

Golden Gate University Environmental Law Journal

Volume 6

Issue 2 *Pacific Region Edition*

Article 4

June 2013

Where Will All the Waste Go?: Utilizing Extended Producer Responsibility Framework Laws to Achieve Zero Waste

Anthony A. Austin

Follow this and additional works at: <http://digitalcommons.law.ggu.edu/gguelj>



Part of the [Environmental Law Commons](#)

Recommended Citation

6 Golden Gate U. Env't'l L. J. 221 (2013).

This Article is brought to you for free and open access by the Academic Journals at GGU Law Digital Commons. It has been accepted for inclusion in Golden Gate University Environmental Law Journal by an authorized administrator of GGU Law Digital Commons. For more information, please contact jfischer@ggu.edu.

WHERE WILL ALL THE WASTE GO?: UTILIZING EXTENDED PRODUCER RESPONSIBILITY FRAMEWORK LAWS TO ACHIEVE ZERO WASTE

ANTHONY A. AUSTIN*

I. INTRODUCTION

The United States has a waste problem. It represents only five percent of the world population, yet it generates twenty-five to thirty percent of the world's waste.¹ In 2008, the United States generated 389.5 million tons of municipal solid waste (MSW).² As our economy and population continue to grow, our waste will continue to grow as well.³ The obvious dilemma is that all of this waste, the byproduct of our economic advances, creates significant adverse environmental and public

*Judicial Law Clerk to the Honorable Diana L. Terry, Colorado Court of Appeals. J.D., Golden Gate University School of Law (2011); LL.M., Environmental and Natural Resources Law and Policy, University of Denver Sturm College of Law (2012). The author would like to thank his wife, Adrienne, colleague Luthien Niland, and Professor Justin Pidot for their endless support and assistance throughout this entire process, as well as the *Golden Gate University Environmental Law Journal* editorial board and Professor Ed Baskauskas for their much appreciated editing. The author would also like to thank Professor Rock Pring for his encouragement and for making this article possible. The views expressed in this article are solely those of the author and do not represent the views of Judge Diana L. Terry or the Colorado Court of Appeals.

¹Robert Malone, *World's Worst Waste*, FORBES.COM (May 24, 2006), www.forbes.com/2006/05/23/waste-worlds-worst-cx_rm_0524waste.html; BRENDA PLATT ET AL., INST. FOR LOCAL SELF-RELIANCE, STOP TRASHING THE CLIMATE 1 (2008), available at www.stoptrashingthecclimate.org/fullreport_stoptrashingthecclimate.pdf.

²Rob van Haaren et al., *17th Nationwide Survey of MSW Management in the U.S.: The State of Garbage in America*, 47 *BIOCYCLE* 16, 16 (2010), available at www.seas.columbia.edu/earth/wtert/sofos/SOG2010.pdf.

³See 42 U.S.C.A. § 6901(a) (Westlaw 2013); Steffen Lehmann, *Resource Recovery and Materials Flow in the City: Zero Waste and Sustainable Consumption as Paradigms in Urban Development*, 11 *SUSTAINABLE DEV. L. & POL'Y* 28, 30 (2010).

health effects when landfilled or incinerated.⁴

This Article explores the use of extended producer responsibility (EPR) laws to achieve the ultimate waste management goal: “zero waste.” Zero waste is achieved through the complete diversion of MSW from landfills and incinerators, resource conservation, and sustainable product redesign. Historically, MSW has been dumped in landfills or deposited in waste incinerators, practices that have allowed for robust commerce and economic growth. However, these typical waste management practices cause vast amounts of air, water, and soil pollution, increased greenhouse gas emissions, and other adverse environmental and public health issues associated with burying or burning our garbage.

In response to these growing concerns, many cities and counties across the country have instituted zero waste policies by using recycling and composting and moving away from the common practices of burning or burying their waste. San Francisco’s zero waste policy is hailed as the most successful in the United States, with approximately seventy-seven percent diversion from landfills or incinerators.⁵ San Diego and Los Angeles each divert about two thirds of their waste; Seattle diverts about fifty-four percent.⁶ Despite the growing number of cities adopting zero waste policies, less than one quarter of all MSW generated in the United States is recycled or composted.⁷

Moreover, as cities strive toward achieving 100 percent diversion it will become much more difficult to actually achieve complete waste diversion. Design, cost, and technological impediments prevent complete waste diversion. Recycling or composting the remaining products in the waste stream is not possible due to product composition, the cost for localities to bear, or the localities’ lack of technological ability to recover all products in the waste stream. EPR laws, which require the remaining products in the waste stream to be taken back by their producers and require the producers to engage in mandated resource recovery, may provide the solution to attaining the zero waste goals. This Article proposes a hybrid approach, under which localities recycle and compost to the maximum extent practicable, and an additional EPR framework law targets the remaining products in the waste stream by requiring the producers to take them back. This use of an EPR law in conjunction with zero waste policies would have many environmental and public health benefits.

⁴ Lehmann, *supra* note 3, at 29.

⁵ David Ferry, *The Urban Quest for “Zero” Waste*, WALL ST. J., Sept. 12, 2011, at R7.

⁶ *Id.*

⁷ Van Haaren et al., *supra* note 2, at 20. This calculation is based on data from 2008.

To best achieve these goals, an effective EPR approach must contain certain adaptable elements. States have already been playing an active role in adopting legislation to reduce waste and the various externalities associated with its disposal. States should continue to be the standard bearers in developing EPR framework laws. Any EPR law should rely on an adaptable “framework” mechanism that allows the state to more efficiently target products posing waste management, public health, and environmental problems. Such a law should also include mandatory resource recovery goals once the product is collected, penalty and enforcement provisions, and vest decision-making authority with the state’s selected agency as opposed to the state’s legislature. Although no such state EPR law currently exists, the landscape of EPR laws in the United States is changing rapidly. Generally, states target one product per law, thereby requiring the legislature to pass a new law every time a product causes waste management and environmental problems. As of January 2013, thirty-two states have adopted seventy-five EPR laws as part of their statewide waste management policies.⁸ In 2010, Maine became the first and only state in the nation to adopt a framework law that, in contrast to the prevailing product-by-product approach, utilizes an established set of factors to determine whether to include products in its EPR take-back program.⁹

Zero waste and EPR policies together can provide a solution to managing and preventing our increasing amounts of waste. Part II of this Article will explain how MSW is currently managed in the United States, what exactly MSW is and how much we are discarding or incinerating, as well as the environmental and public health impacts from our increasing amounts of waste. Part III will introduce and discuss the zero waste doctrine, its benefits, and the current status of zero waste policies in the United States. Part IV will then present the doctrine of EPR, its goals and purposes, and the necessary components of a successful EPR framework law. Finally, Part V will propose recommendations for future state EPR legislation and will also explore potential constitutional challenges to such EPR laws, as well as federal EPR legislation as an alternative.

⁸ *Extended Producer Responsibility State Laws as of January 2013*, PROD. STEWARDSHIP INST., www.productstewardship.us/displaycommon.cfm?an=1&subarticlenbr=280 (last visited Jan. 2013).

⁹ See Press Release, Prod. Policy Inst., First State Producer Responsibility “Framework” Law Passed in Maine with Unanimous Bi-Partisan and Chamber of Commerce Support (Mar. 25, 2010), available at www.productpolicy.org/ppi-press-release/first-state-producer-responsibility-framework-law-passed-maine-unanimous-bi-partis.

II. AN OVERVIEW OF MUNICIPAL SOLID WASTE IN THE UNITED STATES

The United States disposes of a staggering amount of MSW, despoiling the land, air, and water, while contributing to climate change. State and local governments have taken the lead in reducing disposal practices that cause these manifold problems. However, current policies have not, and likely cannot, fully address all the issues. Even the most aggressive efforts by municipalities to facilitate recycling and composting fail to achieve complete diversion.¹⁰

The EPA defines MSW as that which “we commonly use and throw away,” including “everyday items such as product packaging, grass clippings, furniture, clothing, bottles, food scraps, newspapers, appliances, batteries, and tires.”¹¹ MSW in the United States is generally

¹⁰ This Article focuses on MSW and will not discuss the regulation or disposal of hazardous waste, which is managed through cooperative federalism between states and the federal government pursuant to the Resource Conservation and Recovery Act, 42 U.S.C.A. §§ 6921-6939F (Westlaw 2013). While some solid waste products such as batteries and electronics contain hazardous materials, they will be included within the MSW group for the purposes of this Article. Other forms of waste include construction and demolition waste, and industrial and agricultural waste. See Van Haaren et al., *supra* note 2, at 17. This Article will not discuss these other forms of waste, because most of the items that make up these other forms of waste do not lend themselves to being redesigned, which is the focal point of the zero waste and EPR doctrines. Construction and demolition waste includes concrete, wood, asphalt, gypsum, bricks, and salvaged building components. See *Construction and Demolition Materials*, U.S. ENVTL. PROT. AGENCY, www.epa.gov/osw/nonhaz/industrial/cd/index.htm (last updated Nov. 15, 2012). Industrial waste is waste comes from industrial and commercial processes and includes cement kiln dust, oil and natural gas waste materials, fossil fuel combustion waste materials, mineral processing and mining waste materials, and medical waste. See *Industrial Waste*, U.S. ENVTL. PROT. AGENCY, www.epa.gov/osw/nonhaz/industrial/index.htm (last updated Nov. 19, 2012).

The decision to focus only on MSW also stems from the fact that other studies, reports, and articles discussing waste management in the United States do so by focusing on individual forms of waste, particularly MSW. See, e.g., Van Haaren et al., *supra* note 2; U.S. ENVTL. PROT. AGENCY, MUNICIPAL SOLID WASTE IN THE UNITED STATES: 2009 FACTS AND FIGURES (2010), available at www.epa.gov/osw/nonhaz/municipal/pubs/msw2009rpt.pdf [hereinafter *U.S. Env'tl. Prot. Agency, 2009 Facts and Figures*]. Moreover, the focus of this Article is on two doctrinal policy tools—zero waste and EPR—that currently focus on consumer products and other durable and nondurable goods that generally make up MSW. See *Product Stewardship and Extended Producer Responsibility: Definitions and Principles*, PROD. STEWARDSHIP INST., productstewardship.us/displaycommon.cfm?an=1&subarticlenbr=231 (last visited May 13, 2012); *About EPR*, PROD. POLICY INST., www.productpolicy.org/content/about-epr (last visited May 13, 2012); *What Is Zero Waste*, ECO-CYCLE, ecocycle.org/zerowaste#principles (last visited Jan. 2, 2013). Thus, it would be inconsistent to include other forms of waste that are not currently regulated by these doctrines.

¹¹ U.S. ENVTL. PROT. AGENCY, 2009 FACTS AND FIGURES, *supra* note 10, at 4; U.S. ENVTL. PROT. AGENCY, MUNICIPAL SOLID WASTE GENERATION, RECYCLING, AND DISPOSAL IN THE

managed at the state or local level¹² in one of three ways: disposed in landfills, burned in waste-to-energy (WTE) combustion facilities, or recycled or composted.¹³ In 2008, the United States generated approximately 389.5 million tons of MSW.¹⁴

Approximately sixty-nine percent (270 million tons) was sent to landfills, an estimated seven percent (almost 26 million tons) was combusted in WTE facilities, and just over twenty-four percent (nearly 94 million tons) was recycled or composted (69 million tons were recycled and 24.5 million tons were composted).¹⁵

Durable goods (those that last three years or more, such as appliances), non-durable goods (those that last less than three years, such

UNITED STATES: FACTS AND FIGURES FOR 2010, at 2 (2011), *available at* www.epa.gov/osw/nonhaz/municipal/pubs/msw_2010_rev_factsheet.pdf [hereinafter *U.S. Envil. Prot. Agency, 2010 Facts and Figures*]. MSW does not always lend itself to a precise definition depending on the materials contained therein. Some household solid wastes, for instance, can contain hazardous materials and yet may still end up in MSW landfills with other MSW. *See Solid Waste: Laws and Regulations*, U.S. ENVTL. PROT. AGENCY REGION 9, www.epa.gov/region9/waste/solid/laws.html#4 (last visited May 13, 2012).

¹² *See* 39A C.J.S. *Health & Environment* § 169 (2003); 7 EUGENE MCQUILLIN, *MUNICIPAL CORPORATIONS* § 24:253 (3d ed. 2005).

¹³ *See* U.S. ENVTL. PROT. AGENCY, 2009 FACTS AND FIGURES, *supra* note 10, at 11-16, 156-169; Van Haaren et al., *supra* note 2, at 16.

