TORAY
Innovation by Chemistry

100TH

TORAY IR Day

Medium-Term Management Program Project “IGNITION 2028”

Films Business

June 9, 2026

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Business Overview

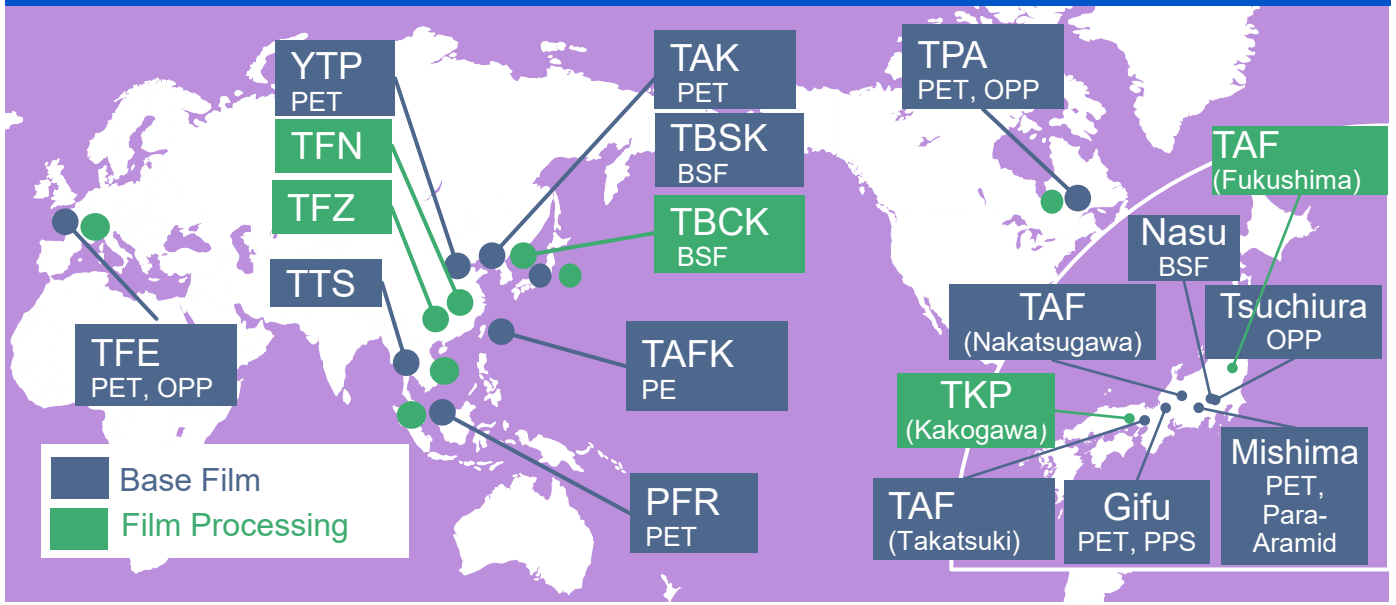
I. Business Overview

General

Revenue : 305.9 billion yen (FY 2025)
Subsidiaries : 12 Companies (Japan 2, Overseas 10)
(Consolidated)

Main Products	Main Applications
Polyester (PET) Film Lumirror™	Functional films for high performance layer production, Optical, Magnetic recording, Packaging, etc.
Polypropylene (OPP) Film Torayfan™	Capacitors (for xEV, etc.), High-performance food packaging, etc.
Polyphenylene sulfide (PPS) Film Torelina™	Electrical insulation, Adhesive tape, Capacitors, etc.
Aramid Film Mictron™	Magnetic recording
Battery Separator Film(BSF) Setela™	Separator for lithium-ion secondary battery
Non-oriented Polyethylene Film Toretec™	Self-adhesive surface protection (for optical, functional resin sheets)
Transparent Barrier Film Barrialox™	High-performance food packaging

Film Production Sites : Global Production Network



Production Capacity by Region

Unit : 1000 tons/year

		PET Film	OPP Film
Japan	Toray	92	13
Americas	TPA	28	76
Europe	TFE	31	19
Asia	PFR, TAK, YTP	223	-

II

Toray's Strengths

II. Toray's Strengths

Toray's Competitive Advantages

Diverse Fundamental Technologies Cultivated Through a Long History

- Polymer technology (synthesis, molecular design)
- Nanotechnology (alloy, multi-layer)
- Film-forming technology
  (solution casting, melt extrusion and casting, structural design and control, surface design and control)

Diverse Product Properties and Application Development

Product Properties

- Surface smoothness
- Release properties
- Electrical properties
- Heat resistance
- Barrier properties
- Sealing properties
- Dimensional stability
- Adhesiveness
- Transparency
- Optical function
- Reflective properties
- Microporosity

