

Accelerating Flexible Packaging Circularity with Recyclable Mono-material Barrier Packaging Film Technology



Presented By: Rajashekhar Venkat

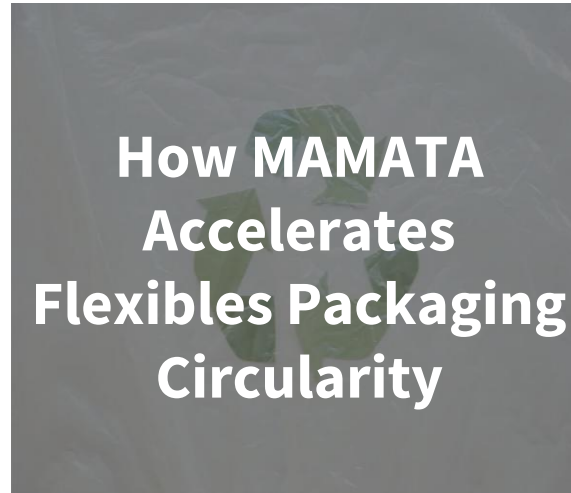
Group President, Mamata Machinery Limited

What We'll Cover Today

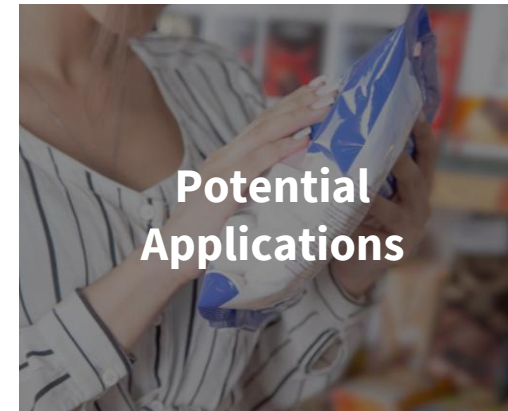
Section 1



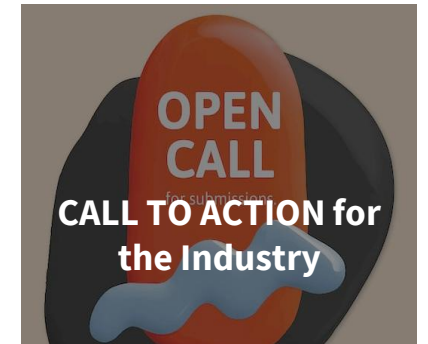
Section 2



Section 3



Section 4





SECTION 1 • The World Today & The Problem Statements for Flexibles

The World Today – India Scenario



\$20.4_B → \$35_B

Flexible packaging consumption
(2025 – 2040) is still increasing, - a
market growing **11.46%** a year

Mordor Intelligence, 2025



~70 – 75%

Of all plastic packaging used in
India is flexible packaging

Mordor Intelligence, 2025



Stronger Regulations

PWM rules now require 20%
recycled content in flexible
packaging - regulation is
tightening fast

Flexibles keep growing, dominate what India consumes, and are now under tightening regulation - solve flexible circularity and India's litter problem is broadly solved.

The World Today & Problem Statement

While Circularity is Initiated for Bottle-To-Bottle, Paper/Corrugates & even to Milk Pouches in India, Flexible-To-Flexible Recycling Hasn't started yet.



The World Today & Problem Statement

Bottle-To-Bottle Proven Closed Loop



PET bottles become PET bottles again, with real value at end-of-life



The World Today & Problem Statement

Closed Loop for Paper to Maximum Fiber Retention



Stronger value chain enabling maximum collection & reprocessing of paper/fiber based packaging back into the value chain

The World Today & Problem Statement

Closed Loop for Milk Pouches



Structural Harmony/Standardization enables a successful model of Milk Pouch Collection & Reprocessing at Recycler's end in India

