



Everything Speaks for Bioplastics

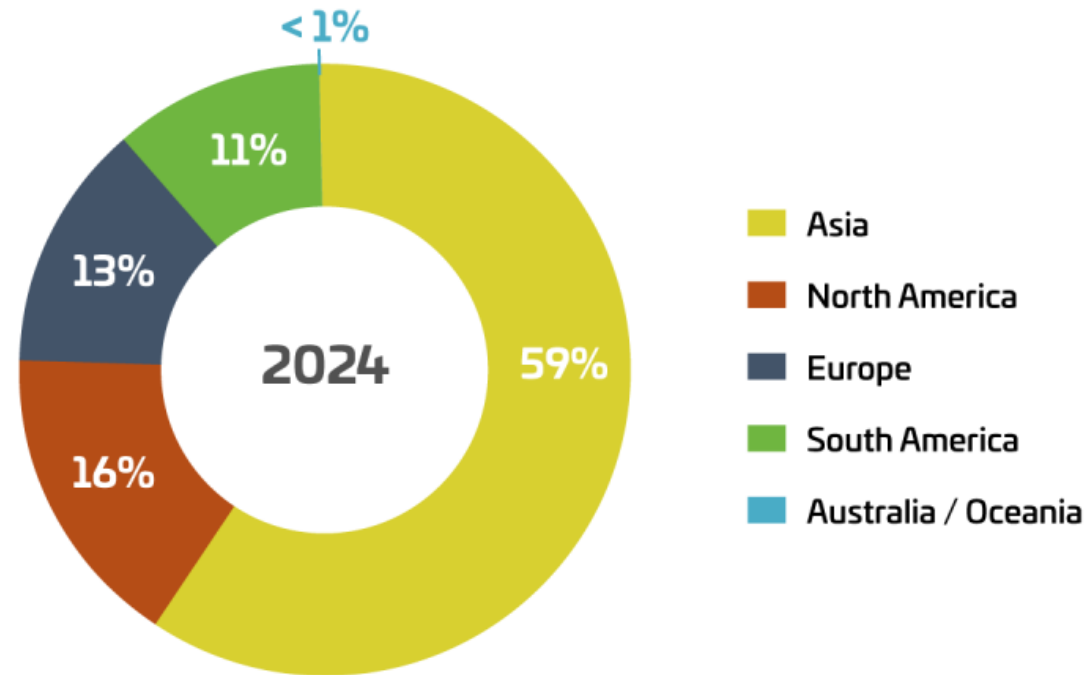
The difference between continuous improvement and disruption!

Kodak

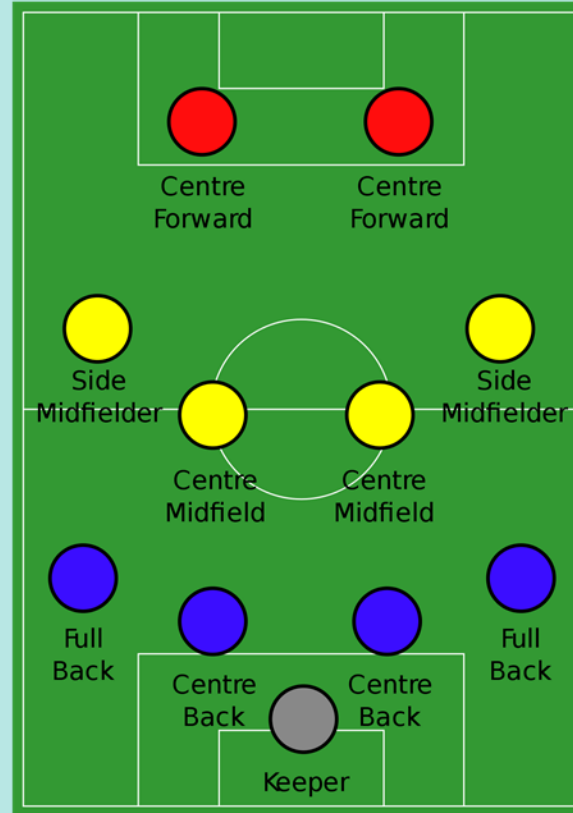


Global Production Capacities of Bio-based Polymers per Region 2024

Preliminary data; without cellulose acetate, epoxy resins and polyurethanes



System
Principles for success
Strategy
Tools
Actions



Systemthinking
is essential but
not unique for
sustainability

COMPARE WITH FOOTBALL

Recycling is normally a no-brainer...but..