¹⁴ Van Haaren et al., *supra* note 2, at 16-17. In separate studies, the EPA estimated that only 243 million tons of MSW was generated in 2009 and 250 million tons generated in 2010. U.S. ENVTL. PROT. AGENCY, 2009 FACTS AND FIGURES, *supra* note 10, at 2; U.S. ENVTL. PROT. AGENCY, 2010 FACTS AND FIGURES, *supra* note 11, at 1. In their article, *The State of Garbage in America*, Van Haaren et al., explained the sizeable difference between the two estimates: “EPA estimates the tonnage landfilled as the difference between its estimate of MSW generated minus its estimate of what is sent to composting, recycling or WTE plants. The State of Garbage methodology, however, is based purely on tons managed via all four methods in the responding states.” Van Haaren et al., *supra* note 2, at 22. In a recent report, Columbia University further explained the discrepancy between the “State of Garbage” report and the EPA’s studies:

The only source of state-by-state [MSW] data is the Columbia/BioCycle ‘State of Garbage’ survey. It is based on detailed questionnaires sent to the waste management departments of each state and subsequent analysis of these data. In 2008, the fifty states reported to the Columbia/BioCycle survey that a total of 270 million tons of MSW was disposed in U.S. landfills, while the EPA estimated . . . that only 136 million tons were landfilled in the same year. It should be noted that the EPA departments dealing with greenhouse gas (GHG) emissions of waste management use the Columbia/BioCycle numbers.

N.J. THEMELIS ET AL., *EARTH ENG’G CTR. OF COLUMBIA UNIV., ENERGY AND ECONOMIC VALUE OF NON-RECYCLED PLASTICS (NRP) AND MUNICIPAL SOLID WASTES (MSW) THAT ARE CURRENTLY LANDFILLED IN THE FIFTY STATES* 9-10 (2011), *available at* jrnetsolserver.shorensteincenete.netdna-cdn.com/wp-content/uploads/2011/11/Report-from-Columbia-Universitys-Earth-Engineering-Center.pdf. Therefore, the estimates from “The State of Garbage in America” of waste generated, recycled, composted, and combusted will be used. However, the EPA’s detailed studies of MSW composition characterized by material or by product categories will also be used because “The State of Garbage in America” does not provide such analysis.

¹⁵ Van Haaren et al., *supra* note 2, at 19-20.

as paper and plastic cups or plates), and containers and packaging¹⁶ account for over seventy percent of the MSW generated; the remaining amount consists mainly of organic waste.¹⁷ Containers and packaging make up the largest product source at approximately thirty percent, and nondurable goods and durable goods make up twenty-two percent and nineteen percent, respectively.¹⁸ Containers and packaging are recycled at the greatest rates among all product categories, at approximately forty-eight percent; nondurable goods and durable goods recovery rates are far lower, at about thirty-six percent and eighteen-and-a-half percent, respectively.¹⁹ Nonetheless, overall recovery among all product categories combined is a dismal thirty-four percent; the remaining sixty-six percent is sent to landfills or waste incineration facilities.²⁰ More importantly, containers and packaging, nondurable goods, and durable goods make up almost sixty-nine percent of the MSW landfilled or combusted, which further illustrates the opportunity to significantly reduce the disposal of these products through zero waste and EPR policies.²¹

Generally, state and local governments manage waste recovery and disposal. They regulate the licensing of waste disposal facilities; the collection, storage, and disposal of waste; landfill closures; and waste incineration.²² States or localities also establish waste management plans, require the use of certain waste facilities or permits for the operation of such facilities, order cleanup measures, prohibit open dumping, establish just and equitable rates for waste collection and disposal, require mandatory recycling, and ban the sale of certain beverage containers.²³ This regulatory regime is a main reason why EPR laws have continued at the state level, rather than the federal level.

Generating MSW and then landfilling or burning that waste creates numerous adverse environmental, public health, and land use effects.²⁴

¹⁶ U.S. ENVTL. PROT. AGENCY, 2009 FACTS AND FIGURES, *supra* note 10, at 66. Typically, MSW is characterized by material type or product type. *Id.* at 34. Materials constituting MSW include paper and paperboard, glass, metals, plastics, rubber and leather, textiles, wood, and other organic wastes (such as food scraps and yard trimmings). *Id.* at 36. Products that make up MSW are categorized into durable goods, nondurable goods, containers and packaging, and food scraps and yard trimmings. *Id.* at 66, 68.

¹⁷ *Id.* at 68; U.S. ENVTL. PROT. AGENCY, 2010 FACTS AND FIGURES, *supra* note 11, at 6.

¹⁸ U.S. ENVTL. PROT. AGENCY, 2009 FACTS AND FIGURES, *supra* note 10, at 68; U.S. ENVTL. PROT. AGENCY, 2010 FACTS AND FIGURES, *supra* note 11, at 6.

¹⁹ U.S. ENVTL. PROT. AGENCY, 2010 FACTS AND FIGURES, *supra* note 11, at 7.

²⁰ *Id.* at 7-8.

²¹ U.S. ENVTL. PROT. AGENCY, 2009 FACTS AND FIGURES, *supra* note 10, at 74, 83, 94.

²² 39A C.J.S. *Health & Environment*, *supra* note 12, § 169; 7 MCQUILLIN, *supra* note 12, § 24:253.

²³ 39A C.J.S. *Health & Environment*, *supra* note 12, § 169.

²⁴ See Lehmann, *supra* note 3, at 28-30; PLATT ET AL., *supra* note 1, at 4-7.

These consequences include water, soil, and air pollution, as well as various land use, climate change, and resources issues that are inextricably connected to unsustainable production and consumption practices.²⁵ Moreover, these effects are negative externalities associated with the manufacture, purchase, use, collection, and disposal of goods and products: costs that are not borne by the consumer (in the price of the product) or the producer (in the cost of making and selling the product), but instead are externalized onto society in general.²⁶

For example, it was only twenty-five years ago that the EPA conducted a study of solid waste management in the United States and found that more than 500 MSW facilities violated groundwater standards, 845 violated air quality standards, and 660 were the source of surface water contamination.²⁷ The findings resulted, in part, in the strengthening of EPA's role in managing MSW through the Hazardous and Solid Waste Amendments to the Resource Conservation and Recovery Act (RCRA).²⁸ Nonetheless, despite the more stringent requirements governing solid waste disposal facilities, landfill runoff and leachate, which contains a variety of hazardous and poisonous chemicals, continue to pose a threat to soil and groundwater.²⁹

In addition, disposing of the vast majority of our MSW through landfilling and incineration emits substantial amounts of air pollutants and climate change-causing greenhouse gases. In the United States, landfills are the third largest source of methane—a greenhouse gas that is twenty-one times more potent than carbon dioxide³⁰—emitting 117.5 teragrams of carbon dioxide equivalent (TgCO₂Eq) in 2009,³¹ which is

²⁵ See Lehmann, *supra* note 3, at 28-30; PLATT ET AL., *supra* note 1, at 4-7.

²⁶ See Noah Sachs, *Planning the Funeral at the Birth: Extended Producer Responsibility in the European Union and the United States*, 30 HARV. ENVTL. L. REV. 51, 55-62 (2006); Daniel Shean, *The Politics of Trash*, 16 BUFF. ENVTL. L. J. 55, 70-77 (2008-2009); William J. Cantrell, *Cleaning Up the Mess: United Haulers, The Dormant Commerce Clause, and Transaction Costs Economics*, 34 COLUM. J. ENVTL. L. 149, 176 (2009).

²⁷ Paula C. Murray & David B. Spence, *Fair Weather Federalism and America's Waste Disposal Crisis*, 27 HARV. ENVTL. L. REV. 71, 74 (2003); Solid Waste Disposal Facility Criteria, 53 Fed. Reg. 33,314, 33,319 (Aug. 30, 1988) (to be codified at 40 C.F.R. pts. 257 and 258).

²⁸ Murray & Spence, *supra* note 27, at 74; Hazardous and Solid Waste Amendments of 1984, Pub. L. No. 98-616, 98 Stat. 3221 (1984).

²⁹ Lehmann, *supra* note 3, at 28; G. FRED LEE & ANNE JONES-LEE, SOLID WASTE MANAGEMENT: U.S. EPA LINED-LANDFILL APPROACH NOT RELIABLE FOR PROTECTING PUBLIC HEALTH AND ENVIRONMENTAL QUALITY 6 (2011), available at www.gfredlee.com/Landfills/Comblandfillsupdate.pdf.

³⁰ *Greenhouse Gas Properties*, U.S. ENVTL. PROT. AGENCY, www.epa.gov/outreach/scientific.html (last updated June 22, 2010).

³¹ One teragram is equal to one million metric tons. U.S. ENVTL. PROT. AGENCY, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990-2009, at ES-3 (2011), available at www.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2011-Complete_Report.pdf.

approximately seventeen percent of the total U.S. anthropogenic methane emissions.³² The EPA has found that methane emissions have been increasing over the last decade and further anticipates that the total amount of MSW generated will continue to increase as the population grows.³³ Additionally, waste incineration at WTE facilities emits substantial amounts of carbon dioxide, methane, and nitrogen oxides.³⁴ In 2009, MSW combustion emitted 12.7 TgCO₂Eq; burning plastics accounted for approximately half of those emissions.³⁵ Moreover, WTE facilities emit more carbon dioxide per megawatt hour than coal-fired, oil-fired, or natural-gas-fired power plants.³⁶ Lastly, when viewed throughout the entire life cycle, from extraction of resources, production, use, and disposal, products and packaging are associated with forty-four percent of U.S. greenhouse gases.³⁷ Burning waste in WTE facilities also emits significant amounts of other air pollutants, such as mercury, lead, nitrogen oxides, carbon monoxide, particulate matter, volatile organic compounds, and dioxins.³⁸

Furthermore, creating products that ultimately end up in landfills or are burned in WTE facilities requires large amounts of energy and raw natural resources. For example, in 2006, U.S. citizens purchased approximately 31.2 billion liters of water, which was sold in plastic bottles, requiring 900,000 tons of plastic.³⁹ In addition, “oil and natural

³² *Id.* at 8-1, 8-2.

³³ *Id.* at 8-3.

³⁴ *Id.* at 3-34.

³⁵ *Id.*

³⁶ Burning MSW in WTE facilities emits 2,988 lbs/megawatt-hour (MWh) of carbon dioxide; burning coal emits 2,249 lbs/MWh of carbon dioxide, burning oil emits 1,672 lbs/MWh of carbon dioxide, and burning natural gas emits 1,135 lbs/MWh of carbon dioxide. *Clean Energy: Air Emissions*, U.S. ENVTL. PROT. AGENCY, www.epa.gov/cleanenergy/energy-and-you/affect/air-emissions.html (last updated Oct. 17, 2012); PLATT ET AL., *supra* note 1, at 9. Proponents of WTE, however, argue that carbon dioxide emissions from WTE facilities are much lower because biomass-based emissions are part of the Earth’s natural carbon cycle and, therefore, do not contribute to a net increase in carbon dioxide emissions. See SOLID WASTE ASS’N OF N. AM., *COMPARISON OF AIR EMISSIONS FROM WASTE-TO-ENERGY FACILITIES TO FOSSIL FUEL POWER PLANTS* 6, at n.8 (2006), available at www.metrovancouver.org/services/solidwaste/planning/ReportsforQA/SWANA.pdf.

³⁷ JOSHUAH STOLAROFF, *PROD. POLICY INST., PRODUCTS, PACKAGING AND U.S. GREENHOUSE GAS EMISSIONS* 5 (2009), available at www.productpolicy.org/ppi/attachments/PPI_Climate_Change_and_Products_White_Paper_September_2009.pdf. This statistic includes the impacts from producing products abroad and consuming them in the United States.

³⁸ ENVTL. INTEGRITY PROJECT, *WASTE-TO-ENERGY: DIRTYING MARYLAND’S AIR BY SEEKING A QUICK FIX ON RENEWABLE ENERGY? 2-7* (2011); *Clean Energy: Municipal Solid Waste*, U.S. ENVTL. PROT. AGENCY, www.epa.gov/cleanenergy/energy-and-you/affect/municipal-sw.html (last updated Oct. 17, 2012).

³⁹ *Bottled Water and Energy: A Fact Sheet*, PAC. INST., www.pacinst.org/topics/water_and_sustainability/bottled_water/bottled_water_and_energy.html (last visited May 13, 2012).

gas are the major raw materials used to produce plastics,”⁴⁰ and producing these plastic bottles required 106 billion megajoules of energy, the equivalent of seventeen million barrels of oil.⁴¹ Moreover, making one liter of bottled water requires three liters of water.⁴² Another illustration is the plastic bag, of which approximately 100 billion are used each year in the United States, requiring twelve million barrels of oil to produce.⁴³

Lastly, the current model of landfilling massive amounts of MSW is unsustainable. As of 2009, there are 1,908 landfills in operation in the United States,⁴⁴ and although the number of landfills has decreased, their overall size has increased.⁴⁵ In light of the ever-growing amount of waste, cities and states all over the country are running out of landfill space. For instance, San Francisco may run out of landfill space by 2014.⁴⁶ Massachusetts, New Hampshire, and Rhode Island each have about twelve years of capacity remaining.⁴⁷ New York has about twenty-five years left.⁴⁸

III. EXPLORING ZERO WASTE POLICIES IN THE UNITED STATES

In exercising their waste management authority, many cities and counties have implemented zero waste policies as a means of fully diverting solid waste away from landfills and incinerators. Most, if not all, of these policies have included aggressive recycling and composting programs. However, those programs do not appear to be able to achieve complete waste diversion.