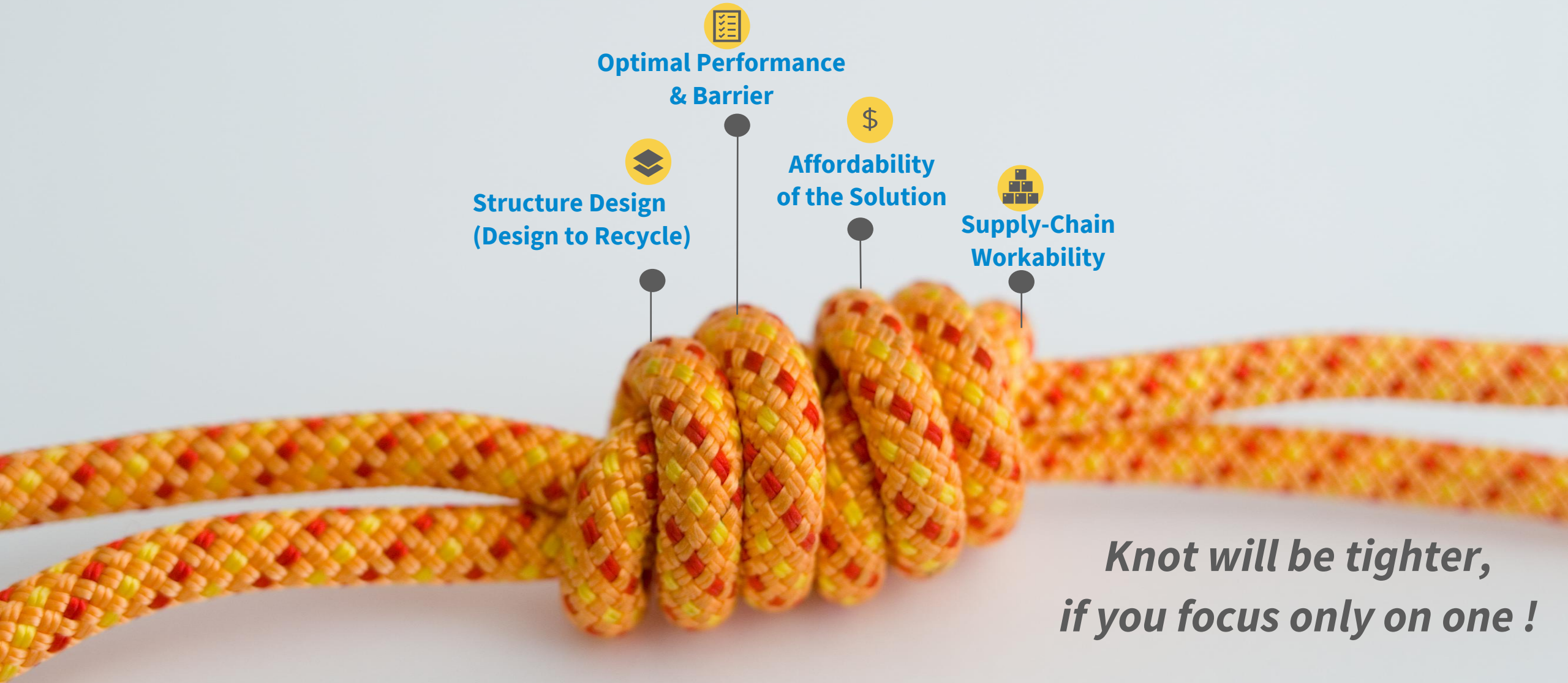
The World Today & Problem Statement

Flexible-to-Flexible Hasn't Started Yet



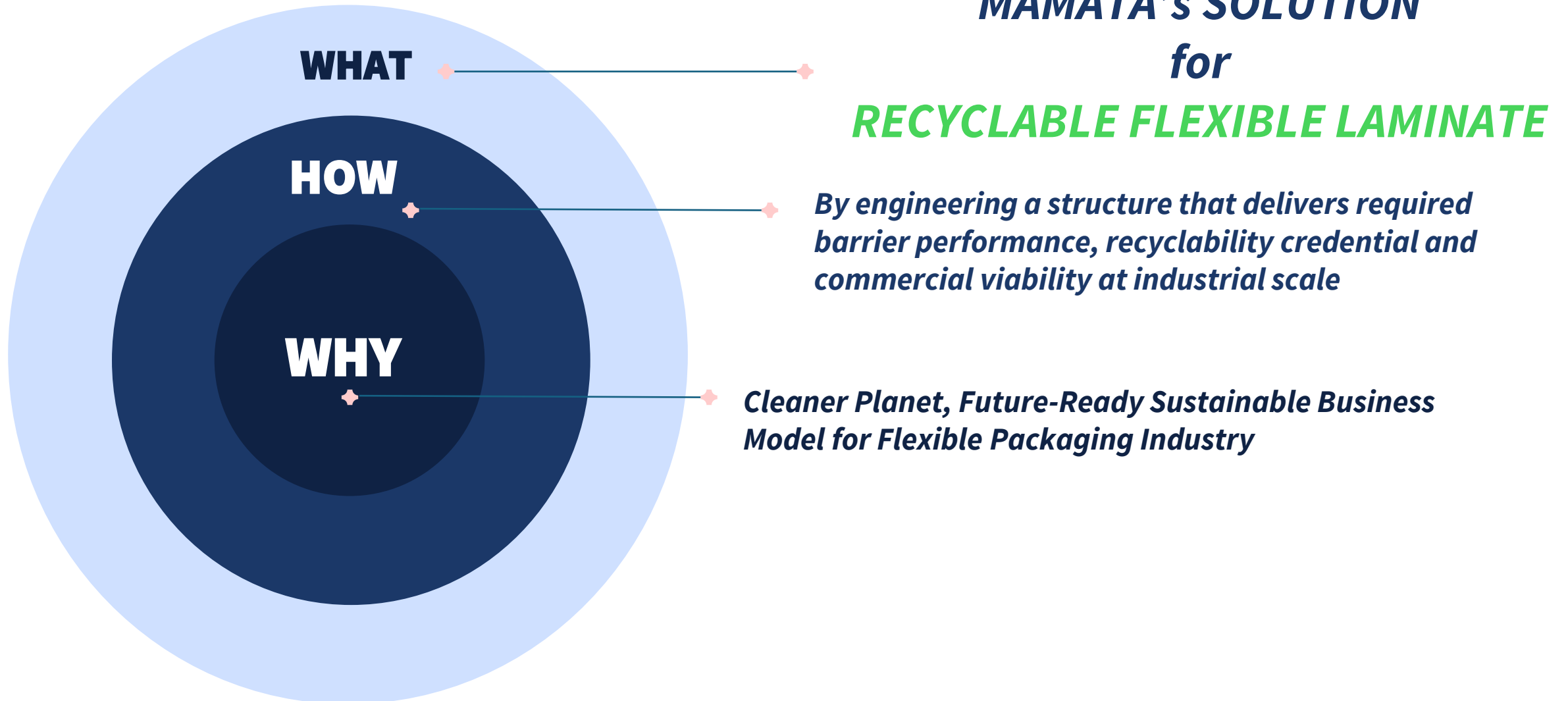
No standardized structure, no end-of-life value - and so no loop for the largest packaging category in India.

Make it Recyclable - Untie The Equation, All Together



*Knot will be tighter,
if you focus only on one !*

Golden Circle Of Purpose



RecTech™

The Solution

Recyclable + Affordable + Strong Barrier + Established Supply Chain

Recyclable Mono-material Packaging Film Technology

ACCELERATING CIRCULARITY IN FLEXIBLE PACKAGING

Introducing RecTech™

MAMATA
MACHINERY
VALUE FOR TRUST



“

Most Of New Technologies Are Claimed Disruptive.

