environmental investigation agency

OCEAN

May 2026

BRIEFING

BENDING THE CURVE ON PLASTIC POLLUTION

Why Upstream Action and Coalition Pathways are Essential to Deliver Results

Summary for Policymakers

INTRODUCTION

Global plastic pollution continues to rise despite decades of policy focus on downstream waste management.[1,2,3,4]

Negotiations towards an international legally binding instrument to end plastic pollution (ILBI) under UNEA Resolution 5/14 have progressed in form but remain politically stalled on several foundational questions.[5,6] Central among these is whether the treaty will meaningfully address plastic production and consumption, or continue to focus on downstream action.[6,7]

Modelling undertaken by the Environmental Investigation Agency (EIA) and Eunomia Research & Consulting Ltd provides clear evidence that upstream action on plastic production is both necessary and effective.[6,7] It also demonstrates that coalitions of countries acting together can deliver significant global reductions to production and consumption levels, as well as waste generation and greenhouse gas (GHG) emissions, even in the absence of universal participation.[7]

This briefing summarises the findings of the report Bending the Curve and their implications for the ILBI.

PLASTIC PRODUCTION TRAJECTORIES ARE INCOMPATIBLE WITH ENVIRONMENTAL AND CLIMATE GOALS

On current trajectories, global plastics production is projected to reach approximately 766 million tonnes by 2040, driven by continued investment in primary (virgin) polymer production capacity.

This growth is decoupled from the ability of waste management systems to cope with resulting materials flows and from global commitments on climate and biodiversity.[2,4,8]

Several structural dynamics define the current plastic economy:

- Plastic production continues to outpace population and economic growth, making plastic the fastest growing bulk material globally.[1,3]
- Primary polymers are projected to account for almost 90 per cent of plastics on the market by the mid-century, despite decades of circular economy policy. [3,9,10]
- Global plastic waste generation is projected to be 621 million tonnes per year by 2040, and mismanaged waste at 112 million tonnes annually, disproportionately affecting lower-income countries.[2,3,4]
- GHG emissions from the plastics lifecycle are projected to reach nearly 3.8 Gt CO_2e annually by 2040, consuming a significant share of the remaining carbon budget consistent with limiting warming to 1.5°C.[1,5,11]

These trends demonstrate that waste-focused strategies cannot succeed in the context of continued production growth and negotiators must explore all available pathways to ensure measures to achieve sustainable production and consumption form part of the final package.[6,7]

WHY PRODUCTION AND CONSUMPTION CONTROLS ARE DECISIVE

EIA and Eunomia Research & Consulting Ltd's modelling confirms that the scale of plastic production is the primary determinant of downstream outcomes, including waste generation, environmental leakage and GHG emissions.

Improvements in recycling and waste management deliver diminishing returns as overall plastic volumes continue to rise. Without reducing production and consumption, even highly developed systems are unable to prevent escalating waste and pollution.[3,9]

Global plastic production is highly concentrated among a small number of countries and companies, many operating with state-influenced strategies.[9,10]

This concentration allows policy action by a limited number of major producers, taken in tandem with major consumers, to materially shift global production and consumption trajectories and deliver disproportionate environmental benefits, challenging the assumption that global action requires universal participation from the outset.[7]

Concerns that cooperation from a plurilateral coalition would inevitably lead to large-scale displacement through trade are not supported by the evidence. While limited participation can result in some leakage, the inclusion of even one major producer significantly reduces displacement and broader coalitions largely eliminate it altogether.[6] As participation expands, outcomes converge across the trade scenarios, demonstrating that ambition and cooperation are the most effective means of preventing leakage.[6]

Finally, the modelling reinforces that plastic production is a climate issue. Plastic remains overwhelmingly fossil fuel-based and continued expansion of production is incompatible with global climate goals.[1,8] Reducing plastic production represents one of the most direct and effective opportunities to reduce GHG emissions in a sector otherwise characterised as hard to abate.[1,10]

WHAT THE MODELLING SHOWS

EIA modelled four scenarios from 2025 to 2040, reflecting realistic political configurations that could emerge from negotiations on an ILBI, either in the form of flexibility mechanisms built into the treaty architecture to allow ambitious countries to move forward or alternative cooperation arrangements, such as a 'Coalition of the Willing' should the negotiations fail to reach agreement.