“A Circle Economy
would reduce
greenhouse gas
emissions by **72%**”

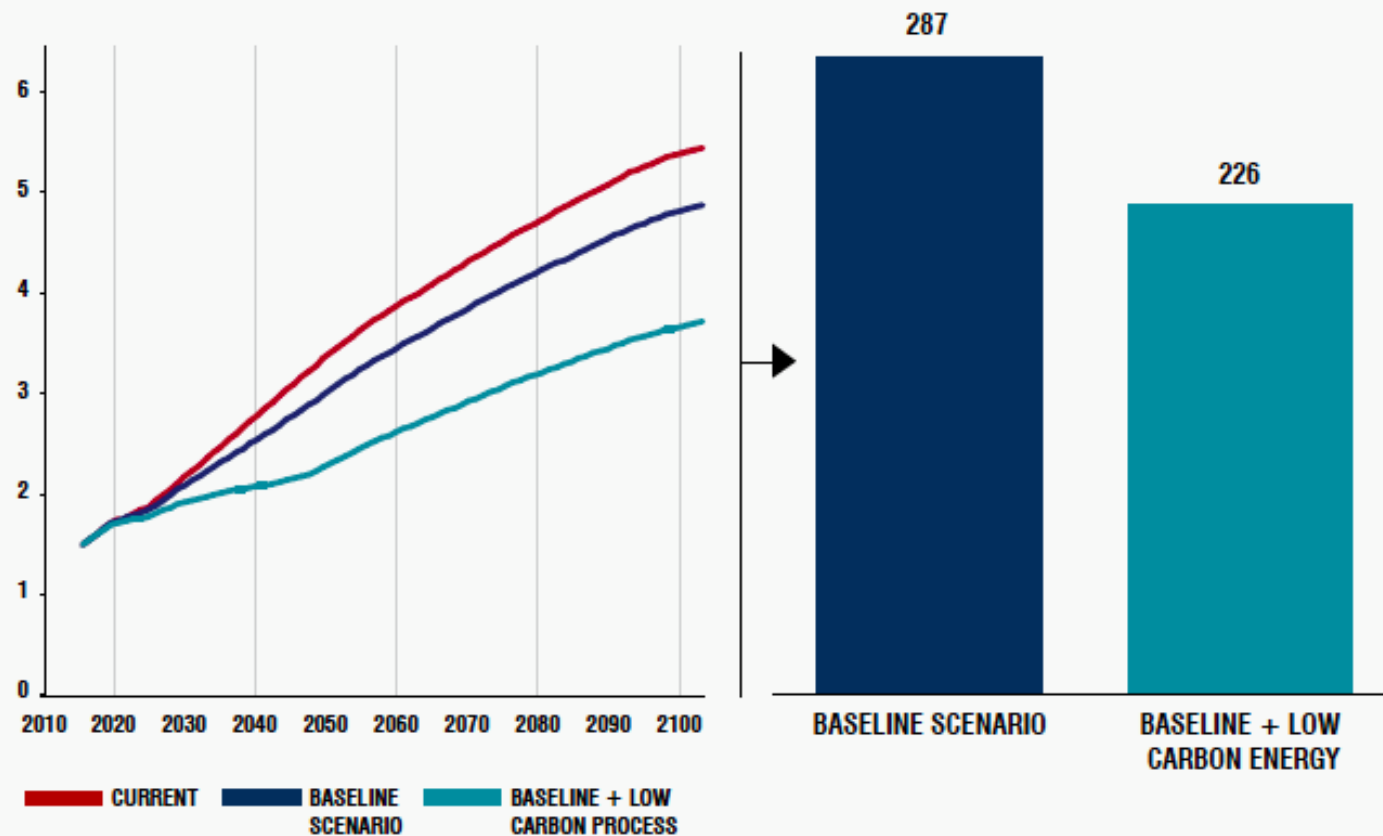
WEF



PLASTICS ALONE RISK EXCEEDING THE CARBON BUDGET QUOTA AVAILABLE FOR INDUSTRIAL EMISSIONS

