สมาคมอุตสาหกรรมเส้นใยประดิษฐ์ไทย
Thai Man-Made Fiber Industries Association

ASIAN CHEMICAL FIBER INDUSTRIES FEDERATION

Roadmap to Carbon Neutrality in the Chemical Fibre Supply Chain

Country Theme Paper from Thailand

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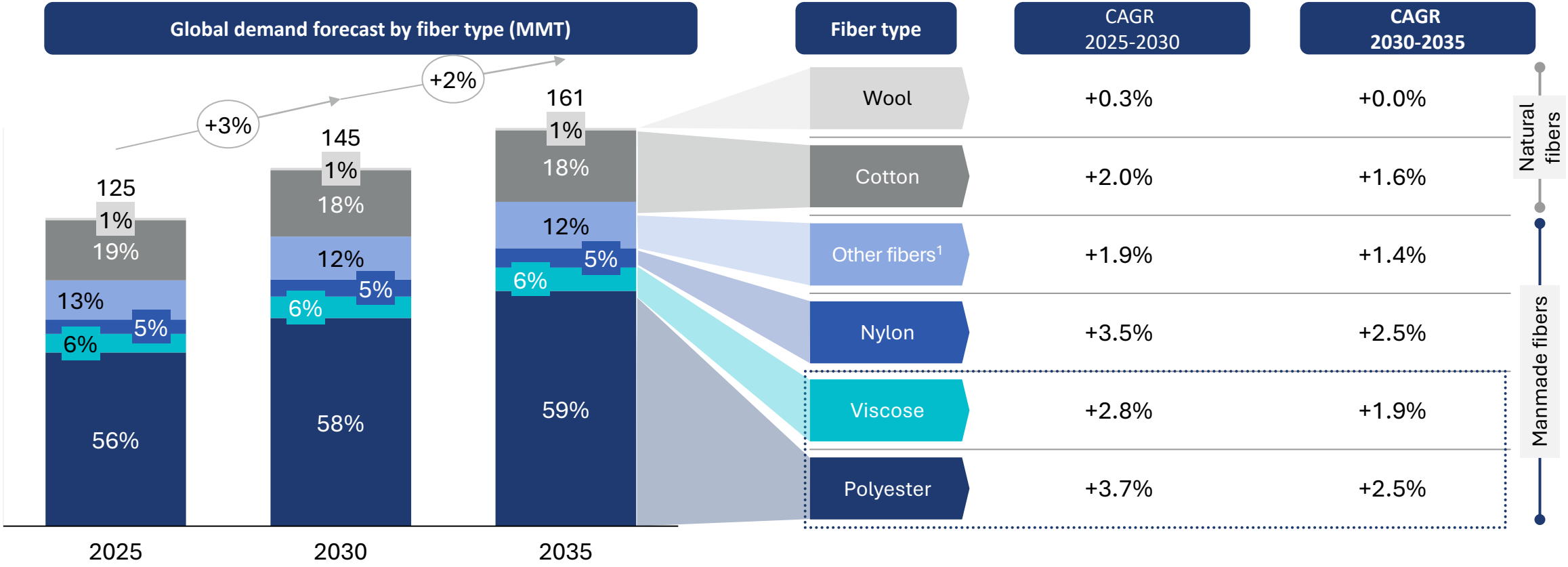
Global fibers consumption demand led by polyester

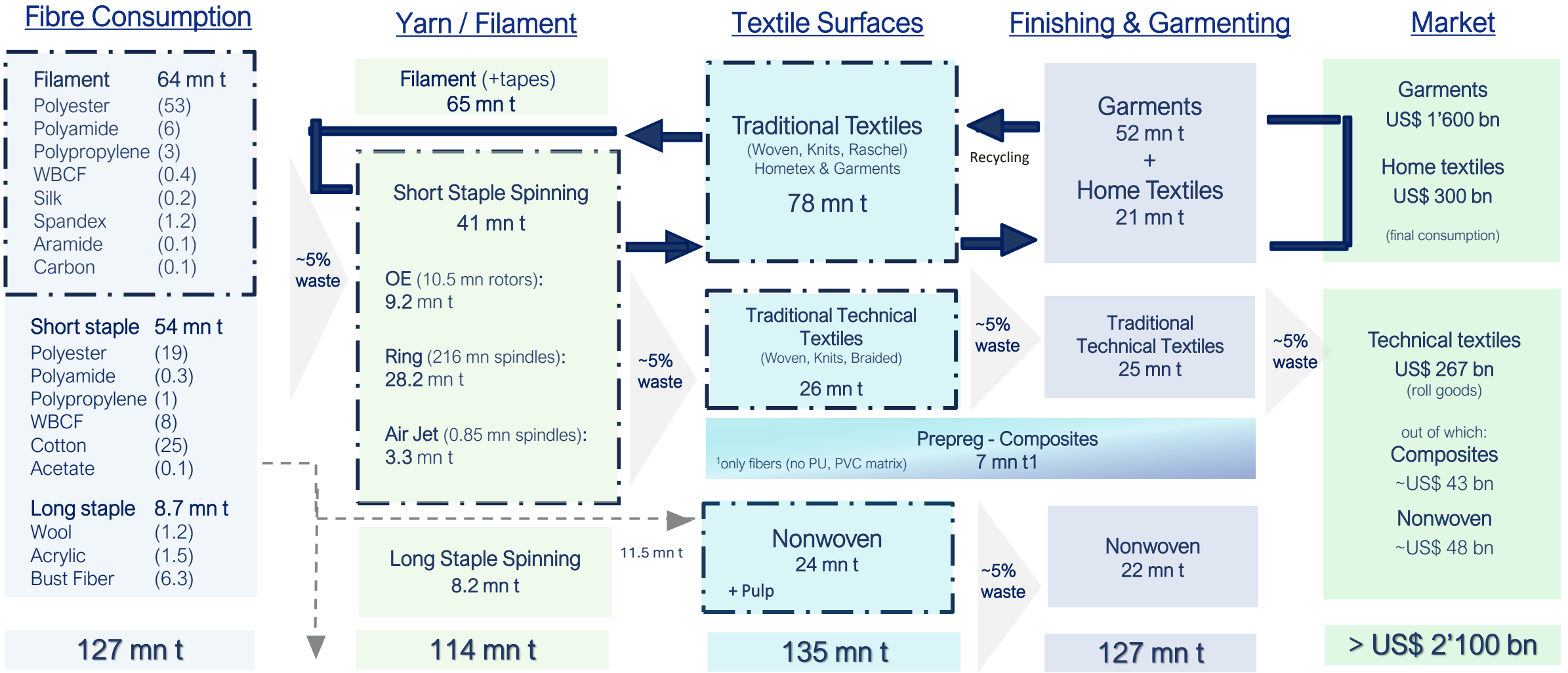
Polyester fibers contributed to 70 KT in 2025E, a 56% share of all fibers. The growth is mainly driven by textile filament while staple and industrial filament rise more slowly