Under a business as usual pathway, plastic production rises to 766 million tonnes by 2040, plastic waste generation reaches 621 million tonnes, mismanaged waste remains high at 112 million tonnes, and net GHG gas emissions climb to 3.8 billion tonnes carbon-dioxide-equivalence ($GtCO_2e$) (Table 1). In contrast, Scenario 1 (Coalition of the Willing) reduces plastic production by around 16–18 per cent relative to business as usual, alongside similar reductions in waste and emissions (Table 1).

Stronger action delivers far greater gains. Scenario 2 (Coalition of the Willing plus China) cuts plastic production by 28–38 per cent and reduces plastic waste generation by up to 38 per cent, while net emissions fall by around one third. Scenario 3 (Coalition of the Willing plus China plus Middle Countries, such as Brazil, India and South Africa) delivers the most transformative outcomes, reducing plastic production by around 45 per cent to just over 420 million tonnes by 2040 (Table 1). Plastic waste generation falls by roughly 44 per cent, mismanaged plastic waste is cut by more than half, and net GHG gas emissions decline by around 45 per cent. Differences between unrestricted and restricted trade scenarios largely disappear under Scenario 3, indicating that broad, coordinated action minimises displacement and delivers consistent global benefits (Table 1).

Table 1: *Modelled outcomes for plastic production, waste and GHG gas emissions in 2040 under three policy scenarios compared with a business-as-usual trajectory, with results shown under unrestricted and restricted trade assumptions.*

MODELS SCENARIO		SCENARIO 1	SCENARIO 2	SCENARIO 3	BUSINESS-AS-USUAL
Total Primary and secondary plastic production	Unrestricted	641 million tonnes	551 million tonnes	421 million tonnes	766 million tonnes
	Restricted	626 million tonnes	477 million tonnes	419 million tonnes	
Total polymer use	Unrestricted	641 million tonnes	551 million tonnes	421 million tonnes	766 million tonnes
	Restricted	626 million tonnes	477 million tonnes	419 million tonnes	
Total plastic waste generated	Unrestricted	517 million tonnes	445 million tonnes	347 million tonnes	621 million tonnes
	Restricted	505 million tonnes	386 million tonnes	345 million tonnes	
Total mismanaged plastic waste	Unrestricted	98 million tonnes	84 million tonnes	54 million tonnes	112 million tonnes
	Restricted	97 million tonnes	72 million tonnes	53 million tonnes	
Total net GHG emissions	Unrestricted	3,210 $MtC0_2e$	2,762 $MtC0_2e$	2,118 $MtC0_2e$	3,836 $MtC0_2e$
	Restricted	3,146 $MtC0_2e$	2,450 $MtC0_2e$	2,108 $MtC0_2e$	

The modelling demonstrates that plurilateral coalitions can bend the global plastics curve without universal participation and supports initiatives to explore flexibility mechanisms and alternative pathways rather than being held hostage by blocking forces.

POLICY IMPLICATIONS

In the latter part of the negotiations, measures on plastic production and consumption have been progressively sidelined despite widespread support and specific proposals for both textual elements and quantitative targets to act as a guiding star for the instrument.[12,13]

The Bending the Curve evidence demonstrates that such an approach is inconsistent with what is required to end plastic pollution. Where binding upstream action is excluded, delayed or deferred to future processes, the likelihood of increased pollution and emissions increases.

International law provides multiple legitimate pathways for states to cooperate outside stalled or diluted negotiation processes. For example, coalition-based approaches such as the pursuit of a plurilateral agreement outside of the framework of the INC can establish binding rules, create de facto global standards and expand participation over time, without foreclosing future universality.[5,6,14]

Equally, in the negotiations to date, there has been limited scope to explore the potential of flexibility mechanisms based on a country's capacity and readiness, whereby such an approach can ensure those countries ready to act are not held back by a minority. Pairing flexibility mechanisms with strong financial and technical assistance is an approach that can ensure equitable participation in pursuing collective global ambition.

POLICY RECOMMENDATIONS

GOVERNMENTS SEEKING TO ALIGN WITH THE EVIDENCE IN THE NEGOTIATIONS SHOULD:

1. Provide clear signposting in the text of the ILBI to facilitate measures to achieve sustainable production and consumption of plastics, including text in the preambular paragraphs and objectives, to inform future interpretation of the instrument.

