

A PARIS FOR PLASTICS? FRAGMENTATION AND SUSTAINABILITY IN GLOBAL PLASTICS TREATY NEGOTIATIONS

by Joseph A. Welsh

Joseph A. Welsh is a Complex Environmental Litigation Associate at Singleton Schreiber, LLP.

[Plastic] is profitable primarily because the external costs it generates have been shifted to others and to the future.

—Llorenç Milà i Canals et al.¹

Published by the United Nations Environment Programme (UNEP), Llorenç Canals' and colleagues' statement contains multitudes that speak to the environmental conundrums of the Anthropocene. It asserts that if the plastics industry were forced to take responsibility for externalities it has foisted onto the public—particularly in developing countries—for over a half century, it would not be nearly the \$500-billion industry it is today. Importantly for sustainable transition economics and governance, the plastics industry is fundamentally misaligned with the most accepted definitions of sustainability. “Sustainable development” has been defined as the “capacity of humanity to develop, ensuring present needs, without compromising the ability of future generations to meet their own needs.”² As framed by Canals et al., the plastics industry has missed the mark by exporting its waste to the developing world without feasible disposal infrastructure,³ and onto future generations by having no plan to mitigate its pollution or ecological impacts.⁴

The negotiations for the Global Plastics Treaty (GPT) that collapsed on December 2, 2024, were meant to be a step toward a plastics future informed by sustainable devel-

opment principles.⁵ That alternate version of the present did not come to pass. We are left to ponder the ways a future GPT could navigate a fragmented international governance system while advancing sustainable development goals, in order to push our epoch away from a consume-and-destroy ethos and toward circularity.

For most of history, the toothbrush you grabbed this morning would have been made from rudimentary materials—wood or bones for the handle, straw or twigs for the brush.⁶ In the 1930s, plastic burst onto the commercial scene. It has since burrowed its way into every facet of our lives, from toothbrushes to combs, computers, and sunglasses. These polymer strings derived from petroleum products have made a century-long journey to simultaneously be among the most useful and most problematic human inventions. As author Sarah Freinkel concisely summarized, “in product after product, market after market, plastics challenged traditional materials and won, taking the place of steel in cars, paper and glass in packaging, and wood in furniture.”⁷ Nearly 100 years later, annual plastic production has ballooned to 400 million tons (Mt) per year—a number projected to double by 2040.⁸

Responses to harmful plastic production have not been nearly as consistent as the annual multiplication of plastic use and waste. On a quasi-predictable decadal cycle, public perception has resurfaced against the plastics industry, whether over litter accumulation, air pollution, or its

Author's Note: Joseph A. Welsh drafted this piece as an LL.M. Candidate at the University of Houston Law Center. He would like to extend his great appreciation to Prof. Elizabeth Trujillo for her invaluable support and guidance during his research and writing process.

1. LLORENÇ MILÀ I CANALS ET AL., UNITED NATIONS ENVIRONMENT PROGRAMME, TURNING OFF THE TAP: HOW THE WORLD CAN END PLASTIC POLLUTION AND CREATE A CIRCULAR ECONOMY 5 (2023).
2. Fabiula Danielli Bastos de Sousa, *The Role of Plastic Concerning the Sustainable Development Goals: The Literature Point of View*, 3 CLEANER & RESPONSIBLE CONSUMPTION 100020, at 1 (2021); see also PAMELA MATSON ET AL., PURSUING SUSTAINABILITY: A GUIDE TO THE SCIENCE AND PRACTICE 2 (2016).
3. Peter Stoett et al., *Global Plastic Pollution, Sustainable Development, and Plastic Justice*, 184 WORLD DEV. 106756, at 3 (2024).
4. *Id.*

5. Madeleine Speed & Amanda Chu, *UN Plastics Treaty Talks Fail After Oil Producers Block Output Limits*, FIN. TIMES (Dec. 1, 2024), <https://www.ft.com/content/737b609d-d660-4f91-a016-740d9c476642>; see also United Nations Environment Assembly Res. 5/14 (Mar. 2, 2022) [hereinafter Resolution 5/14] (outlining initial ambitious sustainability goals, including supporting the 2030 Agenda for Sustainable Development, the need to take immediate action toward the long-term elimination of plastic pollution, promoting sustainable design, and encouraging a circular economy).
6. *Who Invented the Toothbrush and When Was It Invented?*, LIBR. CONG. (Sept. 26, 2024), <https://www.loc.gov/everyday-mysteries/technology/item/who-invented-the-toothbrush-and-when-was-it-invented/>.
7. SARAH FREINKEL, PLASTIC: A TOXIC LOVE STORY 8 (2011).
8. Lisa Song, *Selling a Mirage*, PROPUBLICA (June 20, 2024), <https://www.propublica.org/article/delusion-advanced-chemical-plastic-recycling-pyrolysis>; LEE BELL & JENNY GITLITZ, BEYOND PLASTICS & INTERNATIONAL POLLUTANTS ELIMINATION NETWORK, CHEMICAL RECYCLING: A DANGEROUS DECEPTION 18 (2023).

choking of the oceans.⁹ As a result, environmental scientists included plastics in the “triple planetary crisis” of climate change, biodiversity loss, and pollution—particularly plastic pollution.¹⁰ Several treaties since the 1970s have impacted some piece of the plastic life cycle in attempts to address this pollution crisis. However, within the fragmented plastic waste governance created by those treaties, only pieces of the material’s life cycle are governed, often through implicit or voluntary measures.

Burgeoning recognition of this crisis over the past decade presented a possible turning point in 2024, as UNEP convened the final GPT Intergovernmental Negotiating Committee (INC) session in late November. Engagement originally began to coalesce around potential treaty negotiations in 2014, amid sustained public condemnation of the plastics industry.¹¹ In the decade since, formative progress toward a treaty could have set the world on a path to address the entire plastic life-cycle crisis head-on.

Progress culminated in 2022 with UNEP Members adopting Resolution 5/14 to initiate a two-year negotiation schedule intended to result in an “internationally binding legal instrument” to “end plastic pollution.” But on the last day of the negotiation schedule, global stakeholders allowed the GPT—which had been narrowed to contain largely waste management provisions if petrochemical stakeholders’ pressure succeeded—to collapse.¹² As a result, INC session five (INC-5) concluded without agreement, but left open the possibility of future sessions to push the GPT over the line.¹³

Given that no agreement has yet been reached, this Comment will discuss two broad issues that future INC sessions must confront to produce an effective plastic life-cycle governance instrument. Part I reviews the fragmentation in current plastic waste-related governance instruments and institutions, and describes opportunities for the GPT to find synergies with those instruments. Part II discusses key sustainability issues—extended producer responsibility (EPR), circular waste management, and developed-developing world cooperation—that should drive a future agreement, and considers their interaction with the presently fragmented plastics governance system. Part III concludes.

I. Impact of the GPT on a Fragmented Landscape of Treaties

While three major multilateral environmental agreements (MEAs) address some aspect of the plastics life

cycle,¹⁴ none of them meet the issue in a comprehensive fashion. Between (among others) the United Nations Convention on the Law of the Sea (UNCLOS),¹⁵ the International Convention for the Prevention of Pollution From Ships (MARPOL),¹⁶ and the Basel Convention,¹⁷ a complex regime of overlapping commitments pervades global plastics governance. Complexity in, and between, contemporary measures left many gaps in the plastic life cycle unfilled by international obligations, from upstream production limits to midstream product design and downstream plastic-specific disposal obligations.¹⁸ This naturally led to questions about what measures could be adopted, and from where measures should be derived, in a “fragmented” plastics regime.¹⁹ While early research roundly condemned such situations as detrimental to institutional governance outcomes, recent research highlights cooperative benefits that a plastics treaty could exploit to drive sustainability-focused outcomes.²⁰

INC delegates initially indicated that a comprehensive life-cycle plastics regime would result from GPT negotiations. Though the plastics treaty collapsed on the final day of negotiations, if delegates reconvene and finalize the treaty, a comprehensive treaty would increase the fragmentation of international plastics governance. As stakeholders seek to fill governance gaps left by other plastics-related treaties, they must utilize obligations from those instruments in order to benefit from inevitable interactions among the complex of plastic-related instruments and avoid management difficulties.

A. International Environmental Fragmentation

Fragmentation in international environmental law refers to growing institutional and organizational complexity, particularly through an array of partially overlapping, nonhierarchical institutions governing a particular area.²¹ As MEAs exploded into international governance over a 50-year period, many treaties were implemented with limited foresight into potential relationships with existing or forthcoming treaties.²² In some respects, this was inevitable; because Anthropocene environmental problems evolve

9. DAVIS ALLEN ET AL., CENTER FOR CLIMATE INTEGRITY, THE FRAUD OF PLASTICS RECYCLING 1, 6-27 (2024) (describing a series of public or regulatory responses to surges in realization that plastic waste marketing strategies deployed by petrochemical stakeholders beginning in the late 1960s and resurfacing over the decades to contemporary governmental responses).