Example of Applications

- Functional films for high performance layer production
- Capacitor film
- Packaging film

PET Film Lumirror™

OPP Film Torayfan™

Transparent Barrier Film Barrialox™

CPP* Film Torayfan™ NO
*Cast Polypropylene

Technology Development and Proposal Capabilities Based on the Above

- Continuous value enhancement for customers through film properties improvement

Global Production, Technology, and Sales Network

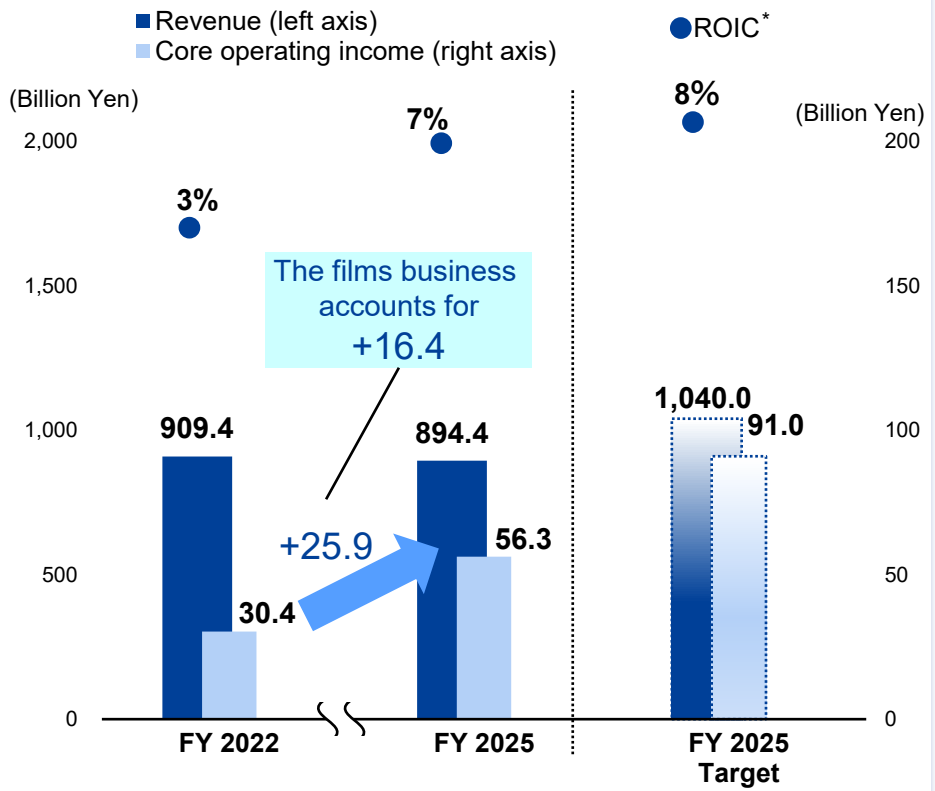
- PET film: 6 global sites
- OPP film: 3 global sites
- 19 production plants

III

Reviewing Medium-Term Management Program “Project AP-G 2025”

Although the film business core operating income fell short of FY 2025 targets, it was improved compared to FY 2022

Performance Trends (Performance Chemicals Segment)



* ROIC: Core operating income after tax / average Invested capital (average of the balances at beginning and end of the period)

Film Business

FY 2025 Target: Not achieved

- Toray and TAK's PET film business exceeded profit targets, driven by the sales expansion of value-added applications such as MLCC (Multi-Layer Ceramic Capacitor) and DFR (Dry Film Resist) for Japan / Korea customers (a new production line commenced operation at Gifu Plant). The OPP capacitor applications (a new production line started operation at Tsuchiura Plant) and the packaging business at TAF also exceeded profit targets.
- Two subsidiaries in the U.S. and Europe that have fallen under Darwin Project ceased production line at the facilities for general-purpose products and focused on value-added product expansion, however, fell short of targets.
- The Battery Separator Film (BSF) business strongly advanced production line shutdowns and associated fixed cost reductions in response to changes in the business environment, including the continued slowdown in EV demand and intensifying competition. However, it fell short of its targets.

Core operating income improved compared to FY 2022

- Toray and TAK's PET film business achieved significant growth of core operating income due to the recovery from weak demand and expanding value-added applications such as MLCC and DFR. TAF also saw an increase in core operating income, driven by packaging and other applications.
- Companies subject to the Darwin Project achieved reduction in losses through demand recovery and structural reforms.
- Core operating income of BSF business declined significantly reflecting a slowdown in EV demand.
- All companies promoted cost reductions through production line shutdowns for general-purpose products and price increase in response to rising raw material and fuel prices stemming from the Ukraine conflict and other factors.

