The Un-Recyclability of EPR: Shortcomings of California's Senate Bill 54

INTRODUCTION

Plastic waste and ever-coagulating plastic pollution are not new to any portion of the globe. Since 1950, only 9 percent of produced plastic has successfully been recycled, even as industries have been promoting recycling as a solution since the early 1990s.[1] As national governments have grappled with the disproportionately pollutive effects of the plastics industry, most have aspired to master the concept of "circular" economies, in which plastic waste feeds the production of plastic manufacturing. Meanwhile, at the helm of the recycling daydream have been conglomerates such as the American Chemistry Council, whose members include ExxonMobil, Chevron, and DuPont—the very crafters of the plastic (and climate) crisis.[2] Those pushing the "advances" in recycling are also in charge of what it means to recycle and of defining what success looks like. Accordingly, it is estimated that the United States alone produced approximately 44 million metric tons of plastic in 2019.[3] Moreover, only about 5 percent of U.S. plastic consumption was recycled in 2021.[4] That figure is lower than the reported 9.5 percent recycled in 2014 when China imported a large portion of the world's plastic "recyclables," most of which were incinerated or downcycled into plastic pallets for use in China's booming manufacturing sector.[5]

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1. Roland Geyer et al., *Production, Use, and Fate of All Plastics Ever Made*, 3 SCIENCE ADVANCES 7 (2017), https://doi.org/10.1126/sciadv.1700782.

2. American Chemistry Council membership is publicly viewable on their website. *Manufacturer Members*, AM. CHEMISTRY COUNCIL, https://www.americanchemistry.com/about-acc/membership/manufacturer-members (last visited Oct. 20, 2023).

3. Anelia Milbrandt et al., *Quantification and Evaluation of Plastic Waste in the United States*, 183 RES., CONSERVATION & RECYCLING 106363 (Aug. 2022), https://www.sciencedirect.com/science/article/abs/pii/S0921344922002087.

4. THE LAST BEACH CLEANUP & BEYOND PLASTICS, THE REAL TRUTH ABOUT THE U.S. PLASTIC RECYCLING RATE: 2021 U.S. FACTS AND FIGURES 2 (May 4, 2022), https://www.lastbeachcleanup.org/_files/ugd/dba7d7_5ae55cdb66d241239e8ae123c96ec9b8.pdf.

5. *Id.*; *see also* Claire Arkin, *Waste Exports: The Rubbish Dump is Closed*, HENRICH BÖLL STIFTUNG: THE GREEN POLITICAL FOUNDATION (Nov. 4, 2019), https://www.boell.de/en/2019/11/04/waste-exports-rubbish-dump-closed.

Governments are left to choose between participating in the global consumerist economy or supporting the well-being of the planet, with the two often being presented as mutually exclusive. Many have turned to policy mechanisms such as Extended Producer Responsibility (EPR). If it is the producers of plastic that are assumed to be so well-versed in recycling success, it seems only natural to place the responsibility of building solutions onto them. By placing the responsibility of tackling post-consumer plastics onto the producers themselves, the goal is that these producers will alter sources, designs, lifecycles, and economies of plastic recycling in order to close the loop currently filling the planet with materials whose lifespans vary from two to fourteen hundred years in length.[6] National governments and individual states have implemented their versions of EPR as a means to curb plastic waste and advance recycling in their respective economies, with California being one of the most recent to do so. However, the recyclability of the EPR scheme itself is faltering, and California's efforts are no exception.

Senate Bill 54 (SB 54), or the Plastic Pollution Prevention and Packaging Producer Responsibility Act, was signed into California state law in June of 2022 to both applause and criticism. This In Brief highlights many of the most pungent vulnerabilities and loopholes present in SB 54 that may lead to the Act's ultimate failure. California is poised to be the fourth-largest economy in the world in the coming years.[7] As such, there is much opportunity to set a precedent in tackling the plastic pollution crisis and to hold producers accountable for the repercussions of their crafting.