A. ZERO WASTE DEFINED

The most basic concept of zero waste can be synthesized into one simple notion: that all solid waste should be diverted from landfills and

⁴⁰ *Lifecycle of a Plastic Product*, AM. CHEMISTRY COUNCIL, plastics.americanchemistry.com/Life-Cycle#top (last visited May 13, 2012).

⁴¹ PAC. INST., *supra* note 39.

⁴² *Id.*

⁴³ Jennie Reilly Romer, Comment, *The Evolution of San Francisco's Plastic-Bag Ban*, 1 GOLDEN GATE U. ENVTL. L. J. 439, 442-43 (2007).

⁴⁴ U.S. ENVTL. PROT. AGENCY, 2009 FACTS AND FIGURES, *supra* note 10, at 168.

⁴⁵ U.S. ENVTL. PROT. AGENCY, 2010 FACTS AND FIGURES, *supra* note 11, at 10.

⁴⁶ Lehmann, *supra* note 3, at 29.

⁴⁷ See Van Haaren et al., *supra* note 2, at 20; Brian Palmer, *Go West, Garbage Can!*, SLATE (Feb. 15, 2011), www.slate.com/articles/health_and_science/the_green_lantern/2011/02/go_west_garbage_can.single.html.

⁴⁸ Palmer, *supra* note 47.

incinerators.⁴⁹ In its practical application, zero waste has become a policy goal of diverting 100 percent of solid waste, in particular waste from end-of-life materials and products, from landfills or incinerators through product reuse, recycling, and composting.⁵⁰ Zero waste also incorporates principles of sustainable product design and manufacturing, as well as other waste reduction tools to work toward a future in which waste is completely eliminated.⁵¹ As a doctrine, zero waste can include elements of EPR, such as making the manufacturer responsible for a product's entire lifecycle and ultimately redesigning the product to be more recyclable or reusable.⁵²

However, the doctrine is not solely about recycling or composting, and cannot be about total waste elimination either given technological limitations. In light of these two aspects, which encompass several waste management and reduction tools, the ultimate goals of a zero waste policy include waste diversion, resource conservation, and product redesign. These goals will be highlighted further when exploring the vital elements of a successful EPR law, which can ultimately serve as the means of achieving those goals by filling in the gaps where a city's zero waste policy falls short.⁵³

B. CURRENT WASTE DIVERSION AND RESOURCE CONSERVATION PRACTICES IN THE UNITED STATES

Cities and counties that have adopted zero waste policies are largely focused on waste diversion. Two readily available tools to achieve waste diversion are recycling and composting.⁵⁴ Recycling and composting our

⁴⁹ S.F. Dep't of the Env't, *Zero Waste*, SFENVIRONMENT.ORG, www.sfenvironment.org/zero-waste (last visited Dec. 28, 2012).

⁵⁰ See generally *id.*; *Waste Reduction Best Practices*, GREEN CITIES CALIFORNIA.ORG, www.greencitiescalifornia.org/best-practices/waste-reduction/index.html (last updated Sept. 1, 2009).

⁵¹ ECO-CYCLE, *supra* note 10.

⁵² *Id.*

⁵³ See Lehmann, *supra* note 3, at 31.

⁵⁴ Although composting is similar to landfilling in the very limited sense that both involve storing waste on land, composting is different in at least one significant respect. With the composting process a beneficial and valuable end product is created—compost—that is used as a “nutrient-rich soil amendment capable of improving depleted or disturbed soil environments.” Cal. Dep't of Res. Recycling and Recovery, *Organic Material Management Compost—What Is It?*, CALRECYCLE, www.calrecycle.ca.gov/organics/compostmulch/CompostIs.htm#Important (last updated May 5, 2006). In addition to improving soil conditions, composting reduces GHG emissions and reduces the need for water, fertilizer, pesticides, and herbicides—all benefits that landfilling does not provide. See *id.*; *Composting, Environmental Benefits*, U.S. ENVTL. PROT. AGENCY, www.epa.gov/compost/benefits.htm (last updated Nov. 16, 2012); U.S. ENVTL. PROT. AGENCY, *REDUCING GREENHOUSE GAS EMISSIONS THROUGH RECYCLING AND COMPOSTING 11* (2011), *available at*

MSW has numerous environmental benefits and can serve as a source of job creation and local revenue generation.⁵⁵ First, the United States' total recycling and composting efforts in 2010 saved more than 1.3 quadrillion BTUs⁵⁶ of energy, equivalent to more than 229 million barrels of oil.⁵⁷ In particular, recycling requires significantly less energy than does mining, extracting, and manufacturing virgin resources.⁵⁸ In his article on resource recovery and zero waste policies, Dr. Steffen Lehmann found that "there is a ninety-five percent energy saving when using secondary (recycled) aluminum; eighty-five percent for copper; eighty percent for plastics; seventy-four percent for steel; and sixty-four percent for paper."⁵⁹ Moreover, recovery through product recycling curbs not just the level of MSW generated, but the level of other discards as well. In a joint report, the Institute for Local Self-Reliance, Eco-Cycle, and the Global Anti-Incinerator Alliance found that "[f]or every ton of discarded products and materials destroyed by incinerators and landfills, about [seventy-one] tons of manufacturing, mining, oil and gas exploration, agricultural, coal combustion, and other discards are produced."⁶⁰ Recycling also reduces air and water pollution that would arise from the mining and extraction of virgin materials.⁶¹

Second, recycling and composting leads to reductions in greenhouse gas emissions. In addition to saving energy, the total amount of MSW recycled and composted in 2010 amounted to a reduction of more than 186 million metric tons of carbon dioxide equivalent (MMTCO₂Eq),

www.epa.gov/region10/pdf/climate/wccmmf/Reducing_GHGsthrough_Recycling_and_Composting.pdf; Sally Brown et al., *Greenhouse Gas Balance for Composting Operations*, 37 J. ENVTL. QUALITY 1396, 1396-97 (2008); Sally Brown & Scott Subler, *Composting and Greenhouse Gas Emissions: A Producer's Perspective*, 48 BIOCYCLE 37 (2007).

⁵⁵ U.S. ENVTL. PROT. AGENCY, OPPORTUNITIES TO REDUCE GREENHOUSE GAS EMISSIONS THROUGH MATERIALS AND LAND MANAGEMENT PRACTICES 8 (2009); Matt Ewadinger & Scott Mouw, *Recycling Creates Jobs and Boosts Economy*, 46 BIOCYCLE 43 (2005), available at www.biocycle.net/2005/10/recycling-creates-jobs-and-boosts-economy/.

⁵⁶ *British Thermal Unit*, ENCYCLOPEDIA BRITANNICA, www.britannica.com/EBchecked/topic/80372/British-thermal-unit-BTU (last visited May 13, 2012).

⁵⁷ U.S. ENVTL. PROT. AGENCY, 2010 FACTS AND FIGURES, *supra* note 11, at 6. However, it is likely that the actual amounts are higher; these figures are based on the EPA's estimation that only 85 million tons of MSW were recycled or composted in 2010. As explained above, *supra* note 14, a study conducted by BioCycle and Columbia University estimated that the United States generated 389.5 million tons of waste and recycled or composted 94 million tons. Van Haaren et al., *supra* note 2, at 20. Therefore, 94 million tons of MSW recycled or composted likely resulted in more than 1.3 quadrillion BTUs of energy saved.

⁵⁸ Lehmann, *supra* note 3, at 32.

⁵⁹ *Id.*; see also U.S. ENVTL. PROT. AGENCY, WASTEWISE (2010), available at www.epa.gov/osw/nonhaz/municipal/pubs/msw_2010_rev_factsheet.pdf.

⁶⁰ PLATT ET AL., *supra* note 1, at 4.

⁶¹ U.S. ENVTL. PROT. AGENCY, 2010 FACTS AND FIGURES, *supra* note 11, at 10; U.S. ENVTL. PROT. AGENCY, *supra* note 55, at 8.

which achieves the same carbon reduction as would taking thirty-six million cars off the road.⁶² In their recent study, *Stop Trashing the Climate*, which analyzed zero waste strategies as a means of reducing greenhouse gas emissions, the Institute for Local Self-Reliance, the Global Anti-Incinerator Alliance, and Eco-Cycle found that “preventing waste and expanding reuse, recycling, and composting programs—that is, aiming for zero waste—is one of the fastest, cheapest, and most effective strategies available for combating climate change.”⁶³ Moreover, the EPA has concluded that increasing recycling and composting rates to 100 percent—thereby achieving complete MSW diversion—would equate to a reduction of 300 MMTCO₂Eq per year.⁶⁴

While complete waste diversion may not be currently achievable, it is a target for cities and counties to aim for in their pursuit of increasing waste diversion, resource conservation, and an overall closed-loop economy.

Of the 389.5 million tons of MSW generated in 2008, only twenty-four percent, or ninety-four million tons, was recycled or composted, leaving the rest to be landfilled or incinerated.⁶⁵ While these figures are national, recycling and composting rates vary by city, state, and region. The western United States region (California, Nevada, Oregon, and Washington) has the highest rate of recycling and composting, at forty-six percent.⁶⁶ Conversely, the Rocky Mountain region (Arizona, Colorado, Idaho, Montana, New Mexico, Utah, and Wyoming) has the lowest rate, at only eleven percent.⁶⁷ The Midwest, New England, and Mid-Atlantic regions recycle and compost at a rate of twenty-two to twenty-nine percent.⁶⁸ Nonetheless, even with the western states’ recycling and composting efforts, these rates are not high enough to stop the adverse environmental effects of landfilling and incinerating.

In response to the adverse environmental and public health effects

⁶² U.S. ENVTL. PROT. AGENCY, 2010 FACTS AND FIGURES, *supra* note 11, at 4. The same logical assumption governing an increase in the amount of energy saved applies here as well, for the reasons explained in footnote 57. While the composting process is a very minor source of methane, volatile organic compounds, and ammonia, its environmental benefits (overall methane and other GHG emission reductions from landfill diversion; enhanced carbon sequestration by the soil; and a reduced need for water, fertilizers and pesticides) greatly outweigh its costs. See *Compost Emissions Work Group*, CAL. AIR RES. BD., www.arb.ca.gov/cc/compost/compost.htm (last updated Dec. 21, 2011); *Composting, Environmental Benefits*; *Composting, Environmental Benefits*, *supra* note 54; REDUCING GREENHOUSE GAS EMISSIONS THROUGH RECYCLING AND COMPOSTING, *supra* note 54, at 10-11; Brown et al. *supra* note 54, at 1396-97; Brown & Subler, *supra* note 54, at 37.

⁶³ PLATT ET AL., *supra* note 1, at 1.

⁶⁴ U.S. ENVTL PROT. AGENCY, *supra* note 55, at 22, box 6.

⁶⁵ Van Haaren et al., *supra* note 2, at 20.

⁶⁶ *Id.* at 16, 20.

⁶⁷ *Id.*

⁶⁸ *Id.*

discussed above, dozens of cities throughout the United States are seriously addressing the growing MSW problem. For example, thirty-six U.S. city mayors have joined eighty other city mayors from all over the world in signing the United Nations Environmental Accords.⁶⁹ The Environmental Accords are a set of objectives aimed at creating an “ecologically sustainable, economically dynamic, and socially equitable future.”⁷⁰ Three of the objectives are aimed at waste reduction, with one specifically calling for signatory cities to establish a zero waste goal and achieve complete MSW diversion by 2040.⁷¹ Accordingly, several U.S. cities have enacted zero waste goals, including Oakland, California; San Francisco, California; San Jose, California; and Seattle, Washington.⁷² Several other localities that are not signatories to the Environmental Accords, such as Boulder County, Colorado, and Alameda, California, have proactively adopted zero waste goals as well.⁷³

No two zero waste goals, however, are the same. Each goal has different benchmarks and different deadlines for achieving waste diversion. Furthermore, some cities and counties are close to reaching their respective goals, as shown by San Francisco’s progress in approaching eighty percent diversion through recycling and composting efforts alone.⁷⁴ San Francisco takes credit for having the most stringent zero waste goal and the greatest rate of MSW diversion in the United States. The city currently diverts at seventy-seven percent.⁷⁵ It met its 2010 benchmark of seventy-five percent diversion and is now working

⁶⁹ S.F. DEP’T OF THE ENV’T., URBAN ENVIRONMENTAL ACCORDS SIGNING CITIES (2011), available at www.sfenvironment.org/sites/default/files/editor-uploads/initiatives/uea_List_of_signing_Cities.pdf.