10. BETHANIE CARNEY ALMROTH ET AL., SCIENTISTS COALITION FOR AN EFFECTIVE PLASTICS TREATY, FACT SHEET: PLASTICS AND THE TRIPLE PLANETARY CRISIS (2024).

11. Gerry Nagtzaam, *Many Miles to Go Before We Sleep: The Long Road to Creating a Comprehensive Global Plastic Treaty*, 35 VILL. ENV'T L.J. 1, 1 (2024).

12. Speed & Chu, *supra* note 5.

13. *Id.*

14. Many other treaties also involve plastics implicitly or explicitly, but for the purposes of this Comment, these three key treaties will guide the discussion.

15. UNCLOS, Dec. 10, 1982, 1833 U.N.T.S. 3, 21 I.L.M. 1261.

16. MARPOL, Nov. 2, 1973, 1340 U.N.T.S. 61, 12 I.L.M. 1319.

17. Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, Mar. 22, 1989, 1673 U.N.T.S. 57, 28 I.L.M. 657 [hereinafter *Basel Convention*].

18. Elizabeth A. Kirk & Naporn Popattanachai, *Marine Plastics: Fragmentation, Effectiveness, and Legitimacy in International Lawmaking*, 27 REV. EUR. COMPAR. & INT'L ENV'T L. 222, 222-23 (2018).

19. *Id.*

20. See Joshua P. Elsässer et al., *Institutional Interplay in Global Environmental Governance: Lessons Learned and Future Research*, 22 INT'L ENV'T AGREEMENTS 373, 374 (2022) (discussing the benefits for sustainability that effective linkage of institutions can produce).

21. Aarti Gupta et al., *Managing Fragmentation in Global Environmental Governance: The REDD+ Partnership as Bridge Organization*, 16 INT'L ENV'T AGREEMENTS 355, 358 (2016).

22. John Carter Morgan III, *Fragmentation of International Environmental Law and the Synergy: A Problem and a 21st Century Model Solution*, 18 VT. J. ENV'T L. 134, 135 (2016).

through human impacts on ecosystems and advancement in scientific knowledge, it becomes necessary to address issues that were unrecognized in decades past. In the 21st century, international recognition of multilateral treaty fragmentation is required from the outset of any new MEA; delegates brought that perspective into GPT negotiations.²³

The 1972 Stockholm Conference on the Human Environment is regularly recognized as the birth of global environmental law.²⁴ From that point onward, almost 20 years passed when MEAs proliferated obligations about disparate, novel branches of environmental concern.²⁵ Following the 1992 Rio Declaration, which focused on “examining possible areas for further development of international environmental law, in the light of the need to integrate environment and development,” MEAs exponentially increased, producing a complex web of interrelated governance.²⁶ Since 2000, international focus has shifted toward consolidating regulatory schemes.²⁷ During this period, as impediments caused by fragmentation became clear, MEAs began implementing adaptive techniques to find synergies between related treaties.²⁸

As the universe of complex plastic-related environmental agreements expanded, international institutions took the position that treaty congestion carries dire consequences.²⁹ In response, the United Nations International Law Commission proposed an adaptive technique to cope with the risks brought by fragmentation.³⁰ This strategy focuses on orchestrating treaty implementation to coordinate with and support related treaties by avoiding overlap and creating coordinating bodies between treaties.³¹ A future GPT will interact with, and potentially overlap, the Basel Convention, MARPOL, and UNCLOS. To do so effectively, stakeholders must consider various strategies to fill plastic-specific governance gaps and encourage institutional cooperation to improve global plastics and sustainable governance.³²

B. Fragmentation in Plastics-Related International Agreements

A final GPT must navigate overlap between the Basel Convention, UNCLOS, and MARPOL. Basel is the most prominent of obstacles because it governs hazardous waste

management.³³ Plastics fall under the Basel umbrella, but the convention lacks specific management criteria necessary to mitigate current plastic waste trends. UNCLOS constitutes a comprehensive regime of “law and order in the world’s oceans and seas, establishing rules governing all uses of oceans and their resources.”³⁴ Several UNCLOS articles implicitly govern downstream plastics waste related to trade in waste and transboundary pollution,³⁵ but filling its governance gaps could improve waste management and sustainability outcomes. Likewise, MARPOL regulations overlap with areas of interest in the GPT. Under MARPOL Annex V, Member States must limit marine plastic pollution from land-based sources and prevent pollution from ships or intentional dumping,³⁶ but measures to limit plastic pollution are not explicit.

After the collapse of GPT prospects at INC-5, it is difficult to discern how it may resolve these areas of governance overlap. Yet, certain provisions from the INC-5 Chair’s Text illustrate conscious fragmentation management to produce a treaty that addresses the complexities of the plastic life cycle and sustainable development.³⁷ If INC sessions reconvene, discussions must refocus strategies to foster beneficial fragmentation management and institutional cooperation, particularly related to Basel, UNCLOS, and MARPOL, which contain some of the most prominent MEA pollution and waste-related provisions.

C. Fragmentation and the GPT

A future GPT will inevitably contribute to a fragmented landscape of international plastics governance. How the ultimate treaty is structured to coordinate with existing conventions will inform whether positive impacts on global plastics governance can emerge. Prof. Sebastian Oberthür asserts that there are three broad fragmentation management typologies and two modes of interaction that inform fragmentation interplay management results.³⁸ A potential GPT could fit within Oberthür’s framework as a hybrid of these typologies and modalities to create an effective plastic life-cycle treaty that contributes positively to cooperative plastics governance.

Oberthür’s three main treaty typologies are the overarching institution, joint interplay management, and unilateral management.³⁹ Overarching institutions involve

23. Fariborz Zelli & Harro van Asselt, *The Institutional Fragmentation of Global Environmental Governance: Causes, Consequences, and Responses*, 13 GLOB. ENV’T POL. 3, 3 (2013).

24. Peter H. Sand & Jeffrey McGee, *Lessons Learnt From Two Decades of Environmental Agreements: Law*, 22 INT’L ENV’T AGREEMENTS 263, 264 (2022).

25. *Id.* at 265.

26. *Id.*

27. *Id.*

28. *Id.* at 266.

29. *Id.*

30. *Id.*

31. *Id.*; see also Zelli & van Asselt, *supra* note 23, at 10 (arguing that it is not fragmentation but coordination of governance gaps that must be addressed).

32. Amandine J. Orsini et al., *Regime Complexes: A Buzz, a Boom, or a Boost for Global Governance?*, 19 GLOB. GOVERNANCE 27, 28-29 (2013) (arguing that institutional interplay can result in “mutual adjustment” and beneficial collaboration).

33. Basel Convention, *supra* note 17, pmb., arts. 2, 4, 10.

34. Gerry Nagtzaam, *A Fraying Patchwork Quilt: International Law and Plastic Pollution*, 34 VILL. ENV’T L.J. 133, 148 (2023).

35. UNCLOS, *supra* note 15, arts. 194, 207.

36. MARPOL, *supra* note 16, Annex V.

37. Tallash Kantai et al., *Summary of the Fourth Session of the Intergovernmental Negotiating Committee to Develop an International Legally Binding Instrument on Plastic Pollution: 23-29 April 2024*, 36 EARTH NEGOTS. BULL. 1, 3-4, 9 (2024); Chair’s Text, Intergovernmental Negotiating Committee to Develop an International Legally Binding Instrument on Plastic Pollution, Including in the Marine Environment arts. 5, 6, 8, 17, Dec. 1, 2024, https://wedocs.unep.org/bitstream/handle/20.500.11822/46710/Chairs_Text.pdf [hereinafter Chair’s Text].

38. Sebastian Oberthür, *Interplay Management: Enhancing Environmental Policy Integration Among International Institutions*, 9 INT’L ENV’T AGREEMENTS 371, 375-78 (2009).