Note: Other man-made fibers include Polypropylene, Acrylic and Bast
Source: Wood Mackenzie, IVL analysis

2025

1 Global Textile Demand will Continue to Grow at 2% p.a. with Greater Share of Man-Made Fibres (esp. filaments) and Regenerated Fibres *(1/2)*

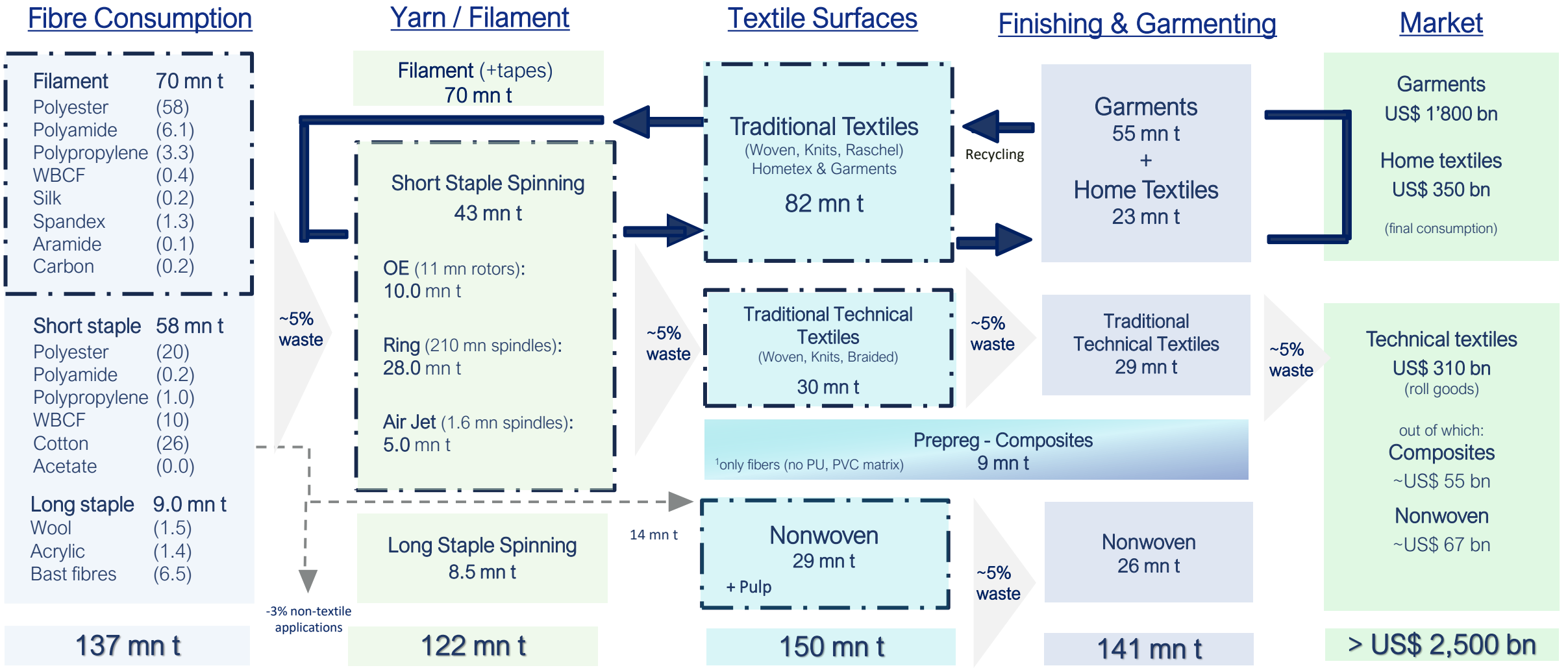


Source: Gherzi market model

2

Global Textile Demand will Continue to Grow at 2% p.a. with Greater Share of Man-Made Fibres (esp. filaments) and Regenerated Fibres *(2/2)*