CO₂ EMISSIONS, PLASTICS PRODUCTION
Gt CO₂ PER YEAR, 2015-2100, GLOBAL

CUMULATIVE CO₂ EMISSIONS, PLASTICS PRODUCTION
Gt CO₂, 2015-2100, GLOBAL

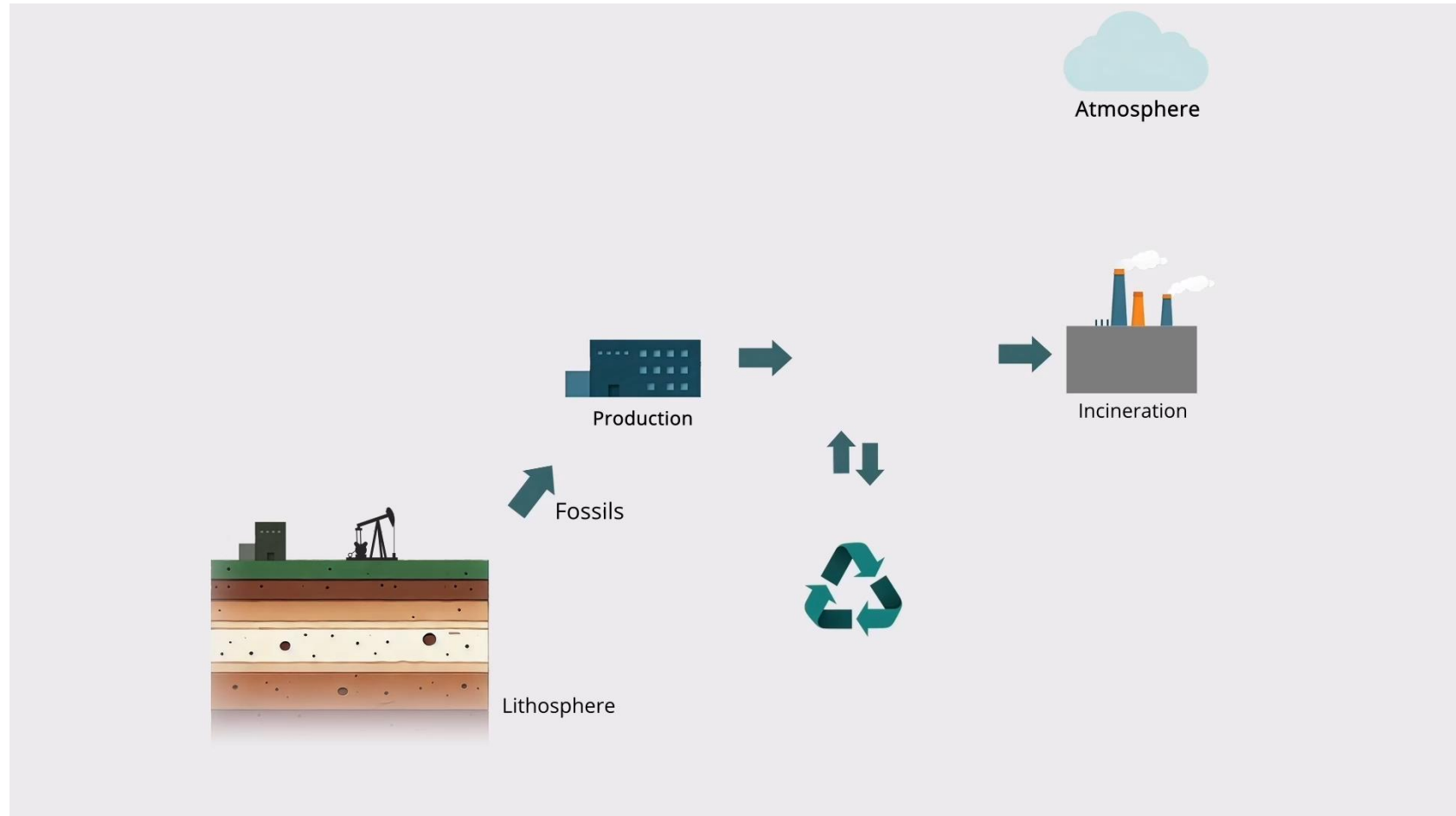


SOURCE: MATERIAL ECONOMICS MODELLING.