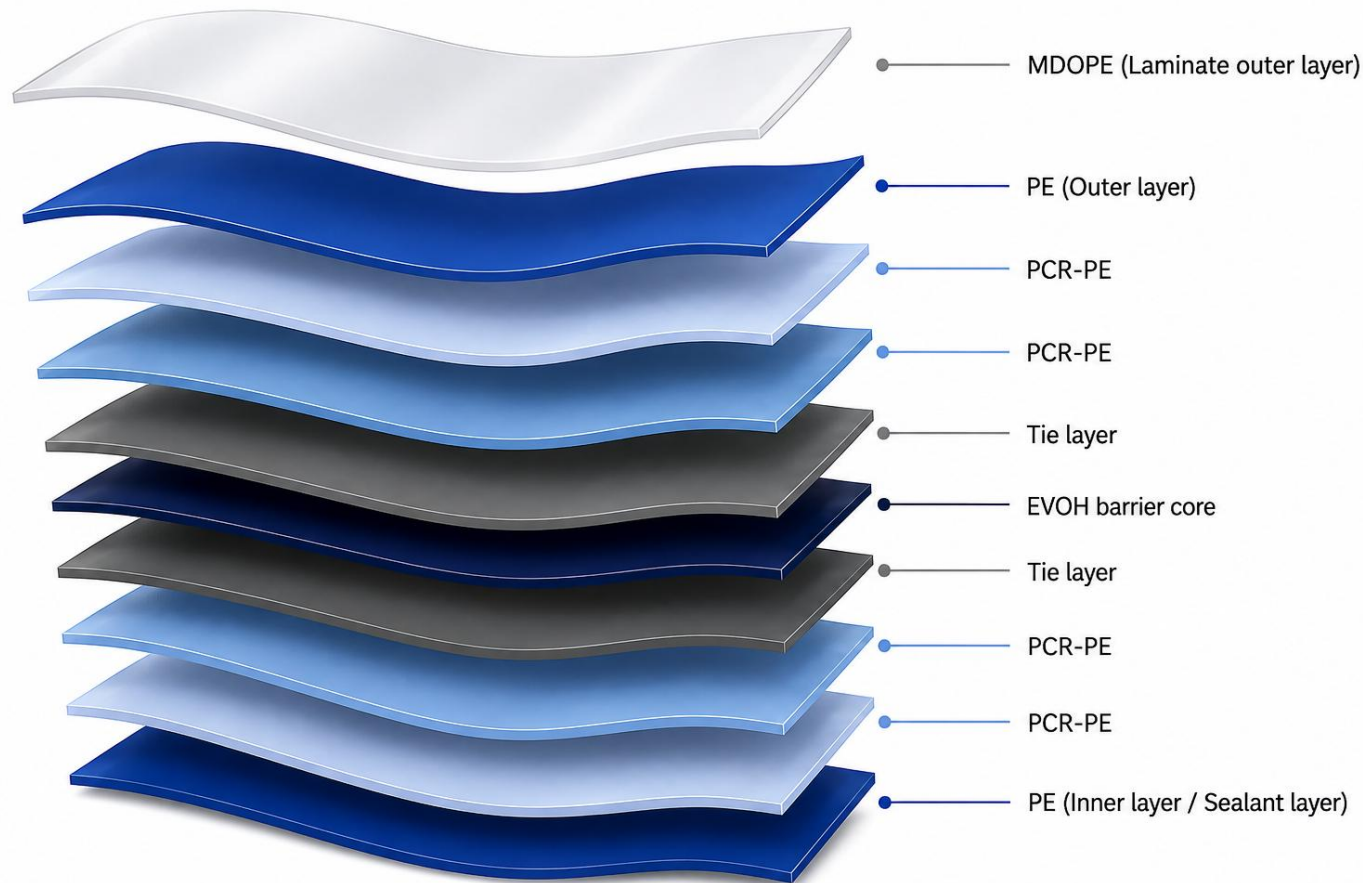
RecTech™ Is Transformative Without Being Disruptive.

”

SECTION 2 • How RecTech Accelerates Flexibles Packaging Circularity



Design Features of RecTech™



- 1** RecTech (9 – Layer Co-Extruded Mono material) Film Laminated with reverse printed MDO/BOPE
- 2** Ability to Encapsulate Post Consumer Recycled Content without impacting the Outer and the Sealant Layer
- 3** Ultra Thin EVOH Barrier Core; Delivering better Barrier with Legacy (PET/PE) Structures

Certifications of RecTech™

Barrier Performance Above Par

**India : Indian Institute of Packaging,
Kolkata**

Singapore : Mitsubishi Chemical

Recyclability Certified

Across 3 Continents

India: CIPET

Europe: HTP Cyclos

USA: APR (Formal Certification awaited)