2030

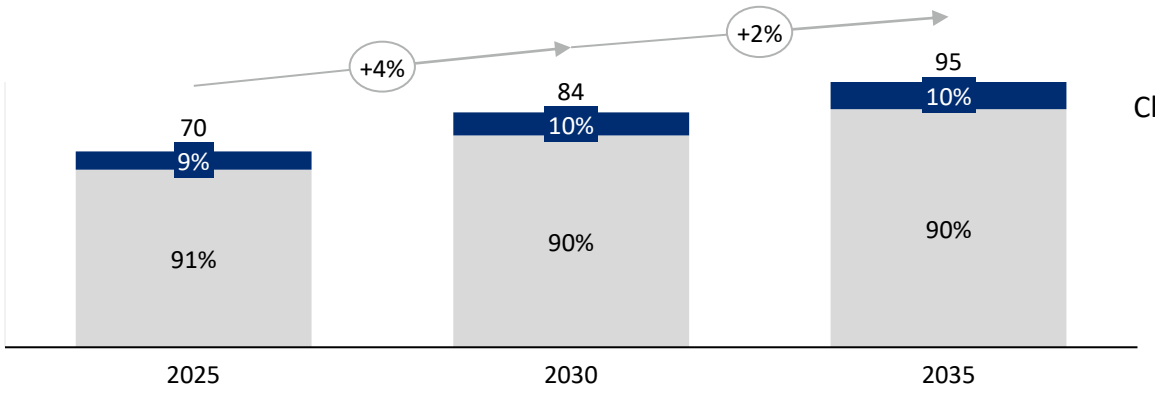


Source: Gherzi market model

Global polyester recycling demand driven by fibers

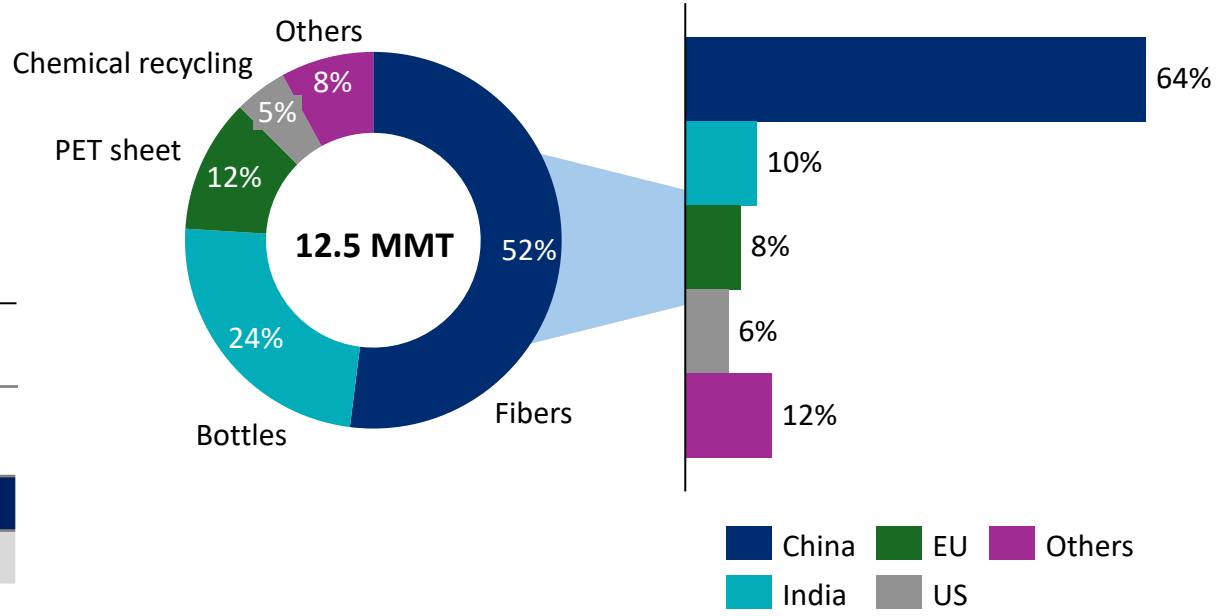
RPET Staple fibers producers prioritize margins since the end-market demand is cost-sensitive. Although staple fibers RPET penetration continues to rise, cost sensitivity and competition with food-grade bottle demand limit access to flake. However, filament RPET penetration rate is stabilized due to product specifications

Glober Fibers Demand Breakdown by (MMT)



	CAGR 2025-2030	CAGR 2030-2035
Recycled Polyester Fibers Demand	4.9%	3.2%
Virtual Polyester Fibers Demand	3.6%	2.4%

Global RPET Demand by End-Market 2025



Source: Wood Mackenzie, IVL analysis

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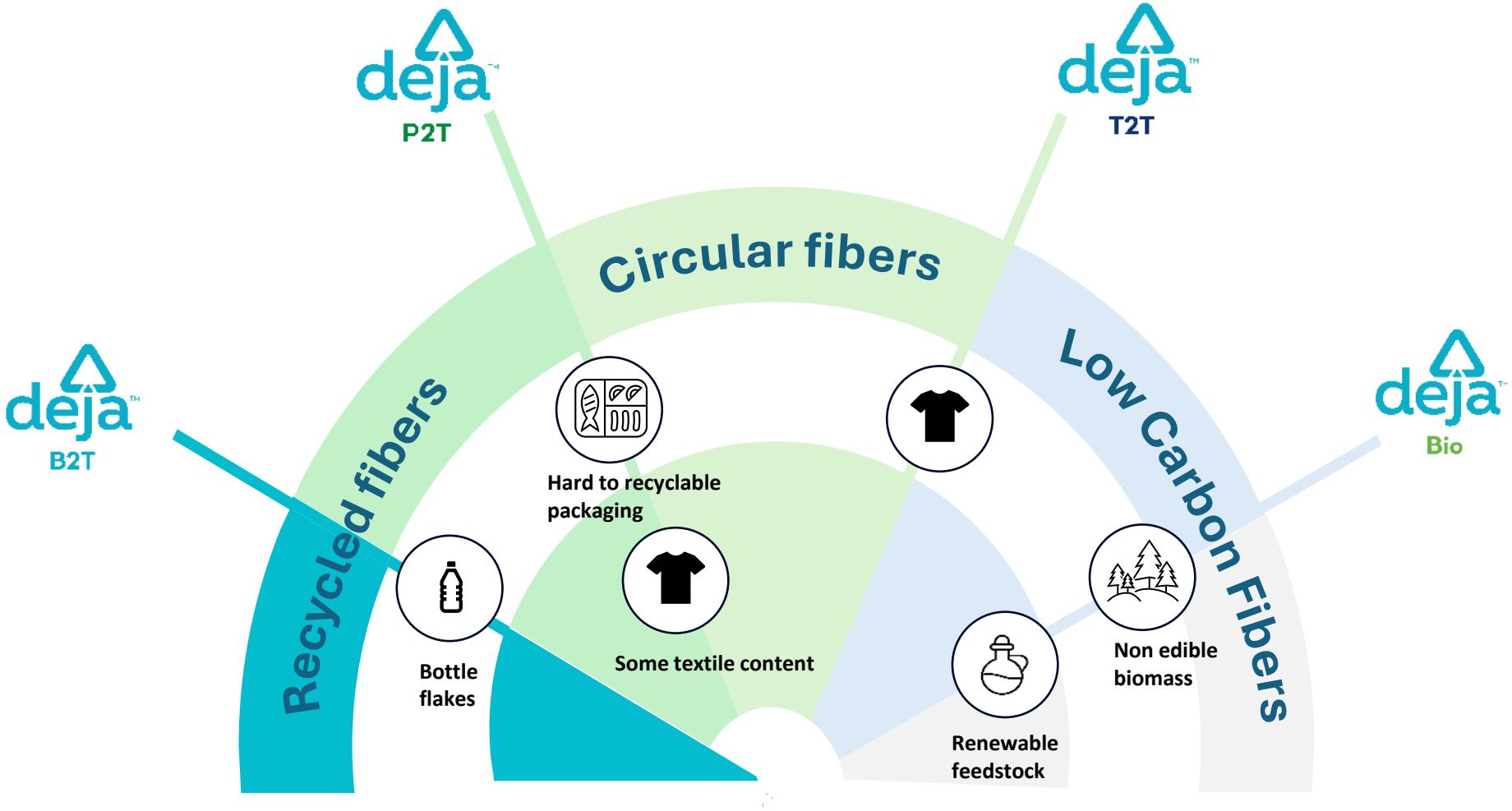
IVL deja™ Solutions: Recycled and bio-based chips, fibers, yarns

