



# **Perspectives on Plastic Lifecycle: Plastics Use & Demand**

**National Academies Roundtable on Plastics**

**December 2024**



# Today's Agenda

- > Who is the U.S. Plastics Pact
- > Uses of Plastics
- > Opportunities for Reuse and Reduction






# The U.S. Plastics Pact

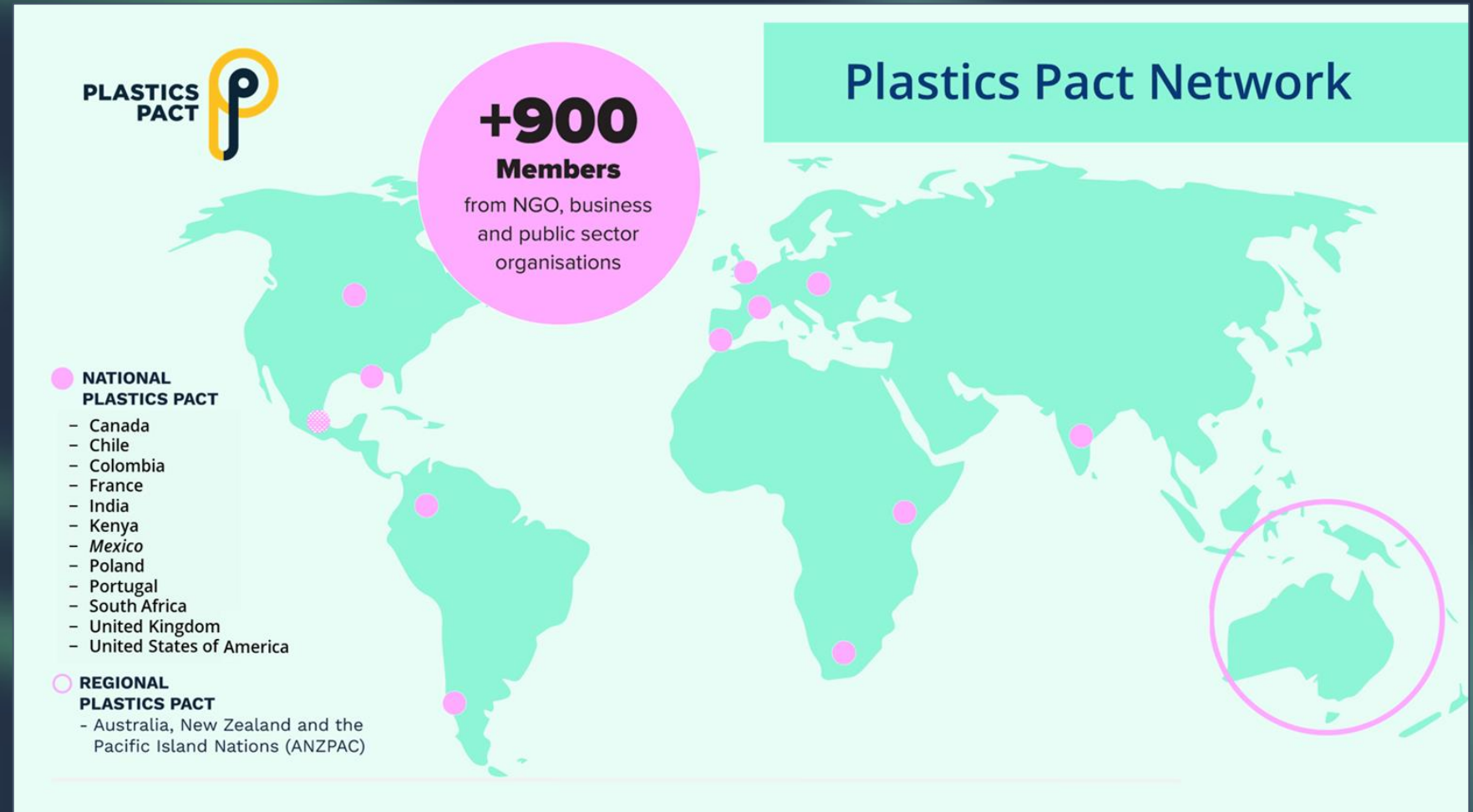






The **U.S. Plastics Pact** brings together businesses, not-for-profit organizations, government agencies, and research institutions that work together toward a common vision of a circular economy for plastics. This vision aims to ensure that plastics never become waste by eliminating the plastics we don't need, innovating to ensure that the plastics we do need are reusable, recyclable, or compostable, and circulating all the plastic items we use to keep them in the economy and out of the environment.