IV

Business Environment

Anticipated Business Environment Under “IGNITION 2028”

Opportunities

- Further advancement are expected in the thinning and sophistication of various functional films used in electronic component manufacturing processes, in line with the increasing sophistication of electronic components.
- Continued growth in power demand is expected to drive demand related to power generation, transmission, energy storage, and batteries.
- Growing social demand for extending shelf life to reduce food loss is expected to drive demand for food packaging materials.

Risks

- Product commoditization driven by the introduction of high-performance production lines by existing competitors and new entrants, and price declines due to a deterioration in the supply-demand balance.
- Accelerated transition back to paper driven by the growing shift away from plastics, particularly in the packaging applications.

V

Medium-Term Management Program Project “IGNITION 2028”

1.Basic Policy

Film Business Basic Policy	Complete transformation from "Plastic Film" to "**Functional Film** = continuously providing value enhancement to customers and continuously supporting growth across the entire supply chain"
Key Initiatives Based on Basic Policy	**[Growth Strategy]** Continuously contribute to customer value enhancement through innovation creation mentioned below, and strengthen our profitability by building winning patterns and promoting strategic pricing. - By leveraging our strengths to improve product properties, upgrade our film products and focus management resources on applications where we can continuously contribute to enhancing customer value. - Further contribute to enhancing customer value by applying Toray group's advanced processing technologies (coating, metal metallizing, etc.) in an integrated manner to the above-mentioned film products. **[Structural Reform]** Promote downsizing or withdrawal from products and applications with high risk of competition from emerging players.

(1) Key Growth Strategy Initiatives

(1) Expansion of functional films for high performance layer production

As electronic components, optics and semiconductor fields become more advanced, particularly through miniaturization and higher precision, improvements in process film performance are directly linked to better customer production yield and higher product value. Leveraging these as value propositions, we are promoting **thinner films, higher smoothness, and higher cleanliness**.

(2) Expansion of OPP Film Capacitor Applications

Sustaining differentiation by advancing technologies that **simultaneously deliver thinner films, higher voltage resistance, and greater heat resistance.**
Leveraging the competitiveness of ultra-thin films that enable the miniaturization and weight reduction of customer products, we aim to maintain and expand a high share in the automotive applications.

(3) Expansion of High-Performance Packaging Films with High Barrier and Sealant Properties

In response to growing demand for food waste reduction and environment friendliness, we focus on extending shelf life, reducing plastic usage through thinner films, eliminating aluminum foil, and promoting mono-material packaging.

(2) Key Initiatives in Business Restructuring

Focused on completing structural reform of the BSF business and film production sites in the U.S. and Europe subject to Darwin Project.
Other sites are also further promoting downsizing or withdrawal of products, applications and production lines with a high risk of competitions from emerging players.

	AP-G 2025 Results	Initiatives Under "IGNITION 2028"
Two subsidiaries in the U.S. and Europe subject to Darwin Project	• PET: Ceased production lines focused on general-purpose products and consolidated value-added products into lines that remained in operation. At the same time, initiated the expansion of the release applications by leveraging our three-layer composite technology and externally sourced recycled materials. In addition, promoted strategic pricing. • OPP: Expanded specialty packaging films and promoted strategic pricing. • Reduced fixed costs and strengthened business reform by downsizing production capacity. • Achieved a significant reduction in losses but has yet to establish stable profitability.	• Building on the strengthened structure under AP-G 2025, promote growth strategies to achieve and expand sustained profitability. • PET: Further improve product mix centered on expansion of functional films for high performance layer. • OPP: Further expansion of high-barrier packaging films that contribute to extended shelf life, and ultra-thin films that address the shift toward paper-based packaging in the European market. • Continued promotion of strategic pricing and fixed cost reduction.
BSF Nasu Plant (including OPP) A production site in the Republic of Korea	• Nasu: Promoted structural transformation through BSF downsizing and establishing new ultra-thin capacitor OPP line (starting FY2027). • Korea: Shut down legacy small lines, strengthened sales and production efficiency through management integration with TAK, and pursued thorough cost reduction aligned with production capacity.	• Nasu: Complete its structural transformation through further line consolidation and the start-up of OPP production lines. • Republic of Korea: Complete structural reform through further production line consolidation focused on value-added products and continued cost reduction.