Designed to reduce CO_2 emissions and combat unmanaged waste

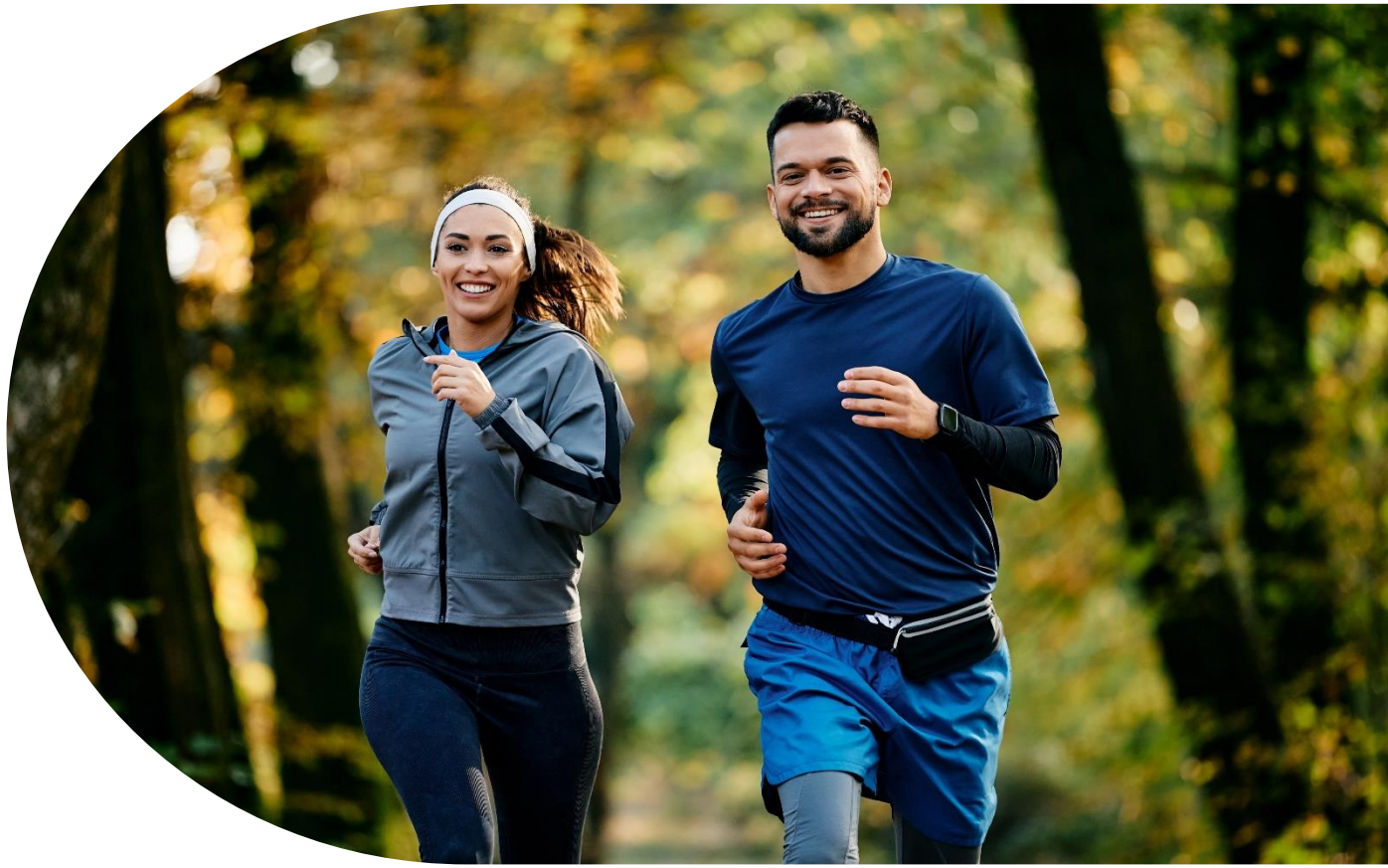


Branding deja™: Designed to reduce CO_2 emissions and combat unmanaged waste

Available at scale

MARKETING MIX – OFFERING DESIGN

deja T2T	From pre-consumer & post-consumer textile waste
deja P2T	From hard-to-recyclable PET packaging
deja B2T	From post-consumer PET bottles
deja Bio	From bio sources
deja Evolve	Designed to bio-degrade at the end of life
deja Care	Designed to consume less harmful chemicals during production



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Thai Man-Made Fiber Industries Association

The apparel industry is ready to move beyond standards

deja™ care helps you build brand leadership

Market Trends

Growing regulations:
REACH, EU Chemical Strategy, California Prop 65, Oregon Toxic-Free Kids Act, tightening restrictions on heavy metals in textiles and harmful chemicals in childcare articles and toy safety regulations

Consumer expectations:
Parents demand safe, certified, skin-friendly materials

Risks in global supply chain

Traceability gaps:
Brand owners often rely on indirect suppliers without full control over fiber content

Solution: deja™ care

Fully controlled production:
Proprietary PTA, HMF / regulated Polymerization process
Fully integrated in-house manufacturing

Certified safety:
DIN-EN71-3, DIN-EN ISO 17294-2, OEKO-TEX Standard 100 Product Class I.