Impact of RecTech’s Design Features

~35% - 38% Reduced Footprint

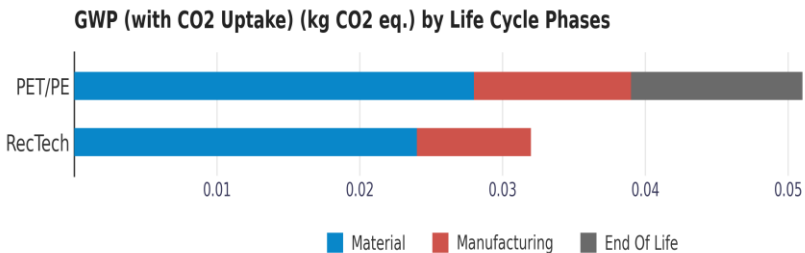
Carbon Footprint

~5% Cost Delta

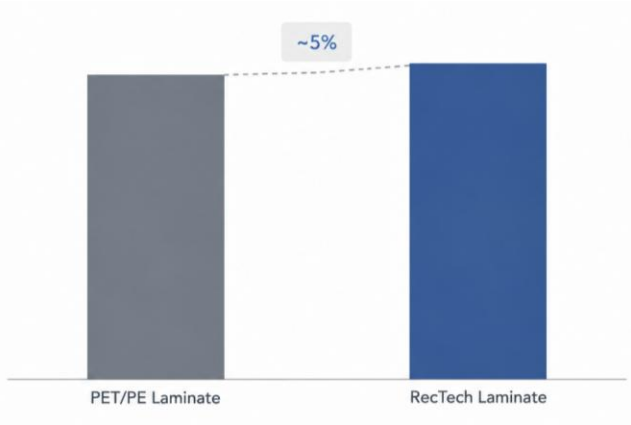
Cost Of Usage

Cat. II vs Cat. III

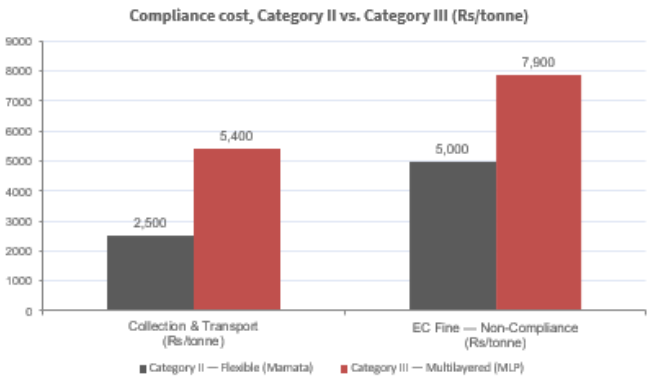
EPR Compliance Economics



Basis desktop LCA – Global Warming Potential
(Carbon Footprint) across life-cycle phases



Over the existing PET/Poly structure

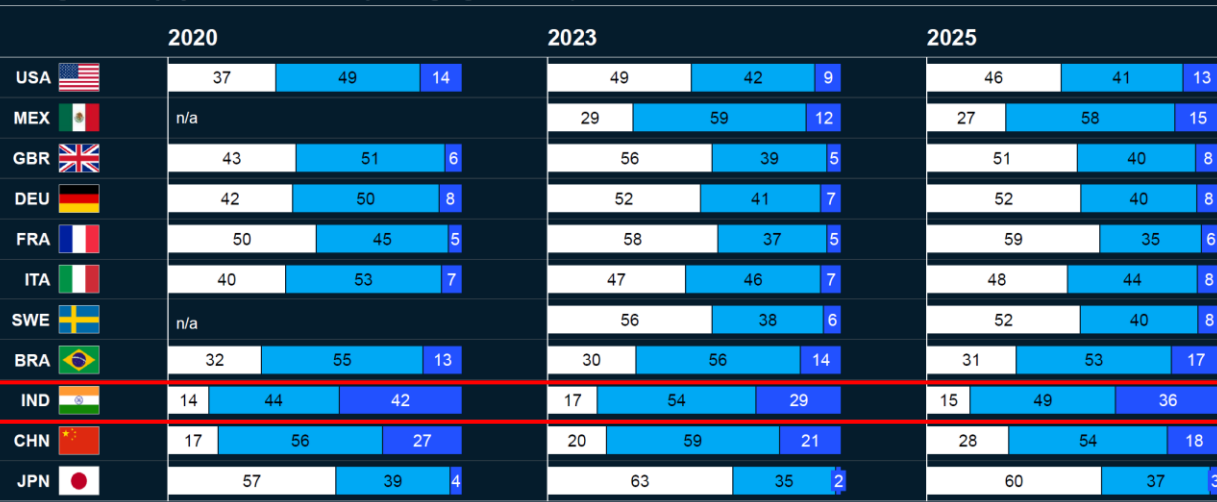


Lower collection & transport cost + environmental
compensation levy on non-compliance

*Assessment comparing RecTech with PET/Poly structure (India
Region)

Since 2020, consumers surveyed have become more polarized in their willingness to pay more for sustainable packaging