NORDISK
BIOPLASTFÖRENING

Recycling can help, but fossil-free is essential!



Scientific Principles defining sustainability

In a sustainable society, nature is not subject to systematically increasing...

Non-fossils



1... concentrations of substances from the earth's crust (such as fossil CO₂ and heavy metals)

Persistent polymers



2... concentrations of substances produced by society (such as antibiotics and endocrine disruptors)

Responsible sources



3... degradation by physical means (such as deforestation and draining of groundwater tables).



4. And in that society there are no structural obstacles to people's health, influence, competence, impartiality and meaning.

When short term actions undermines the purpose :(

Designkrav for blød plast - Hovedkomponent

	Grønt niveau	Gult niveau	Rødt niveau
Materiale	<ul style="list-style-type: none">- Mere end eller lig med 90 vægtprocent PP enkel eller flerlagsmaterialeeller- Mere end eller lig med 95 vægtprocent PE enkel eller flerlagsmateriale	<ul style="list-style-type: none">- Blanding af PE og PP med mere end eller lig med 90 vægtprocent	<ul style="list-style-type: none">- Bionedbrydelig plastOg/eller- Alle andre materialer fx mono-PS, flerlagsfolier med blandede materialer fx PET, PVC, PS, papir

‘single-use plastic product’

”with the exception of natural polymers that have not been chemically modified”



4.6 PLAST

Idag kommer majoriteten av plast från fossil råvara som leder till klimatförändringar. Plasten bidrar också till nedskräpning vilket är ett stort globalt problem som hotar det marina ekosystemet, människor och djur. Systembolaget ska undvika och reducera plast i inköp och välja de mest hållbara alternativen när plast