I. EVOLUTION OF EXTENDED PRODUCER RESPONSIBILITY

A. Origins and Approaches of the EPR Framework

The creation of the EPR framework is relatively recent in the timeline of plastic management approaches, having been introduced by Thomas Lindqvist in a report to the Swedish Ministry of the Environment in 1990.[8] In 1994, the Organization for Economic Cooperation and Development (OECD) began work on EPR analyses and applications.[9] OECD defines EPR as "an environmental policy approach in which a producer's responsibility for a product is extended to

6. Ali Chamas et al., *Degradation Rates of Plastics in the Environment*, 8 ACS SUSTAINABLE CHEMISTRY & ENG'G. 3494, 3502 (2020), https://pubs.acs.org/doi/10.1021/acssuschemeng.9b06635.

7. Matthew A. Winkler, *California Poised to Overtake Germany as World's No. 4 Economy*, Bloomberg (Oct. 24, 2022), https://www.bloomberg.com/opinion/articles/2022-10-24/california-poised-to-overtake-germany-as-world-s-no-4-economy.

8. Abhishek Gaur et al., *Circular System of Resource Recovery and Reverse Logistics Approach: Key to Zero Waste and Zero Landfill*, *in* ADVANCED ORGANIC WASTE MGMT. 365, 375 (Jan. 2022), https://www.researchgate.net/publication/357848415.

9. OECD, EXTENDED PRODUCER RESPONSIBILITY: A GUIDANCE MANUAL FOR GOVERNMENTS 9 (2001), https://www.oecd-ilibrary.org/environment/extended-producer-responsibility_9789264189867-en.

the post-consumer stage" of the product's life cycle.[10] EPR is characterized as a *shifting of responsibility*—physically, economically, fully, or partially—upstream toward the producer and away from municipalities, in addition to implementing "incentives to producers to take into account environmental considerations when designing their products."[11] In other words, EPR seeks to place the onus upon producers for more than previously assigned responsibilities of worker safety, prevention and treatment of environmental releases, etc., to encompass the management of their products at the end-of-life stage post-consumption.[12] However, it should be noted that factors such as the cost of policy implementation, sorting costs, and the structure of product markets play an important role in the success or failure of EPR when compared to other policy instruments, and this disclaimer has been attached since the very first applications.[13]

The primary function of EPR, with respect to plastics, is shifting the economic and physical responsibility of plastic waste management from local governments and taxpayers to the producers of plastic.[14] Ideally, this shift would materialize in both: (1) the treatment of products at their post-consumer phase and (2) addressing upstream activities such as source material selection and the design of the product.[15] Various analyses of EPR have found that setting measurable targets is of key importance for policymakers aiming to increase recovery and recycling rates.[16] Design changes, referred to as "design for environment" (DfE), should include improving product recyclability and reusability, reducing material consumption, and downsizing products.[17] Additional guiding principles include producer incentives, innovation, communication strategies, consultation of stakeholders, the inclusion of local governments, periodic evaluations, and transparency.[18]

All of the shifting mechanisms of an EPR framework are operated by a "producer responsibility organization," or a PRO. PROs are conglomerates of producers that assume uniform responsibilities and act as single bodies in communication, reporting and carrying out EPR requirements.[19] Instruments for carrying out EPR policies range from product taxes and fees, taxes commonly called "advanced recycling fees," product take-back mandates, virgin material

10. *Id*.
11. *Id*.
12. *Id*. at 10.
13. *Id*.
14. *Id*. at 18, 21–22.
15. *Id.* at 18.
16. *See* Yamini Gupt & Samraj Sahay, *Review of Extended Producer Responsibility: A Case Study Approach*, 33 WASTE MGMT. & RSCH. 595, 610 (2015).
17. Margaret Walls, *EPR Policies and Product Design: Economic Theory and Selected Case Studies*, OECD 4 (Feb. 28, 2006), https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/EPOC/WGWPR(2005)9/FINAL&doclanguage=en.
18. OECD, *supra* note 9, at 27–28.
19. *Id*. at 21.

taxes, and various combinations of these instruments.[20] "[A] cost-effective [approach . . . exploits] all the possible avenues for waste reduction — i.e., source reduction, recycling, material substitution, and design changes — rather than a single method."[21] For example, a policy combining advanced recycling fees and recycling subsidies will have higher success outcomes than one solely targeting recycling rates.[22] An element of this framework that is emphasized by the OECD but largely lost in many applications is the consideration of the carrying capacity of the recycling market in setting these rates.[23]

