharging into the waterbody meet their NPDES permit limits.

In *Center for Biological Diversity v. EPA*, the Center for Biological Diversity (CBD) sued EPA for improperly approving the state of Hawaii’s list of impaired waters because that list did not include waters affected by plastic pollution. No. 1:20-cv-00056 (D. Hawaii filed Feb. 2, 2020). CBD’s Clean Water Act citizen suit argued that EPA and Hawaii overlooked extensive plastic pollution in 17 water bodies (despite extensive data and information submitted by CBD), and it asked the court to either order EPA to reject Hawaii’s defective TMDL designations or in the alternative to vacate and remand EPA’s approval of Hawaii’s list. Before the court could reach a decision, however, EPA withdrew its approval of Hawaii’s list and ordered the state to submit a new list that re-evaluated the data on plastic pollution. After reviewing Hawaii’s new submission, EPA subsequently decided to add waters at two of Hawaii’s beaches to the list of impaired waters because of extensive plastic pollution. Joint Status Report at 2, *Center for Biological Diversity*, No. 1:20-cv-00056 (D. Haw. July 17, 2020).

Deceptive Marketing and False Advertising Claims. As opposed to environmental regulatory violations, these cases involve a different type of regulatory misstep with tort overtones: false advertising and consumer misrepresentation claims. The lawsuits contend that plastic producers and marketers have made misleading or inaccurate claims about the environmental or health benefits of plastics to improperly persuade consumers and customers to purchase their products. These misstatements have allegedly inflated the environmental and health benefits of plastic products or underplayed the ecological damage and high costs of recycling discarded plastics.

For example, in *Kathleen Smith v. Keurig Green Mountain, Inc.*, the plaintiffs alleged that Keurig deceived its customers by falsely claiming its single-serve coffee pods were recyclable. This alleged misrepresentation, according to the complaint, violated the California Consumers Legal Remedies Act, the California Environmental Marketing Claims Law, and the California Business & Professions Code § 17200 for fraudulent business actions and practices. Keurig's actions also allegedly breached express warranties that they made when selling the pods. The plaintiffs seek sweeping remedies: an order to halt production of the pods, corrections to Keurig's advertising, and recovery of damages, legal fees, and restitution. The case has already survived a motion to dismiss and removal to federal court, and the court granted class certification to the plaintiffs on September 21, 2020.

Similarly, two other lawsuits have claimed that false claims about environmental benefits or recyclability by plastics manufacturers rise to the level of consumer deception. One of them has already ended – temporarily – in a voluntary dismissal. In *Cindy Baker v. Nestle S.A.* (filed April 12, 2018), the plaintiffs brought a class action lawsuit to allege that Nestle had misled its customers about the environmental and health benefits of its “Pure Life” bottled water. Despite Nestle's claims about the purity and sustainability of its bottled water, the plaintiffs alleged that each bottle contained up to 10,000 pieces of microplastic per liter of water. This alleged misrepresentation, according to the plaintiffs, constituted a breach of express warranties, violation of false advertising law, fraud, and negligent representation under California's False Advertising Laws and its business code. The plaintiffs voluntarily dismissed their complaint on February 1, 2019 after the trial court rejected the initial complaint because it ruled the U.S. Food and Drug Administration had primary jurisdiction over the claim.

Along similar lines, a California court wrestled with consumer deception claims arising from plastics marketing in *Greenpeace, Inc. v. Walmart, Inc.* No. RG20082964 (Cal.Super. Dec. 16, 2020), 2020 WL 8642276. The misrepresentation in this case centered on allegedly false claims that Walmart's “private label brands” products were made with recyclable plastic even though consumers did not have access to recycling programs that would accept them and no end market existed to reuse the products. These false statements, according to Greenpeace, rose to the level of “fraudulent acts and practices” under California's Business & Professions Code as well as “unlawful business acts and practices.” First Amended Complaint at ¶¶ 74, 81, 92. The trial court ultimately dismissed the complaint on Sept. 20, 2021 because Greenpeace had failed to properly allege that any of its individual members had relied on the specific misrepresentations in a way that would create standing. Order Granting Defendant's Motion to Dismiss First Amended Complaint at pp. 3-4 (Sept. 20, 2021). The dismissal, however, leaves open the possibility that

Greenpeace or another environmental advocacy group could re-file the claim with properly identified members.