Purpose-built for:
Sensitive applications like school uniforms, underwear, baby wipes, diapers, feminine care

Offering first-movers brand advantage: Differentiation potential

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Investing Textile Circularity

No single company will solve mismanaged textile waste and GHG emission crisis alone

Joint Venture with Jiaren Chemical Recycling to promote deja™ T2T fibers and yarns made from textile waste

- ✓ Proven chemical recycling technology, commercially established for 12 years
- ✓ Virgin-like performance proven
- ✓ Double-digit million USD investment to scale recycling capacity
- ✓ deja™ T2T products positioned for market adoption


Textile Sphere India

Indorama Ventures' Fibers business and Jiaren Chemical Recycling form joint venture to enhance global textile circularity

佳人 JIAREN | INDORAMA VENTURES

Enabling textile circularity

November 11, 2025 | By Textile Sphere India

Partnership backed by Indorama Ventures' double-digit mill investment in Jiaren's recycling capacity

Indorama Ventures' Fibers business, a leading global supplier of recycled technical textiles, polyester fibers and yarns, and Jiaren Chemical Recycling, a technology leader in chemical polyester recycling, form a joint venture to accelerate circularity in the global textile industry.

Both partners plan to leverage the joint venture to unlock up to 100,000 tonnes of textile-recycled PET spinning capacity annually, thereby enhancing the resilience and transparency of the global textile supply chain and optimizing the value both partners deliver to the industry.

Press release

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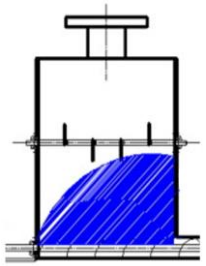
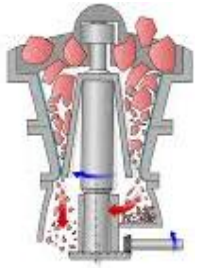
Chemical Recycling process for T2T

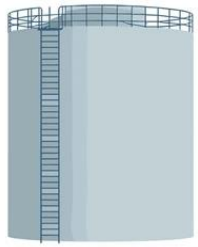
1. Raw Material Input



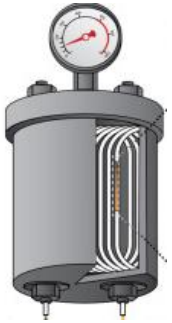
2. Pretreatment (Crushing)