Focus on Functional Films for High Performance Layer

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A
Higher Functionality of End Products
Electronic Components, Display Peripherals

- Thinner and lighter components
- Coating ⇒Function transfer
- Close collaboration with customers, barriers to entry

B
Toray Group's Technological Advantages and Strengths Advancement and Competitiveness Enhancement

- Composite technology
- Surface micro-design
- Foreign particle control (cleanliness)

C
Cost Reduction and Environmentally-friendly Products

- Environmental friendliness
- Ecouse™ environmentally friendly recycled products
- Raw material reuse (composite)

D
Value Extension by Integration of Coating Processing

- Differentiation of film by adding release properties (in-line and off-line processing)
- Value extension of value chain

Foldable Smartphone

Automotive Display

Smart Watch

Our Strengths x Barriers to Entry x Value Extension (enabling smooth pass-through of cost increases) = Focus on functional films and promote further upgrades

PET Films for the MLCC production process

Business Environment

- In addition to advanced smartphones and automotive electrification, demand for AI servers is rapidly expanding
  → An increase in the number of ceramic layers driven by MLCC miniaturization and higher capacitance, along with increased content per device

Our Strength & Value

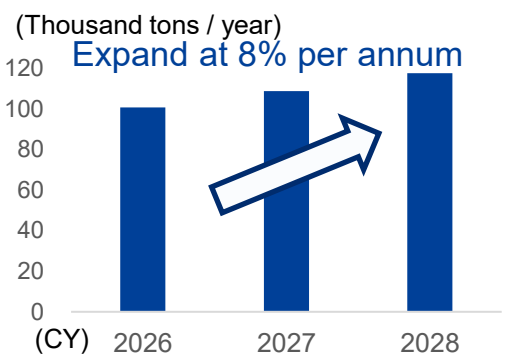
- Smoothness and film surface design technology
- High quality through minimal defects, including foreign matter and scratches, and uniform thickness.
- Global production system

*A new production line became operational at Gifu Plant in February 2026, and processing line in the Republic of Korea will be expanded in FY 2026

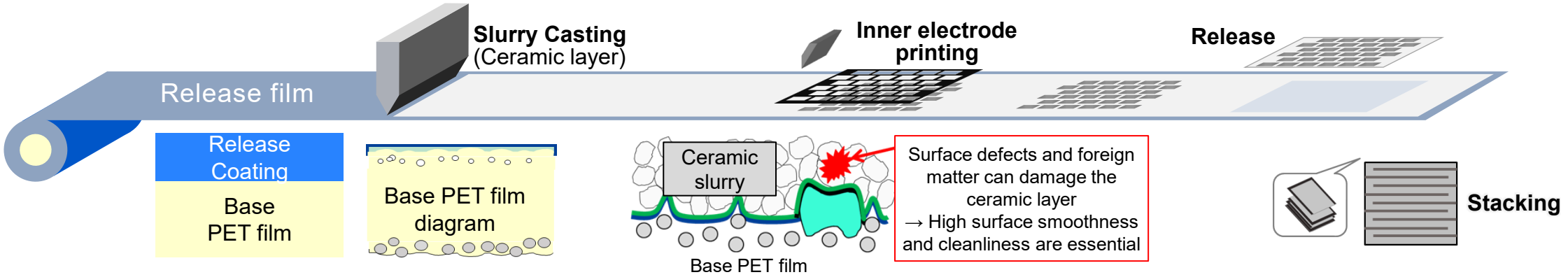
Our Business Strategy

- Contributing to customer value enhancement through continuous product upgrades

PET Film for MLCC Process Demand Forecast



Multi-Layer Ceramic Capacitor (MLCC) production processes



＜Contribution to MLCC technology progress＞
Miniaturization and increased capacitance → Thinner ceramic slurry and increase stacking layers → Required smoothness and cleanliness

Expansion of PET Film Material Recycling System for MLCC

Business Environment

As the world shifts from a linear economy to a circular economy, building a circular system to collect and reuse films used and discarded in customers' manufacturing processes, including MLCC, is a social responsibility of plastic film manufacturers.

Our Strength & Value

(1) Technology of mechanical recycling to remove coating materials and resins from film surface and of removing foreign materials in each process

(2) Establishment of a recycling system ahead of competitors

(3) Proprietary film production technology produces clean products using recycled raw materials

(4) Ability to reduce CO_2 emissions up to 50% in the manufacturing process

Our Business Strategy

(1) Increase collection and cleaning volume of used films by cooperating with each company in the supply chain