39. *Id.* at 375-76.

the most significant interplay; a new comprehensive treaty becomes responsible for decisionmaking in previously instituted treaties.⁴⁰ Joint interplay management requires “active targeted efforts to coordinate activities of the interacting institutions and conscious creation of horizontal structure for coordination.”⁴¹ Unilateral management occurs where “independent collective action and decision-making [unfold] within one or more interacting institutions without coordination.”⁴²

Next, Oberthür identifies two modes of interaction: regulatory and enabling.⁴³ Regulatory interaction focuses on “prescribing, proscribing, and permitting certain behavior.”⁴⁴ Such management usually exists when institutions are hierarchical and employ “command-and-control approaches” to governance.⁴⁵ Enabling interactions involve learning and capacity-building focused on “communication and knowledge brokering as a way to persuade and enhance capacities” to effect governance goals.⁴⁶ Generally, treaties based on an enabling modality employ “cognitive elements (communication, information, and knowledge) and allocation of resources in order to persuade relevant actors, overcome barriers to knowledge and information processing, and enhance actors’ capacities to implement [environmental policies].”⁴⁷

An effectively implemented GPT may form what Aarti Gupta identifies as a core within a fragmented regime, around which other plastics-related treaties operate without undermining mutual enforcement.⁴⁸ Based on the GPT text when INC-5 concluded on December 2, 2024, delegates appear to employ a hybrid of elements proposed by Oberthür.⁴⁹ A final treaty could reflect certain elements of an overarching framework and regulatory management.⁵⁰ However, INC sessions more prominently point toward a treaty that situationally melds joint interplay management with enabling modalities.⁵¹

A joint interplay management structure will likely permeate a future GPT. Although the treaty would constitute a new, comprehensive regime for governance of (possibly)

the entire plastics life cycle, it is unlikely that it would commandeer governance decisions for long-standing treaties like the Basel Convention, MARPOL, and UNCLOS. Nonetheless, it could function as a new core that informs the expansion and implementation of its own obligations and preexisting regimes. If a final treaty achieves any progress, it would likely be in refining obligations around waste management, including waste minimization, pollution abatement, and improved end-of-life strategies and technologies.⁵² Each of these life-cycle components relates to a prior treaty’s obligations, whether they explicitly reference plastic (the Basel Convention Annexes) or not (MARPOL and UNCLOS).

Pre-dating INC-1, UNEP recognized the need to consider related international agreements.⁵³ UNEP Resolution 1/10 proclaimed the GPT “could contribute to strengthened plastics governance and sustainability across all governance levels and business sectors.”⁵⁴ Across current international plastics regulation, plastic waste management and stakeholder responsibility are among the optimal areas to strengthen governance through effective fragmentation management.⁵⁵ Both of these regulatory areas overlap with existing international instruments.⁵⁶ However, improved regulatory standards, or enabling capacity and knowledge, in these areas could improve pathways toward a sustainable transition from a plastic-dominated economy.

Limited areas of broad international agreement in the treaty are more likely to be included by regulatory management characteristics. At most, this would emerge from waste management practices and product design, including plastic additives. During INC-3, discussions emerged around adopting command-and-control measures for downstream issues like waste management to offset agreement to adopt limited, voluntary upstream provisions.⁵⁷ More ambitious delegates proposed mandatory EPR requirements.⁵⁸ To the extent regulatory management obligations are agreed upon in a GPT that impacts other institutions, they will likely arise in downstream provisions.

More strained areas of agreement could be improved through reliance on transparent communication and effective knowledge and capacity-building to assess the impacts of institutional overlap and treaty implementation. Enabling modalities will be required where voluntary commitments under a future GPT overlap with existing UNCLOS, MARPOL, or Basel Convention obligations around plastic waste trade and dumping. For instance,

40. *Id.* at 375.

41. *Id.*

42. *Id.*

43. *Id.* at 377-78.

44. *Id.*

45. *Id.* at 377.

46. *Id.* at 378.

47. *Id.*

48. Gupta et al., *supra* note 21, at 357.

49. Chair’s Text, *supra* note 37, arts. 5, 8 (provisions that explicitly reference a treaty, namely Article 8’s reference to the Basel Convention and Article 5’s encouraging Parties to “cooperate with relevant international organizations towards the development of relevant international rules, standards, and guidelines at the multilateral level to support implementation”).

50. Tallash Kantai et al., *Summary of the Third Session of the Intergovernmental Negotiating Committee to Develop an International Legally Binding Instrument on Plastic Pollution: 11-19 November 2023*, 36 EARTH NEGOTS. BULL. 1, 8 (2023) (discussing limited command-and-control measures in Article 8, Plastic Waste Management).

51. Chair’s Text, *supra* note 37, arts. 5, 8, 17-18, 21 (particularly, Article 8 encourages implementation of plastic-specific waste management measures that would also align with Basel Convention environmentally sound management requirements; Article 21 specifically directs the secretariat to coordinate activities with “the Secretariats of other relevant international bodies and instruments”).

52. Kantai et al., *supra* note 37, at 4, 10 (concluding that during negotiations Parties’ “understanding varie[d] on what the ‘full lifecycle of plastic(s)’ entails, and on whether to address plastic production”); *see also* E360 Digest, *Oil States Play Spoiler in Failed Plastics Treaty Negotiations*, YALE ENV’T 360 (Dec. 2, 2024), <https://e360.yale.edu/digest/2024-un-plastics-treaty>.

53. Overview of Information to Promote Cooperation and Coordination With Relevant Regional and International Conventions, Instruments, and Organizations, U.N. Doc. UNEP/PP/INC.1/10, at 1 (Sept. 9, 2022).

54. *Id.* at 2-3.

55. *Id.* at 3.

56. *See* Basel Convention, *supra* note 17, art. 4; UNCLOS, *supra* note 15, art. 207.

57. Kantai et al., *supra* note 50, at 8.

58. *Id.* at 5; discussed *infra* Section II.A.

INC-4 delegates proposed phaseouts of harmful and avoidable plastic that could inform Basel's conception of hazardous plastics.⁵⁹

Coordination with the Basel Convention, MARPOL, and UNCLOS was emphasized throughout the INC sessions.⁶⁰ Delegates addressed the need to avoid, or manage, complex interactions between overlapping treaties as a central objective to produce an effective instrument.⁶¹ The breadth of pollution and sustainability issues within the plastic life cycle means there must be significant consideration of the interplay between each instrument. Emphatic statements that INC delegates intend to avoid duplication or overlap between the treaties to the extent possible⁶² indicate that the most likely outcome is a GPT that predominantly employs enabling, joint interplay management. Further, text options throughout the Chair's Text reference related instruments, highlighting the need to support regulation of plastics and chemicals in other treaties.⁶³

1. GPT Fragmentation—The Basel Convention

Basel implements obligations that recognize the reality that waste is a domestic issue that producing nations have internationalized through export for disposal—often imported into less developed countries.⁶⁴ These obligations attempt to address waste that could be handled in a more environmentally sound manner, but is instead landfilled, incinerated, or disposed of in harmful manners because recycling infrastructure is often ill-equipped to handle complex, harmful waste streams.⁶⁵

Basel sought to address this through two key obligations: (1) nonbinding commitments to implement environmentally sound waste management,⁶⁶ and (2) a requirement that importers provide notice to receiving nations that hazardous waste is en route, allowing for “prior informed consent” before the waste can be transferred.⁶⁷ In 2019, the treaty was explicitly expanded to cover plastic waste.⁶⁸ Ultimately, these commitments increased transparency, which diminished developing nations' willingness to import

waste,⁶⁹ forcing some developed nations to internalize disposal costs.⁷⁰

The Basel Convention and its plastic waste annexes would overlap with a GPT in significant ways. Most prominently, the Basel Convention was the first international treaty to make inroads to improving environmentally sound waste management. The convention applies to a wide array of waste. Its definition of “environmentally sound management” (ESM) is likewise broad: “taking all practicable steps to ensure that hazardous wastes or other wastes are managed in a manner which will protect human health and environment against the adverse effects which may result from such wastes.”⁷¹ This definition and Basel's encouragement to adopt ESM practices do little to address specific best practices for plastic waste management.

Nonetheless, Basel's definition of ESM serves as the preamble to Article 8 of the Chair's Text on plastic waste management. The Chair's Text establishes seven obligations for Member States. Three of these obligations directly impact methods of waste management:

- (a) Establish appropriate systems and disaster-resilient infrastructure at the national and subnational levels for the safe handling, sorting, collection, transportation, storage, recycling and disposal, including with energy recovery, of plastic waste;
- (b) Promote circular economy approaches;
- (c) Set objectives and targets at the national level to increase the collection and recycling rates of plastic waste[.]⁷²

While Basel and the GPT overlap, the GPT serves to bolster a bedrock principle of both treaties by inaugurating plastic-specific environmentally conscious waste management. This is an example of coherent governance and an area of beneficial overlap that could promote sustainable development.⁷³

Through recognition and then expansion of Basel's definitions into the specialized problem of plastic waste, the GPT may cure Basel's lack of institutional fit for plastic waste management problems that left a governance gap.⁷⁴ Instead of reinventing the wheel, the Chair's Text builds on the institution by identifying plastic-specific problems, including handling, sorting, collection, and recycling, and filling the gap with plastic-specific requirements.⁷⁵ Tar-

59. Kantai et al., *supra* note 37, at 4.

60. Tallash Kantai et al., *Summary of the First Session of the Fifth Session of the Intergovernmental Negotiating Committee to Develop an International Legally Binding Instrument on Plastic Pollution: 25 November-2 December 2024*, 36 EARTH NEGOTS. BULL. 1, 5 (2024) [hereinafter Kantai et al., INC-5]; Tallash Kantai et al., *Summary of the First Meeting of the Intergovernmental Negotiating Committee to Develop an International Legally Binding Instrument on Plastic Pollution: 28 November-2 December 2022*, 36 EARTH NEGOTS. BULL. 1, 4 (2022); Kantai et al., *supra* note 37, at 5; Kantai et al., *supra* note 50, at 5, 9.