2. Agree measures to achieve sustainable production and consumption of plastics such as national data on reporting, a global target or target-setting process, national targets or measures on production and consumption as part of the legally binding obligations for inclusions in national plans, a review clause that enables periodic review of efforts to reduce production and a clear link to monitoring progress and effectiveness evaluation.

3. Enable coalitions of willing states to act through the exploration of flexibility mechanisms that link progressive measures on production and consumption with financial and technical assistance, while allowing scope for other countries to join later.

4. Develop a resolution for the Conference of Plenipotentiaries that outlines the interim work needed on production reduction and to facilitate early action, including key elements such as work on national data reporting formats and methodologies, steps towards a target-setting process such as identification of baseline years and relevant implementation aspects.

5. Establish criteria to phase down hazardous and problematic polymers, using objective, criteria based approaches to protect human health and enable safe circular economy.

OUTSIDE OF THE NEGOTIATIONS, GOVERNMENTS SHOULD:

6. Explore alternative pathways to the INC such as plurilateral agreements or Protocols under existing multilateral environmental agreements, such as the Basel Convention, to safeguard against the failure to achieve an ambitious outcome in the INC.

7. Align plastic controls with climate policy, recognising plastic production as a significant and growing source of GHG emissions.

8. Prioritise prevention and reduction in national plans and policies in line with the waste hierarchy.

9. Deploy complementary measures beyond the INC, including industrial policy, public procurement, extended producer responsibility and trade measures, while catalysing investment into sustainable alternatives such as systems designed to facilitate reuse, repair, refill and overall reduction.

CONCLUSION

The plastics crisis is fundamentally a production crisis. EIA's modelling shows that coordinated upstream action can rapidly reverse current trajectories, delivering substantial reductions in plastic pollution and associated emissions within the next fifteen years.

The choice facing policymakers is no longer whether such action is possible, but whether to continue facilitating approaches that manage pollution while allowing its drivers to expand.

References

1. Lawrence Berkeley National Laboratory (LBNL) (2024). *Climate Impact of Primary Plastic Production*. Executive Summary Available here.

2. Geyer, R., Jambeck, J. R., & Law, K. L (2017). *Production, use, and fate of all plastics ever made*. Science Advances, 3(7), e1700782. Available here.

3. Li, J. (2021) Global plastic recycling: *Challenges and policy implications*. Resources, Conservation & Recycling, 173, 105722. Available here.

4. United Nations Environment Programme (UNEP) (2021). *From Pollution to Solution: A Global Assessment of Marine Litter and Plastic Pollution*. Nairobi: UNEP. Available at: Available here.

5. United Nations Environment Assembly (UNEA) (2022). *Resolution 5/14: End plastic pollution – towards an international legally binding instrument*. Available here.

6. Addor, F., Mardasova, A., Martin, J., & Saier, S. (2022). *The case for upstream measures in a global plastics treaty*. Geneva: Center for International Environmental Law (CIEL). Available here.

7. Environmental Investigation Agency (EIA) (2024). *Addressing the Issue Head On: Measures on Polymer Production in the Global Plastics Treaty* Available here.

8. Zheng, J. & Suh, S (2019). *Strategies to reduce the global carbon footprint of plastics*.

9. OECD (2022). Global Plastics Outlook. Available here.

10. Dahmouni, I., Issifu, I., & Sumaila, U. R (2025). *Assessing the ecological and economic transformation pathways of plastic production systems*. Journal of Environmental Management, 374, 124104. Available here.

11. Issifu, I., Dahmouni, I., & Sumaila, U. R (2025). *Assessing the ecological and economic transformation pathways of plastic production systems*. Journal of Environmental Management, 374, 124104. Available here.

12. PSIDS on Article 6. Available here. Panama on behalf of a group of countries. Available here.

13. Rwanda and Peru (2024). *Conference Room Paper on a Global Target for the Production of Primary Plastic Polymers*. Submitted to the Intergovernmental Negotiating Committee (INC). Available here.

14. Environmental Investigation Agency (EIA) (2026). *Shared Responsibility: Why the European Union and China should collaborate on plastic production controls in the Global Plastics Treaty*. Available here.

environmental investigation agency

EIA UK
62-63 Upper Street, London, N1 0NY, UK
eia-international.org
+44 (0)20 7354 7960