Revolutionizing materials with molecular recycling

Globe EU event

8 February 2023

Chris Killian

Eastman.com/circular

EASTMAN

A materials innovation company

- Celebrating more than **100 years of vital innovations that enhance people's lives every day**
- A Fortune 500 company with approximately **14,500 employees and approximately 10.5 billion USD** in revenue
- Dedicated to **enhancing the quality of life in a material way**
- Sustainability strategy commitment to **mitigating climate change, mainstreaming circularity** and **caring for people and society**

Global Commitment

U.S. PLASTICS PACT

ENERGY STAR AWARD 2019 PARTNER OF THE YEAR Sustained Excellence

AMERICA'S MOST JUST COMPANIES Forbes 2017

Responsible Care® OUR COMMITMENT TO SUSTAINABILITY

FAST COMPANY World Changing Ideas 2022

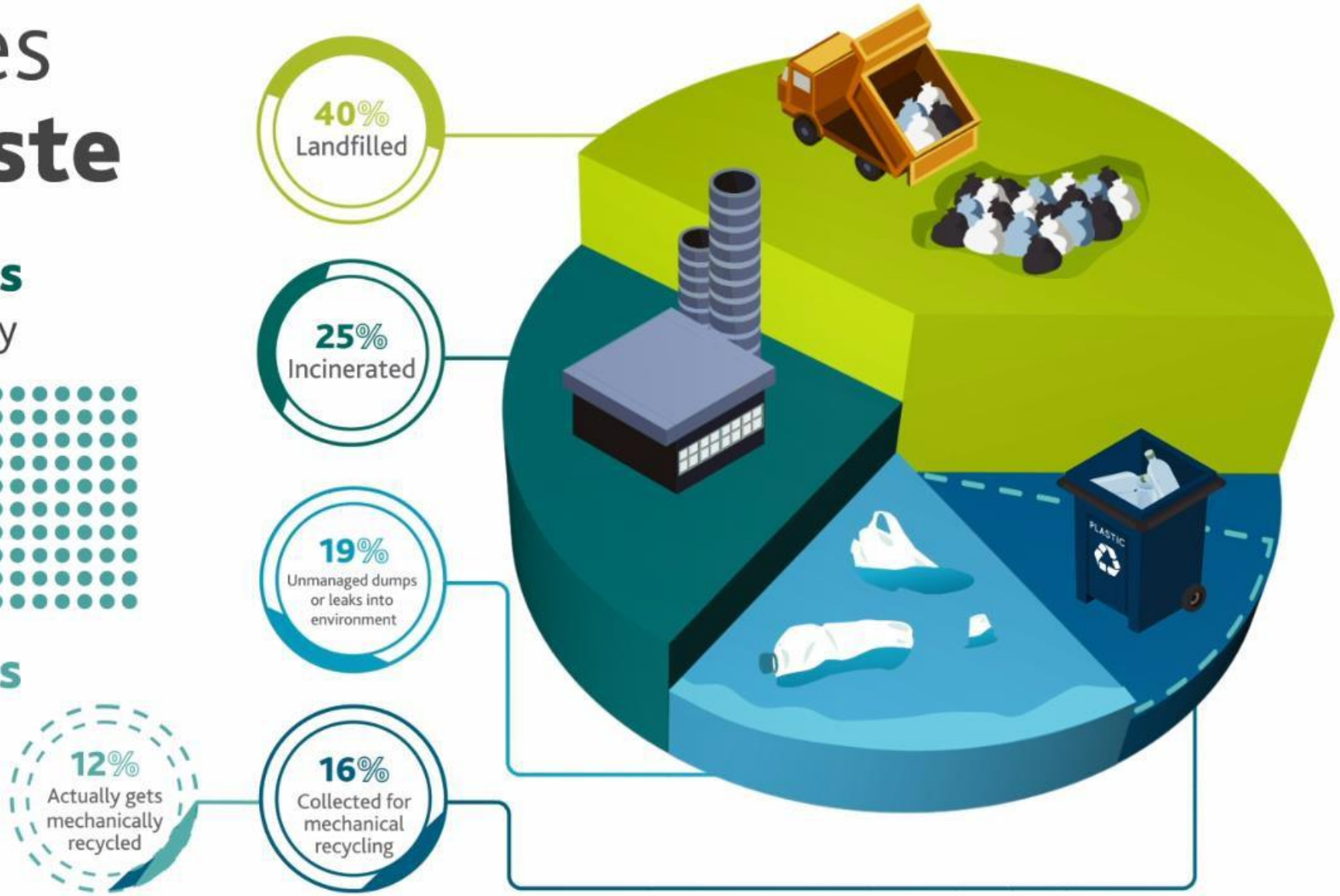
TOP 100 BARRON'S Most Sustainable Companies 2021