61. Kantai et al., *supra* note 50, at 3, 5.

62. *Id.* at 3; Kantai et al., *supra* note 37, at 5-6.

63. Chair's Text, *supra* note 37, art. 2, Option 2.

64. Jehan El-Jourbagy et al., *Creating an Industrial Regulatory Framework to Reduce Plastics*, 18 BERKELEY BUS. L.J. 94, 111 (2021).

65. Stoett et al., *supra* note 3, at 4.

66. Basel Convention, *supra* note 17, art. 4 (General Obligations).

67. *Id.* art. 6 (Transboundary Movement Between Parties).

68. *Id.* Annexes II, VIII, IX (effective Jan. 1, 2021).

69. Diana Barrowclough & Carolyn Deere Birkbeck, *Transforming the Global Plastic Economy: The Role of Economic Policies in the Global Governance of Plastic Pollution*, 11 Soc. Sci. 1, 4 (2022); Stoett et al., *supra* note 3, at 4.

70. Barrowclough & Birkbeck, *supra* note 69, at 4; Stoett et al., *supra* note 3, at 4.

71. Basel Convention, *supra* note 17, art. 2(8).

72. Chair's Text, *supra* note 37, art. 8.

73. See Elsässer et al., *supra* note 20, at 379 (discussing the benefits for sustainability that effective linkage of institutions can produce).

74. Benjamin Faude & Julia Fuss, *Coordination or Conflict? The Causes and Consequences of Institutional Overlap in a Disaggregated World Order*, 9 GLOB. CONSTITUTIONALISM 268, 273 (2020) (defining “institutional fit” as the basic ability of an existing governance arrangement to achieve its designated governance objective).

75. *Id.* at 275 (arguing the goal of institutional coordination should be to identify governance gaps and then create “synergistic co-governance”).

geted alignment of waste management provisions between the two treaties demonstrates optimal joint interplay management in a fragmented field.⁷⁶ By continuing to build on Basel, the GPT could provide clarity in how Basel's baseline definition fits into plastic waste governance. It would also establish a reference point for the secretariats and Members of the two institutions to relay useful knowledge, technology, and capacity to implement reinforcing objectives.

2. GPT Fragmentation—MARPOL

Ratified in 1973, MARPOL was intended to prevent marine air and sea pollution.⁷⁷ Generally, the treaty prohibits discharge of garbage and sewage into the marine environment, which extends to plastic waste through its annexes.⁷⁸ Viewed as important progress at its implementation because it skipped phasing out certain materials to explicitly prohibit all dumping, MARPOL has failed to mitigate plastic waste pollution.⁷⁹ At least 80% of plastic waste originates from land-based sources.⁸⁰

Accordingly, a GPT could create sensible complements to MARPOL by occupying a broader geographical jurisdiction to mitigate all avenues of plastic waste dispersion, whether from land or sea and whether to land or sea.⁸¹ Provided there is communication and cooperation between the treaties, this land-sea institutional synergy is a clear opportunity for Oberthür's joint interplay and enabling management.

Support for a GPT was driven in part by dissatisfaction with the basic ability of MARPOL, among other institutions, to foster the international cooperation necessary to address land-based plastic waste pollution governance gaps.⁸² GPT Chair Text Articles 7, 8, and 9, respectively governing "Releases and Leakages," "Plastic Waste Management," and "Existing Plastic Pollution," create sensible complements to fill MARPOL's marine waste provisions and fill plastic-related gaps. Despite fragmentation, governance effectiveness could be enhanced by identifying these institutional gaps and, rather than undermining existing obligations, carefully designing complementary

obligations that can utilize soft power and communication among related treaty Members.⁸³

Article 7 obligates all Parties to "prevent, reduce, and where possible, eliminate" releases and leaks of microplastics from all sources into the environment and pellets and flakes into aquatic systems, "taking into account other relevant international instruments."⁸⁴ Article 8(d) requires Parties to take measures to prevent littering and to prohibit ocean dumping of plastic waste, "taking into account internationally agreed rules."⁸⁵ Article 9 encourages Parties to identify, monitor, and remove plastic accumulation zones in their national jurisdiction; it also encourages Parties to cooperate to make the same progress in areas beyond their national jurisdictions.⁸⁶ Through these provisions, plastic-specific marine and land-based pollution characteristics are identified for Parties to act on and create a land-sea nexus—with respect for existing institutions—for cooperation between MARPOL and the GPT.

Articles 7 and 8 of the Chair's Text, referencing marine waste international institutions and rules, hold enabling management potential. MARPOL obligations fall within both articles' criteria allowing for secretariat interactions and dialogue between scientific experts over the life of both treaties' implementation and enforcement. Resolution 5/14 explicitly encouraged a final GPT to facilitate best practices between Members premised on the lessons learned by MARPOL regarding plastic waste pollution to improve the pace of plastic waste mitigation.⁸⁷ Under Oberthür's analysis of enabling management, systematic cooperation with MARPOL would enhance the capacity of both institutions to pursue their purposes.⁸⁸

Interplay between GPT provisions and MARPOL exhibits coherent implementation of enabling and joint interplay management. The GPT provisions could result in coordination allowing provisions of MARPOL that work to specifically mitigate marine plastic discharge while the GPT focuses on both land- and sea-based sources, whether from streams or any other mechanism.⁸⁹ This typifies Oberthür's joint interplay management framework, wherein Members consciously create horizontal structures to coordinate regimes by specialized evolution into new areas.⁹⁰ Coordination on best practices necessary to implement Articles 7 and 8 could capitalize on enabling management opportunities. Global plastics governance would benefit from effective coordination between future GPT and existing MARPOL obligations and institutional knowledge.

76. *Id.*

77. El-Jourbagy et al., *supra* note 64, at 111.

78. Nagtzaam, *supra* note 34, at 143.

79. *Id.* at 139.

80. *Id.* at 143.

81. *See, e.g.*, Chair's Text, *supra* note 37 (Spanning the entirety of the proposed text, from the preamble's statement about the plastic life cycle, to Article 5 addressing product design, Article 6 addressing sustainable production, Article 7 on releases and leakage, Article 8 on plastic waste management, and Article 9 on existing plastic pollution, the treaty covers all of the land-based activity that escapes MARPOL's jurisdiction.); *see also* Faude & Fuss, *supra* note 74, at 271, 273 (discussing how treaties that fill governance gaps in prior institutions often create interinstitutional cooperation that results in productive treaty interactions).

82. U.N. Environment Assembly of UNEP, *Combating Marine Plastic Litter and Microplastics: An Assessment of the Effectiveness of Relevant International, Regional, and Subregional Governance Strategies and Approaches*, U.N. Doc. UNEP/EA.3/INF/5, at 5 (Feb. 15, 2018) [hereinafter *Combating Marine Plastic Litter*].

83. Faude & Fuss, *supra* note 74, at 275, 284; *see also* Oberthür, *supra* note 38, at 379 (arguing that soft enabling approaches promote information flow between institutions).

84. Chair's Text, *supra* note 37, art. 7.

85. *Id.* art. 8(d)-(e).

86. *Id.* art. 9(1).

87. Resolution 5/14, *supra* note 5, at 3; *Combating Marine Plastic Litter*, *supra* note 82, at 15.

88. Oberthür, *supra* note 38, at 377.

89. *See* Chair's Text, *supra* note 37, art. 7; *Combating Marine Plastic Litter*, *supra* note 82, at 15; *see generally* MARPOL, *supra* note 16.