# PLASTICS PACT GLOBAL NETWORK\*



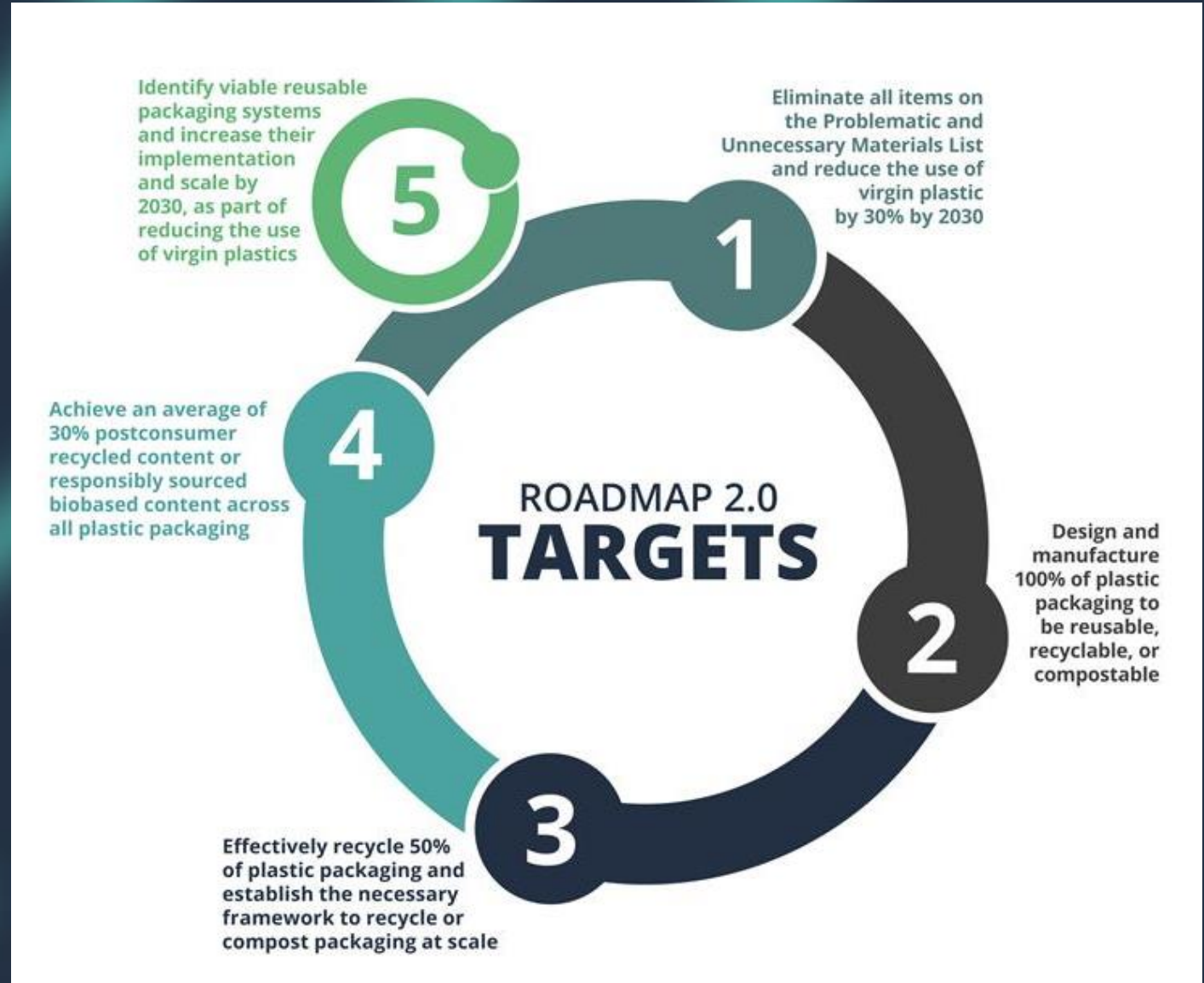
\*Mexico is currently a Plastics Pact in development