⁷⁰ See URBAN ENVIRONMENTAL ACCORDS (2005), available at www.sfenvironment.org/sites/default/files/editor-uploads/initiatives/uea_Urban_Environmental_Accords.pdf.

⁷¹ *Id.*

⁷² S.F. DEP’T OF THE ENV’T., *supra* note 69; Oakland, Cal., Res. 79774 C.M.S. (Mar. 7, 2006), available at clerkwebsvr1.oaklandnet.com/attachments/13137.pdf; S.F., Cal., Res. 679-02 (Sept. 30, 2002), available at www.sfbos.org/ftp/uploadedfiles/bdsupvrs/resolutions02/r0679-02.pdf; San Jose, Cal., Res. 74077 (Oct. 30, 2007), available at www3.sanjoseca.gov/clerk/ORDS_RESOS/RESO_74077.pdf; Seattle, Wash., Res. 30990 (July 16, 2007), available at clerk.seattle.gov/~archives/Resolutions/Resn_30990.pdf.

⁷³ BOULDER CITY COUNCIL, A RESOLUTION DECLARING BOULDER A ZERO WASTE COMMUNITY (May 2, 2006), available at ecocycle.org/files/pdfs/ARESOLUTIONDECLARINGBOULDERAZEROWASTECOMMUNITY.pdf; Boulder County, Colo., Res. 2010-143, (Dec. 9, 2010), available at www.bouldercounty.org/doc/sustainability/zerowastereresolution2010.pdf; CITY OF ALAMEDA, ZERO WASTE IMPLEMENTATION PLAN, at ES-1 (2010), available at www.cityofalamedaca.gov/getdoc.cfm?id=5700.

⁷⁴ Ferry, *supra* note 5; S.F. Dep’t of the Env’t, *supra* note 49.

⁷⁵ Ferry, *supra* note 5; S.F. Dep’t of the Env’t, *supra* note 49.

toward its 2020 zero waste goal of 100 percent.⁷⁶ The cost for residential waste collection in San Francisco is \$27.55 per month, which is the cost for the black “garbage” container alone; the blue recycling and green composting containers are provided at no cost.⁷⁷ If a resident can reduce his or her landfill waste to fit into a smaller, twenty-gallon garbage container, then the cost is reduced to \$21.21 per month.⁷⁸ San Francisco has also enacted an ordinance mandating recycling and composting by all persons, firms, businesses, associations, corporations, and government entities in the city.⁷⁹ Seattle, on the other hand, currently diverts about fifty-four percent of its MSW; although this is a laudable and necessary effort, this rate misses its 2012 benchmark of sixty percent diversion (Seattle’s ultimate goal is seventy percent diversion by 2025).⁸⁰

Despite these growing local efforts, the current zero waste goals alone are not enough to address the growing MSW problem in the United States. Even with these goals in place, San Francisco is the only city close to achieving complete diversion. Additionally, some cities do not even consider their zero waste goals to mean actual “zero” waste. Instead, these cities rely on the definition from the Zero Waste International Alliance, which considers ninety percent diversion to be zero waste.⁸¹

The larger issue, though, is that not all products that make up our MSW are capable of being recycled or composted by local governments. While ninety percent waste diversion is certainly a reasonably attainable goal for cities like San Francisco,⁸² the looming question is how to divert the remaining ten (or fifteen or twenty) percent. One solution proposed by many city officials is to incinerate the remaining amount in WTE facilities.⁸³ However, this option overlooks the fact that zero waste means diversion from not only landfills, but incinerators as well. Furthermore, despite state-of-the-art emission control systems,⁸⁴ combusting MSW in WTE facilities still emits significant amounts of air pollutants, including mercury, lead, nitrogen oxides, carbon monoxide,

⁷⁶ Ferry, *supra* note 5; S.F. Dep’t of the Env’t, *supra* note 49.

⁷⁷ *Residential Rates*, RECOLOGY, www.sunsetscavenger.com/residentialRates.htm (last visited May 12, 2012).

⁷⁸ *Id.*

⁷⁹ S.F., Cal., Ordinance 100-09 (June 9, 2009).

⁸⁰ Ferry, *supra* note 5; Seattle, Wash., Res. No. 30990 (July 16, 2007).

⁸¹ Ferry, *supra* note 5; see *Zero Waste Definition*, ZERO WASTE INT’L ALLIANCE, zwia.org/standards/zw-definition/ (last visited Jan. 4, 2013).

⁸² See Ferry, *supra* note 5.

⁸³ *Id.*

⁸⁴ Elisabeth Rosenthal, *Europe Finds Clean Energy in Trash, but U.S. Lags*, N.Y. TIMES, Apr. 13, 2010, www.nytimes.com/2010/04/13/science/earth/13trash.html.

particulate matter, volatile organic compounds, and dioxins.⁸⁵ Looking to WTE facilities as a solution also fails to address the issue of resource conservation, because these facilities incinerate valuable materials that could instead be recycled into new products.⁸⁶ Thus, burning the remaining MSW is not an optimal solution.

Because traditional waste management techniques are failing and WTE cannot address the adverse environmental and public health effects or the resource conservation and product redesign goals, another solution is necessary. EPR laws have the potential to close that gap on the remaining MSW that cannot be composted or recycled through local efforts. EPR laws are a growing trend in the United States⁸⁷ and they operate as a means of realizing complete waste diversion from landfills and incinerators, resource conservation, and product redesign, which help move toward a more sustainable society in the process.

IV. ACHIEVING ZERO WASTE THROUGH EXTENDED PRODUCER RESPONSIBILITY

Cities and counties currently utilize recycling and composting measures in order to divert as much MSW from landfills or incinerators as possible. However, while absolutely necessary, these efforts are not enough. In looking to the future, a hybrid approach should be adopted, whereby local governments (or third-party waste management companies hired by localities) continue to recycle and compost to the greatest extent practicable, and once those efforts are exhausted, EPR laws would address those products that remain in the waste stream. EPR laws, when designed to force the producer to take back a product at the end of its life and engage in resource recovery, can close the gap on the remaining MSW that cannot feasibly be recycled, composted, or reused.

While such a role of EPR or product stewardship would rely further on city and county waste collection services, this approach is consistent with the current recycling and composting practices of many local

⁸⁵ ENVTL. INTEGRITY PROJECT, *supra* note 38, at 2-7; U.S. ENVTL. PROT. AGENCY, *supra* note 38.

⁸⁶ Ferry, *supra* note 5.

⁸⁷ Letter from Scott Cassel, Exec. Dir. & Founder, Prod. Stewardship Inst., to Assemb. Member Nancy Skinner, Chair, Cal. Assemb. Comm. on Natural Res., Support for Assembly Bill 283 (Apr. 14, 2009), *available* at www.productstewardship.us/associations/6596/files/PSI%20support%20for%20CA%20AB%20283%20framework%20bill%20204-14-09.pdf; Letter from Scott Cassel, Exec. Dir. & Founder, Prod. Stewardship Inst., to Rep. Ben Cannon, Chairman, Or. House Env't and Water Comm., Support for House Bill 3060 (Mar. 31, 2009), *available* at www.productstewardship.us/associations/6596/files/PSI%20support%20for%20OR%20HB%203060%20framework%20bill%203-31-09.pdf.

governments. Certainly, expanding recycling and composting efforts to the greatest extent possible will have costs, and each locality will have to determine what is feasible given these costs and the technology required for increased resource recovery. Still, cities like San Francisco have shown that getting to eighty percent or more of MSW diversion simply through recycling and composting practices is possible.

A. DEFINING EXTENDED PRODUCER RESPONSIBILITY

EPR take-back laws work by requiring the producers of products that cause waste management, public health, environmental, and other adverse issues to take back their products at the end of the products' lives. The main concept is that the responsibility and costs of managing, recycling, and disposing of a particular product is to be borne by the producer of that product, rather than society. The theoretical underpinning of EPR take-back laws is that by requiring the producer to take responsibility—both financial and physical—for the product, the internalization of these costs by the producer should serve as an incentive for the producer to redesign the product to be more recyclable, compostable, and or reusable—in other words, more sustainable.⁸⁸ This logic is a purely economic, market-based approach that arises from the desire, or need, to internalize those product externalities, such as the cost of waste disposal and the associated environmental and health impacts, with the producer.⁸⁹ In addition to potentially curing such market failures, EPR laws also help achieve waste diversion and resource conservation.⁹⁰

⁸⁸ See STEPHEN SMITH, ORG. FOR ECON. CO-OPERATION & DEV., ANALYTICAL FRAMEWORK FOR EVALUATING THE COSTS AND BENEFITS OF EXTENDED PRODUCER RESPONSIBILITY PROGRAMMES 7-8 (2005), [search.oecd.org/officialdocuments/displaydocumentpdf/?doclanguage=en&cote=env/epoc/wgwpr\(2005\)6/final](http://search.oecd.org/officialdocuments/displaydocumentpdf/?doclanguage=en&cote=env/epoc/wgwpr(2005)6/final); PROD. STEWARDSHIP INST, *supra* note 8; *About EPR*, PROD. POLICY INST., www.productpolicy.org/content/about-epr (last visited May 10, 2012); *Extended Producer Responsibility*, INFORM, www.informinc.org/pages/research/waste-prevention/extended-producer-responsibility.html (last visited May 10, 2012).

⁸⁹ See Sachs, *supra* note 26, at 56-57; Hannah McCrea, Note, *Germany's "Take-Back" Approach to Waste Management: Is There a Legal Basis for Adoption in the United States?*, 23 GEO. INT'L ENVTL. L. REV. 513, 515-17 (2011).

⁹⁰ A related doctrine, known as product stewardship, shares most of the EPR elements. However, they differ in one major regard: traditionally, EPR laws provided that only the producers should bear the responsibility and costs of managing their products at the end of life. Product stewardship laws, on the other hand, impose responsibility on all those involved in the life of the product: producers, retailers, and consumers. See *Product Stewardship and Extended Producer Responsibility: Definitions and Principles*, PROD. STEWARDSHIP INST., productstewardship.us/displaycommon.cfm?an=1&subarticlenbr=231 (last visited May 15, 2012). In part due to their doctrinal similarities, the growing trend is to use the terms EPR and "product stewardship" interchangeably. See Garth Hickle, *The Evolving Product Stewardship Policy*

Because management of MSW in the United States is traditionally undertaken by cities and states, and because there has been a lack of federal action in this area, states have taken the lead in addressing the MSW problem through innovative EPR laws. As of January 2013, thirty-two states have enacted seventy-five EPR laws.⁹¹ Among these laws, nine product categories are regulated: mercury-filled automobile switches, batteries, carpet, cell phones, electronics, fluorescent lighting, mercury thermostats, paint, and pesticide containers.⁹² However, no state regulates all nine categories, and most states regulate only one or two.⁹³ In addition to these nine, several other product categories have been introduced in state legislation across the United States in the last three years, including mattresses, medical sharps, smoke detectors, packaging, and pharmaceutical drugs.⁹⁴

In his article discussing the success of EPR legislation in the European Union, Professor Noah Sachs provides a critique of EPR, and in so doing brings attention to two of its goals: full cost internalization and the subsequent product redesign. While Professor Sachs does not dispute the “downstream impacts” of EPR—that EPR reduces the volume of waste to be landfilled or incinerated, thereby diverting toxic chemicals from the waste stream, and also reduces the pressure on extracting virgin resources—he argues that EPR is not always successful in accomplishing the “upstream impacts,” thus forcing the cost internalization and subsequent redesign of certain products.⁹⁵ He explains that in order to have true cost internalization, and therefore incentive to redesign, a producer must have “individual responsibility” over its own products instead of “collective responsibility,” under which the entire industry shares in the costs of taking back the product.⁹⁶ However, individual responsibility, he argues, faces large transactional costs and thus is not feasible.⁹⁷ He further concludes that collective responsibility, which is what most European EPR laws utilize, fails to

Landscape in the United States: A State Perspective 1, at the ABA Section of Environment, Energy, and Resources Section Fall Meeting (Oct. 13, 2011); PROD. POLICY INST., PROD. STEWARDSHIP INST. & CAL. PROD. STEWARDSHIP COUNCIL, PROD. STEWARDSHIP AND EXTENDED PRODUCER RESPONSIBILITY: DEFINITIONS AND PRINCIPLES (2012), *available at* www.calpsc.org/admin-document-upload/doc_download/11-ppi-psi-cpsc-epr-principles.

⁹¹ PROD. STEWARDSHIP INST., *supra* note 8.

⁹² *Id.*

⁹³ *Id.*

⁹⁴ *Extended Producer Responsibility Legislation as of December 31, 2012*, PROD. STEWARDSHIP INST., productstewardship.us/associations/6596/files/PSActiveLegislation2012.cfm.

⁹⁵ Sachs, *supra* note 26, at 63-65.

⁹⁶ *Id.* at 75-76.