90. Oberthür, *supra* note 38, at 376.

3. GPT Fragmentation—UNCLOS

Comprising four separate treaties, UNCLOS is a comprehensive framework for governance of all maritime zones.⁹¹ UNCLOS Articles 194, 195, and 207 are all relevant to the plastics life cycle.⁹² Article 194 established measures to prevent, reduce, and control marine pollution; to impose a duty for States to not cause pollution to other States; and to outline particular pollution sources to be minimized.⁹³ Article 195 instituted a duty to not create environmental damage in transferring or transforming waste.⁹⁴ Article 207 set out a framework of basic obligations for States to adopt as law or regulation to prevent and control land-based sources of marine pollution.⁹⁵

However, for all of its rules, standards, and recommendations that implicitly address plastics, UNCLOS' ambiguity makes it a deficient tool for addressing plastic pollution.⁹⁶ While UNCLOS “recognizes the existence of several sources of marine pollution, [it] does not go into detail about these sources and does not acknowledge plastics as a distinct category.”⁹⁷ For instance, Article 207's obligations for States to adopt laws to prevent land-based pollution omit any detail on how to design those laws to deal with plastics.⁹⁸ At a basic level, despite implicit connection, there is poor institutional fit between UNCLOS and plastic pollution because “it was not designed to take the systematic, lifecycle approach needed to address plastic waste pollution.”⁹⁹

UNCLOS' poor institutional fit provokes resolutions from a GPT that could create conflict or coordination. According to Benjamin Faude and Julia Fuss, conflict surfaces in interplay management when disagreement over substantive rules or norms leads to a new institution that drives international policy change because of the overlap.¹⁰⁰ However, cooperative synergies are possible where disagreements over institutional fit—gaps in governance that omit details or strategies necessary to a particular issue—push Parties to opt for a new institution.¹⁰¹

One view could be that the lack of standards and timelines to adopt recommendations in UNCLOS evinces institutional norms that are fundamentally at odds with a progressive GPT. Thereunder, institutional conflict could result, where a GPT seeks to shift plastics governance toward timely action ahead of potential ecological tipping points while UNCLOS allows nations to move at their own

pace.¹⁰² Yet, the Chair's Text suggests INC compromises will expel any hope of progressive compliance schedules from the treaty.¹⁰³ Instead, the likelihood that a final GPT would be premised in nationally determined contributions means the lack of substantive mandates will form a point of continuity between UNCLOS and the GPT.

As with Basel and MARPOL, institutional coordination is the most probable result. UNCLOS fails to list technical rules or types of pollutants that would clarify domestic obligations in response to plastic pollution.¹⁰⁴ Addressing that omission requires a GPT that fills those gaps through provisions that express precise actions that should, or must, be enacted by Members, which leads to further fragmentation but beneficial outcomes.

This type of overlap can be seen in Chair's Text Articles 7, 8, and 9. Each identifies either types and locations of plastic waste to be mitigated (Article 7) or plastic waste management and mitigation strategies to be addressed by Parties (Articles 8 and 9).¹⁰⁵ Such provisions take the premise of UNCLOS Article 194 (pollution control and prevention), Article 195 (pollution management), and Article 207 (land-based pollution controls) and particularizes them to coherently resolve UNCLOS' ambiguities. Thereby, a future GPT could foster opportunities for coordinated activities with UNCLOS, including knowledge transfer and implementation monitoring to effectively remediate marine waste.

D. Conclusion

Despite frequent arguments that fragmentation causes mismanagement and conflict,¹⁰⁶ the Chair's Text and related plastic waste treaties highlight that synergistic links between overlapping institutions can enhance governance despite significant institutional fragmentation.¹⁰⁷ Overlap between such treaties can increase the probability that problem areas or important omissions will be addressed.¹⁰⁸ Amandine Orsini et al. conclude that such complexes are more likely to be stable when organized around a sector.¹⁰⁹

That contention could hold true in plastics governance, as the complex of waste and pollution management treaties discussed above allow related issues—most importantly

91. Nagtzaam, *supra* note 34, at 146.

92. *Id.* at 148-50.

93. UNCLOS, *supra* note 15, art. 194.

94. *Id.* art. 195.

95. *Id.* art. 207.

96. Nagtzaam, *supra* note 34, at 151.

97. *Id.*

98. Kirk & Popattanachai, *supra* note 18, at 223. Currently, the GPT presents the same issues, as the waste management and product design provisions are ambiguous, only encouraging Parties to take action.

99. Noreen O'Meara, *Human Rights and the Global Plastics Treaty to Protect Health, Ocean Ecosystems, and Our Climate*, 38 INT'L J. MARINE & COASTAL L. 3, 4 (2023).

100. Faude & Fuss, *supra* note 74, at 273-74.

101. *Id.* at 275.

102. Nagtzaam, *supra* note 34, at 151 (criticizing the lack of standards and compliance schedules contained in UNCLOS); Sandy Ong, *What You Need to Know About Tipping Points*, WORLD WILDLIFE FUND (Aug. 8, 2024), <https://www.worldwildlife.org/stories/what-you-need-to-know-about-tipping-points> (defining a “tipping point” as “when sufficient changes accumulate over time” pushing “the system beyond a critical threshold,” resulting in “a completely new state” where “drastic transformation happens abruptly, and triggers cascading feedback loops that accelerate the process, often leading to irreversible changes in the system”).

103. Chair's Text, *supra* note 37, art. 14.

104. Nagtzaam, *supra* note 34, at 152.

105. Chair's Text, *supra* note 37, arts. 7, 8, 9.

106. Rakhyn E. Kim & Klaus Bosselman, *International Environmental Law in the Anthropocene: Towards Purposive Multilateral Environmental Agreements*, 2 TRANSNAT'L ENV'T L. 285, 287 (2013).

107. Harro van Asselt & Fariborz Zelli, *Connect the Dots: Managing Fragmentation of Global Climate Governance*, 16 ENV'T ECON. & POL'Y STUD. 2, 11 (2014).

108. Orsini et al., *supra* note 32, at 32-34.

109. *Id.* at 35.

plastic pollution—to effectively fill governance gaps without disrupting core obligations. “Division of work” among institutions is the preferred alternative to conflicting mandates.¹¹⁰ Accordingly, a final GPT that capitalizes on enabling, joint interplay management opportunities could support Oberthür’s conclusion that effective fragmentation management can prevent “acute conflict between competing institutions” by providing systematic support for overlapping treaties that weigh in on the plastics crisis.¹¹¹

II. Progress Toward Sustainable Development in a GPT

Since the 2030 Agenda for Sustainable Development and its Sustainable Development Goals (SDGs) were adopted in 2015, they have provided a vital but imperfect reference point for global progress toward sustainability while mitigating ecosystem damage.¹¹² Vital, because they help guide the world closer to the “sustainable development” definition provided earlier in this Comment; imperfect, because the SDGs were underinclusive of key sustainability issues—plastics were not explicitly mentioned in the SDGs. Still, many of them, including SDG 12,¹¹³ SDG 14,¹¹⁴ and SDG 15,¹¹⁵ help set implicit goals around plastics because they target harmful environmental or social outcomes that cannot be fully addressed unless plastic production and management are considered. Adoption of a GPT would mark essential progress toward framing a sustainable plastic transition that encompasses the necessary benefits of plastics in certain sectors while furthering SDGs.

Part of the difficulty in striking the correct balance in the GPT is the need to resolve the plastics crisis while recognizing the material’s necessity to many sectors of developed and developing societies.¹¹⁶ While plastic production, use, and pollution yield dire ecological harm, the material is also advantageous to societal advances, from packaging to infrastructure. In packaging, while single-use products flood oceans and evade recycling efforts, they also ensure longer preservation periods and decrease food loss, leading to positive health outcomes.¹¹⁷ In the health sector, plastics protect syringes and packaged blood as well as being the most effective material for pacemakers, implants, and soft tissue scaffolding, all of which advance health-related SDGs.¹¹⁸

Incorporation of plastics into vehicles produces more fuel-efficient fleets.¹¹⁹ And plastic provides clean, durable replacements for water distribution; is vital to water treatment, sanitation, and irrigation processes; and effectively insulates electrical wires.¹²⁰ All of this, and absence of any clear replacement material, makes plastic nearly indispensable to societal development. Yet, negative impacts from overreliance on plastic dictate that unsustainable production, design, use, and management strategies must not continue.

Three key areas of the GPT could enhance a global trajectory toward sustainable development that reduces dependence on plastic and avoids harmful externalities while accommodating plastic use in certain necessary sectors. Two of these issues are primary to a circular economy that reinforces sustainable development. A circular economy is one that “eliminates unnecessary production and consumption, avoids negative impacts on ecosystems and human health, keeps products and materials in the economy and safely collects and disposes waste that cannot be economically processed.”¹²¹ However, certain provisions would also invoke fragmentation and require considered interplay management.