# U.S. Plastics Pact is a partnership of more than 130 Activators



# Roadmap 2.0 Targets







# Uses for Plastic





# But First, Some Statistics...

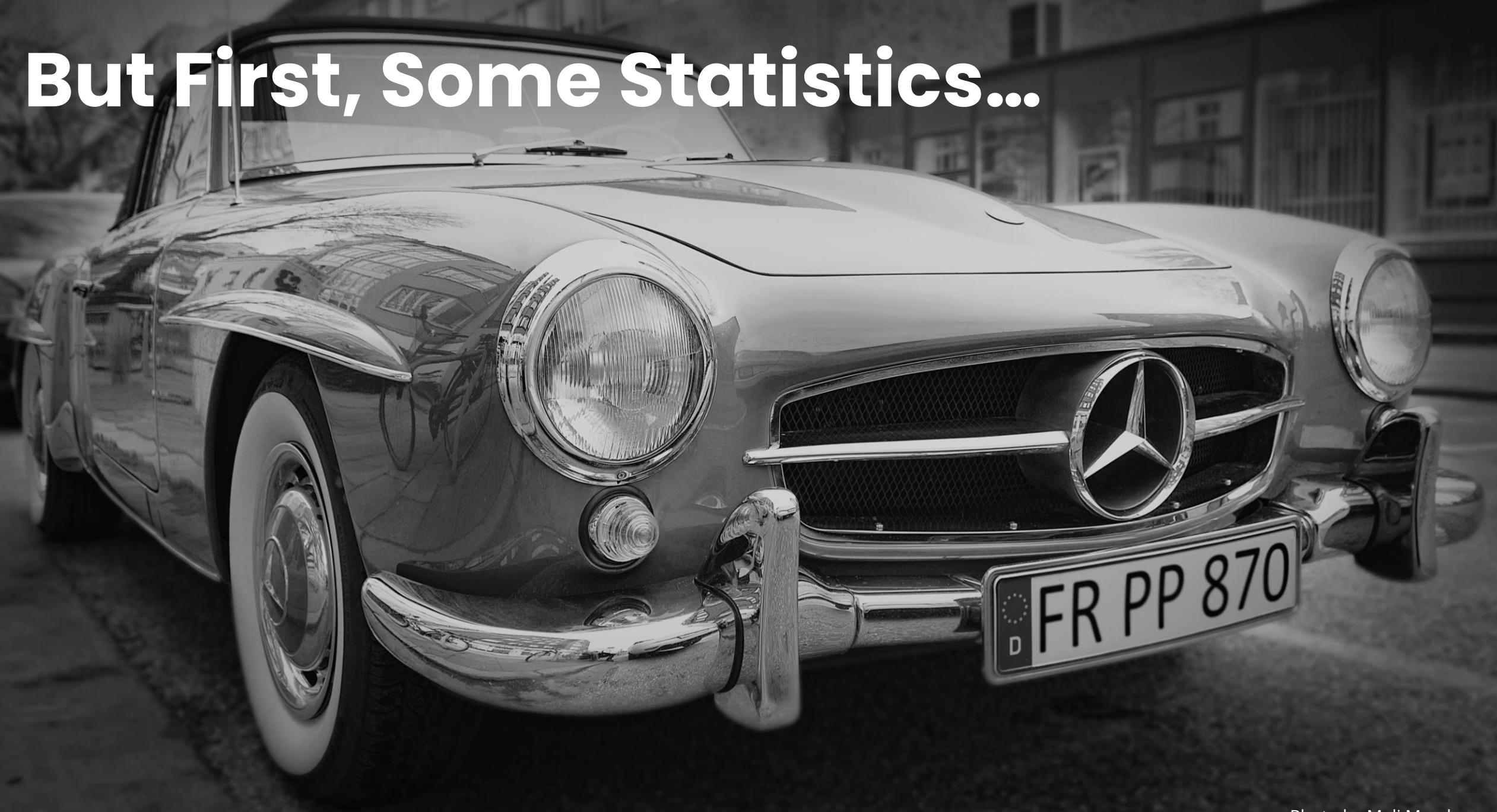


Photo by Mali Maeder



# 1950's vs Today

## Women in the workforce:

- 29% in 1950 vs 59% in 2019<sup>1</sup>

## Single parent homes:

- 13% in 1950 vs 27% in 2019<sup>1</sup>

## Supply chain footprint

- Locally sourced vs internationally sourced

## SKU's per store

- 3,000 per store in 1950 vs 47,000 per store in 2010<sup>2</sup>



<sup>1</sup> <https://www.census.gov/library/stories/2022/03/1950-census-records-window-to-history.html>

<sup>2</sup> <https://www.fmi.org/blog/view/fmi-blog/2018/05/29/from-1950-to-2010-how-the-grocery-industry-has-changed>





## **Plastic Often Wins in the Areas of:**

- Cost
  - Light weight material
  - Low cost for virgin material
- Convenience
  - Individually wrapped packaging
  - Easy to dispose of
- Functionality
  - High performing materials optimized over decades





# Important Functions

## Packaging:

- Health & Safety
- Food Safety & Shelf Life
- Product Protection



# Low Cost, High Performing Materials for Durables as Well

A close-up photograph of several rows of bright red, molded plastic stadium seats. The seats are arranged in a tiered fashion, with the focus on the middle row. Each seat has a circular hole in the center of the seat pan and two smaller circular indentations on the sides. The surface of the seats is covered with numerous small, clear water droplets, suggesting they have been recently wet. The background is dark and out of focus, emphasizing the vibrant red color and texture of the seats.





Are all plastics really necessary?