B. EPR in Practice

Several countries and states[24] have implemented some version of EPR since the idea's inception. One of the longest-running is Germany's "Green Dot Program," which has been both hailed as a success and attacked as a green-washed procrastination exercise. As a part of the Green Dot Program, producers join the Duales System Deutschland, a PRO, and pay to have a "green dot" put on their products to show that they have already paid for the end-of-life costs associated with that product.[25] That money is then used to outsource collection and recycling to a recycling entity.[26] Those not party to the PRO are individually responsible for collecting their packaging waste.[27] In 1991, when the program was implemented, packaging recovery rates were reported to be 37.3 percent; by 2000, that rate had risen to 76.7 percent.[28] For comparison, the U.S. Environmental Protection Agency reported that the United States' packaging recovery rate in 2003 was 39 percent.[29] The policy instrument utilized in Germany was a weight-based fee that encouraged producers to use less material.[30] Of note, though, is that a substantially similar result would likely have come from any other fee-based system, regardless of an EPR application.[31] Additionally, several organizations have highlighted the discrepancy between

20. *Id*.
21. Walls, *supra* note 17, at 4.
22. *Id*.
23. OECD, *supra* note 9, at 21.
24. *See, e.g.*, H.B. 22-1355, 2022 Leg., Reg. Sess. (Colo. 2022); S.B. 582, 81st Leg., Reg. Sess. (Or. 2021); L.D. 1541, 130th Leg., 1st Special Session (Me. 2021).
25. *Who Cares About the Waste in the Garbage Can? All of Us!*, DER GRÜNE PUNKT, https://www.gruener-punkt.de/en/politics-and-society/consumer-information (last visited Oct. 20, 2023).
26. *Id.*
27. *Id.*
28. Walls, *supra* note 17, at 34.
29. EPA, MUNICIPAL SOLID WASTE GENERATION, RECYCLING, AND DISPOSAL IN THE UNITED STATES: FACTS AND FIGURES FOR 2003, https://archive.epa.gov/epawaste/nonhaz/municipal/web/pdf/msw03rpt.pdf (last visited Oct. 20, 2023).
30. Walls, *supra* note 17, at 34.
31. *Id*.

collection and recycling rates, as not all that is collected is recycled, further obscuring the metrics for success.[32]

Similarly, the United Kingdom has a version of EPR and has had the benefit of learning from countries like Germany before it. The United Kingdom adopted its version of the EPR concept in 1995 as part of the Environment Act.[33] The Producer Responsibility Obligations were passed in 1997,[34] and the Packaging Regulations came soon after in 1998.[35] The 1998 regulations require producers to recover and recycle a specific percentage of their packaging waste each year, with the percentage rising over time in five-year increments.[36] At the start, the United Kingdom had a target total recovery rate of 38 percent and recycle rate of 7 percent.[37] By 2008, total recovery—that is, the total amount of plastics collected to be recycled—was to be elevated to 70 percent and recycling to 66.5 percent.[38] As the rates of recovery and recycling increase, there are also separate targets for different materials to be collected, as the program includes paper products in addition to plastics.

The producers defined in the U.K. application of EPR are placed into four categories: manufacturers, converters, packers/fillers, and sellers.[39] Of the four, it is essential to note that 48 percent of the total recycling obligation falls on the seller alone, while 37 percent falls on the packer/filler, and 6 and 9 percent fall to manufacturers and converters, respectively.[40] The companies within these obligations began with the largest companies in 1998. The largest are those with an annual turnover of more than £5 million (roughly $6.2 million USD, inflation not considered).[41] Two years later, companies with an annual turnover of £2 million (approx. $2.5 million USD) were included in the obligations.[42] Like in Germany, companies may organize into PRO-synonymous groups or independently orient themselves to the obligations, though nearly all belong to a PRO.[43] The obligated companies can meet their recycling obligations by

32. Katharina Wecker, *Plastic Waste and the Recycling Myth*, DEUTSCHE WELLE (Oct. 12, 2018), https://www.dw.com/en/plastic-waste-and-the-recycling-myth/a-45746469.