First, the Chair’s Text endorses but does not require Parties to implement EPR mechanisms. While likely overly optimistic, a GPT should mandate EPR systems because they force cost internalization, thereby incentivizing circular product management patterns. Second, strengthened waste management provisions, including product design, will ensure that, at minimum, the treaty redesigns mid-stream and downstream plastic life-cycle governance to reduce waste and encourage circularity. Finally, there must be strong capacity-building and knowledge-transfer mechanisms to benefit developing nations. These provisions tie the rest of the treaty together and allow for sensible fragmentation management.

A. EPR

EPR mechanism obligations are key to encouraging sustainable transition toward a circular economy.¹²² However, given the negotiations over upstream issues that precipitated the treaty’s collapse during INC-5,¹²³ an EPR mandate rather than encouragement¹²⁴ may be unrealistic in subsequent negotiations. Since the negotiation collapse, petrochemical stakeholders have expressed desire for the treaty’s scope to remain on downstream plastic impacts.¹²⁵

110. *Id.* at 37.

111. Oberthür, *supra* note 38, at 386.

112. TERI LIBRARY AND INFORMATION CENTRE, SUSTAINABLE DEVELOPMENT TIMELINE (2016), https://www.teriin.org/library/files/SD_timeline.pdf; G.A. Res. 70/1, Transforming Our World: The 2030 Agenda for Sustainable Development (Oct. 21, 2015) (announcing the 17 SDGs).

113. G.A. Res. 70/1, *supra* note 112, at 22 (Ensure Sustainable Consumption and Production Patterns).

114. *Id.* at 23 (Conserve and Sustainably Use the Oceans, Seas, and Marine Resources for Sustainable Development).

115. *Id.* at 24 (Protect, Restore, and Promote Sustainable Use of Terrestrial Ecosystems, Sustainably Manage Forests, Combat Desertification, and Halt and Reverse Land Degradation and Halt Biodiversity Loss).

116. LIHINI DE SILVA ET AL., ENVIRONMENTAL DEFENSE FUND, DISCUSSION PAPER EDP 21-05, THE PLASTIC ECONOMY 12-15 (2021).

117. *Id.* at 12-13.

118. *Id.* at 14.

119. *Id.* at 15.

120. *Id.* at 16-17.

121. CANALS ET AL., *supra* note 1, at 7.

122. *Id.* at 11.

123. Joyce Lee & Valerie Volcovici, *Countries Fail to Reach Agreement in UN Plastic Talks*, REUTERS (Dec. 2, 2024), <https://www.reuters.com/business/environment/over-100-countries-back-plastic-treaty-caps-talks-reach-fierce-finish-2024-11-30/> (explaining that oil-producing nations refused upstream obligations related to plastic production caps prior to scheduled INC sessions concluding without an approved treaty).

124. Chair’s Text, *supra* note 37, art. 8(4).

125. Stefan Anderson, *UN Plastic Pollution Treaty Derailed as Fossil Fuel Nations Block Production Limits*, HEALTH POL’Y WATCH (Mar. 12, 2024), <https://>

If Parties are willing to compromise for consensus, by agreeing to phase in EPR systems over time in exchange for the “high ambition coalition” conceding its ambitions to establish sunset schedules for plastic production, an optimistic result could be achieved that furthers Resolution 5/14 objectives to end plastic pollution and improve circularity in the plastic life cycle.

EPR systems extend a producer’s responsibility for its product to the “post-consumer stage of a product’s life including take-back, recycling, and final disposal.”¹²⁶ Basically, EPR systems support the polluter-pays principle,¹²⁷ thereby, in the plastic context, stimulating common but differentiated responsibility.¹²⁸ Because the most problematic plastic production disproportionately occurs in nations with the largest plastic waste problems, EPR systems would put the onus on developed nations to resolve a crisis largely of their own making. Corporations are best positioned and, therefore, should be incentivized to reconsider material selection, manufacturing processes, product use, and disposal mechanisms to “minimize the impacts of their products.”¹²⁹ Amid continuous rise in plastic usage, EPR systems are effective mechanisms to incentivize comprehensive reconfiguration of the plastic life cycle to avoid significant end-of-life costs and loss of value when a product is not recycled.¹³⁰

Collective EPR systems are the most sensible design for a broad-based treaty like the GPT in order to whip up the necessary consensus.¹³¹ Collective EPR systems “impose a collective, rather than individual, responsibility on a particular industry that generates a particular type of waste.”¹³² Members of that industry establish a “producer responsibility organization” to manage the disposal process.¹³³ Accordingly, a balance is created that alleviates any one producer’s direct or sole responsibility, which would be logistically demanding, by spreading the responsibility among responsible parties while enforcing the polluter-pays principle.

healthpolicy-watch.news/global-plastics-treaty-talks-derailed-as-fossil-fuel-nations-block-production-limits/ (demonstrating oil-rich nations’ persistent resistance to provisions outside pollution and waste management).

126. Walter Leal Filho et al., *An Overview of the Problems Posed by Plastic Products and the Role of Extended Producer Responsibility in Europe*, 214 J. CLEANER PROD. 550, 553 (2019).

127. *What Is the Polluter Pays Principle?*, LONDON SCH. ECON. & POL. SCI. (July 18, 2022), <https://www.lse.ac.uk/granthaminstitute/explainers/what-is-the-polluter-pays-principle/> (explaining that the polluter-pays principle “is the commonly accepted practice that those who produce pollution should bear the cost of managing it to prevent damage to human health or the environment”). The polluter-pays principle is also incorporated into the Chair’s Text at Article 1, Options 2-3, indicating there is significant support among negotiators to make the concept a touchstone of the treaty.

128. El-Jourbagy et al., *supra* note 64, at 114 (requiring petrochemical companies that predominantly produce plastic waste in developed nations to accept EPR would emphasize the developed world’s proper, outsized role in curing the crisis).

129. *Id.* at 114-17; *see also* Filho et al., *supra* note 126, at 553.

130. Aishwarya Rani et al., *Revitalizing Plastic Wastes Employing Bio-Circular-Green Economy Principles for Carbon Neutrality*, 472 J. HAZARDOUS MATERIALS 134394, at 16-18 (2024).

131. El-Jourbagy et al., *supra* note 64, at 114.

132. *Id.* at 115.

133. *Id.*

Experts have concluded that a well-designed EPR could “cover the full costs of ensuring system circularity.”¹³⁴

Mandating collective EPR systems in exchange for leaving discussion of production limits to later INC iterations would be a sensible yet ambitious starting point for renewed negotiations. Given the friction between petrochemical stakeholders and environmental advocates over stricter measures throughout the INC sessions, compromise is necessary.¹³⁵ An EPR mandate would force plastic producers to consider sunsets on many products without external mandates because product value would decrease with increasing downstream disposal costs. And progressive advocates could offset the problem of concluding a treaty with no upstream provisions, as summarized by the Indonesian Zero Waste Alliance: “Framing marine litter as only a waste management problem is nonsense when it is actually a reflection of the industry’s refusal to take responsibility for the plastic pollution crises . . . We can’t recycle toxic plastics and pretend that the marine litter chaos is a waste issue.”¹³⁶

An EPR mandate, or stronger encouragement, could provide the needed incentive for increased recycling infrastructure development, further engraining the sustainable development transition embodied by the SDGs.¹³⁷ However, it also creates a conundrum because the current undersupply of recyclates, in part, reflects a global lack of effective recycling infrastructure.¹³⁸ This was a common problem for early-adopting nations in the early years of EPR implementation.¹³⁹ But membership of countries that have already scaled this learning curve and proven the mechanism technically and economically viable could empower other Members to meaningfully engage with the requirement.¹⁴⁰

Implementing a mandated EPR phase-in over the next decade would put the GPT in an overarching framework posture.¹⁴¹ It would create the baseline for nations to implement the mechanism. This necessitates oversight to monitor whether and how Parties comply with their obligations.¹⁴² Throughout INC sessions, several nations expressed support for EPR provisions, spanning from mandatory to nationally determined systems.¹⁴³

At INC-3, only one nation proposed that EPR be entirely omitted from the treaty.¹⁴⁴ Regions like the European Union (EU) have a long history with EPR systems, and through the GPT forum they would be able to facili-

134. CANALS ET AL., *supra* note 1, at 11.

135. Kantai et al., INC-5, *supra* note 60, at 4 (explaining that some delegations expressed strong opposition to including production limits); *see also* Kantai et al., *supra* note 37, at 4; Kantai et al., *supra* note 50, at 8.

136. Barrowclough & Birkbeck, *supra* note 69, at 9.

137. Jaakko Siltaloppi & Markus Jähi, *Toward a Sustainable Plastics Value Chain: Core Conundrums and Emerging Solution Mechanisms for a Systemic Transition*, 315 J. CLEANER PROD. 128113, at 6-7 (2021).

138. *Id.* at 7.