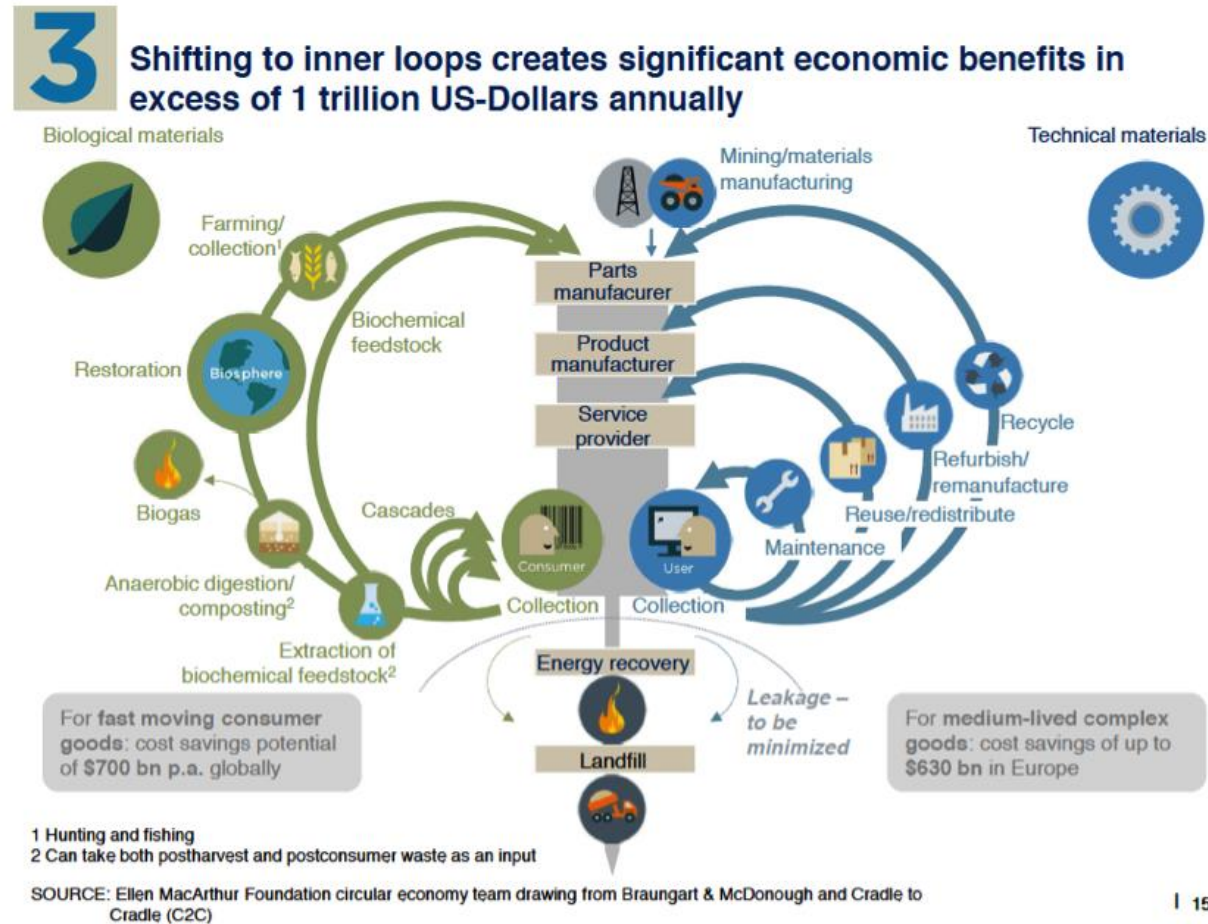
Våra krav

Plastråvaran **ska** i första hand vara återvunnen och i andra hand biobaserad.

Plast **ska** gå att återvinna i befintliga återvinningssystem.

PVC, Ftalater och Bionedbrytbar plast **ska** undvikas. Engångsartiklar av plast **ska** undvikas.^h

The biological part of circular economy



Make our Soil great again

The Quality of the soil is essential for:

1. Our food production
2. Water management
3. Biodiversity

Current situation

1. The soil becomes exhausted
2. Water management is disrupted
3. Biodiversity is declining

Important causes

- 1) The carbon content of the soil is too low
- 2) Pollution by microplastics



McKinsey Report on sustainable packaging

- McKinsey report on sustainability in packaging 2023
- Consumer perspective
- Survey incorporating responses from over 11500 consumers across 11 countries
- Compostable packaging and plant-based packaging within top 3 ranked sustainable packaging options

europeanbioplastics

McKinsey
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Materials Practice

Sustainability in packaging 2023: Inside the minds of global consumers

Consumer sentiment on sustainability is changing as we emerge from the COVID-19 pandemic. A few common themes are clear, but views on packaging materials and environmental priorities vary by country.

This article is a collaborative effort by David Feber, Abhinav Goel, Daniel Nordigården, Suku Ponshe, and Mukund Prasad, representing views from McKinsey's Materials Practice.



August 2023

Bildtext

Environmental impacts ranked by respondents who indicated “extremely” or “very concerned”