33. Environment Act 1995, 1995 c. 25, Part V, § 92, https://www.legislation.gov.uk/ukpga/1995/25/section/92.

34. The Producer Responsibility Obligations (Packaging Waste) Regulations 1997, 1997 No. 648, Part II, § 3, https://www.legislation.gov.uk/uksi/1997/648/contents/made.

35. The Packaging (Essential Requirements) Regulations 1998, 1998 No. 1165, https://www.legislation.gov.uk/uksi/1998/1165/contents/made.

36. *Id*.

37. Walls, *supra* note 17, at 22.

38. *Id*.

39. *Id*. at 23 (Manufacturers are identified as those who manufactures raw materials for packaging; converters are those who use or modify packaging material in the production or formation of packaging; packers/fillers put goods into the packaging; sellers are those who supply packaging to a user or consumer of that packaging, whether or not the filling has taken place at the time of supply.).

40. *Id*.

41. *Id*.

42. *Id*.

43. *Id*.

contracting with a re-processor or by joining a "compliance scheme," an outside contractor that fulfills all the obligations on their behalf for a fixed fee.[44]

C. EPR Observations

Across twenty-seven case studies conducted by Gupt and Sahay in 2015, none revealed significant physical producer responsibility.[45] "The results for the upstream stage show that . . . producers have greater financial responsibility and very little physical responsibility for recycling."[46] In the most successful cases, producers assumed financial responsibilities and outsourced the collection and recycling by paying a fee to responsible entities within the market.[47] Generally, EPR schemes assign more significant financial roles to retailers and consumers. Case study analysis showed retailers' financial responsibility had an overall negative impact on the financial sustainability and success of EPR.[48] Consumer responsibility tended to take the form of incentives for returning packaging or consumers paying recycling fees themselves.[49] The case studies also demonstrated the importance of producers taking up the financial responsibility in maintaining the financial flows in the system—*not* retailers or local governments.[50]

As for product design, there is a lack of consensus on Design for Environment impacts of various applications of EPR. OECD reports have concluded that changes to product design are difficult to attribute to EPR policies even when they do occur, as the policies affect design indirectly.[51] On the contrary, Gupt and Sahay's case studies determined that where financial responsibility is placed heavily on producers, producers take innovative measures to DfE to reduce environmental burdens associated with their projects.[52] Ultimately, DfE is not a significant characteristic of EPR policies as they have been applied.[53]

II. CALIFORNIA'S SB 54

After nearly two years, California passed and chaptered SB 54, also known as Plastic Pollution Prevention and Packaging Producer Responsibility Act, on June 30, 2022. SB 54 came into effect on January 1, 2023.[54]

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44. *See* Gupt & Sahay, *supra* note 16, at 598.
45. *Id*. at 608.
46. *Id*.
47. *Id*. at 609.
48. *Id*. at 610.
49. *Id.* at 609–10.
50. *Id.* at 610.
51. Walls, *supra* note 17, at 6.
52. Gupt & Sahay, *supra* note 16, at 608.
53. *See id*.
54. CAL. PUB. RES. CODE § 42040.

A. Legislative Elements

Drawing on the EPR framework, California established its approach with many familiar characteristics. The Act requires all covered material sold in or imported into the state to be recyclable or compostable by 2032.[55] By that same year, the Act also requires a 25 percent reduction in the use of plastic packaging and a 65 percent recycling rate among remaining single-use packaging.[56] "Covered material" includes common types of single-use plastic packaging and food service ware.[57] Notably, the Act does not ban expanded polystyrene foam, or styrofoam; the Act instead places alternative recycling rates on continued use.[58] "Recycling," as defined in the Act, does not include combustion, incineration, energy generation, fuel production, or other forms of disposal.[59] Further, "to be considered recycled, covered material shall be sent to a responsible end market."[60] It is also specified that a "responsible end market" is one in which the recycling and recovery of materials "[are] conducted in a way that benefits the environment and minimizes risks to public health and worker health and safety."[61]