139. El-Jourbagy et al., *supra* note 64, at 116-17.

140. *Id.*

141. Oberthür, *supra* note 38, at 375.

142. *Id.*

143. Kantai et al., *supra* note 37, at 5.

144. Kantai et al., *supra* note 50, at 4.

tate information to new EPR adopters—particularly developing nations.¹⁴⁵ Such top-down cooperation forced by the GPT secretariat would speed EPR system effectiveness by helping Parties to circumvent initial stumbling blocks that early adopters in Europe experienced, particularly with quickly scaling up recycling infrastructure.¹⁴⁶

B. Waste Management and Circularity in Plastic Waste

If a GPT is adopted, plastic waste management will likely form the crux of the agreement.¹⁴⁷ Therefore, environmentally minded negotiators must push for the most comprehensive waste management provisions possible. From an outside perspective, it is easy to rally around waste management as a victory from this treaty, because the vast piles of land- and ocean-based plastic waste pollution have positioned it as the unfortunate geological marker for the Anthropocene.¹⁴⁸ From a pessimistic perspective, mitigating plastic waste plays into petrochemical stakeholders' frequent motto "out of sight, out of mind."¹⁴⁹ A GPT that balances petrochemical and environmental stakeholders' interests must center on circularity, by creating strong mid-stream product design incentives complemented by down-stream waste management obligations.

Plastic production is currently around 460 Mt per year, set to triple to 1,231 Mt by 2060.¹⁵⁰ Two industries, packaging and infrastructure, account for 61% of that plastic waste.¹⁵¹ This means that targeted improvements of collection, sorting, recyclability of single-use plastic, and recyclability or reusability of outdated infrastructure materials would expedite a sustainable transition without eliminating necessary uses in health services, agriculture, and other industries.

Further, retaining opportunities in these fields serves to integrate communities' SDG achievements. Together, manufacturing and waste management account for nearly one million jobs in the United States alone.¹⁵² Sustaining living wages for this population amid transition is essential to SDGs 1 (poverty), 8 (decent work and economic growth), and 10 (reduced inequality). Increased emphasis on bolstering waste management infrastructure will bring those sustainability targets closer to reality.¹⁵³

Further, more environmentally sensitive waste management supports SDGs 3 and 11, which target better health and more sustainable cities.¹⁵⁴ Current inadequate

disposal of post-consumer products causes annual detriment to marine life, which in turn impacts human life.¹⁵⁵ With many countries lacking sufficient waste management capacity, plastic production will further outstrip management capacity without serious attention.¹⁵⁶ UNEP estimates that if the world could transition to a circular economy, it would accrue \$130-200 billion per year in avoided costs by 2040.¹⁵⁷

1. Enhanced Waste Management Provisions in the GPT

Enhanced waste management in the Chair's Text is premised on "environmentally sound waste management." This requirement in Chair's Text Article 8(1) creates the possibility for enabling management to fortify sustainable outcomes. Creating coordination opportunities between the GPT and Basel Convention could build plastic waste management knowledge and capacity through Basel Member States and secretariat experience.¹⁵⁸ To narrow the lessons from the broad strokes of the Basel Convention and to support sustainable shifts at each level of plastics waste, the final GPT must coalesce around specific standards for environmentally sound plastic waste management.

To advance a circular economy where waste can be effectively collected, sorted, and recycled, a GPT must encourage adoption of more specific management standards that fit within its mandate for Members to "manage plastic waste in an environmentally sound manner."¹⁵⁹ Such standards should start with an annex that sets schedules for escalating end-of-life recycling rates. This could be integrated into Article 14's national plans,¹⁶⁰ forming a voluntary nationally determined contributions component that would include commitments to unify waste into two streams in order to increase recyclability.¹⁶¹

This strategy would set nations on a mutually reinforcing sustainability pathway. For every 10% increase in the end-of-life recycling rate, there is an average decrease of 227 kilograms of carbon dioxide equivalent per metric ton from incineration and landfills.¹⁶² Further, it would shift emphasis away from contentious production caps and build phaseout obligations starting from nations' abilities

145. El-Jourbagy et al., *supra* note 64, at 116.

146. *Id.* at 116-17.

147. Kantai et al., *supra* note 50, at 5; Kantai et al., *supra* note 37, at 10.

148. Rani et al., *supra* note 130, at 2.

149. Stoett et al., *supra* note 3, at 2.

150. Rani et al., *supra* note 130, at 3.

151. *Id.*

152. de Sousa, *supra* note 2, at 8; *see also* CANALS ET AL., *supra* note 1, at 11-13 (explaining that systems change toward a circular economy would increase the global jobs market, alleviating poverty through an increase in collection, sorting, recycling, and washing recyclates).

153. de Sousa, *supra* note 2, at 8.

154. *Id.* at 13-14.

155. *Id.* at 17-18.

156. *Id.*

157. *Id.* at 9.

158. van Asselt & Zelli, *supra* note 107, at 11 (arguing that it is important to prevent institutional conflict by identifying areas to link the institutions).

159. Chair's Text, *supra* note 37, art. 8(1).

160. *Id.* art. 14 (creating a requirement to adopt national plans to implement treaty obligations over time).

161. Katarina Novakovic et al., *Zero-Waste Circular Economy of Plastic Packaging: The Bottlenecks and a Way Forward*, 38 SUSTAINABLE MATERIALS & TECH. e00735, at 3-4 (2023) (explaining that because many plastics are unrecyclable, circularity would be served by limiting recycled plastic waste streams to only those that are recyclable, namely polyethylene terephthalate (PET)/polypropylene (PP) and high-density polyethylene (HDPE)).

162. Rani et al., *supra* note 130, at 13.

to phase out unsustainable management practices rather than plastic use altogether.¹⁶³

Second, the treaty could encourage environmentally sound waste management obligations by pushing Members to disincentivize waste management strategies that upend circularity by removing products from the value chain.¹⁶⁴ Fundamentally, this applies to incineration and landfilling. Both mechanisms lead to materials being lost from the value chain as they either sit in place with no productive use (landfilling) or are burned, resulting in partial energy recovery and partial material loss (incineration). Neither of these disposal mechanisms are environmentally sound.¹⁶⁵

Such a provision would also restrict the petrochemical industry's current pseudosolution to the plastic crisis—chemical recycling.¹⁶⁶ This technology uses heat to break down plastic into hydrocarbons, monomers, or polymers before turning that output into either fuel or new products, in the few instances that is possible.¹⁶⁷ According to many researchers, chemical recycling is at odds with both sustainability and circularity. It creates a looser circularity loop by turning plastic into fuel, expelling it from the value chain.¹⁶⁸ Burning chemical recycling hydrocarbon output (which is the most common result) spews greenhouse gases and other chemicals into the atmosphere, which is fundamentally at odds with sustainability and environmentally sound waste management.¹⁶⁹

While plastic waste management provisions are considered “low-hanging fruit” in treaty negotiations,¹⁷⁰ strong measures are vital to a final GPT that emphasizes circularity.¹⁷¹ The current Chair's Text only vaguely encourages “handling, sorting, collection, transportation, storage, recycling and disposal.” This lacks the particularity needed to embolden sustainable transition efforts. Although it may be difficult to win certain nations' votes on stronger waste management measures, early signs have indicated that countries like Switzerland and the EU bloc favor strong measures around environmentally sound waste management.¹⁷² Even late in negotiations at INC-5, delegates were pushing for waste management guidelines, demonstrating support for stronger sustainability efforts.¹⁷³

2. Enhanced Product Design Provisions in the GPT

Along with downstream standards, environmentally sound waste management must consider midstream components,

in particular product design. Design is often the facet of the plastic life cycle that prevents otherwise recyclable materials from being feasible recyclates.¹⁷⁴ For that reason, Resolution 5/14 recognized the “[i]mportance of promoting sustainable design of products and materials so that they can be reused, remanufactured or recycled and therefore retained in the economy for as long as possible.”¹⁷⁵ INC sessions yielded productive discussions on this item, including proposals to increase recyclability based on minimum global standards and international partnerships to advance sustainable, circular product design.¹⁷⁶

In furtherance of Resolution 5/14 product design goals, GPT provisions that encourage nations to implement policies that incentivize producers to incorporate environmentally safe features into product design are central to improving circularity.¹⁷⁷ One incentive for Members to adopt such policies would be funding subsidies for petrochemical companies that remove additives from their products or implement sustainable designs that ease recyclability.¹⁷⁸ Over time, this could cut and/or offset abundant petrochemical subsidies for fossil fuel-based plastics—a root cause of the economic viability of current virgin plastic production.¹⁷⁹ As a result, the additives that often make recycling infeasible would be removed, thereby increasing plastic circularity.