Ranked in top 2

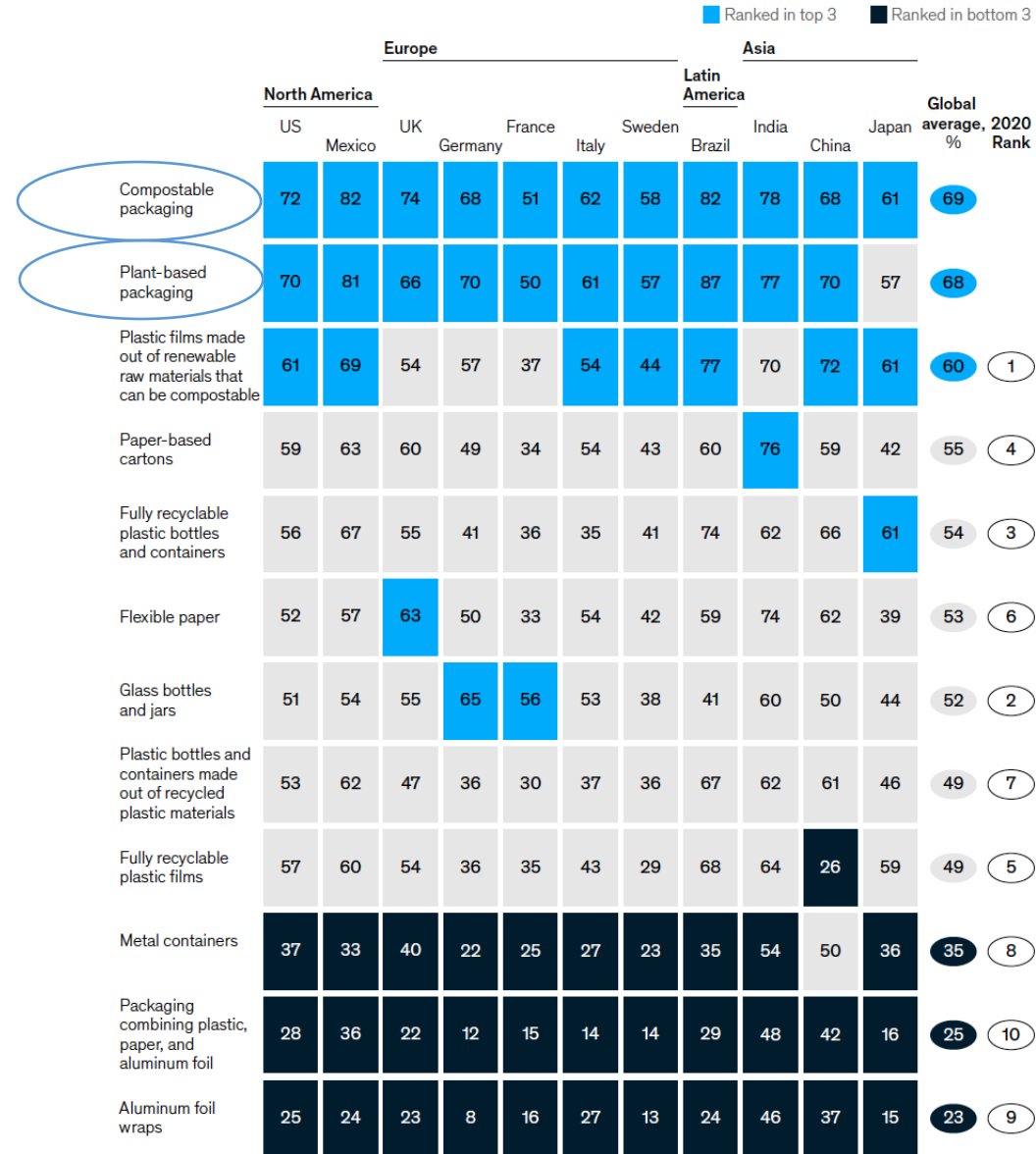
Ranked in bottom 2

	Europe							Asia				2020 global rank
	North America		UK	Germany	France	Italy	Sweden	Latin America		China	Japan	
	US	Mexico						Brazil	India			
Water pollution	2	1	5	2	2	1	2	1	1	1	2	1
Ocean litter	1	2	1	1	1	2	1	3	7	4	1	2
Climate change	5	6	2	4	5	3	4	7	4	5	4	6
Waste production	3	7	3	6	6	5	6	5	3	3	3	5
Air pollution	4	5	7	7	7	4	7	2	2	2	5	3
Deforestation	7	3	4	3	3	6	5	4	6	7	6	4
Natural resource depletion	6	4	6	5	4	7	3	6	5	6	7	7

Source: McKinsey Packaging Survey, March 2023

Consumer perceptions around the world are starting to align with compostable solutions.

Q: "How sustainable do you think each of these packaging types are?," ranked by number of respondents who indicated "extremely" or "very strong," %



Source: McKinsey Packaging Survey, March 2023

McKinsey & Company

In Summary

- Priority of principles very important when dealing with complexity.
- Authorities and policy makers - big knowledge gaps.
- Much better acceptance among customers than authorities.
- Start with defining a sustainable PLC, select materials as next step.
- Recycling is beneficial but far from a single solution.
- NON-fossil content is essential!
- Composting supports; Bio-CCS, soil-health, non-pollution and true circular economy.