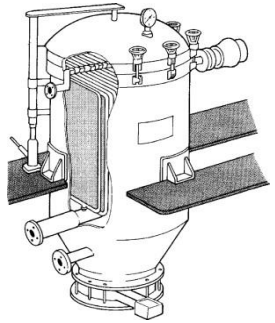
3. Storage Tank



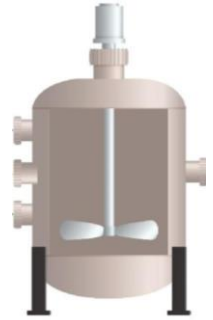
4. Depolymerization



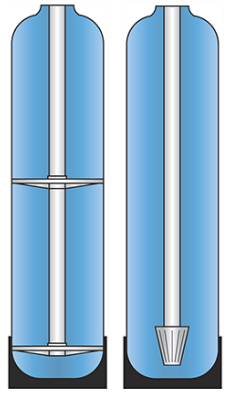
5. Filtration Separation



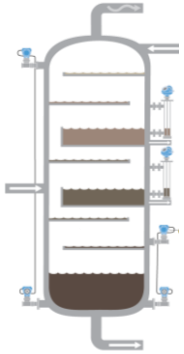
6. Transesterification



7. DMT Purification

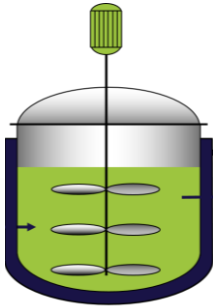


8. Rectification

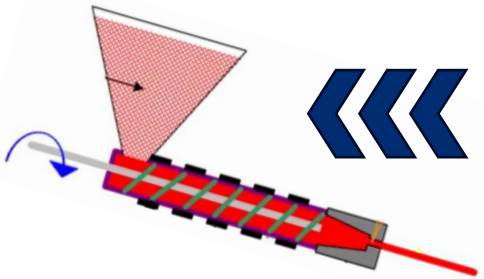


9.DMT Storage

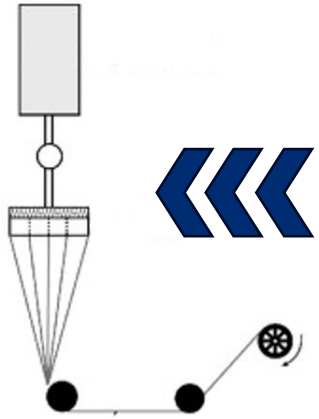
10. Polymerization



11. Granulation

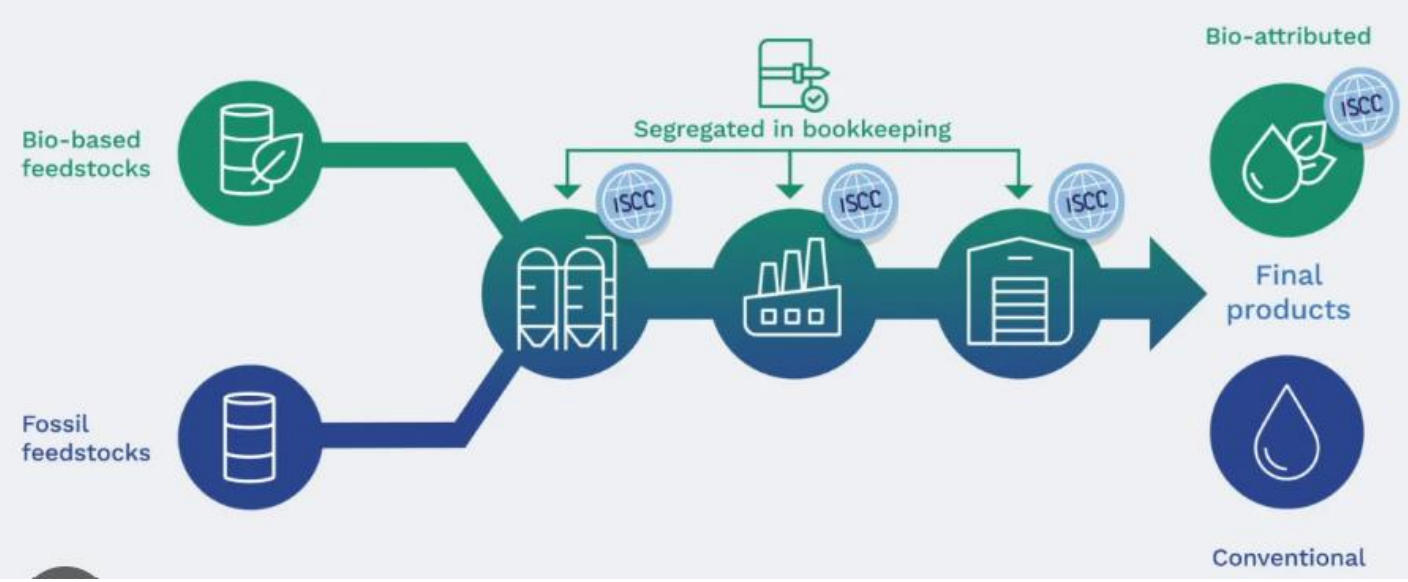


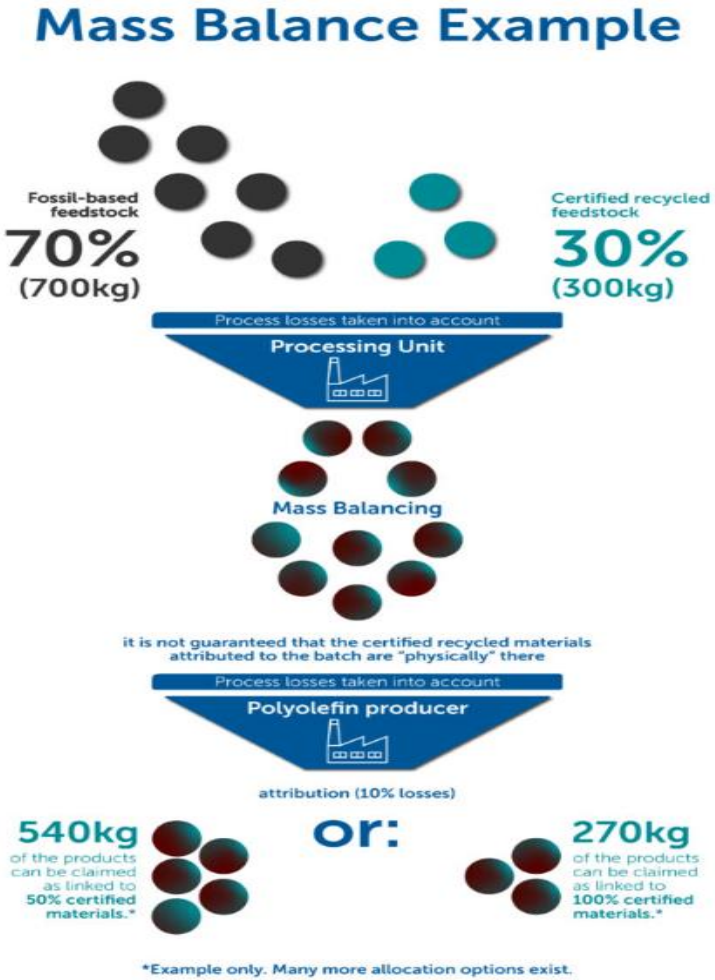
12. Spinning



Introducing the Mass Balance Approach

Mass balance is a smart way forward. It lets us introduce renewable feedstocks into existing systems – reducing emissions without redesigning the infrastructure.