Similar to prior applications of EPR, producers[62] are required to form and join a PRO.[63] A producer may comply with the Act without a PRO but must then meet several requirements and obtain individual approval by CalRecycle.[64] The PROs are charged a state-mandated fee to participate in the California market.[65] The remitted monies, totaling $500 million per year per PRO, would be held in the California Plastic Pollution Mitigation Fund and expended for purposes "relating to mitigating the environmental impacts of plastic."[66] Additionally, PROs must pay into the California Circular Economy Fund, which the Act created.[67] CalRecycle is to set the charge to an amount "adequate to cover the

55. *Id*. § 42050(b).
56. *Id*. § 42050(c)(3).
57. *Id*. § 42041(e)(1)–(2). "Covered material" includes single-use packaging and food service ware made of polyethylene terephthalate (PET), high density polyethylene (HDPE), polyvinyl chloride (PVC), low density polyethylene (LDPE), polypropylene (PP), polystyrene (PS), polylactic acid (PLA), and aliphatic biopolyesters, such as polyhydroxyalkanoate (PHA) and polyhydroxybutyrate (PHB). Including, but not limited to, plastic-coated paper products, plastic trays, plates, bowls, clamshells, lids, cups, utensils, stir sticks, lidded containers, straws, wrappers, and bags sold to food service establishments. Covered material does not include, *inter alia*, packaging used for medical products, medicines, products intended for animals, infant formula, and medical foods.
58. *Id*. § 42057(i).
59. *Id*. § 42041(aa)(2).
60. *Id*. § 42041(aa)(3).
61. *Id*. § 42041(ad).
62. *Id*. § 42041(w)(1). ("Producer 'means a person who manufactures a product that uses covered material and who owns or is the licensee of the brand or trademark under which the product is used in a commercial enterprise, sold, offered for sale, or distributed in the state.'").
63. *Id*. § 42051(a).
64. *Id*. § 42051(b)(2)(B)(i).
65. *Id*. § 42053.
66. *Id*. § 42064(e).
67. *Id*. § 42053.5(b).

department's and any other state agency's full costs of administering and enforcing" the EPR scheme based on a needs assessment prepared either by the Department or a hired third party.[68]

The onus is on CalRecycle to craft regulations around budgetary specifications, including funding for costs incurred by local jurisdictions, consumer education, collection costs, container costs, processing, and storage.[69] Additionally, CalRecycle is responsible for crafting regulations on mandatory processes, reporting timelines, data requests, reporting systems, and processing plastics that "[present] unique challenges in complying with this [statute]" and those that *cannot* comply.[70] CalRecycle is also charged with creating any applicable exemptions for small businesses.[71]

To organize, initiate, and maintain the EPR requirements by identifying barriers and solutions to creating the aspirational circular plastic economy, the Act establishes an advisory board.[72] The board is to be made up of representatives from cities, rural counties, environmental protection organizations, disadvantaged communities, a materials recovery facility, a recycling service provider, manufacturers of covered materials, PROs, and the retail and grocery sectors.[73] Finally, enforcement is carried out by CalRecycle and supporting state agencies, which may revoke previously approved PRO plans and investigate, audit, and assess penalties to those who fail to remain in accordance with the Act.[74]

B. Misalignments with EPR Foundations

The very core of EPR is to shift the responsibility of post-consumer plastic waste onto the producers themselves. Even with examples set, both internationally and domestically, SB 54 still fails to pave the way for a successful approach, much less a solution, to the plastics crisis. As I will discuss, SB 54 inequitably allocates responsibility and power, allows for loopholes for harmful materials, and does not correspond with the recycling market capacity within the state.

1. Inequitable Allocations of Responsibility

Responsibility within an EPR framework generally falls under two primary forms: physical responsibility and financial responsibility. The most pervasive of those responsibilities appears within SB 54 as financial requirements placed on PROs. Each PRO must contribute $500 million annually to participate in the

68. *Id.* § 42034.2(a)(1).
69. *Id.* § 42060(a)(1).
70. *Id.* § 42060(a)(3)–(4).
71. *See id.* § 42060.5(b).
72. *Id.* § 42070(a).
73. *Id.*
74. *Id.* § 42060.