These regulatory and administrative lawsuits may expand into other theories of liability. For example, in a lawsuit objecting to the U.S. Army Corps of Engineers' decision to issue a permit to a Formosa Plastics for a proposed expansion of a plastics production plant in Louisiana, the Center for Biological Diversity and numerous local environmental advocacy groups claimed that the Corps' issuance of the permit violated the Clean Water Act, the National Environmental Protection Act, the Rivers and Harbors Act, and the National Historical Preservation Act. Complaint at 4-5, *Center for Biological Diversity v. U.S. Army Corps of Engineers*, No. 20-103, 2021 WL 14929 (D.D.C. 2021). The stakes were high: Formosa's proposed project under the permit involve \$9.4 billion of investment in 10 chemical plants and four other facilities. This expansion would take place near an environmental justice community that already hosted numerous chemical plants and refineries in St. James Parish, Louisiana. In response, the Corps suspended the permit before the court could issue a judgment. While this case centered on the production of chemicals subsequently used for plastics manufacturing, it augurs similar lawsuits under NEPA and other statutes that could support environmental justice challenges to plastics production and management.

Plastics producers and marketers in the United States may also face future litigation and liability issues arising from corollary litigation on insurance recovery, contribution claims for remediation costs, and indemnification disputes.

VIII. Recommendations

A. France and the United States Joint Recommendations at the International Level

Because plastic pollution has become a global problem, an international treaty to fight plastic pollution and develop sustainable alternatives appears both relevant and necessary. During the Ocean Summit held in Brest, France on 12 February 2022, France and the United States both announced their support for the launch of negotiations on an international treaty against plastic pollution under the guidance of the United Nations. On 2 March 2022, the fifth United Nations Environment Assembly (UNEA) held in Nairobi, with the participation and support of both France and the United States, adopted its Global Resolution to End Plastic Pollution. The UNAE established an intergovernmental negotiating committee to meet in 2022 that will lead to a legally binding global instrument potentially in 2024.

An international treaty dedicated to fight plastic pollution would have many advantages. Such a treaty:

- would not isolate France, the United States – nor any other country – on the international scene while possibly supporting strong measures against plastic pollution such as the ban on the manufacture of certain products;
- could have a broad scope by covering both marine and land-based plastic pollution;
- could introduce common definitions and global standards for plastic production and recyclability that could strengthen a life-cycle approach to plastics in all countries;
- could encourage signatory states to develop alternatives to plastic products;

- could be binding on its signatory states, at least in some of its provisions;
- as part of the treaty, signatory states could set national targets for plastic reduction, recycling, and better management, including transparent reporting mechanisms that recognize the transboundary nature of plastic pollution.

Furthermore, an international treaty dealing specifically with plastic pollution could be complementary to a global treaty on environmental protection, such as the Global Pact for the Environment. The French President presented a proposal for such a Global Pact at the United Nations in September 2017. The United States President now supports a Global Pact.

B. France

Even though French law is well developed on plastic pollution, plastics play a central role in the every day experience in France. France is the European country with the third highest demand for plastics, behind Germany and Italy.¹⁶⁰

Taking the current situation as a starting point, the following recommendations address both general and sector-specific issues for France.

1. General Recommendations at the National Level

In view of the large number of existing measures, the challenge and priority for France is to implement the measures that already exist. Public authorities need to perform thorough controls as well as dedicate sufficient financial means in order to achieve their legal objectives.

First, controls of the application of the legal and regulatory framework are currently insufficient.

In particular, within the Ministry of Economy, the General Directorate for Competition, Consumer Affairs and Fraud Control (DGCCRF) conducts investigations to ensure that regulations are correctly applied. To date, very few studies have focused on the application of regulations that aim to fight plastic pollution.

Also, the French Agency for ecological transition (Ademe) monitors the implementation of certain environmental measures and collects related data. However, the Agency's reports are not followed by sanctions in the event of poor application or non-compliance with the regulations.

In view of the weak implementation of existing controls, more controls should be carried out relating to compliance with the legal and regulatory framework on plastic pollution. The increase in the number of controls would allow, first, to acquire a better knowledge of the application of the laws and, second, to sanction violations.

¹⁶⁰ Rapport au nom de l'Office Parlementaire d'Evaluation des Choix Scientifiques et Technologiques « Pollution plastique : une bombe à retardement ? » enregistré à la présidence de l'Assemblée nationale et du Sénat le 10 décembre 2020, p.211.

In this regard, the implementing decision 2022/162 of February 4, 2022, of the European Commission is a first step towards a simplified EU-wide monitoring of the consumption reduction targets for single-use plastic products. The Commission's implementing decision establishes rules for the application of Directive (EU) 2019/904 regarding the calculation, verification, and reporting on the reduction in the consumption of certain single-use plastic products and the measures taken by Member States to achieve such reduction. Thus, the Commission harmonizes the method for calculating and verifying the reduction in consumption of single-use plastic products. Member States remain free to base their calculations either on the total weight of plastics contained in single-use plastic products placed on the market, or on the number of single-use plastic products placed on the market.