⁹⁷ *Id.* at 76.

effectuate true cost internalization and product redesign.⁹⁸ Though Professor Sachs accurately concludes that EPR is able to achieve waste diversion and resource conservation, his argument that EPR laws are unable to achieve cost internalization and product redesign presents only one view and is arguably incorrect. It is also important to note that Professor Sachs's article came out in 2006, before most of the EPR laws in the United States were passed. Hence, it is too soon to see a direct link between EPR and product redesign in the United States.

There is evidence of a direct link between EPR laws and redesign in other countries. The International Institute for Industrial Environmental Economics at Lund University has concluded that, in practice, individual responsibility is feasible and that EPR laws have proven to be successful in internalizing costs and incentivizing redesign.⁹⁹ The Institute's report on the matter concludes, as did Professor Sachs, that individual producer responsibility is necessary to achieve true cost internalization and product redesign.¹⁰⁰ However, unlike Professor Sachs, the Institute presents empirical evidence that "unequivocally illustrates that manufacturers have designed their products to meet anticipated and existing demands from EPR."¹⁰¹ As a direct consequence of EPR laws employing individual producer responsibility, electronics and car manufacturers in Sweden and Japan have taken concrete measures to reduce the amount of materials used, prolong the products' or cars' lives, ease the disassembly or separation of the products, reduce the use of hazardous substances, enhance component and material re-use, and increase the recyclability of materials.¹⁰² Lastly, while the Institute's report maintains that individual producer responsibility is vital, it also suggests that producers may be allowed to choose to collectively organize take-back and recycling systems so long as each producer maintains individual *financial* responsibility¹⁰³ for its own new products.¹⁰⁴

In addition to his theory about the success of EPR laws, Professor Sachs also accurately highlights the importance of achieving product redesign in measuring the success and necessity of EPR laws. He poses

⁹⁸ *Id.* at 76-77.

⁹⁹ CHRIS VAN ROSSEM ET AL., INT'L INST. FOR INDUS. ENVTL. ECONS., EXTENDED PRODUCER RESPONSIBILITY: AN EXAMINATION OF ITS IMPACT ON INNOVATION AND GREENING PRODUCTS (2006).

¹⁰⁰ *Id.* at 6-7.

¹⁰¹ *Id.* at 14.

¹⁰² *Id.* at 14-15, 19-20.

¹⁰³ Financial responsibility is defined in the report as the producer covering all or part of the costs for the collection, recycling, or final disposal of its products. *Id.* at 2.

¹⁰⁴ *Id.* at 25.

the question, “If EPR is similar to other recycling programs in achieving downstream impacts and resource benefits, then what is the added value of producer responsibility?”¹⁰⁵ In other words, why require the producers, and not some other entity or government agency, to take back their products? The answer is that only the producer designs and manufactures the product, and thus only the producer has the ability to redesign the product to be more sustainable.¹⁰⁶ Moreover, even in the absence of actual redesign, shifting costs back to the producers will likely have an effect on price and thus consumer demand for those regulated products. Therefore, while the market elasticity of demand for the product will indeed play a role,¹⁰⁷ EPR may still be able to eliminate negative externalities and optimize the purchase of products despite the doctrine’s arguable inability to effectuate product redesign.

B. THE ELEMENTS OF EPR

Presented below is a discussion of five concepts or mechanisms that are part of current EPR laws and the framework for EPR legislation: the product selection mechanism, the product take-back method, the product recovery mechanism and performance goal, the product design goal, and the enforcement mechanism. These are key strategies to EPR programs, and decisions about them can affect the efficacy of the program. While this list is not exhaustive, it includes those concepts that are arguably most important in crafting successful EPR laws.

1. *Product Selection Mechanisms*

The first strategy that will be explored is the mechanism by which states select the products to be regulated under the states’ EPR laws. There are two different means of determining which products to regulate: 1. a separate EPR law that is enacted by the legislature to target each particular product (the “product-by-product” approach), and 2. an EPR

¹⁰⁵ Sachs, *supra* note 26, at 75.

¹⁰⁶ One major alternative to the take-back EPR policy approach is the use of advanced recovery fees (ARFs). An ARF is an extra fee that the consumer pays to the retailer for a particular product, such as an electronic good, at the time of purchase; the retailer then forwards the fee to the governmental authority or other organization that is responsible for the collection, recycling, and resource recovery of that product. NW. PROD. STEWARDSHIP COUNCIL, FRONT-END FINANCING (FEF) SCENARIOS FOR COLLECTION/RECYCLING OF ELECTRONIC PRODUCTS 2 (2004), *available at* productstewardship.net/PDFs/productsElectronicsFinancingScenarios.pdf. The chief concern with ARFs, however, is that the producer and the incentive for sustainable product redesign are completely absent from the equation. *Id.* at 3. Therefore, if the goal is sustainable product redesign (as it is with EPR and zero waste policies), it is the producer that should bear the responsibility of taking back and managing products at the end of life.

¹⁰⁷ See Louis Kaplow, *Why (Ever) Define Markets?*, 124 HARV. L. REV. 437, 482 (2010).

law that institutes a framework mechanism under which the state relies upon a specific set of criteria and factors when determining which products to regulate under its EPR program.¹⁰⁸ The latter framework approach has two variations: the “framework/legislature” approach and the “framework/agency” approach.

The product-by-product approach involves the state’s legislature passing an entirely new law for each product to be regulated under an EPR take-back program. Historically, in the United States, the general process behind state EPR legislation has reflected a product-by-product approach: whenever a state chooses to regulate a particular product or product category, it will enact an entirely new statute for that single product or product category.¹⁰⁹ Over the years, some states have established several EPR laws. California and Maine, for example, each have six EPR laws for six separate products; Vermont has five; Maryland has four; and Illinois, Iowa, New Jersey, and Rhode Island each have three.¹¹⁰

The obvious concern with the traditional, product-by-product approach is that each time a state determines that a particular product needs to be regulated under the state’s EPR program, it must pass new legislation. As with any piece of legislation, the bill must be passed by both chambers of the legislature and then signed by the governor. Throughout the political process, the bill must navigate the mounting pressures from special interest and lobbyist groups aimed at defeating the bill. The result is a tedious, drawn-out, and inefficient process.

An EPR framework law differs from the product-by-product approach because instead of passing a new law for each product to be regulated, a framework law gives the state the ability to address multiple products under one law based on a set of criteria or factors.¹¹¹ The criteria used to recommend or select products generally include whether regulating the product has the potential to reduce waste, toxicity, greenhouse gas emissions, or other environmental or health impacts; the potential to encourage product redesign or manufacture that reduces environmental or health impacts; the public demand or need for improved recycling, reuse, or disposal practices; the potential to increase recovery of materials for reuse and recycling; the potential to reduce the costs of waste management to local governments and taxpayers; and the success in regulating the product in similar programs in other states or

¹⁰⁸ See *EPR/Product Stewardship Q&A*, PROD. POLICY INST., www.productpolicy.org/content/eprproduct-stewardship-q#framework (last visited Sept. 30, 2012).

¹⁰⁹ See Prod. Policy Inst., *supra* note 9.

¹¹⁰ PROD. STEWARDSHIP INST., *supra* note 8.

¹¹¹ PROD. POLICY INST., *supra* note 108.

countries.¹¹² A new chapter in state EPR law began in 2010 when Maine passed the nation's first EPR framework law.¹¹³ Following Maine's lead, eight states have introduced EPR framework bills in their legislature: California, Massachusetts, Minnesota, New York, Oregon, Rhode Island, Vermont, and Washington.¹¹⁴ As of January 2013, none of these bills has passed to become law.¹¹⁵

These framework laws can take two different approaches. Under the first, the "framework/legislature" approach, the state agency uses established selection criteria and factors to recommend to the legislature those products that should be regulated, which are then included in new legislation if the legislature accepts the recommendations.¹¹⁶ Under the second approach, the "framework/agency" approach, the named state agency uses the selection criteria and factors to determine, through a public process, those products that are to be regulated under an EPR program.¹¹⁷ The key difference is that the former approach vests the ultimate decision-making authority with the state legislature and the legislative process, while the latter approach vests the decision-making authority with the named state agency and the regulatory process.

2. *Individual Versus Collective Take-Back*

The next EPR concept, the degree of cooperation or responsibility among producers for taking back their products, is crucial in determining the effectiveness of EPR laws in achieving product redesign. Only those EPR laws that require individual producer responsibility, as opposed to collective responsibility, will create true cost internalization and subsequent product redesign.¹¹⁸ Thus, EPR regulatory regimes can, and should, call for individual producer responsibility, under which a producer is individually responsible for the take-back and end-of-life management of its products.

¹¹² See ME. REV. STAT. ANN. tit. 38, § 1772 (Westlaw 2013); A. 6293, 2011-2012 Reg. Sess. (N.Y. 2011); H.B. 2017, 2011 Leg., Reg. Sess. (Mass. 2011); H.B. 3060, 75th Leg. Assem., Reg. Sess. (Or. 2009); S. 2027, 2012 Gen. Assem., Jan. Sess. (R.I. 2012).

¹¹³ ME. REV. STAT. ANN. tit. 38, §§ 1771-1775; see also Press Release, Prod. Policy Inst., *supra* note 9.

¹¹⁴ A.B. 2139, 2010 Leg., Reg. Sess. (Cal. 2010); Mass. H.B. 2017; H.F. 2407, 86th Sess. (Minn. 2009); N.Y. A. 6293; Or. H.B. 3060; R.I. S. 2027; H. 696, 2009-2010 Leg. Sess. (Vt. 2010); H.B. 1718, 61st Leg., 2009 Reg. Sess. (Wash. 2009).

¹¹⁵ PROD. STEWARDSHIP INST., *supra* note 8.

¹¹⁶ See Maine's framework law and the recent framework bills introduced in California, Minnesota, New York, and Vermont: ME. REV. STAT. ANN. tit. 38, §§ 1771-1775; Cal. A.B. 2139; Minn. H.F. 2407; N.Y. A. 6293; Vt. H. 696.

¹¹⁷ See the recent framework bills introduced in Massachusetts, Oregon, and Rhode Island: Mass. H.B. 2017; Or. H.B. 3060; R.I. S. 2027.

¹¹⁸ See Sachs, *supra* note 26, at 75-76; VAN ROSSEM ET AL., *supra* note 99, at 6.

However, there are EPR laws and bills that give producers or manufacturers the *option* of whether to be individually or collectively responsible for end-of-life product management.¹¹⁹ While not as effective as individual producer responsibility, this approach may be a suitable one, as the International Institute for Industrial Environmental Economics concluded in its report: “The fact that EPR law is meant to be goal-oriented . . . suggests that producers should be allowed to collectively organize . . . take-back and recycling systems. In fact, in many cases it may be rational to do so from both an economic and environmental perspective.”¹²⁰ If producers are given the option and elect to collectively organize, it will be necessary for producers to maintain individual financial responsibility for their new products in order to ensure proper cost internalization and product redesign.¹²¹ The focus is on a producer’s new products because the design of old products cannot be changed retroactively and thus cost internalization is not as vital for those products.¹²²

3. *Product Recovery Mechanisms and Performance Goals*

Under an EPR take-back program, a potential problem is that the disposal of waste in landfills and incinerators will continue to occur and the responsibility for disposal will only be shifted to the producers. Such an outcome would fail to achieve the waste diversion and resource conservation goals. The solution is to include within an EPR law two related components: a product recovery mechanism and performance goals. Both of these pieces are necessary, because without mandatory reuse and recycling provisions or performance goals there would be almost no benefit from requiring producers to take back the products if they are ultimately to be landfilled or incinerated.¹²³

The product recovery mechanism is a mandate that all discarded products collected by the producer be reused or recycled by the producer.¹²⁴ In some of the new EPR framework bills these mandates fall within the producers’ prescribed product stewardship programs.¹²⁵ These EPR framework bills also contain a narrow exception that allows

¹¹⁹ See, e.g., ME. REV. STAT. ANN. tit. 38, § 1672; Mass. H.B. 2017; Minn. H.F. 2407; N.H. REV. STAT. ANN. § 149-M:58-a (Westlaw 2013); Or. H.B. 3060; R.I. S. 2027; Vt. H. 696.

¹²⁰ VAN ROSSEM ET AL., *supra* note 99, at 25.

¹²¹ *Id.* at 7.

¹²² *Id.* at 7.

¹²³ See Sachs, *supra* note 26, at 80.

¹²⁴ See CAL. PUB. RES. CODE §§ 42970-42983 (Westlaw 2013); Mass. H.B. 2017; Or. H.B. 3060; R.I. S. 2027.

¹²⁵ See Mass. H.B. 2017; Or. H.B. 3060; R.I. S. 2027.

products to be properly “disposed” only if the “applicable product-specific rule” promulgated by the state so permits.¹²⁶ However, this exception is largely insignificant in light of EPR goals, because the focus is first on reusing and recycling the product, and disposal may occur only if the agency allows.