California market.[75] Those funds are to be directed to "[monitoring] and [reducing] the environmental impacts of plastic."[76] Additionally, PROs must contribute to the California Circular Economy Fund.[77] This payout amount will be determined by CalRecycle every five years to direct the amounts adequate to cover its departmental costs, as well as any other state agency's costs of implementing and enforcing the EPR scheme.[78] Those financial parameters, however, are not specified beyond what state account they must be paid into and who may utilize them. SB 54 has no barriers to producers passing these costs to consumers and retailers of all sizes. As emphasized by Gupt, discussed above, a primary marker of unsustainable financial frameworks within EPR is shifting financial burdens onto the retailers. This diminishes responsibility on producers, and the equity implications are nearly boundless. Just two months into 2023, California residents juggle inflation,[79] a looming recession, and the recent expiration of food assistance[80] to many low-income recipients. Nutritional staples such as milk, cheese, meat, certain produce, breads, and many beverages are found on grocery shelves in single-use plastic containers. In the very first section of the bill, SB 54 specifies that "[d]isadvantaged and low-income communities are disproportionately impacted by the human health and environmental impacts of plastic pollution and fossil fuel extraction."[81] It appears counterintuitive to further burden consumers—including those very communities—with the plastic producers' rightful burden.

2. Materials Loopholes

Beyond shifting responsibility, the intended goal of SB 54 is to lessen the amount of plastic waste entering the environment, as evidenced by the various recycling rate requirements. However, recycling rates are insufficient alone. Bans on non-recyclable materials are also necessary to achieve the intended goal. For instance, styrofoam, a material used in takeaway food service, packing peanuts, and foam molding, is not banned from use or import into California.[82] In fact, a producer that can show recycling rates slightly higher than other plastic rates may continue to produce, import, and sell styrofoam within the state.[83] The

75. *Id*. at § 42064(e).
76. *Id*.
77. *Id*. at § 42053.5(a)(1).
78. *Id*. at § 42067(a).
79. *Consumer Price Index Summary*, BUREAU OF LAB. STAT. (Sept. 2023), https://www.bls.gov/news.release/cpi.nr0.htm.
80. *See* Mario Cortez, *End to Pandemic Assistance Leaves Bay Area Food Banks on Edge*, S.F. CHRON. (Feb. 7, 2023), https://www.sfchronicle.com/food/article/calfresh-pandemic-assistance-california-17767846.php; Kris Sanchez, *CalFresh Benefits End in March, Raising Concerns for Families Struggling to Buy Food*, NBC Bay Area (Feb. 14, 2023 4:35 PM), https://www.nbcbayarea.com/news/california/calfresh-benefits-end-in-march/3155860/.
81. CAL. PUB. RES. CODE § 42040(b)(1).
82. *Id*. § 42057(i).
83. *Id*.

reality is that styrofoam is almost entirely non-recyclable, as only a very small number of facilities can process it and are generally not capable of recycling it at the scale demanded by the most populous state in the nation.[84] Section 42057, subsection (f)(3), states that a PRO "may identify material types in the source reduction plan that face significant recycling or end market challenges and would require significant investment to bring into compliance. . . ." Due to the vague nature of the language, PROs may challenge the recyclability of styrofoam (and many other materials) as infeasible, thus potentially relieving responsibility for the use and eventual waste of styrofoam products. A court, theoretically likely to lean on the perceived intent of the legislature in determining the viability of a legal challenge, would be left with little to lean on since the Act itself grants such escape valves. Similarly, §42060(3)(A) allows CalRecycle to independently determine that a material "presents unique challenges in complying," therefore creating yet another loophole that various actors can utilize in lessening the responsibility placed on producers.

Comparably, advocates have pushed back against SB 54 for passively allowing processes such as chemical recycling.[85] Meanwhile, the text of the Act largely ignores the policy solution of simply reducing plastic usage. The various financial requirements placed on producers could be interpreted as incentivizing producers to innovate, explore alternative materials, and design for the environment. Though, as Gupt revealed, DfE rates cannot be directly attributed to EPR regulations.[86] Successes have accompanied direct financial incentives and the assignment of financial costs *and* financial management to producers. SB 54 does not directly impose design goals. Instead, it relies on weight reporting and mitigation fees to sway producers to seek design innovations while leaving the bookkeeping burden to state and local governments.