Second, adapting to the evolving legal and regulatory framework may be a challenge for local authorities that manage and collect domestic and assimilated wastes.

Prices for the management and collection of domestic and assimilated wastes are expected to increase over the next decade, especially due to the need to adapt and modernize waste management facilities, the increase in selective collection, and the application of extended producer responsibility to a greater number of channels.¹⁶¹

For example, local authorities that have already made substantial investments in waste landfills may lose a significant portion of their past investments that have become less relevant under the new regulations, which promote waste prevention and recycling.

Besides, some cities – such as Avignon in the South of France – already anticipate the ban on plastic containers used to cook or warm food in schools' institutional catering that will take effect on January 1st, 2025 or 2028 (depending on the size of the city). The city of Avignon decided to buy non-plastic food containers, but to outsource their cleaning to a company due to a lack of space in its premises.

When addressing plastic pollution, it thus seems important to consider the financial difficulties that local authorities may face in order to ensure that they have the necessary means to implement the legal and regulatory framework governing waste in general, and plastic products in particular.

2. Sector Specific Recommendations

Sector-specific recommendations include the implementation of a deposit-system in France and new financial rules pertaining to plastic production.

First, as it stands, French law neither prohibits nor requires the introduction of a deposit system for plastic products.

¹⁶¹ Terra Nova and La Banque Postale, *La gestion du service des déchets ménagers par les collectivités locales en France, un service en cours de rationalisation pour affronter les défis environnementaux*, 8 July 2021.

At the EU-level, the European Commission initiated in August 2021 a citizens' initiative "ReturnthePlastics." The initiative calls for an EU-wide deposit system to recycle plastic bottles through the installation of plastic collection systems in supermarkets and a tax on bottle producers based on the polluter pays principle.

A deposit system for recycling or reuse represents an alternative to the use of single-use plastic products, while creating local jobs. Working on a deposit system would involve addressing its current major obstacles in France: that are the lack of infrastructure to collect, transport and clean plastic containers.

Second, new fiscal and banking measures could encourage less plastic production and could be an additional way to fight plastic pollution, especially if implemented at a global or European level.

A first recommendation would be to introduce a mandatory tax on imported and produced virgin plastics to raise the price of these plastics relative to recycled plastics.

A second recommendation would be to require financial institutions to publicly report on the impact of their funding of activities that contribute to the production of plastic waste and to cease funding new plants that use virgin materials for the production of single-use and consumer plastics. These measures would make financial institutions more accountable for their investments.

C. United States

In contrast to French law, law in the United States that might effectively mitigate plastic waste, whether federal or state environmental legislation or regulations or common law litigation, is not well developed, as discussed herein. In the context of the March 2, 2022 5th UNAE-5.2 Resolution to End Plastic Pollution, and the United States' support, the following recommendations address both general and sector-specific issues for the United States.

1. General Recommendations at the National Level

The authors support the four general recommendations offered by NASEM in its 2021 consensus paper, "Reckoning with the U.S. Role in Global Ocean Plastic Pollution,"¹⁶² including: (1) reducing solid waste generation; (2) conducting national marine debris shoreline surveys; (3) implementing plastic pollution monitoring programs for coastal and inland water, and (4) creating a "coherent, comprehensive, and crosscutting federal research and policy strategy" covering "the entire plastic life cycle" to reduce the U.S contribution of plastic waste to the environment. As recommended, this policy strategy would focus on "identifying, implementing, and assessing equitable and effective interventions."

- Progress toward Recommendation No. 1 may be achieved through such devices as President Biden's Executive Order 14057 (Dec. 8, 2021) providing for a 2021 Federal

¹⁶² Reckoning with the U.S. Role in Global Ocean Plastic Waste (consensus paper), National Academies of Sciences, Engineering, and Medicine (2021), <https://www.nap.edu/read/26132/chapter/1#ii>.

Sustainability Plan,¹⁶³ the EPA’s 2021 National Recycling Strategy, Part One of a Series on Building a Circular Economy for All,¹⁶⁴ and hopefully an upcoming Part Two. However, more action will likely need to be considered as none of these vehicles appear to expressly ban single-use items, a measure adopted by most nations currently mitigating plastic waste due to the significant contribution of these items to the plastic waste profile.