WSJ 100 MOST SUSTAINABLY MANAGED COMPANIES 2020

Opportunities **going to waste**

300 million metric tons
of plastics are produced globally

260 million metric tons
of plastics are disposed



Plastics are essential …

but the waste issue must be solved

HYDRATE

Plastics help to deliver hydration to those who need it

FEED

Advanced packaging technologies preserve fruits, vegetables, & meats

CARE

Plastics improve sterility, patient safety, and comfort in therapies

REDUCE **REUSE** **RECYCLE**

Climate impact of plastics

Reducing greenhouse gas emissions:

In applications analyzed by McKinsey & Company, plastics had a lower total greenhouse gas contribution than the next-best, non-plastic alternative for that product in the U.S. in 2020.

In carpets, plastic emitted

80% less

GHG than wool

In soft drink containers, plastic emitted

50% less

GHG than aluminum

In soap containers, plastic emitted

15% less

GHG than glass

In t-shirts, plastic emitted

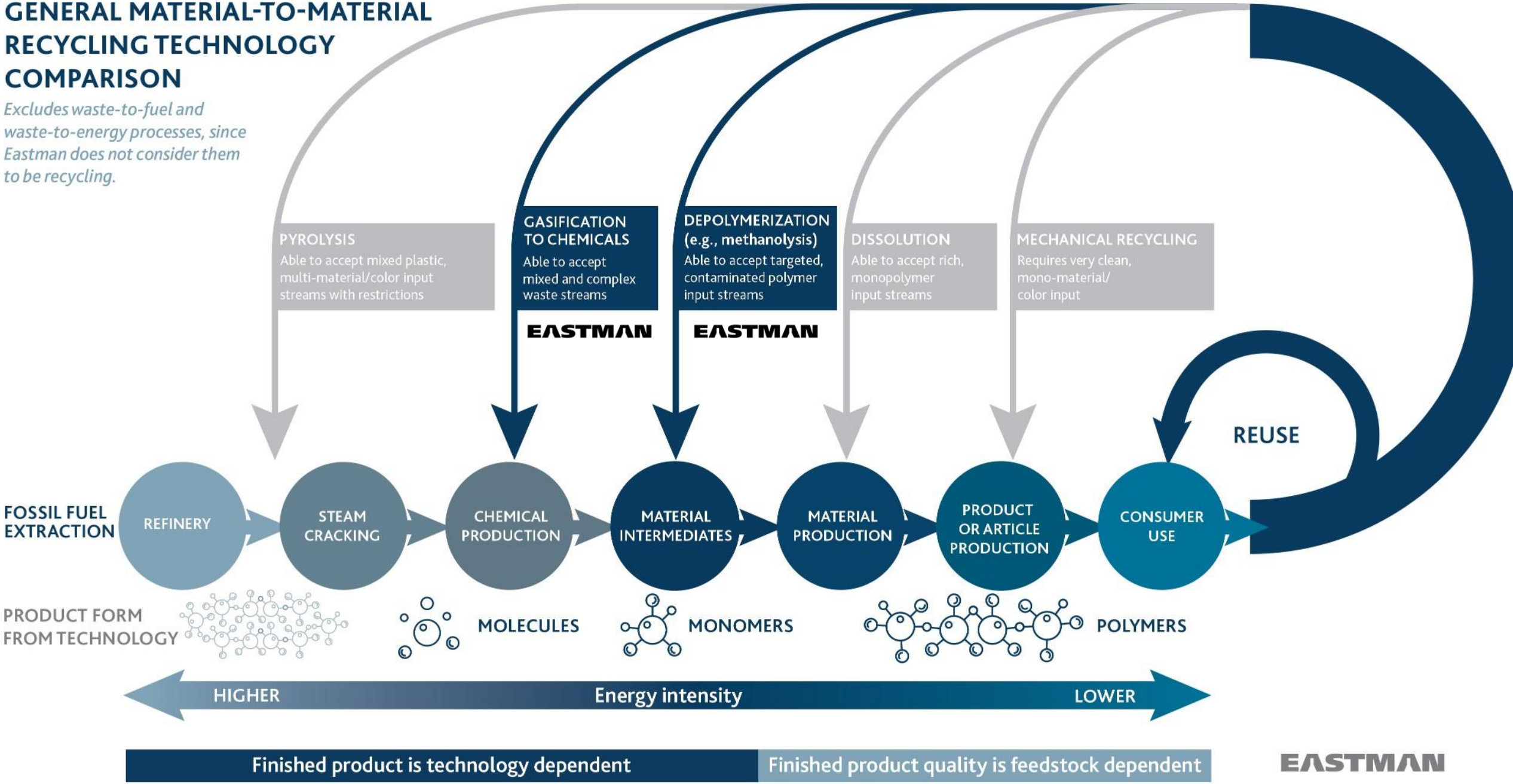
15% less

GHG than cotton

Source:https://www.mckinsey.com/~/media/mckinsey/industries/chemicals/our%20insights/climate%20impact%20of%20plastics/climate-impact-of-plastics-v2.pdf