Implementing policies to eliminate unrecyclable additives would serve several goals. First, it would improve circularity by increasing the percentage of plastics that are easily separated and recycled, thereby keeping more products in the value chain for longer.¹⁸⁰ Second, phasing out the chemicals and additives that make plastics difficult to recycle would improve health outcomes, thereby advancing SDGs.¹⁸¹ And circularity of plastics increases product value, which creates profit opportunities for stakeholders, further incentivizing circularity investments.¹⁸² Ultimately, while there are significant capital barriers to implementing these standards, the long- or mid-term savings are projected to compensate for any short-term capital barriers.¹⁸³

C. Capacity-Building and Knowledge Transfer

Resource disparities are paramount to the plastic crisis that has developed over the past century. As developed nations expanded plastic production, they simultaneously exported massive quantities of plastic waste to developing nations

163. Caroline Hull, *The U.N. International Plastic Agreement: Tackling the Plastic Crisis by Addressing Recycling Cost and Viability*, 47 ENVIRONS: ENV'T L. & POL'Y J. 124, 139 (2024).

164. Meret Jürgens & Hans-Josef Endres, *Environmental Impacts of Circular Economy Practices for Plastic Products in Europe: Learning From Life Cycle Assessment Studies*, 122 31ST CIRP CONF. ON LIFE CYCLE ENG'G 312, 313 (2024).

165. *Id.*

166. ALLEN ET AL., *supra* note 9, at 3; BELL & GITLITZ, *supra* note 8, at 38-40.

167. BELL & GITLITZ, *supra* note 8, at 52.

168. Jürgens & Endres, *supra* note 164, at 315.

169. BELL & GITLITZ, *supra* note 8, at 40.

170. Kantai et al., INC-5, *supra* note 60, at 11.

171. *Id.*

172. Nagtzaam, *supra* note 11, at 45, 57.

173. Kantai et al., INC-5, *supra* note 60, at 5.

174. Hull, *supra* note 163, at 149.

175. Resolution 5/14, *supra* note 5, at 2.

176. Kantai et al., *supra* note 50, at 4-5.

177. El-Jourbagy et al., *supra* note 64, at 114.

178. Siltaloppi & Jähi, *supra* note 137, at 6 (explaining that inclusion of certain materials increases the recyclability challenges); Novakovic et al., *supra* note 161, at 4 (promoting phasing out of difficult-to-recycle products to increase recyclability); XUEJING CHEN ET AL., PACIFIC ENVIRONMENT, STEMMING THE PLASTIC-CLIMATE CRISIS (2023) (promoting the ban of nonrecyclable plastics).

179. Barrowclough & Birkbeck, *supra* note 69, at 8.

180. *Id.* at 5.

181. Hull, *supra* note 163, at 152.

182. *Id.* at 151; Barrowclough & Birkbeck, *supra* note 69, at 5.

183. CANALS ET AL., *supra* note 1, at 9-11.

that did not, and do not, have the infrastructure capacity to manage it in an environmentally sound manner.¹⁸⁴ Through this strategy, developed countries have abdicated waste management responsibilities and abandoned internationally acknowledged polluter-pays and sustainability principles, by off-loading pollution onto other nations and future generations.¹⁸⁵

As a result, while developed and developing nations must build waste management capacity alongside investment in safer plastics and plastic alternatives, developed countries must engage in capacity-building and knowledge transfer to aid developing nations' infrastructure expansion.¹⁸⁶ Resolution 5/14 goals that foster sustainable development with consciousness of developing nations¹⁸⁷ affirm that these provisions are central to remedying misalignment between countries receiving waste and their waste management capacity.¹⁸⁸

Many developing countries are entrenched in plastic reliance without meaningful infrastructure to dig themselves out.¹⁸⁹ Developing countries' plastic use is also projected to increase in the coming decades, matching income growth (which aligns with demand for packaged goods).¹⁹⁰ As with the climate crisis, it would be inequitable to demand that developing countries forgo the development benefits that plastics provide in food safety, health services, and infrastructure based on an economic and environmental quagmire overwhelmingly designed by developed countries. A strong GPT must envision a path to coordinate technical and financial commitments channeled toward developing countries.¹⁹¹

Knowledge-transfer and capacity-building mechanisms were proposed in Chair's Text Articles 12 and 17.¹⁹² Article 12 requires Members to cooperate toward "timely and appropriate capacity building and technical assistance," with preference for developing nations.¹⁹³ Article 17 implements less-stringent obligations, only "encourag[ing] [Parties] to facilitate the exchange of information."¹⁹⁴ These articles do not include sufficient requirements to establish visible information and capacity transfer benchmarks that, if achieved, could promote competition in sustainable transition progress.¹⁹⁵

Future sessions should expand these provisions to include annually monitored regional transfer goals, followed by larger stocktakes similar to the Paris Agreement five-year stocktake.¹⁹⁶ Resolution 5/14 proposed that the treaty should "specify national reporting, as appropriate" and "periodically assess the progress of

implementation of the instrument."¹⁹⁷ Ensuring accountability among Member nations promotes progress toward treaty goals, whether statistical or aspirational, particularly for developed nations, when outcomes are not directly beneficial.¹⁹⁸

It is vital that developing nations' interests are deeply entrenched within the scope of sustainable development commitments to transition away from plastics, because so much of the developed world's waste has been deposited in their backyards.¹⁹⁹ Implementing capacity-building, knowledge transfer, and transparency provisions stronger than those in the current Chair's Text would advance SDGs that recognize impacts on developing nations and promote a sustainable and just transition. Such provisions could improve drinking water supply and infrastructure (SDG 6), enable smoother clean energy development through use of electrical wire insulation (SDG 7), and allow for infrastructure development using more environmentally sound plastics strategies so they do not forgo the benefits of plastics withheld by developed nations (SDG 9). Without provisions to facilitate this component of the transition, not only could a future GPT produce a downstream-centric instrument, but also a developed nation-dominated instrument.

III. Conclusion

December 2024 saw two years of INC sessions falter at the final stretch. Because each stage of the plastic life cycle is riddled with complexities, crafting and agreeing to a document that effectively managed each component was always going to be challenging, and failure was always a distinct possibility. Yet, as 2025 neared, it seemed that a treaty, albeit one that would disappoint many environmentally focused advocates would be disappointed, could coalesce into final form. That result did not come to pass. However, the INC left a door open to reinstitute negotiations,²⁰⁰ resolve broad outstanding disagreements, and adopt a final, likely limited, treaty.

If and hopefully when negotiators reconvene, it is essential for them to ensure that the final text considers interconnectivity of the instrument with deeply entrenched, preexisting waste governance. Because earlier treaties have left significant governance gaps related to plastic-specific obligations for waste management and pollution mitigation, a consciously constructed GPT could encourage effective cooperation where opportunities for conflict exist. Conscientious efforts to foster cooperation would permit treaty implementation focused on transition to a circular plastic economy that benefits sustainable development through the broadest knowledge base possible.

To the disappointment of many in favor of stronger sustainability and circularity principles, a final text is likely to center on waste management provisions, because upstream

184. El-Jourbagy et al., *supra* note 64, at 111.

185. *Id.*

186. de Sousa, *supra* note 2, at 19; *see also* Hull, *supra* note 163, at 129, 138.

187. Resolution 5/14, *supra* note 5, at 3-4.

188. *Id.*

189. Barrowclough & Birkbeck, *supra* note 69, at 10.

190. *Id.*

191. *Id.* at 14.

192. Chair's Text, *supra* note 37, arts. 12, 17.

193. *Id.* art. 12.

194. *Id.* art. 17.

195. Sitaloppi & Jähi, *supra* note 137, at 8.

196. Stoett et al., *supra* note 3, at 4-5.

197. Resolution 5/14, *supra* note 5, at 3.

198. Hull, *supra* note 163, at 155.

199. Stoett et al., *supra* note 3, at 2.

200. Lee & Volcovič, *supra* note 123.

commitments like production caps will not be entertained by petrochemical stakeholders.²⁰¹ EPR could serve as a compromise for parties to return to the table with production caps off-limits in what may predominantly be a plastic waste treaty. Even if that option proves too ambitious, sustainability advocates should concede to a treaty foundation focused on waste management.

From that framework, the building blocks can be laid to transform the types of plastic produced based on

downstream collection, sorting, and recyclability requirements, while strategizing to expand the treaty in later Conferences of the Parties. To solidify any prospect for a circular economy, capacity-building, knowledge transfer, and transparency provisions must be agreed upon to ensure the developing world's sustainable transition needs are considered. Unfortunately, that is still where much of developed nations' waste is likely to be disposed of in the coming decades.

201. Kantai et al., INC-5, *supra* note 60, at 4-5.