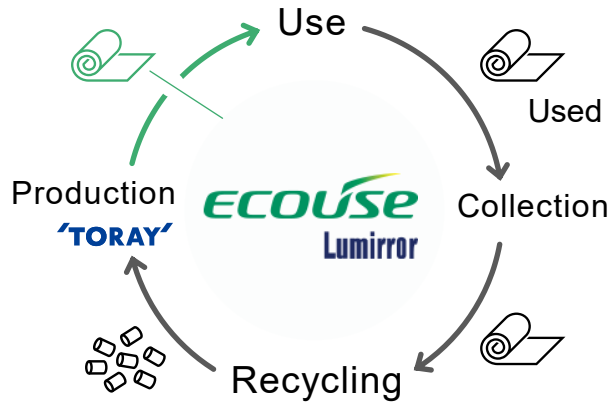
(2) Expand supply of high-quality, safe and reliable recycled film

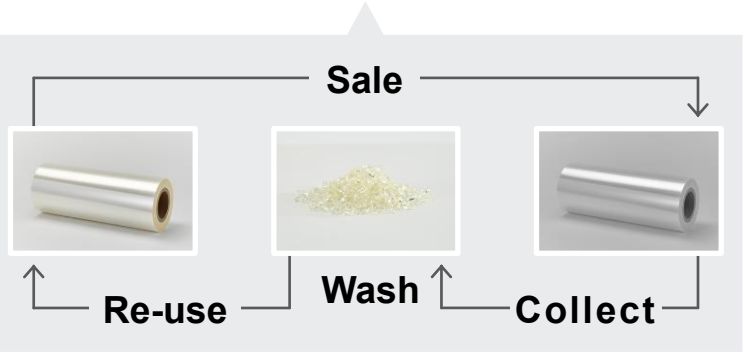
(3) Consider early introduction of chemical recycling system to stabilize quality and increase production volume

(4) Promote development of bio-based PET for further reduction of CO_2

Recycled PET Film "Ecouse™ Lumirror™"

Circular recycled film made from film collected from customers.
This product significantly reduces CO_2 emissions during production.





PET Films for DFR

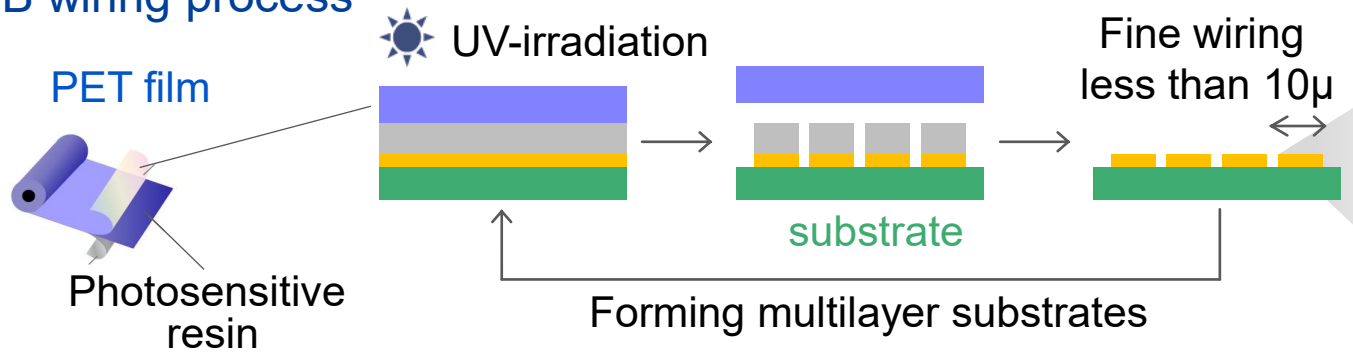
Business Environment

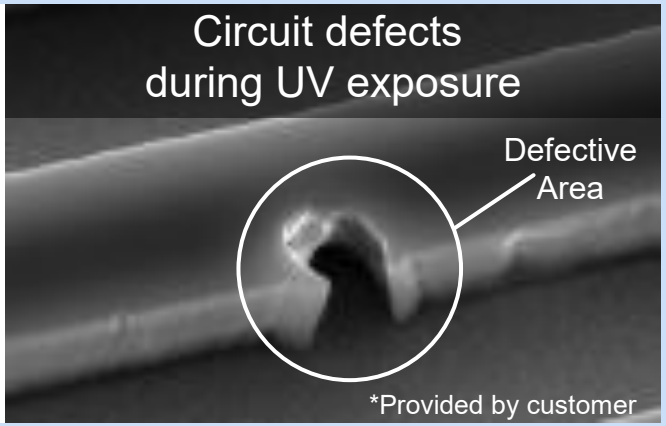
- Increasing performance of semiconductors
- Finer wiring, larger and multilayer circuit boards
- Market CAGR：10%