Related to the product recovery mandate are enforceable performance goals, which are “metrics established by the producer or the state to measure on an annual basis the performance of a product stewardship program in addressing recycling, reuse, safe disposal, environmental impacts or health impacts related to a product.”¹²⁷ Producers must include these goals within their product stewardship plans, which are submitted to the state for approval and must include the total amount collected, the collection rate, and the disposition rate.¹²⁸ These goals will be measured annually and will be enforced by the state; producers who violate them will be subject to significant civil penalties.¹²⁹

4. *Product Design Goals*

Another important EPR concept is the inclusion of mechanisms to prompt sustainable product redesign either through voluntary “product goals” or mandated consideration of design changes. These mechanisms prompt producers to consider design and manufacturing changes by either allowing or requiring them to adopt product goals. These mechanisms are a new concept in EPR laws in the United States, and they have been included in the EPR framework bills introduced in the last few years.¹³⁰ While most pre-existing EPR laws in the United States include the foundational take-back element of the EPR doctrine—leading to cost internalization and subsequent redesign—they do not include express provisions aimed specifically at triggering product redesign. Some of the recent EPR framework bills include a provision that allows producers to establish voluntary product goals, typically defined as “any change in the design and manufacture of a product that reduces or has the potential to reduce environmental or health impacts.”¹³¹ Moreover, if a producer *does* adopt product goals, it must include them in its product

¹²⁶ Mass. H.B. 2017; Or. H.B. 3060; R.I. S. 2027.

¹²⁷ Cal. A.B. 2139, 2010 Leg., Reg. Sess. (Cal. 2010); Mass. H.B. 2017; Or. H.B. 3060; R.I. S. 2027.

¹²⁸ Cal. A.B. 2139; Mass. H.B. 2017; Or. H.B. 3060; R.I. S. 2027.

¹²⁹ *See, e.g.*, Mass. H.B. 2017; Or. H.B. 3060; R.I. S. 2027.

¹³⁰ Cal. A.B. 2139; Mass. H.B. 2017; H.F. 2407, 86th Sess. (Minn. 2009); Or. H.B. 3060; R.I. S. 2027.

¹³¹ Mass. H.B. 2017; Or. H.B. 3060; R.I. S. 2027; *see also* Cal. A.B. 2139.

stewardship plan submitted to the state.¹³²

Other recent EPR framework bills employ a more direct approach in prompting design changes. Although some framework bills merely permit producers to develop voluntary product redesign goals, California's bill appears to *require* producers to adopt product goals that address "the use of virgin material . . . , the impact upon, or use of, water or energy by the covered product, the use of, or generation of hazardous substances by the covered product, the carbon footprint . . . , the . . . product's longevity, the recycled content of the . . . product, and [its] recyclability."¹³³ Additionally, California's bill mandates that a producer's product stewardship plan "address the environmental impacts of the covered product over the entire life-cycle of that product, including the product design [and] manufacture."¹³⁴ Similarly, Minnesota's bill also states that a producer's product stewardship plan must include "product design changes that will be considered to reduce toxicity, water use, or energy use or to increase recycled content, recyclability, or product longevity."¹³⁵

In both approaches, it is the producers that determine what the goals or changes will be. In either instance, if or when product goals are adopted, they are not enforceable and there is no requirement that producers achieve the goals.¹³⁶ This lack of enforceability, however, further encourages producers to freely consider and implement design changes without the danger of incurring penalties if producers fail to meet their goals.

5. *Enforcement and Penalty Mechanisms*

The last major components of EPR laws are enforcement and penalty mechanisms, which ensure that producers will comply with a state's EPR program. Generally, a producer and a retailer are not allowed to sell or distribute a regulated product unless the producer has submitted a product stewardship plan¹³⁷ or participates in an approved product stewardship program for that product.¹³⁸ Moreover, to enforce these provisions, EPR laws can impose penalties for violations. Penalty

¹³² Mass. H.B. 2017; Or. H.B. 3060; R.I. S. 2027.

¹³³ Cal. A.B. 2139.

¹³⁴ *Id.*

¹³⁵ Minn. H.F. 2407.

¹³⁶ *See, e.g.*, Cal. A.B. 2139; Mass. H.B. 2017; Minn. H.F. 2407; Or. H.B. 3060; R.I. S. 2027.

¹³⁷ *See, e.g.*, CAL. PUB. RES. CODE § 42974(b) (Westlaw 2013); Cal. A.B. 2139; Mass. H.B. 2017.

¹³⁸ *See, e.g.*, N.H. REV. STAT. ANN. § 149-M:58-a(IV) (Westlaw 2013); Minn. H.F. 2407; Or. H.B. 3060; R.I. S. 2027; H. 696, 2009-2010 Leg. Sess. (Vt. 2010).

provisions can be broad, covering any violation of the statute by any person, and range from \$1,000 to \$25,000 for each day the violation continues or for each violation.¹³⁹ Alternatively, penalty provisions can be much more narrow and specifically target producers and or retailers. In these latter types of penalty provisions, a producer can be fined for each day it is not participating in an approved product stewardship program covering the product, or for not implementing an approved product stewardship plan.¹⁴⁰ In addition, retailers can be fined for continuing to sell a product from a producer who is not participating in a product stewardship program or otherwise not in compliance with the EPR statute.¹⁴¹

V. A SOUND EPR LAW, ITS CONSTITUTIONAL CHALLENGES AND A FEDERAL ALTERNATIVE

The political environment is changing with respect to EPR legislation. More states are now regulating more products through the product-by-product approach discussed earlier.¹⁴² In addition, EPR framework laws are gaining traction, with the enactment of Maine's first-in-the-nation framework law and the introduction of eight more framework bills since then.¹⁴³ This Part recommends which concepts and mechanisms should be included to create an ideal framework law. This Part will also address potential constitutional hurdles to such EPR laws and will consider national EPR legislation as an alternative to the current state-by-state approach.

A. THE IDEAL EPR FRAMEWORK

In order to achieve the immediate goals of closing the gap on the remaining amount of MSW still being landfilled or incinerated, conserving natural resources, and prompting product redesign, states should enact EPR framework laws instead of relying on the traditional product-by-product approach. Framework laws can serve as a more efficient and effective way of including all those products in the waste stream that cannot be recycled, composted, or reused through current municipal efforts.

Though states should follow Maine's general efforts, they should not model their framework laws too closely on Maine's approach.

¹³⁹ See, e.g., Mass. H.B. 2017; Or. H.B. 3060; R.I. S. 2027.

¹⁴⁰ See, e.g., CAL. PUB. RES. CODE § 42978; Cal. A.B. 2139; Minn. H.F. 2407; Vt. H. 696.

¹⁴¹ See, e.g., Minn. H.F. 2407; Vt. H. 696.

¹⁴² See PROD. STEWARDSHIP INST., *supra* note 8; PROD. STEWARDSHIP INST., *supra* note 94.

¹⁴³ See ME. REV. STAT. ANN. tit. 38, §§ 1771-1775 (Westlaw 2013).

Maine's three-page framework bill¹⁴⁴ presents the bare minimum of an EPR framework law. Moreover, Maine's law does not differ much from the traditional product-by-product approach logistically because it still requires the legislature to pass a new law for each new product to be regulated under its framework law.¹⁴⁵ In moving forward, states should design their EPR framework laws to include all the concepts and mechanisms previously discussed. Some state framework bills have already included many of those mechanisms, but none of the bills are drafted in such a way as to achieve complete zero waste.

First, in regard to product selection mechanisms, states should use the framework/agency approach, under which a set of criteria or factors, established by the state's legislature, are used by a designated state agency to recommend products for inclusion in a product stewardship program, and the state agency makes the ultimate determination of which products will be regulated.¹⁴⁶ This approach significantly limits inefficiency and delay inherent in the framework/legislature and product-by-product approaches. Agencies tasked with identifying those products requiring EPR can act in a more timely and efficient manner than state legislatures. Furthermore, the framework/legislative and product-by-product approaches will lead to the regulation of fewer products and delay expanded implementation of EPR.¹⁴⁷

Although this approach vests the agency with the decision-making authority, the agency does not make the decision independently. Those new framework bills that utilize the framework/agency approach require that the public be involved throughout the product selection process, with the opportunity for written comments to be given and at least one public hearing to be held.¹⁴⁸ In addition, the agency must create and seek guidance from an advisory committee, composed of members representing producers, local government, environmental groups, the solid waste or recycling industry, and the retail industry.¹⁴⁹ These elements will work to ensure that an open, public process is used, which will be vital to maintain accountability, given that unelected agency officials rather than the elected representatives in the legislature will be deciding which products to regulate.

Second, with respect to the type of take-back mechanism used, there

¹⁴⁴ 2010 Me. Legis. Serv. Ch. 516 (H.P. 1159) (L.D. 1631) (Westlaw 2013).

¹⁴⁵ ME. REV. STAT. ANN. tit. 38, §§ 1772(2), 1773.

¹⁴⁶ See, e.g., H.B. 2017, 2011 Leg., Reg. Sess. (Mass. 2011); H.B. 3060, 75th Leg. Assem., Reg. Sess. (Or. 2009); S. 2027, 2012 Gen. Assem., Jan. Sess. (R.I. 2012).

¹⁴⁷ See, e.g., A.B. 2139, 2010 Leg., Reg. Sess. (Cal. 2010); H.F. 2407, 86th Sess. (Minn. 2009); H. 696, 2009-2010 Leg. Sess. (Vt. 2010).

¹⁴⁸ Mass. H.B. 2017; Or. H.B. 3060; R.I. S. 2027.

¹⁴⁹ Mass. H.B. 2017; Or. H.B. 3060; R.I. S. 2027.

are two options states can follow: states should design their framework laws to achieve individual producer take-back and responsibility or allow for collective take-back that still requires producers to bear individual financial responsibility for new products. In order to achieve cost internalization and encourage product redesign, producers must have individual rather than collective responsibility over their products.¹⁵⁰ However, most of the framework bills introduced in the last few years give producers the option to collectively organize in taking back and managing their products.¹⁵¹ Arguably, because individual take-back and responsibility leads to greater cost internalization by the producers, producers will likely opt to collectively organize, which could lead to the problems that Professor Sachs discusses in his Article.¹⁵² Nonetheless, giving producers the option may be sufficient; so long as producers maintain individual financial responsibility over their new products while undertaking collective responsibility over their old products, the true product costs should still be internalized.¹⁵³

A third, related element that has been included in some of the recent bills is the product goal defined as an adopted change in the design and manufacture of a product to increase the sustainability of that product. States should look to including this mechanism in their EPR framework laws because this tool may be effective enough to supplement any potential lack of cost internalization arising from producers opting for collective responsibility. Many of the new framework bills include this element in an effort to encourage producers to voluntarily reexamine their products' design and manufacturing processes and reduce the associated environmental impacts of the products.¹⁵⁴ Provisions that require a producer to address the environmental impacts of the product's design and manufacturing process and include product goals aimed at reducing the product's adverse impacts will have a greater likelihood of achieving product redesign, and thus states should include a mandatory product goal provision.¹⁵⁵ Such a provision will likely serve as a safety net and ensure that product redesign will occur in the event that cost internalization fails to bring about such change.

Fourth, with respect to product recovery mechanisms and performance goals, states must include both of these EPR policy tools in

¹⁵⁰ See Sachs, *supra* note 26, at 75-76; VAN ROSSEM ET AL., *supra* note 99, at 6.

¹⁵¹ See Cal. A.B. 2139; Mass. H.B. 2017; Minn. H.F. 2407; Or. H.B. 3060; R.I. S. 2027; Vt. H. 696.

¹⁵² Sachs, *supra* note 26, at 75-76.

¹⁵³ *Id.*

¹⁵⁴ See Mass. H.B. 2017; Or. H.B. 3060; R.I. S. 2027.

¹⁵⁵ See Cal. A.B. 2139; *see also* Minn. H.F. 2407 (requiring producers to include in the product stewardship plan product design changes that will be considered by the producer).

order to maximize waste diversion and resource conservation. These reuse and recycling mandates and performance goals will conserve limited resources and help make certain that regulated products do not end up in landfills or incinerators. Without such provisions, producers could simply landfill or incinerate the collected products and there would be no point to requiring product take-back.¹⁵⁶ The performance goals, which will generally be set by the producers and enforced by the state, are another means of creating producer accountability and will work to ensure that producers actually engage in resource recovery. In addition, such performance goals should increase over time, perhaps annually or every two years, thereby acting as a technology-forcing mechanism and leading to more sustainable product design and manufacturing processes. Furthermore, mandated recovery, reuse, and recycling provisions and goals will work to increase the costs that producers must face. Under the current framework bills, a producer would be required to reuse or recycle the product in its entirety unless the state grants an exemption. Thus, in light of these added costs, such provisions should further prompt product redesign.