- Recommendation Nos. 2 and 3 are supported by the work completed by this GCSE scientific cohort which identified distinctly different ranges of plastic pollution correlating with different coastal uses (from public beach to wildlife preserves), but which found plastic pollution on all beaches studied. This additional work could possibly be accomplished through implementation of existing Clean Water Act authority and the Trash Free Waters Program,¹⁶⁵ with possible assistance from litigation intended to achieve enforcement of existing legislation and regulation.¹⁶⁶ In any case, participation in the UNAE’s development of the global treaty and development of responsive national legislation, will likely require additional research regarding plastic product production, distribution, plastic waste generation and management data, as well as environmental monitoring data, as recommended by the NASEM consensus paper.
- Consistent with NASEM Recommendation No. 4, the authors further recommend that the United States develop and adopt effective United States legislation addressing plastic waste responsive to the process initiated with the March 2, 2022 5th UNAE-5.2 Resolution to End Plastic Pollution.
 - Such national legislation should consider the entire plastic life cycle and be developed parallel to, and as informed by, the United States’ participation in the UN negotiations to develop the global treaty by 2024.
 - Legislative efforts can build on lessons learned from other nations, particularly France, as well as the experience of several individual states and municipalities, which as discussed herein, have already adopted measures to mitigate plastic waste pollution including bans of single-use plastic items and plastic bags.
 - United States legislative proposals discussed herein already incorporate provisions that could be responsive to the global treaty, particularly those that include provisions mandating extended producer responsibility, recycled content in produced goods, and phasing out single-use products such as the Break Free from Plastic Pollution Act of 2021, which would amend the Solid Waste Disposal Act.
 - Amendments to other existing legislation and adoption of new regulations pursuant to existing authority should also be considered, including for example, as recommended herein, Toxic Substances Control Act (TSCA), where EPA could consider: given broad exemptions, implications for TSCA application to plastics (as polymers) and their additives (as mixtures); redefining “unreasonable risk” considering commercialization; reconsidering the source-specific nomenclature system to better align U.S. policy with other countries and support greater use of

¹⁶³Federal Sustainability Plan: Catalyzing America's Clean Energy Industries and Jobs | Office of the Federal Chief Sustainability Officer, <https://www.sustainability.gov/federalsustainabilityplan/>.

¹⁶⁴National Recycling Strategy: Part One of a Series on Building a Circular Economy for All (2021), <https://www.epa.gov/system/files/documents/2021-11/final-national-recycling-strategy.pdf>.

¹⁶⁵ Trash Free Waters | US EPA, <https://www.epa.gov/trash-free-waters>.

¹⁶⁶ See e.g., EPA requires Hawaii to account for plastic pollution under Clean Water Act – Surfrider Foundation, <https://www.surfrider.org/campaigns/account-for-plastic-pollution-in-water-quality-impairment>.

alternative products to conventional plastic; mandating consideration of pollution prevention and relative risk information; rewarding submitters of new chemicals meeting sustainability criteria; providing the TSCA program more resources. Additional authority regarding plastic and microplastic pollution may also be realized through existing or potential amendments to the Clean Air Act, Clean Water Act and the Comprehensive Environmental Response, Compensation and Recovery Act.

- To support the effectiveness of these legislative and regulatory efforts, and consistent with the UNAE's call for the inclusion of all stakeholder perspectives, stakeholders including industry (resin producers, resin product manufacturers and related industries including oil and gas producers), government and nongovernmental should participate in the UNAE's development of the global treaty so that their views are considered.

Also consistent with the NASEM 2021 consensus paper, the Environmental Protection Agency should quantify risk from plastic waste and microplastic pollution.

- Significant work has been accomplished already qualifying the types of risk posed by plastic pollution, such as mortality from entanglement and ingestion of larger pieces of plastic waste, as well as biological uptake of microplastic pollution and leaching of chemicals upon ingestion.
- However, quantification of physical and chemical risk considering relevant characteristics including size, shape, plastic type and chemical burden will support development of mitigation parameters.
- The Administration might consider following an adaptation of the EPA's strategy for polyfluoroalkyl substances (PFAS), through its risk assessment and toxicological processes for eventual consideration as regulated pollutants pursuant to the existing environmental statutes including the Clean Air Act, Safe Drinking Water Act, Clean Water Act, Resource Conservation and Recovery Act and the Comprehensive Environmental Response, Compensation and Liability Act.

To support plastic waste mitigation generally, the authors recommend that the current Administration continue to move forward with development of the United States Securities and Exchange Commission (U.S. SEC) Environment, Sustainability and Governance (ESG) reporting regulations.