3. Carrying Capacity of the Recycling Market

While the recycling rates outlined by SB 54 appear straightforward, what is not addressed is the requisite carrying capacity of California's recycling market. Only two types of plastics are currently recyclable in California facilities: #1PET bottles and #2HDPE bottles, or soda bottles and a few types of jugs.[87] Though, the label and caps are not recyclable. Nevertheless, SB 54 requires the recycling of seven additional types of plastic.[88]

84. Steph Coelho, *Why Styrofoam is So Hard to Recycle and What You Can Do About It*, INSIDER (Jan. 21, 2022), https://www.insider.com/guides/home/is-styrofoam-recyclable.

85. Jennifer McDermott, *Advanced Recycling: Plastic Crisis Solution or Distraction?*, ASSOCIATED PRESS NEWS (Oct. 21, 2022), https://apnews.com/article/science-united-states-providence-business-climate-and-environment-b9f202a703ea7fa4231053d544b3266e.

86. *See* Gupt & Sahay, *supra* note 16, at 608–10.

87. CALRECYCLE, STATEWIDE COMM'N ON RECYCLING MARKETS & CURBSIDE RECYCLING, JULY 1, 2021 FINAL RECOMMENDATIONS REPORT 94 (Jun. 25, 2021), https://www2.calrecycle.ca.gov/Docs/Web/119460.

88. *See* CAL. PUB. RES. CODE § 42041(e).

Prior to 2018, China was a major importer of plastic waste, including that originating in the United States.[89] Therefore, there was not any major market push for domestic recycling infrastructure. Since 2013, both leading up to and following China's denial of anything other than the purest streams of material, California has seen closures of nearly a thousand state recycling facilities that could not accomplish more stringent contamination limits necessary to meet China's standards.[90] Although there are efforts to explore and expand alternative processes, such as chemical recycling, none are currently available in California. Even as those alternatives may expand, their safety and ability to suffice as a "responsible end market" remain questionable. After all, #1PET, as it is recycled now, is immoderately toxic for use in food service ware.[91]

4. Policy Penalties and Power Distribution

The requisite spine of any successful EPR program is the accountability of the parties involved. Accountability is attempted throughout SB 54 in the form of rates and penalties. However, the flexibility of said penalties misses the mark. Section 42062 of the Act provides for periodic review of recycling rates and allows for rate adjustments in response to "current unforeseen and anomalous market conditions, including, but not limited to, recycling infrastructure conditions" or other constraints on rate success.[92] As previously stated, the infrastructure for recycling most types of plastics is not currently present at scale in the state. The avenue that remains is the Act's directive towards "responsible end markets," a term that leaves much open to interpretation. Further, the Act does not restrict PRO lobbying opportunities to push for changes to the policies that police them.

Concededly, the accounts to which PROs are required to pay into are partially intended to fund the development and expansion of requisite infrastructure. This is, of course, with the assumption and faith in the development of technology to fuel this expansion. However, the timescale necessary for development at a physical scale to meet the needs of a population such as California's is unlikely to parallel the timeline required within the Act—despite the decades-long promises of the plastics industry. In the interim, contracting external collection agencies provides the opportunity for mere box-checking of duties and further evasion of intended responsibilities. In practice, this additionally shifts penalty vulnerability to collection agencies, which are not the intended subjects of the legislation.

89. L.A. CNTY. PUB. WORKS, L.A. CNTY. SOLID WASTE MGMT. COMM., INSIDE SOLID WASTE 9 (2018), https://dpw.lacounty.gov/epd/tf/isw/isw_2018_04.pdf.

90. STATEWIDE COMM'N ON RECYCLING MARKETS & CURBSIDE RECYCLING, *supra* note 87, at 13.

91. *See* Spyridoula Gerassimidou et al., *Unpacking the Complexity of the PET Drink Bottles Value Chain: A Chemicals Perspective*, 430 J. OF HAZARDOUS MATERIALS 15 (May 15, 2022), https://www.sciencedirect.com/science/article/pii/S0304389422001984?via%3Dihub.