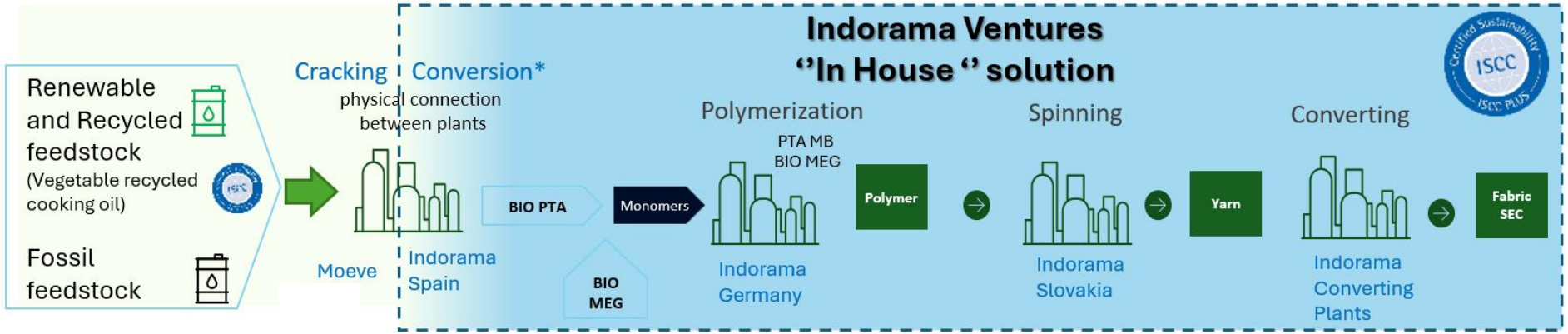


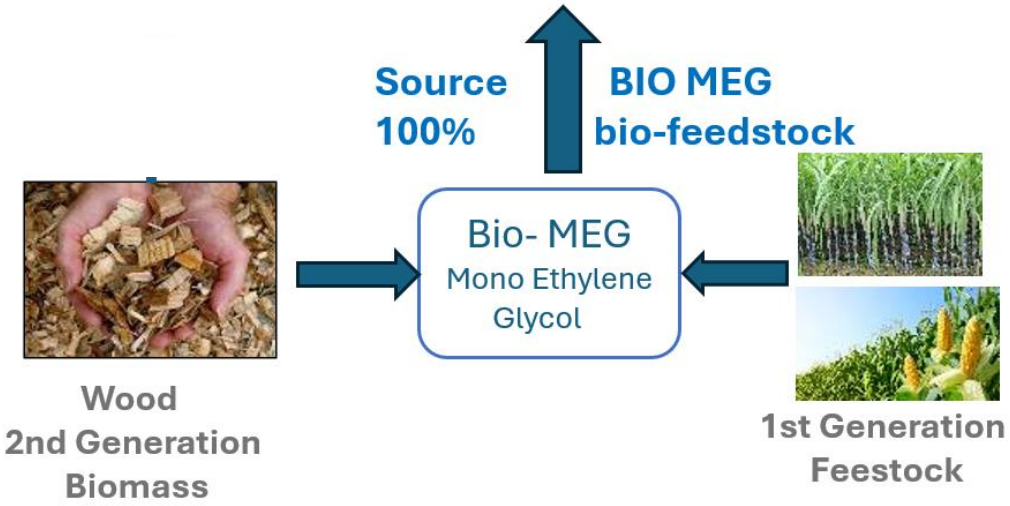
What it is:

- Mixing renewable and fossil feedstocks
- Traceability via certifications (e.g ISCC+)
- Enables gradual transition

Indorama's Ventures Integrated Supply Chain

Indorama Ventures built a certified supply chain – from sourcing bio based raw materials to delivering yarns and fibers. This integrated system ensures both accountability and traceability.





- End to End: feedstock sourcing and production to fiber production
- Certification and tracking
- Renewable feedstock input

deja™ Bio:
deja™ T2T:
} **Yarns tested for virgin-like performance**

Sample test report

Properties	Virgin PET Yarn	deja Bio — 30% bio content Bio MEG -1G**	deja Bio — 100% bio content (Bio MEG 2G** + bioPTA mass balanced)	deja T2T — 100% chemically Recycled
Technology Readiness Level (TRL*)	**Current product**	**TRL 9**	**TRL 9**	**TRL 10**
Breaking force	100	100	100	100
Elongation	100	101	101	101
Dimension stability	100	100	101	101

***Technology Readiness Level (TRL)**

(TRL1-TRL3) - Proof of concept
(TRL4-TRL5) - Laboratory environment
(TRL6-TRL7) - Full scale / Pilot
(TRL8-TRL9) - First Product

**** 1st (1G) / 2nd (2G) generation bio feedstock**

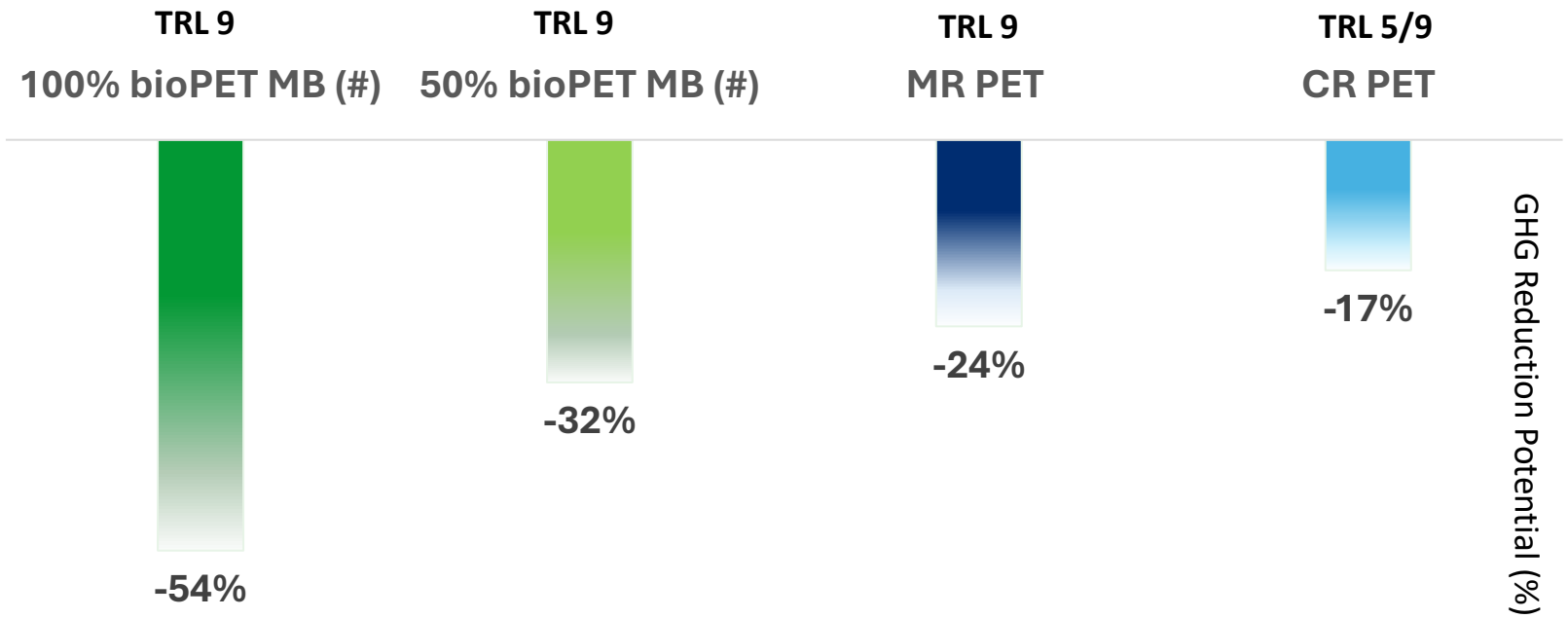
1G - primarily derived from food crops such as corn, sugarcane, and other carbohydrate-rich agricultural sources.
2G – *derived from* non-food biomass such as agricultural residues, woody crops, and dedicated energy crops grown on marginal lands.

- Bio-PET can be recycled easily in the corresponding recycling stream, as its chemical and physical properties are exactly the same as fossil-based PET.
- Chem recycled T2T has its chemical and physical properties matching fossil-based PET.
- 11 Indorama Ventures sites have been ISCC+ certified already. Progressing to enlarge the number of ISCC+ certified sites to serve customers.
- No switching risks for customers

Low-Carbon PET Progress – Key metrics

We have seen significant progress in lowering the carbon footprint. Our bio-PET yarns and fibers are helping customers make measurable progress toward their Net Zero goals.