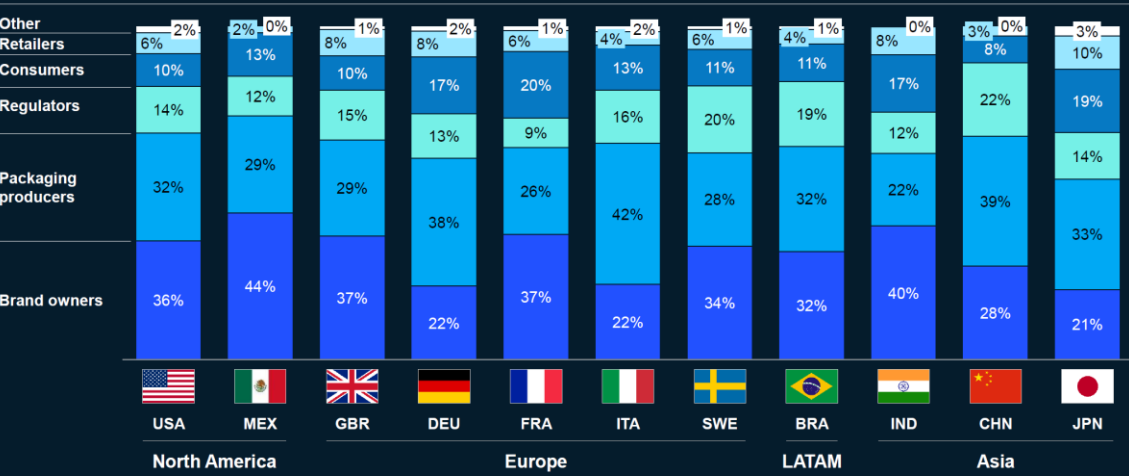
Willingness to pay for sustainable packaging, % of respondents



Question: To what extent would you be willing to pay more for sustainable packaging?
Results: Derived from taking an average % of respondents across product categories who indicated each of the willingness to pay levels
Source: McKinsey Packaging Survey, March 2025 (n = 11,136)

Consumers view brand owners and packaging producers as the most responsible for driving sustainability in packaging

Responsibility perception for sustainable packaging, % of respondents

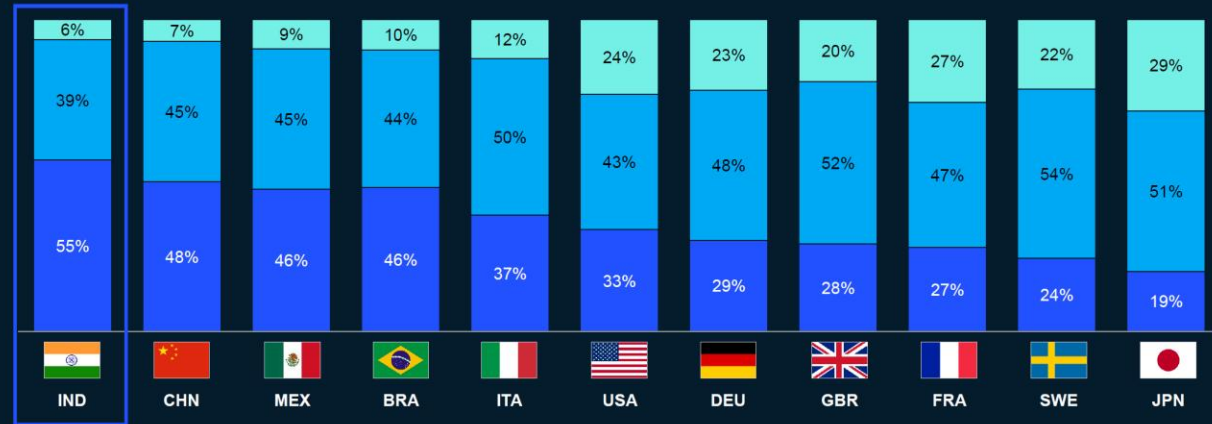


Question: Who do you see as most responsible for sustainability in packaging?
Results: Derived from % of respondents who indicated each of the stakeholders
Source: McKinsey Packaging Survey, March 2025 (n = 11,136)

Indian consumers perceive a higher association between sustainable packaging and a product's brand

Sustainable packaging... Doesn't tell me much about the brand Makes me think the brand may be sustainable Makes me think the brand is sustainable

Perceived association between sustainable packaging and product brand, % of respondents



Question: To what degree does sustainable packaging make you think the brand is sustainable or environmentally friendly?
Results: Derived from % of respondents who indicated each degree
Source: McKinsey Packaging Survey, March 2025 (n = 11,136)