Lastly, in order to ensure that producers comply with these important provisions and mechanisms, state framework legislation should have enforcement and penalty provisions. Framework laws should prohibit a producer (and retailers) from selling or distributing a regulated product unless the producer has submitted a product stewardship plan for that product¹⁵⁷ or participates in an approved product stewardship program for that product. Moreover, penalty provisions should be drafted broadly to include any violation of the statute by any person.

While a framework law with these recommended provisions should be able to significantly advance the zero waste and EPR goals discussed earlier, simply adopting a framework law with these components will not suffice. A hybrid approach should be pursued. In addition to such a framework law, cities, counties, and states should look to adopting a mandatory recycling and composting ordinance or law, like that of San Francisco,¹⁵⁸ which is arguably the biggest, if not the sole, reason for its current seventy-seven percent diversion rate. Accordingly, once an adequate EPR framework law has been established, it will be necessary to then target those products that are still being landfilled and incinerated

¹⁵⁶ See Sachs, *supra* note 26, at 80.

¹⁵⁷ See Mass. H.B. 2017; Or. H.B. 3060; R.I. S. 2027. Product stewardship plans describe the producer's program for collection; recycling, reuse, or disposal of products; and any related performance or product goals.

¹⁵⁸ See S. F., Cal., Ordinance 100-09 (June 9, 2009).

or not already regulated under the existing EPR laws.

B. CONSTITUTIONAL CHALLENGES TO STATE EPR LAWS

EPR laws have yet to face significant legal challenge. But as the number and complexity of EPR laws expand, regulated producers will predictably raise constitutional challenges under the Equal Protection Clause and Commerce Clause of the U.S. Constitution.¹⁵⁹ A well-designed EPR law, however, should be able to withstand such constitutional scrutiny.¹⁶⁰

The Equal Protection Clause of the Fourteenth Amendment provides that “no State shall deny to any person within its jurisdiction the equal protection of the laws.”¹⁶¹ The U.S. Supreme Court has construed the Equal Protection Clause as prohibiting government action that involves irrational classifications.¹⁶² Because EPR laws will differentiate between products—imposing end-of-life responsibility on the producers of some products, but not others—they must withstand rational-basis review (as opposed to intermediate or strict-scrutiny review because producers are not a protected class entitled to heightened scrutiny).

The rational-basis test would be used to determine whether state laws regulating goods and products violate the Equal Protection Clause and presents a fairly low burden.¹⁶³ So long as “the question is at least debatable” and “there was evidence before the legislature reasonably supporting the classification,” such challenges to state laws cannot succeed.¹⁶⁴ A state would have a myriad of rational bases for creating an EPR law, such as conserving valuable natural resources; protecting the

¹⁵⁹ While an EPR law may raise substantive due process issues as well, challenges on this basis would likely fail, given the extremely low burden required to uphold the law and the great deference afforded to the government. The Due Process Clause of the Fourteenth Amendment provides that the State may not “deprive any person of life, liberty, or property without due process of law.” U.S. CONST. amend. XIV, § 1. Substantive due process focuses on whether the government has an adequate basis for depriving a person of life, liberty, or property. *See* IRWIN CHEMERINSKY, CONSTITUTIONAL LAW 603 (3d ed. 2009). Since 1937, no state or federal law has been held to violate the Constitution on economic substantive due process grounds. Irwin Chemerinsky explains: “The [Supreme] Court has made it clear that economic regulations . . . will be upheld when challenged under the Due Process Clause so long as they are rationally related to a legitimate government purpose. The government’s purpose can be any goal not prohibited by the Constitution. In fact, it does not need to be proven that the asserted purpose was the legislature’s actual objective. Any conceivable purpose is sufficient.” *Id.* at 628.

¹⁶⁰ U.S. CONST. amend. XIV, § 1; U.S. CONST. art. I, § 8, cl. 3.

¹⁶¹ U.S. CONST. amend. XIV, § 1.

¹⁶² *City of Cleburne, Tex. v. Cleburne Living Ctr.*, 473 U.S. 432, 446 (1985) (“The State may not rely on a classification whose relationship to an asserted goal is so attenuated as to render the distinction arbitrary or irrational.”).

¹⁶³ *Minnesota v. Clover Leaf Creamery Co.*, 449 U.S. 456, 461 (1981).

¹⁶⁴ *Id.* at 464.

environment from air, water, and soil pollution; and improving the public health by moving away from landfilling and incineration toward recycling, composting, and product take-back. Therefore, in light of the low rational-basis threshold and the significant likelihood that the state would have a legitimate interest in its EPR law that is rationally related to the state's goals, any Equal Protection Clause challenge against a state EPR law would most likely be unsuccessful.¹⁶⁵

The Commerce Clause also has the potential to obstruct EPR laws. The Commerce Clause grants to Congress the power “[t]o regulate Commerce . . . among the several States.”¹⁶⁶ It has long been established that even in the absence of Congress exercising this power, the Commerce Clause prevents states from creating statutes or regulations that unreasonably burden interstate commerce.¹⁶⁷ This restriction on the states’ authority is known as the “dormant Commerce Clause.”¹⁶⁸ Because EPR laws require producers to bear physical and financial responsibility of certain products at the end of their lives, and thus increase costs of production, such laws could conceivably impose burdens on interstate commerce.

The process for determining whether a state statute or regulation violates the dormant Commerce Clause involves a two-step analysis: 1) the court must determine whether “a state statute directly regulates or discriminates against interstate commerce, or [whether] its effect is to favor in-state economic interests over out-of-state interests,” and 2) “if the state regulation is neither discriminatory nor extraterritorial, then the court must apply the balancing test set forth in *Pike* [*v. Bruce Church, Inc.*].”¹⁶⁹ In particular, a state law or regulation is discriminatory if it “directly regulates or discriminates against interstate commerce, or when its effect is to favor in-state economic interests over out-of-state interests.”¹⁷⁰ A state law or regulation is extraterritorial, and thus *per se* invalid, when it “directly controls commerce occurring wholly outside the boundaries of [the state].”¹⁷¹ A statute or regulation that is not discriminatory or extraterritorial must still pass the *Pike* balancing test, which weighs the local benefits against the burden on interstate

¹⁶⁵ See *id.* at 470; *Shamrock Farms Co. v. Veneman*, 146 F.3d 1177, 1183 (9th Cir. 1998).

¹⁶⁶ U.S. CONST. art. I, § 8, cl. 3.

¹⁶⁷ *Raymond Motor Transp., Inc. v. Rice*, 434 U.S. 429, 440 (1978); *Clover Leaf Creamery*, 449 U.S. at 470-71.

¹⁶⁸ See *Int’l Dairy Foods Ass’n v. Boggs*, 622 F.3d 628, 644 (6th Cir. 2010).

¹⁶⁹ *Am. Beverage Ass’n v. Snyder*, 700 F.3d 796, 803-04 (6th Cir. 2012) (internal quotation marks omitted); see also *Clover Leaf Creamery*, 449 U.S. at 471; *Healy v. Beer Inst.*, 491 U.S. 324, 336, 340-41 (1989); *Pike v. Bruce Church, Inc.*, 397 U.S. 137, 142 (1970).

¹⁷⁰ *Brown-Forman Distillers Corp. v. N.Y. State Liquor Auth.*, 476 U.S. 573, 579 (1986); see also *Am. Beverage Ass’n*, 700 F.3d at 803.

¹⁷¹ *Healy*, 491 U.S. at 336; *Boggs*, 622 F.3d at 645.

commerce: “Where the statute regulates even-handedly to effectuate a legitimate local public interest, and its effects on interstate commerce are only incidental, it will be upheld unless the burden imposed on such commerce is clearly excessive in relation to the putative local benefits.”¹⁷²

While there have been no cases expressly determining the constitutionality of a state EPR law, there have been decisions dealing with related laws regulating goods and products, such as product labeling restrictions,¹⁷³ packaging bans,¹⁷⁴ and various size and body regulations for tractor-trailers.¹⁷⁵ Their discussion and analysis lend themselves to determining the potential outcome for EPR laws.

In a string of decisions over four decades, the U.S. Supreme Court analyzed whether a state can regulate the size or certain body specifications of tractor-trailers involved in interstate transport. The Court ultimately concluded that despite a state’s “broad” and “pervasive” power to regulate the use of its highways, as well as the great deference afforded to states in regulating local safety, a state may not regulate trailer design or require the use of certain mudguards for tractor-trailers, nor may it regulate the length of tractor-trailers, if the resulting burdens on interstate commerce clearly exceed the local benefits.¹⁷⁶ The Court’s decisions turned on the principle that state laws should not be inconsistent with most or almost all of the other similarly situated states’ regulations.¹⁷⁷

The Supreme Court has also upheld a state ban on the use of certain packaging despite the fact that in-state producers would benefit and out-of-state producers would be burdened.¹⁷⁸ The purpose of the state ban was to conserve natural resources and energy and to ease solid waste

¹⁷² *Pike*, 397 U.S. at 142.

¹⁷³ *Nat’l Elec. Mfrs. Ass’n v. Sorrell*, 272 F.3d 104 (2d Cir. 2001); *Boggs*, 622 F.3d at 628; *Am. Beverage Ass’n*, 700 F.3d at 800.

¹⁷⁴ *Clover Leaf Creamery*, 449 U.S. at 456.

¹⁷⁵ *Bibb v. Navajo Freight Lines*, 359 U.S. 520, 521-23 (1959); *Raymond Motor Transp., Inc. v. Rice*, 434 U.S. 429 (1978); *Kassel v. Consol. Freightways Corp. of Del.*, 450 U.S. 662 (1981).

¹⁷⁶ *Bibb*, 359 U.S. at 528-29; *Raymond Motor Transp.*, 434 U.S. at 447-48; *Kassel*, 450 U.S. at 671. *But see* *S.C. State Highway Dep’t v. Barnwell Bros., Inc.*, 303 U.S. 177, 196 (1938) (“It plainly cannot be said that the width of trucks used on the highways in South Carolina is unrelated to their safety and cost of maintenance, or that a 90-inch width limitation, adopted to safeguard the highways of the state, is not within the range of the permissible legislative choice.”).

¹⁷⁷ *Bibb*, 359 U.S. at 526, 529-30 (“A State which insists on a design out of line with the requirements of almost all the other States may sometimes place a great burden of delay and inconvenience on those interstate motor carriers entering or crossing its territory.”); *Kassel*, 450 U.S. at 671 (“Iowa’s law is now out of step with the laws of all other Midwestern and Western States. Iowa thus substantially burdens the interstate flow of goods by truck.”).

¹⁷⁸ *Clover Leaf Creamery*, 449 U.S. at 458, 472-73.

disposal problems.¹⁷⁹ The Court concluded that the law was not discriminatory and, further, that any incidental burden on interstate commerce was not clearly excessive in light of the state's environmental and waste management interests.¹⁸⁰

Lastly, there have been several cases involving challenges to state product labeling requirements for goods, such as mercury-containing products,¹⁸¹ milk products,¹⁸² and beverage containers.¹⁸³ In these cases, the primary issue was whether the state laws were extraterritorial and thus *per se* invalid. In concluding that the laws were not extraterritorial, the courts focused on the fact that these state labeling laws had no bearing on how the manufacturers were required to label the same products in other states.¹⁸⁴ Moreover, in response to one challenger's argument that the law exposed it to the possibility of multiple labeling standards, one court simply held that there needed to be an actual conflict between competing regulations before either would be found invalid.¹⁸⁵

A state EPR law would most likely not be invalid *per se* as long as the law applied to *all* producers of that regulated product and is drafted in such a way that it does not directly control conduct completely outside the state's borders. All of the recent EPR framework bills apply evenhandedly to all persons who manufacture, import, or own the name, brand, or license of a product that is sold or distributed within the relevant state.¹⁸⁶ Thus, there is no distinction between in-state and out-of-state producers. Additionally, these laws have no bearing on how producers of regulated products are to manage those same end-of-life products upon disposal in other states.¹⁸⁷ Therefore, because state EPR laws would likely not be deemed discriminatory or extraterritorial, the focus would likely be on whether the burden imposed on interstate

¹⁷⁹ *Id.* at 458.

¹⁸⁰ *Id.* at 471-73. The Ninth Circuit has also addressed a Commerce Clause challenge to a California law that governed the composition of consumer milk. *Shamrock Farms Co. v. Veneman*, 146 F.3d 1177, 1178 (9th Cir. 1998). However, the analysis and outcome are not helpful in determining the constitutionality of an EPR law because Congress had immunized the state's law from Commerce Clause challenges, which it had authority to do. *Id.* at 1180. Thus, although the court held that the state law did not violate the Commerce Clause, the court did not address the ultimate issue of whether the law overburdened interstate commerce. *Id.* at 1179-81.

¹⁸¹ *Nat'l Elec. Mfrs. Ass'n v. Sorrell*, 272 F.3d 104, 106 (2d Cir. 2001).

¹⁸² *Int'l Dairy Foods Ass'n v. Boggs*, 622 F.3d 628, 632-33 (6th Cir. 2010).