GENERAL MATERIAL-TO-MATERIAL RECYCLING TECHNOLOGY COMPARISON

Excludes waste-to-fuel and waste-to-energy processes, since Eastman does not consider them to be recycling.



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METHANOLYSIS

POLYESTER RENEWAL TECHNOLOGY (PRT)

20%–30% less GHG emissions than fossil based monomer

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Enables a diverse variety of polyesters, including many that are difficult to mechanically recycle, to be unzipped to their monomers and reassembled into new polyesters with prime performance.

RECOVERED POLYESTER

MECHANICAL PURIFICATION PROCESS

DEPOLYMERIZATION

rDMT

rMEG

EXISTING SPECIALTY PLASTICS PRODUCTION

DMT | MEG

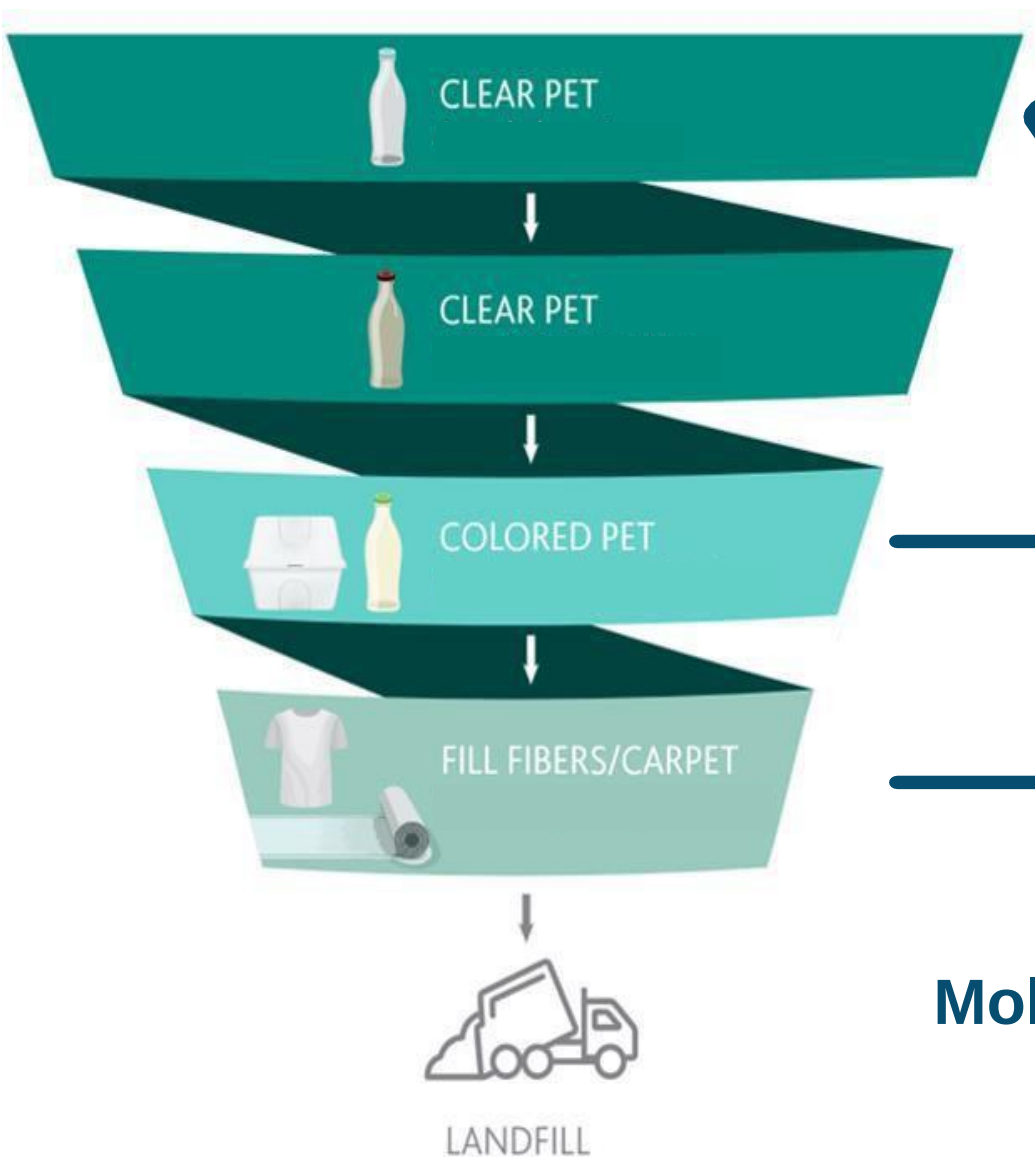
rEmbrace
rEastar
rTritan

If **feedstock** is **95%** polyester rich

PRT has among the highest % of material recovery rates amongst chemical recycling technologies.

87% Of feedstock turns into **high-quality** plastics again.

Molecular recycling disrupts the downward spiral, eliminating both landfilled PET and virgin PET