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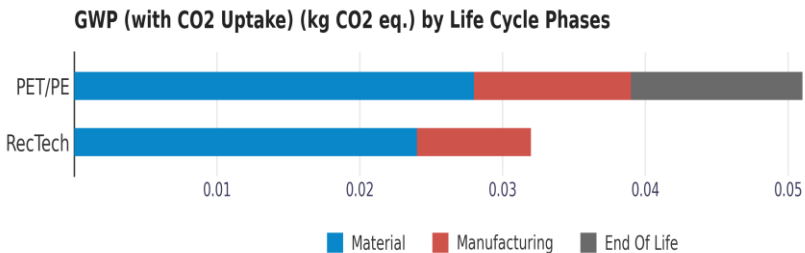
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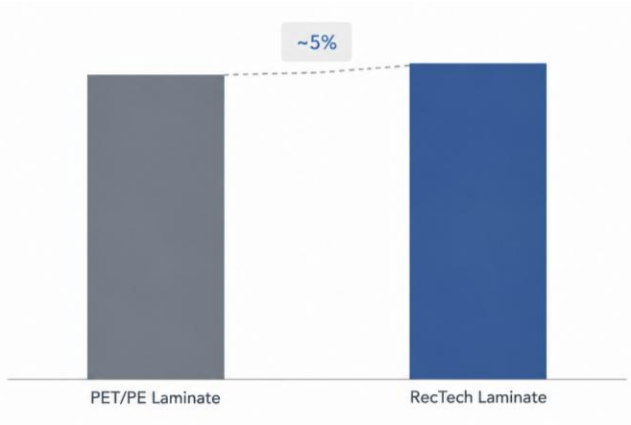
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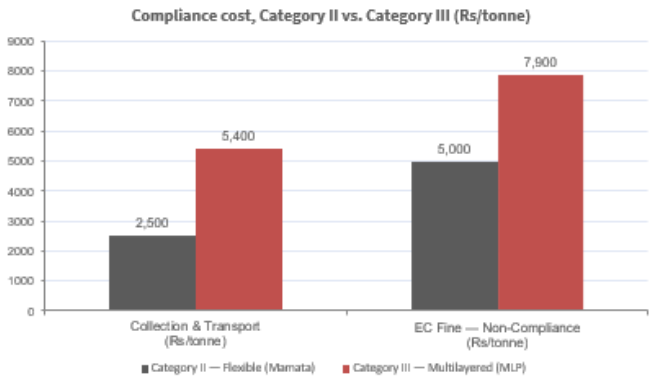
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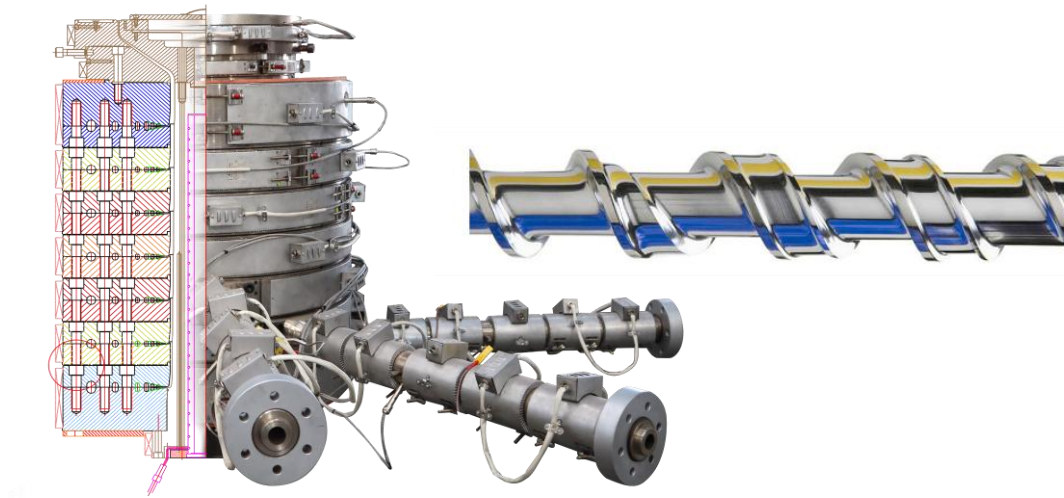


Lower collection & transport cost + reduced
exposure to non-compliance

*Assessment comparing RecTech with PET/Poly structure (India
Region)

Enablers

Streamline co-extrusion die technology + Extruder Screw*



**Patent Applied For*

Holding ultra thin 2–3 μm EVOH barrier layer across the full web periphery

Converting & Packaging Machines



Patented Sealing Technology & MultiZone Web Tension Control with servo-driven indexing to process recyclable film at high speed, efficiency & consistency – future-ready HFFS & VFFS pouch machines

A person with long blonde hair, wearing a white shirt with thin blue vertical stripes, is holding a blue and white striped bag. The background is a blurred store interior with shelves of products.