GHG Emission Reduction Potential for Sustainable PET vs Fossil Dipped Fabric (%)



- Carbon reduction vs. fossil PET
- Chemical recycling and bio footprint
- Cradle-to-Gate - includes raw materials polymerization, extrusion, spinning and converting to final product.
- incl. biogenic carbon

(TRL1-TRL3) - Proof of concept
(TRL4-TRL5) - Laboratory environment
(TRL6-TRL7) - Full scale / Pilot
(TRL8-TRL9) - First Product

Preliminary data comparisson with PET fossil

(#) Included biogenic carbon

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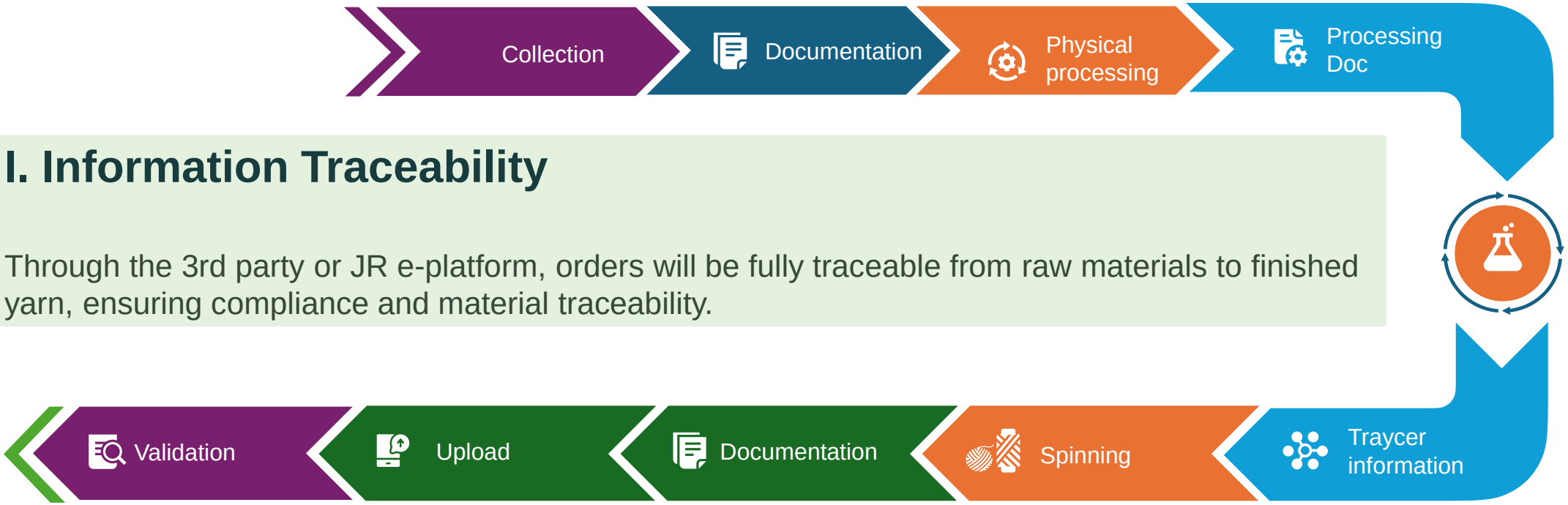
T2T Traceability & Digital Tracking



I. Information Traceability

Through the 3rd party or JR e-platform, orders will be fully traceable from raw materials to finished yarn, ensuring compliance and material traceability.

II. Product Traceability

The tracer project began small-scale testing in 2023, successfully completing the raw material-to-yarn-to-fabric-to-garment tracking process.

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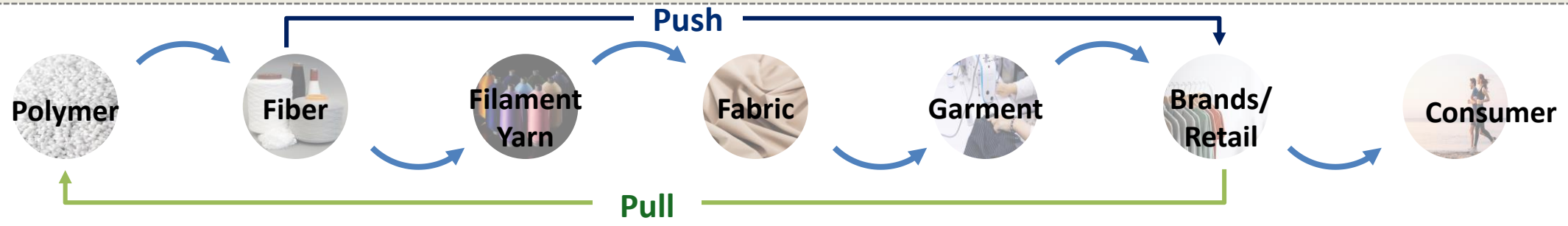
Transforming Market Approach: Industrial Players need to come together to "Create the Pull & Push"

Industry Players	Recyclers (Chemical / Mechanical)	Fiber Manufacturers	Filament Manufacturers	Weavers	Sewing and Knitters	Brands	Who feel proud



Engagement Level	**Medium - High:** RM availability, material stability, quality	**High:** Product development, quality, on time material availability	**High:** Product development, quality, on time material availability	**Very High:** Application development	**Medium** Quality, compliance, production clarity	**Very High:** Specification approval, marketing, demand creation	**Indirect High:** Sustainability and product benefit messaging
Value Proposition			Processing efficiency, product specs and consistency, support service	Product Perfection, fabric consistency blend ability, dyeability, certification, lead-time	Salesman sampling, quality, response time	Sustainability claims, quality, ease of sourcing, lead-time, response time, traceability, tag	Look, feel, comfort, durability, choice and emotional connect
Responsibility	• Recycling Team • Sustainability	• Plant Team • Sales team • Sustainability	• Plant Team • Sales team • CTS Yarn • Sustainability	• Fabric Dev. • Business Dev. • Sustainability	• Business Dev.	• Sustainability • Business Dev.	• Communication • Sustainability

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Please get in touch!

Here to support

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