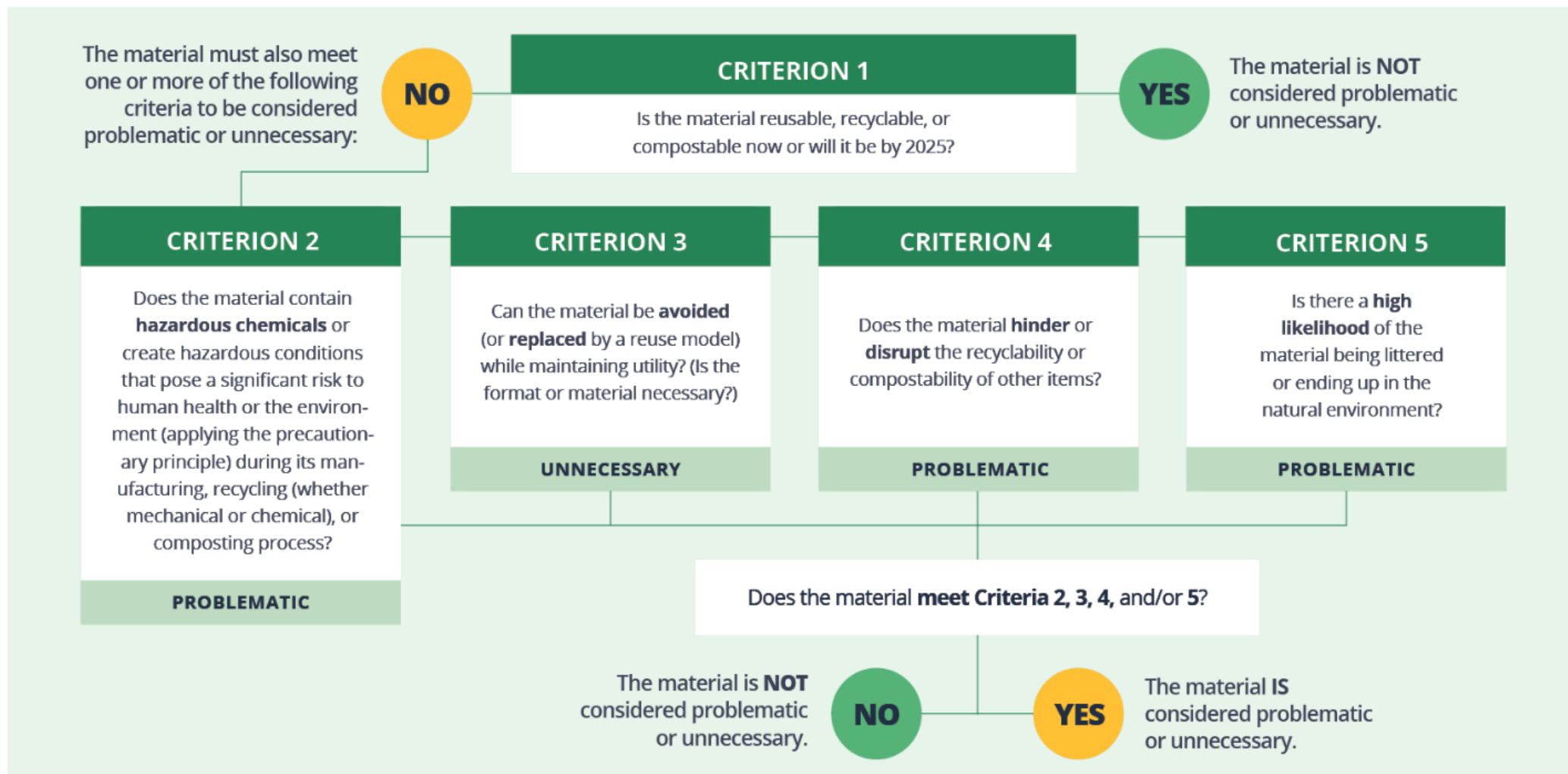
What can be eliminated or replaced?

Where do we even start????



## TARGET 1

# PROBLEMATIC AND UNNECESSARY MATERIALS LIST: DECISION TREE







# Opportunities for Reuse & Reduction







# Reusable Packaging Opportunities

- Distribution chain (business to business)
- Foodservice (closed vs open loop)
- Retail (online vs in store, return vs refill)



# Reusable Packaging Challenges

- > Consumer trial & adoption
  - > Lost in a sea of single-use options
  - > Convenience, convenience, convenience
  - > Preference for variety
- > Return rates
  - > To charge or not to charge?
- > Washing infrastructure
  - > Space considerations
  - > Health & safety
- > Supply chain logistics
  - > Complexity in returning to filling location
  - > Transportation & labor considerations
- > Cost structure
  - > Consumers unlikely to pay more for less convenient option



# Collective action to advance solutions

- > Engaging the consumer
  - > [Unpacking Consumer Perspectives on Reusable Packaging](#) (U.S. Plastics Pact & Closed Loop Partners)
  - > Forthcoming Ready for Reuse study
- > Establishing consistency, driving efficiency
  - > The emergency of reusable packaging standards
  - > Challenge of communicating brand identify on an interchangeable container
- > Washing infrastructure
  - > Mapping out infrastructure by region
  - > Centralized hubs
- > Supply chain logistics
  - > Concentrated efforts in key regions help in achieving economies of scale



# Reduction Considerations

- > Elimination
  - > Maintaining functionality
- > Concentrates
  - > Maintaining product performance
- > Lightweighting
  - > Consumer perception of quality
- > Changing Materials
  - > Impact to carbon footprint
  - > Chemicals of concern



An aerial photograph of a beach and ocean. The left side shows a sandy beach with some footprints, and the right side shows the ocean with white-capped waves breaking. A white rectangular box is overlaid on the left side of the image, containing the main text.

**Only together can we  
achieve a circular  
economy for plastics.**





## **Questions?**

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## **Thank you!**