SECTION 3 • Potential Applications

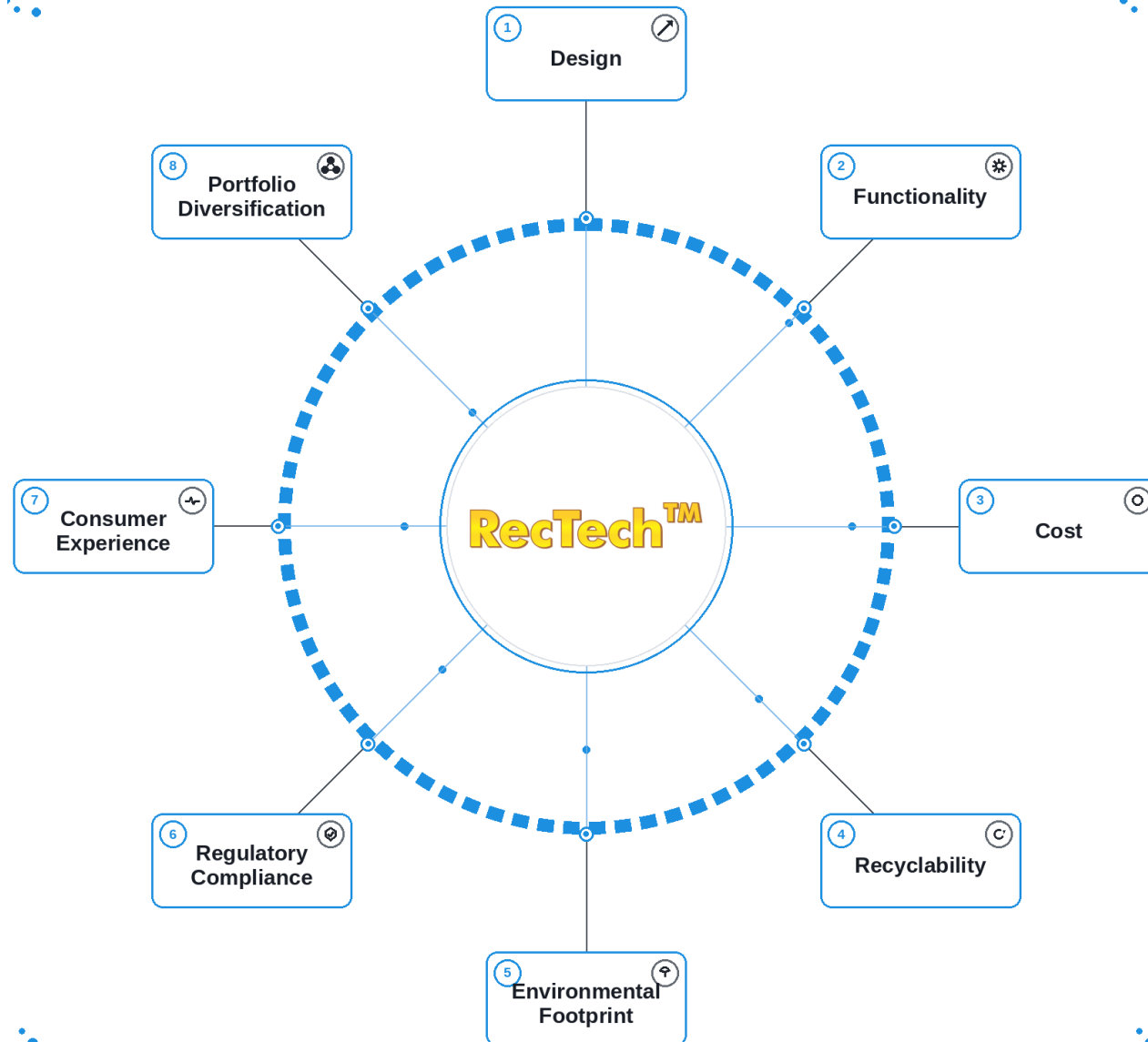
PRIORITY APPLICATIONS

Diverse Application Fit



**Potential to replace all PET/PE applications
thickness of 70 microns & above**

Summary Statement



**40 Years of Value Chain
Experience Converges
Into Perfecting
RECTECH!**

**Tailormade, Holistic
Solution Addressing the
Industry Need!**

Call To Action

Reshape the Circularity Approach for Recyclable Barrier Flexible Packaging

Inviting all Key Stakeholders to Collaborate

- **Brand Owners**
- **MDO & BOPE Manufacturers**
- **Processors & Converters**
- **Raw Material Suppliers**
- **Recyclers**
- **Policy Makers**

Join the RecTechTM Journey

Powering Packaging, **Shaping Tomorrow**



Our journey is built on trust, technology, and transformation.

Interact further with us at Booth E5/E6 at ElitePlus Exhibition Area !