¹⁸³ *Am. Beverage Ass'n v. Snyder*, 700 F.3d 796, 800 (6th Cir. 2012).

¹⁸⁴ *Sorrell*, 272 F.3d at 110; *Boggs*, 622 F.3d at 647. *But see Am. Beverage Ass'n*, 700 F.3d at 810.

¹⁸⁵ *Sorrell*, 272 F.3d at 112.

¹⁸⁶ A.B. 2139, 2010 Leg., Reg. Sess. (Cal. 2010); H.B. 2017, 2011 Leg., Reg. Sess. (Mass. 2011); H.F. 2407, 86th Sess. (Minn. 2009); H.B. 3060, 75th Leg. Assem., Reg. Sess. (Or. 2009); S. 2027, 2012 Gen. Assem., Jan. Sess. (R.I. 2012); H. 696, 2009-2010 Leg. Sess. (Vt. 2010).

¹⁸⁷ *See Sorrell*, 272 F.3d at 110; *Boggs*, 622 F.3d at 647.

commerce is clearly excessive in relation to the local benefits.

In light of the above cases, particularly those dealing with tractor-trailer regulations and product labeling, arguments could be made that a state EPR law runs afoul of the dormant Commerce Clause. Challengers to a state EPR law could potentially argue that differing state EPR standards and requirements would result in producers having to comply with multiple and possibly conflicting regulatory regimes. Thus, the laws would impose an excessive burden on interstate commerce. This “conflicting regulatory regimes” analysis was the primary rationale for the Supreme Court striking down state laws regulating the size and mudguard specifications of tractor-trailers that deviated substantially from surrounding states’ regulations.¹⁸⁸ Challengers to state labeling standards made the same argument, but the Second Circuit held that “[i]t is not enough to point to a risk of conflicting regulatory regimes in multiple states; there must be an actual conflict between the challenged regulation and those in place in other states.”¹⁸⁹

Here, however, current state EPR laws utilize the same basic take-back requirements and resource recovery mandates, and thus do not conflict. Even when there are differences, they are merely minor deviations and do not result in drastic differences that would amount to the complete halting of the movement of goods across state lines. Moreover, most of the new EPR framework bills include provisions that require the state to consult and coordinate with other states in order to achieve consistency in the development and implementation of the product stewardship system,¹⁹⁰ look to those products regulated under a product stewardship program in other states when determining which products to regulate,¹⁹¹ or encourage the inclusion and participation of other states when selecting products to regulate under a product stewardship program.¹⁹²

Under the *Pike* balancing test, once a legitimate local purpose is found, “the question becomes one of degree,” and courts will look to whether the local interest “could be promoted as well with a lesser impact on interstate activities.”¹⁹³ Waste management has traditionally been a state and local government function, and therefore courts are reluctant to infringe upon this authority.¹⁹⁴ In addition, conservation of

¹⁸⁸ *Kassel v. Consol. Freightways Corp. of Del.*, 450 U.S. 662, 671 (1981); *Bibb v. Navajo Freight Lines*, 359 U.S. 520, 529-30 (1959).

¹⁸⁹ *Sorrell*, 272 F.3d at 112.

¹⁹⁰ Or. H.B. 3060; R.I. S. 2027.

¹⁹¹ Cal. A.B. 2139.

¹⁹² H.B. 2017, 2011 Leg., Reg. Sess. (Mass. 2011).

¹⁹³ *Pike v. Bruce Church, Inc.*, 397 U.S. 137, 142 (1970).

¹⁹⁴ *United Haulers Ass’n v. Oneida-Herkimer Solid Waste Mgmt. Auth.*, 550 U.S. 330, 344

natural resources and energy and alleviating waste disposal issues have been recognized as legitimate, substantial state interests.¹⁹⁵ Thus, there is already a strong presumption in the validity of a state EPR law, the purpose of which is to promote better waste management solutions and reduce the burden on natural resources extraction. While there very well may be a modicum of burden imposed on interstate commerce, existing case law supports the conclusion that such burden is not “clearly excessive in relation to the putative local benefits.”¹⁹⁶

C. NATIONAL EPR LEGISLATION

An alternative to a state EPR framework law is national EPR legislation. There is currently no federal regulatory system directly governing MSW reduction or generation.¹⁹⁷ Although RCRA addresses solid and hazardous waste disposal, this law is aimed at providing guidelines and minimum compliance standards while deferring to state and local solid waste regulatory authority.¹⁹⁸ A national EPR law would arguably be more efficient than fifty separate state laws. Many in the manufacturing industry would prefer a single, uniform EPR approach, claiming that the current patchwork of state EPR laws is too costly.¹⁹⁹ In addition, a federal law would sidestep the constitutionality issues discussed above, allowing the federal government to take a more command-and-control approach with respect to directly regulating the end-of-life management of a product. Such federal legislation could take at least one of two forms: amending RCRA to include EPR provisions, or creating an entirely new EPR statute and regulatory regime modeled on the state law approach.²⁰⁰

When Congress created RCRA, it declared that our increasing generation of solid and hazardous waste is creating environmental and public health impacts and that hazardous waste, in particular, should be

(2007).

¹⁹⁵ *Minnesota v. Clover Leaf Creamery Co.*, 449 U.S. 456, 473 (1981).

¹⁹⁶ *Pike*, 397 U.S. at 142.

¹⁹⁷ See *McCrea*, *supra* note 89, at 517.

¹⁹⁸ RCRA, 42 U.S.C.A. §§ 6902, 6907, 6941 (Westlaw 2013); see also, *RCRA State Authorization*, U.S. ENVTL. PROT. AGENCY, www.epa.gov/osw/laws-regs/state/index.htm (last updated Nov. 15, 2012).

¹⁹⁹ See NAT'L CTR. FOR ELEC. RECYCLING, *A STUDY OF THE STATE-BY-STATE E-WASTE PATCHWORK: AN ANALYSIS OF ITS ECONOMIC AND OTHER EFFECTS ON INDUSTRY, GOVERNMENT AND CONSUMERS* (2006); CHAZ MILLER, NAT'L SOLID WASTES MGMT. ASS'N, *FROM BIRTH TO REBIRTH: WILL PRODUCT STEWARDSHIP SAVE RESOURCES?* 9, ABA Section of Environment, Energy, and Resources Section Fall Meeting, Oct. 2011.

²⁰⁰ See *McCrea*, *supra* note 89, at 527.

reduced or eliminated.²⁰¹ Therefore, amending RCRA to include EPR provisions would be consistent with the Act's underlying purpose. While the federal government cannot legally require states to legislate a certain way,²⁰² it can incentivize states to take legislative action by unambiguously conditioning the receipt of federal funds on compliance with federal statutory directives that are related to the purpose of the funds.²⁰³

RCRA already ties federal grants to the approval of states' solid waste management plans and provides for minimum criteria that must be included in a plan for it to be approved.²⁰⁴ Therefore, amending RCRA would not have to be very drastic and could maintain the current regulatory practice in place, under which states carry out waste management practices through the development of approved state management plans. Such an amendment could simply change the statutory and regulatory requirements for the approval of state management plans²⁰⁵ by mandating that such plans provide for the development of EPR framework programs. In fact, federal regulations are already moving in this direction by requiring that state plans "provide for a policy and strategy for *encouragement* of resource recovery and conservation activities"²⁰⁶ and recommending that states "*encourage* the development of resource recovery and resource conservation facilities and practices as the preferred means of solid waste management."²⁰⁷ These regulations could be augmented to require more than mere "encouragement" and to address specific EPR practices. In addition, by amending the state plan criteria, the federal government can specify what the product stewardship programs must include in order to obtain federal approval, thereby ensuring a more uniform and consistent EPR policy.

As an alternative to RCRA amendment, an entirely new federal law—a "Product Stewardship Act"—could be passed to address EPR. Such a law should include all those recommended concepts and mechanisms discussed earlier and could be modeled on the Consumer Product Safety Act, which was passed to protect the public from unreasonable risks of injury associated with consumer products through the development of uniform safety standards.²⁰⁸ Under the proposed "Product Stewardship Act," a Product Stewardship Commission would

²⁰¹ 42 U.S.C.A. §§ 6901, 6902 (Westlaw 2013).

²⁰² See *New York v. United States*, 505 U.S. 144, 161 (1992).

²⁰³ See *South Dakota v. Dole*, 483 U.S. 203, 206-07 (1987).

²⁰⁴ 42 U.S.C.A. § 6947 (Westlaw 2013).

²⁰⁵ 42 U.S.C.A. §§ 6942, 6943 (Westlaw 2013); 40 C.F.R. pt. 256 (Westlaw 2013).

²⁰⁶ 40 C.F.R. § 256.30 (emphasis added).

²⁰⁷ 40 C.F.R. § 256.31 (emphasis added).

²⁰⁸ 15 U.S.C.A. §§ 2051-2089 (Westlaw 2013).

be created and would be granted the authority of determining which products to regulate, prescribing resource recovery standards and performance and product goals, and enforcing the provisions of the statute.

Such a new federal law would likely result in preemption of current state EPR laws in order to maximize regulatory efficiency. In fact, some of the recent state framework bills contemplate the possibility of a stricter federal law by requiring the state to evaluate such federal law to determine if it meets or exceeds the requirements of the state's law and to provide a report to the state's legislature.²⁰⁹ One way to alleviate any potential for state opposition and ensure a smooth transition to a national regulatory regime would be to allow state EPR laws to remain in place for those products that the federal law is not yet regulating.

While a federal EPR law is preferable to fifty individual state laws, federal EPR legislation does not appear to be coming anytime soon. Such proposed legislation would also likely face stiff opposition from well-funded and powerful lobbying groups such as the U.S. Chamber of Commerce, the Pharmaceutical Research and Manufacturers of America, and the National Electrical Manufacturers Association. But state EPR laws have confronted oppositional lobbying efforts as well.²¹⁰ In light of how far away a federal EPR law is and the uphill battle proponents will face in passing one, states should continue passing their own framework laws in the interim. Such continued and diverse state efforts will only build momentum for a federal law and lead to better regulation that further protects the environment, its natural resources, and the public from the significant, adverse effects caused by our status quo waste management practices.

VI. CONCLUSION

The numerous adverse environmental and public health effects that stem from our current waste management practices have prompted cities,

²⁰⁹ H.B. 2017, 2011 Leg., Reg. Sess. (Mass. 2011); H.B. 3060, 75th Leg. Assem., Reg. Sess. (Or. 2009); S. 2027, 2012 Gen. Assem., Jan. Sess. (R.I. 2012); H. 696, 2009-2010 Leg. Sess. (Vt. 2010).

²¹⁰ See Melinda Burns, *The Smoldering Trash Revolt*, PAC. STANDARD (Jan. 21, 2010), available at www.miller-mccune.com/business-economics/the-smoldering-trash-revolt-7306/; see, e.g., Tim Faulkner, *Lobbyists Invade Producer Responsibility Hearing*, ECORI NEWS (Apr. 12, 2012), www.exporter.com/social-entrepreneur/corporate-responsibility/lobbyists-invade-producer-responsibility-hearing-ecori-news/; Jerry Elmer, *Why Producer Responsibility Makes Sense for Rhode Island*, CLF SCOOP (Apr. 2, 2012), www.clf.org/blog/rhode-island/why-producer-responsibility-makes-sense-for-rhode-island/; NAT'L ELEC. MFR. ASS'N, WHAT HAVE WE DONE FOR YOU LATELY? 10-11 (2012) (outlining NEMA's successful efforts in the past year in defeating EPR laws), available at www.nema.org/Members-Only/Documents/WHWDFYL.pdf.

counties, and states to enact new innovative policies. Two of these policies, zero waste and EPR, are designed to change the way in which waste is ultimately managed and are aimed at achieving, among other things, complete waste diversion from landfills and incinerators, resource conservation, and sustainable product redesign.

Current zero waste policies around the country appear to be focused purely on waste diversion using recycling, composting, and reuse efforts. While these practices are laudable and necessary, they are not enough to achieve true zero waste goals. In addition, localities or states should enact laws mandating recycling and composting, resulting in resource recovery to the greatest extent practicable. Still, even with these efforts in place, complete waste diversion would not be achieved and the larger problem of sustainable product design and manufacturing would similarly not be addressed.

To fully achieve these goals, a state EPR framework law should be in place to require producers of those products still in the waste stream to take them back and manage them. The law must be a “framework” law that gives the state’s designated agency the ultimate authority for targeting those products that present waste management, environmental, and public health issues. Moreover, an effective EPR framework law must have provisions requiring the producer to reuse and recycle the product and to consider design and manufacture changes of the product.

Though a federal EPR law that includes these same or similar provisions is preferred to a patchwork of state laws, a national regulatory regime is still too far away. Therefore, it is imperative that states continue to work in crafting framework legislation that would address, in product stewardship programs, those products presenting persistent waste management, environmental, and public health issues.