Our Strengths＆Value

- Advanced surface design technology＆QC
- Global de facto in high-end market

PCB wiring process





Our business strategy

- Realization of fine wiring by surface design technology and advanced Quality Control
- Contribution to customers' yield improvement and product value enhancement
- Expanding of sales to a wide range of markets from high-end to mid-range

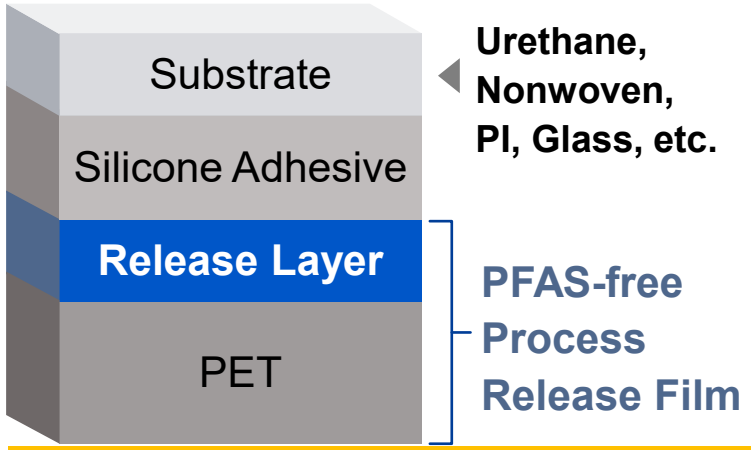
Expansion of Processed Film Products / Further Enhancement of Product Value

Fluorine-Based Release Film Alternative: Silicone-Free Release Film for Medical and Industrial Materials

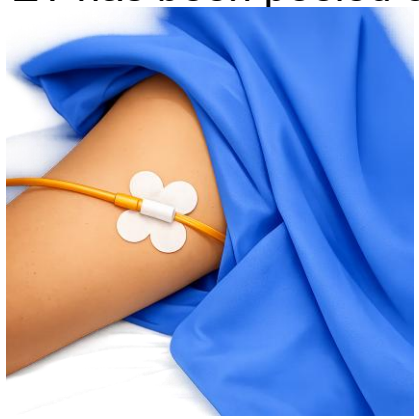
Technology	**Base film (+ recycled products) + release coating**
Environment	**PFAS Regulations** *PFAS= "Per- and Polyfluoroalkyl Substances" - global regulatory trends
Differentiation Point	**PFAS-free formulation that achieves both light peel release - excellent compatibility with silicone adhesives**

Environmentally Friendly

Representative Silicone Adhesive Product Configuration



For Medical Use
*PET has been peeled off



For Industrial Materials
*PET has been peeled off

Our Business Strategy

- Confirming needs with end customers and related material manufacturers, and coordinating with adhesive products

Ultra-Thin OPP Film for xEV Capacitors

Business Environment

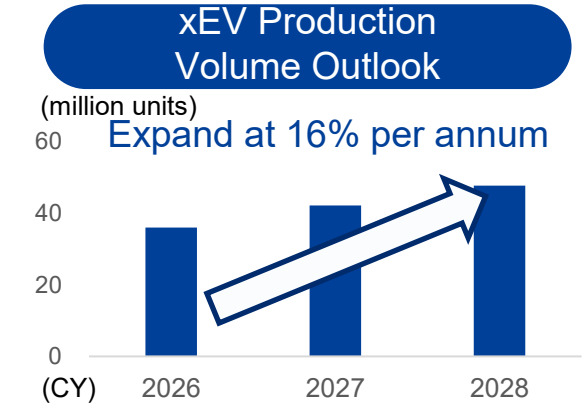
- xEV's drive system consists of battery, electric motor, and power control unit (PCU).
  PCUs are the key components, which control and manage electric motors
- Film capacitors are the biggest components in PCUs and have essential functions to ensure performance and reliability of PCUs. Our OPP film Torayfan™ is used in the capacitor
- To improve design flexibility and ensure stable operation, PCUs require miniaturization and higher capacitance.