VIRGIN PET

REQUIRED TO REPLENISH THE LOSSES OF MECHANICAL RECYCLING

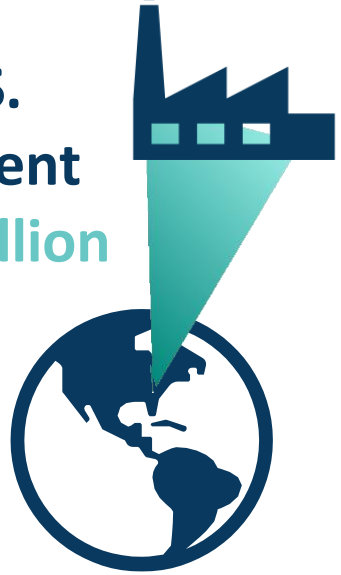
MOLECULAR RECYCLING RESETS REJECTED PET TO VIRGIN QUALITY

Molecular recycling replaces virgin PET and complements mechanical recycling

Eastman is moving to catalyze circularity for PET

these investments would keep close to 400,000 metric tons of waste from landfill or incineration annually

1st U.S. Investment
>$300 million
2023



Supported by EMN specialty plastics primarily for durable applications

France Investment
Up to $1 billion
2026

Supported by French government and leading brands such as P&G, LVMH, L'Oreal, Danone, Clarins & Estee Lauder

2nd U.S. Investment
$600-$800 Million
2026

***EMN and PEP** are completing a definitive agreement that would be the baseload volume for investment*

Thank you! **Questions?**

Chris Killian
SVP and Chief Technology Officer

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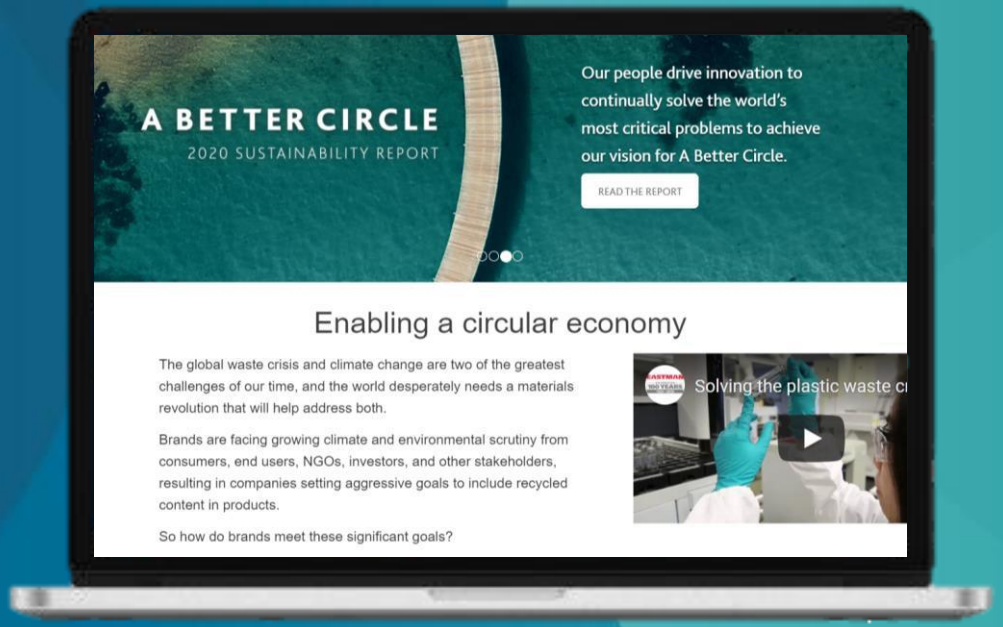
Find more resources at Eastman.com/circular



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