92. CAL. PUB. RES. § 42062(a)–(b).

III. IMPLICATIONS AND RECOMMENDATIONS

While an approach to shifting society's relationship with plastic in any form can be considered progress, if done haphazardly, the opportunity for real progress may be missed entirely. California holds a pivotal position in crafting the next age of the plastic economy. Not only is California among the top economies of the world, but it is also the most populous state in the United States. Therefore, this example has the potential to establish the bar to which other states, and even countries, may strive. In looking at the history and progression of earlier implementations of EPR, such as in Germany, it is clear that a successful EPR scheme takes time to master. However, California could benefit from the history and lessons learned to build upon. Instead, it would appear that SB 54 is attempting to reinvent the wheel in a world where planes, trains, and cars already exist. In other words, there is little evidence to support SB 54's current approach to the EPR framework when examples have already been set among other economies. Additionally, without addressing the various escape valves of tangible producer responsibility, no tangible change to producer burden is to be expected. Without the intentional direction of onus, that burden will undoubtedly fall upon the vulnerable communities, both domestic and abroad, that unjustly carry much of that burden now.[93]

The brightest area of potential that California can address *now* is the assessment of market capacity and the steps required to bring recycling infrastructure and technology to the level needed to realistically reach the recycling goals set out in the Act. SB 54 has implemented an opportunity to do just that in the needs assessment required by Section 42067(a). It is integral to carry out this needs assessment via a third party to achieve a neutral result. Although Section 42067 calls for consultation with PROs in conducting this assessment, there should be no steering of this assessment by said PROs. California does not have the recycling capacity currently demanded by the Act's goals. If governing bodies have built this building block into the Act, it is unclear from the text of the Act itself.

A virgin materials tax should also be implemented within the already existing financial flows obligated upon PROs. As addressed by Gupt et al., the mere existence of an EPR scheme is not enough to guarantee design changes.[94] Further, if virgin materials are cheaper than recycled stock, there will continue to be little to no demand for recycled feed products. Although the economic details of this element expand beyond this paper, examples of this supply and demand relationship have already been alluded to in the revelation of California's shuttering recycling infrastructure after 2014. This shift may require the downfall of many lightweight plastics that are not feasible to recycle, but that will

93. Referring to both the financial burdens that will inevitably trickle down to small businesses and low-income consumers, as well as the pollution burden faced by several smaller economies, island nations, and the planet itself.

94. *See* Gupt & Sahay, *supra* note 16, at 609.

assuredly and naturally lead to the lessening of those plastics ending up in landfills and the ocean. With this tax, however, there must be surefire protections against the financial trickle-down of such cost changes. The responsibility of closing the loop on plastics *must* fall upon the creators of those very plastics and not on the consumers that are rarely, if ever, offered a realistic alternative.

Finally, an aspect that remains absent from SB 54 and the EPR approaches that came before it is the relatively simple consideration of using less plastic. Just as society continues to shift away from other petroleum-based energy sources, materials, and infrastructure towards electrification and renewable technology, so should the materials born from said sources. Glass, metal, and many papers have fewer barriers to recycling, yet their uses appear to dwindle in ratio. A call to fundamentally revisit our relationship with plastics demands further research and economic shifts, but so does the continued reinvention of the wheels of consumption. Just as there is the opportunity to craft a more robust recycling infrastructure, there lies the opportunity to craft avenues of alternative mediums of consumption.

CONCLUSION

In conclusion, this In Brief has highlighted several significant shortcomings of California's SB 54. Despite its intended goal of reducing waste and increasing recycling, the bill fails to address many critical issues, such as: inequitable allocation of responsibility (or lack thereof), unfairly burdening small businesses and vulnerable communities, loopholes in material requirements, and most blatantly, the disconnection between required metrics and carrying capacity to meet them.

California has a massive opportunity to learn from EPR approaches of other countries in various timeframes, while setting an example for other states to follow suit. With further research and the addressing of the shortcomings outlined in this paper, California is capable of laying the groundwork for a successful approach to society's relationship with plastic. While SB 54 may have been well-intentioned, it falls short in many crucial areas and shrinks the possibility of success without intentional revisions to the Act.

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