- Given the heightened climate and other environmental risk reported by scientists, the SEC recently concluded that shareholders are now more interested in climate change and other ESG disclosures. Thus, in May 2020, the SEC began efforts to update reporting requirements considering "material, decision-useful environmental, social, and governance, or ESG factors." The SEC created the Climate and ESG Task Force and also committed to increased review and enforcement regarding corporate reporting of climate-related risks. In December 2020, the SEC's Asset Management Advisory Committee recommended that the SEC adopt standards requiring corporate disclosures of ESG risk, while on March 15, 2021, the SEC requested public input regarding climate change disclosures to better facilitate such disclosures.
- Such mandated and enforced ESG disclosures should require disclosure of material risk arising from ESG concerns including organization business models' reliance on plastic in

its product inventory and inevitability of such products becoming plastic waste in the environment (e.g., single-use disposable plastic consumer items such as packaging, fast-food utensils, loosely woven fabrics such as fleece). This evolution may be considered somewhat analogous to corporate America's adaptation to profound impacts of the EPA's hazardous waste regulations adopted in 1980.

2. Sector Specific Recommendations

Sector specific recommendations include support of voluntary organizational programs, such as the packaging industry's voluntary commitments pursuant to Ellen MacArthur Foundation, in collaboration with the UN Environment Programme, Global Commitment to a circular economy for plastics. This Global Commitment includes more than 500 voluntarily participating organizations (representing 20% of all plastic packaging produced globally).¹⁶⁷

Additionally, the authors recommend that all stakeholders, particularly industry sectors fully participate in the further development and implementation of rulemaking, including SEC regulation development of ESG reporting and market disclosures, as well as the Federal Sustainability Plan, EPA's National Recycling Strategy, Parts 1 and 2, and any other opportunities to participate in this national process of change regarding plastic products, use and waste management in a new circular plastic economy.

ANNEX I

The main international conventions applicable to France are the following:

- *London Protocol and Convention (1972, 1996)*: The Convention contributes to sea pollution control and prevention at the international scale as it forbids the immersion of some dangerous materials. The Protocol completes the Convention by extending its provisions to land environment. The Convention prohibits waste dumping in marine waters, including plastic elements.
- *Barcelona Convention (1976)*: The Convention for the Protection of the Mediterranean Sea against Pollution prescribes a plan for the prohibition of plastic materials immersion.
- *International Convention for the Prevention of Pollution from Ships (MARPOL) (1973, 1978)*: It is the main international convention dealing with marine environment pollution caused by marine exploitation or accidents. A prescription from its Annex V prohibits any plastic waste dumping into marine environment (such as fishing nets for instance).

¹⁶⁷ The Global Commitment 2021, Ellen McArthur Foundation, https://ellenmacarthurfoundation.org/global-commitment/overview?gclid=CjwKCAiA1JGRBhBSEiwAXXblwTNenscpqUsEQv79SRUcO8eSzM8HQn2LRzW6xO-54JMtKbAChdPnOxoCqCAQAvD_BwE

- *Noumea Convention (1986)*: The Convention for the Protection of Natural Resources and Environment of the South Pacific Region is completed by a Protocol, which explicitly mentions plastics as forbidden materials to be immersed.
- *Basel Convention (1992)*: The Convention is designed to reduce hazardous waste circulation between Contracting Parties, and in particular to avoid hazardous waste transfer from the Global North to the Global South.
- *Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR)*: The Convention aims to prevent and eliminate pollution as well as protect the Atlantic North-East marine environment from harmful human activities. Its application covers issues arising from marine waste creation (including plastic waste).

ⁱ Additional text re EU product regulation

Another relevant piece of EU legislation is the Single Use Plastics Directive (Directive 2019/904/EC). The directive sets goals and deadlines that EU countries must achieve by devising and implementing their own laws. The goals include:

- Reducing consumption through awareness-raising measures;
- Introducing design requirements, such as a requirements to connect caps to bottles;
- Introducing labelling requirements, to inform consumers about the plastic content of products, disposal options that are to be avoided, and harm done to nature if the products are littered in the environment; and
- Introducing waste management and clean-up obligations for producers, including Extended Producer Responsibility (EPR) schemes.

Some Member States have increased the scope of the requirements to include more products than those specified in the directive. For example, France has gone beyond the directive's scope and included new categories of products to form "new EPR schemes" (e.g., textile products, toys, sports and leisure items, do it yourself and gardening items, cars, and chewing gum). This approach allows the individual Member States to set laws that are most appropriate to their market, but it can be problematic for companies acting in multiple countries across the EU.

While there is a variety of legislation in place across Europe to prevent harm caused by plastics, the EC and individual Member States recognize that more work is required to achieve their ambitious targets.