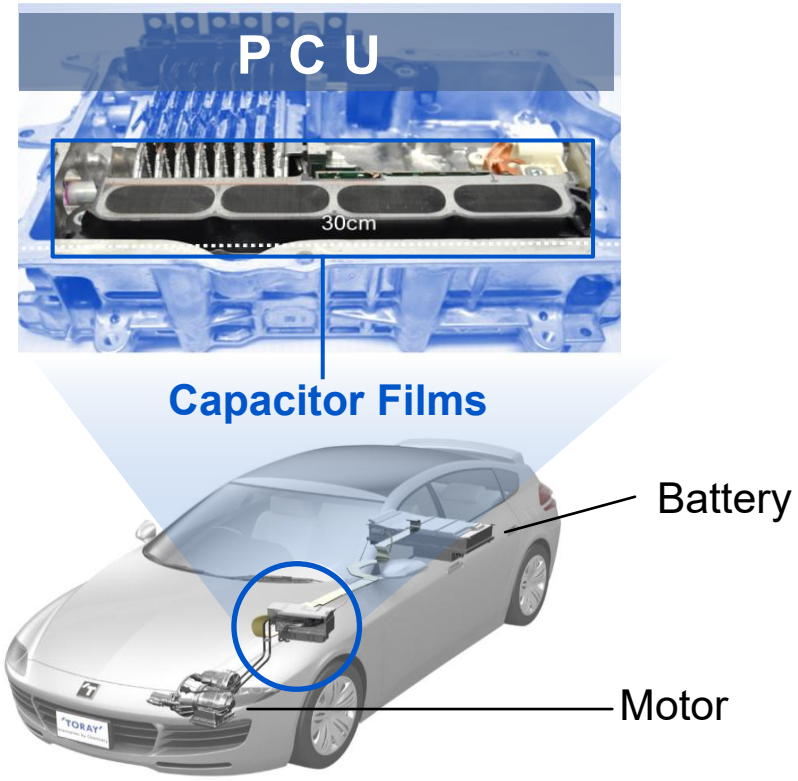
Our Strength & Value

- A solution for PCU downsizing & weight saving
  →Achieving both film thinning and enhanced voltage and heat resistance of Torayfan™, a dielectric OPP film

Our Business Strategy

- World leader in ultra-thin films, voltage resistance, and high quality
  Achieved extra high voltage resistance(480V/um) at thin gauge(2.0μ) and higher temperature (125℃) by our proprietary technology.
  Constant improvement resulted in over 60% market share.
- Stable supply through capacity expansion aligned with demand growth
  FY 2025: New production line at Tsuchiura Plant started operation, boosting capacity to 1.4 times.
  FY 2026: New production line planned at Nasu Plant, expanding capacity by approx. 34%.





High-Performance Packaging Films with Barrier & Sealant Properties

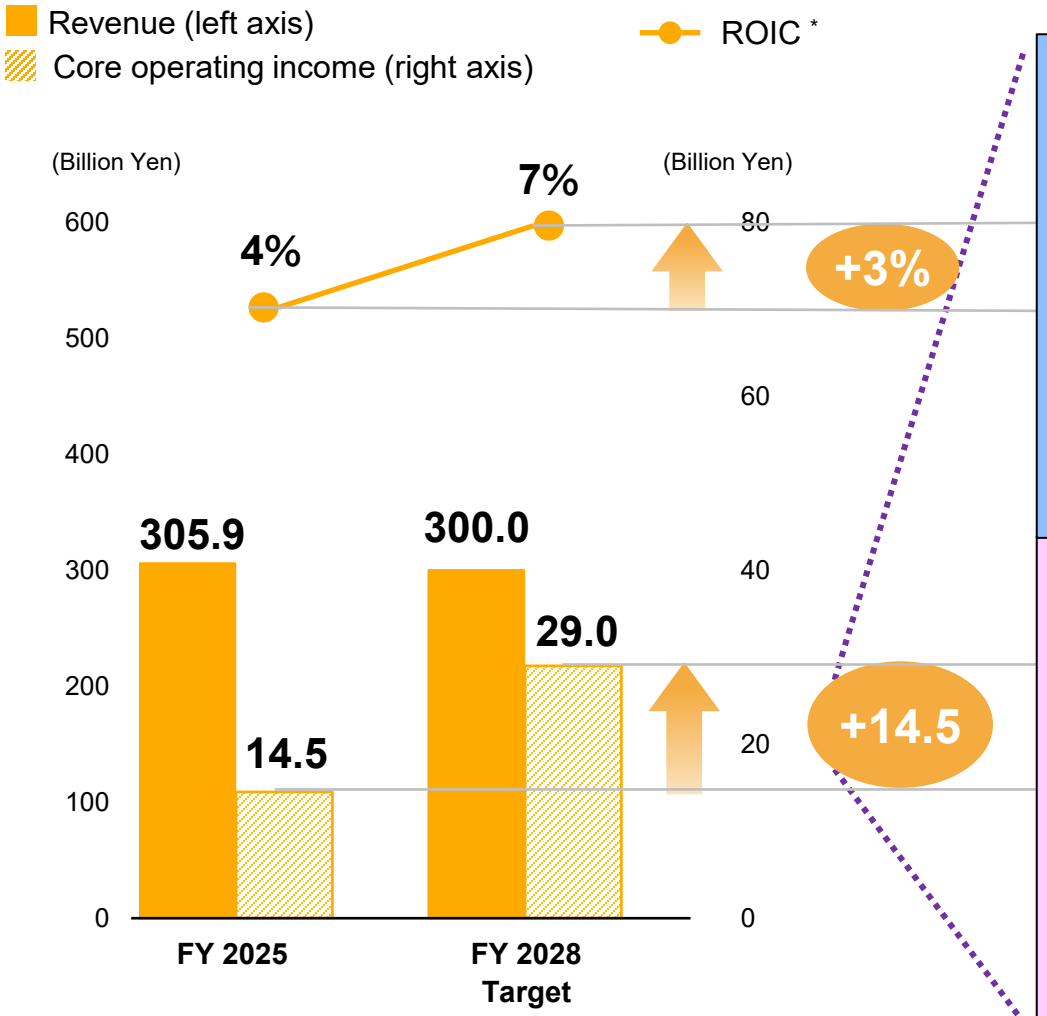
Our Strength & Value	Deploying high-performance packaging films with superior barrier and sealant properties tailored to regional needs worldwide, contributing to addressing social issues such as extending product shelf life and reducing plastic usage (thinner films).
Our Business Strategy	Packaging material requirements vary by region in terms of packaging formats and material specifications, and we tailor our approach accordingly. However, improving barrier and sealant performance to address social issues such as shelf-life extension and plastic reduction through thinner films remains a common technical challenge, which we address through coating and metal metallizing technologies. We will drive further technological evolution by leveraging the combined capabilities of all production sites.

	Packaging Material Needs (Examples)	Toray Group's Action
Japan (TAF)	With the expansion of microwave-compatible retort pouches for preserved and processed food packaging, demands for sealing integrity, burst resistance, and hygiene in retort pouches are increasing.	TAF's retort packaging films offer high sealant performance and are a trusted brand for safety and hygiene. We will expand these same high-quality products to meet growing demand in Asia and India. (Market growth rate: 3%/year)
Americas (TPA)	With the ban on artificial colorants in snack foods, packaging films require further improvement in oxygen high-barrier performance to maintain shelf life.	Maintaining top market share by expanding developed high-barrier products. (Market growth rate: 4-5%/year)
Europe (TFE)	Against a backdrop of growing anti-plastic sentiment among consumers, major food manufacturers are aggressively shifting to paper packaging (recyclable as paper when paper content exceeds 90% by weight).	Co-developing and expanding ultra-thin high-barrier films with heat-seal layers in collaboration with major food manufacturers. (Market growth rate: 7-8%/year)

VI

FY 2028 Target of Core Operating Income and Contribution Breakdown by Business and Initiative

VI. IGNITION 2028 Targets



* ROIC: Core operating income after tax / average Invested capital (average of the balances at beginning and end of the period)

Growth Strategy

Expansion of Functional Films for High Performance Layer

At production sites in Asia, Toray Industries and TAK, promote further value-added enhancement of PET film for MLCC production process

OPP Capacitor Application Expansion

Leverage the strong competitiveness of our ultra-thin films to further strengthen R&D collaboration with metal metallization sites in Japan & China

Expansion of High-Performance Packaging Films

Enhance overall strength by integrating high-quality products across production sites

Structural Reform

Structural reform of Companies subject to Darwin Project

Driving stable profitability and earnings stability by expanding the release film applications of PET films and value-added packaging of OPP films.

Structural reform of BSF Business

Complete **structural reform** while further optimizing production capacity in line with demand

VII

Appendix (List of Affiliated CompanyAbbreviations)

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List of Affiliated Company Abbreviations

Region	Abbreviations	Official name
Japan	TAF	Toray Advanced Film Co., Ltd.
	TKP	Toray KP Films Inc.
Americas	TPA	Toray Plastics (America), Inc.
Europe	TFE	Toray Films Europe S.A.S.
Asia	TAK	Toray Advanced Materials Korea Inc.
	TFN	TAK Advanced Film (Nantong) Co., Ltd.
	PFR	Penfibre Sdn. Berhad
	TTS	Thai Toray Synthetics Co., Ltd.
	TFZ	Toray Film Products (Zhongshan) Ltd.
	TAFK	Toray Advanced Film Kaohsiung Co., Ltd.
	TBSK	Toray Battery Separator Film Korea Limited
	TBCK	Toray BSF Coating Korea Limited
	YTP	Yihua Toray Polyester Film Co., Ltd.

Descriptions of predicted business results, projections, and business contained in this material are based on predictive forecasts of the future business environment made at the present time.

The material in this presentation is not a guarantee of the Company’s future business performance.

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