

Intelligent Recycled Materials: Leading the Growth Seeds

Toward a Clean, Zero-Waste Society

Konica Minolta, Inc.

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Speakers

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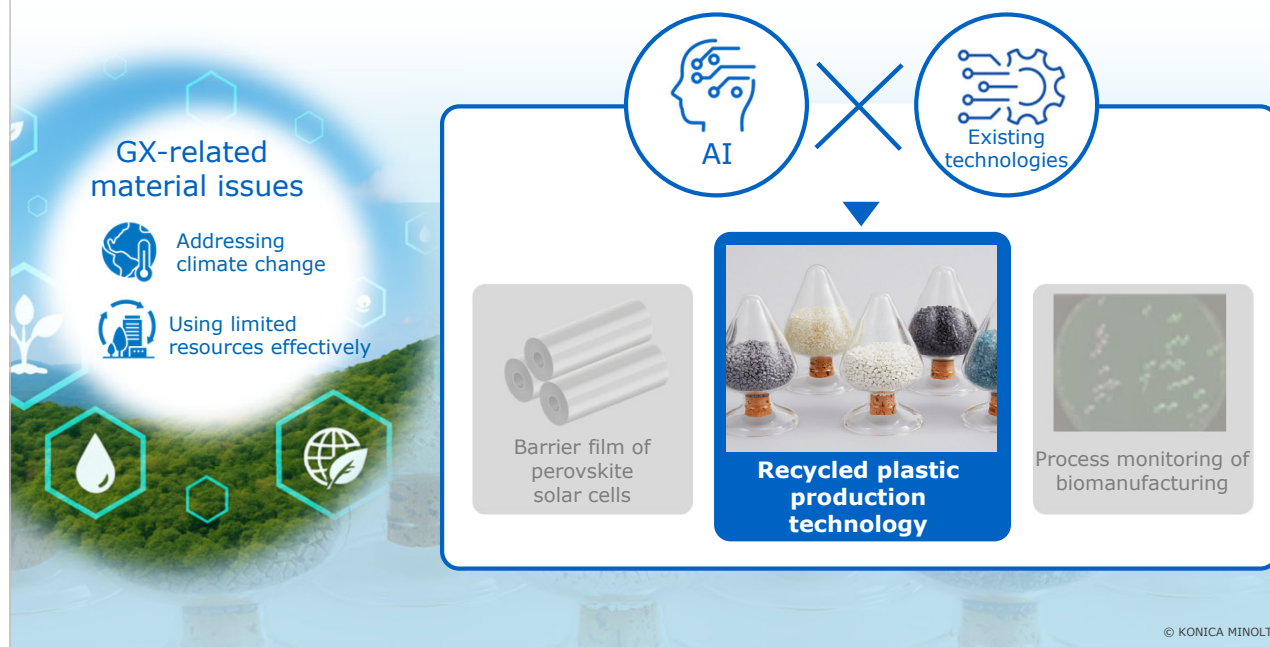
Thank you very much for joining today's briefing on our intelligent recycled materials.

This session will be structured around three key themes: background, path to growth, and future perspectives from our partners.

To begin, I will explain the background behind our initiative on intelligent recycled materials, focusing on the "three whys" that led us to this endeavor.

The "three whys" we will explore today are as follows: First, "why are we announcing this now?" Second, "why recycled plastic?" And finally, "why is Konica Minolta taking on this initiative?"

I will explain each of these perspectives in turn.



As we have previously explained, Konica Minolta has positioned fiscal 2025 as the year to establish a foundation for growth.

We are actively promoting growth initiatives by leveraging our existing technologies, newly developed AI-based innovations, and applying them to address challenges in the GX (Green Transformation) domain, which we recognize as a critical issue. Among these initiatives, we have made progress in the development of recycled plastic materials manufacturing technology, which we would like to share with you today.

Let me now address the first of the "three whys": Why are we announcing this now?

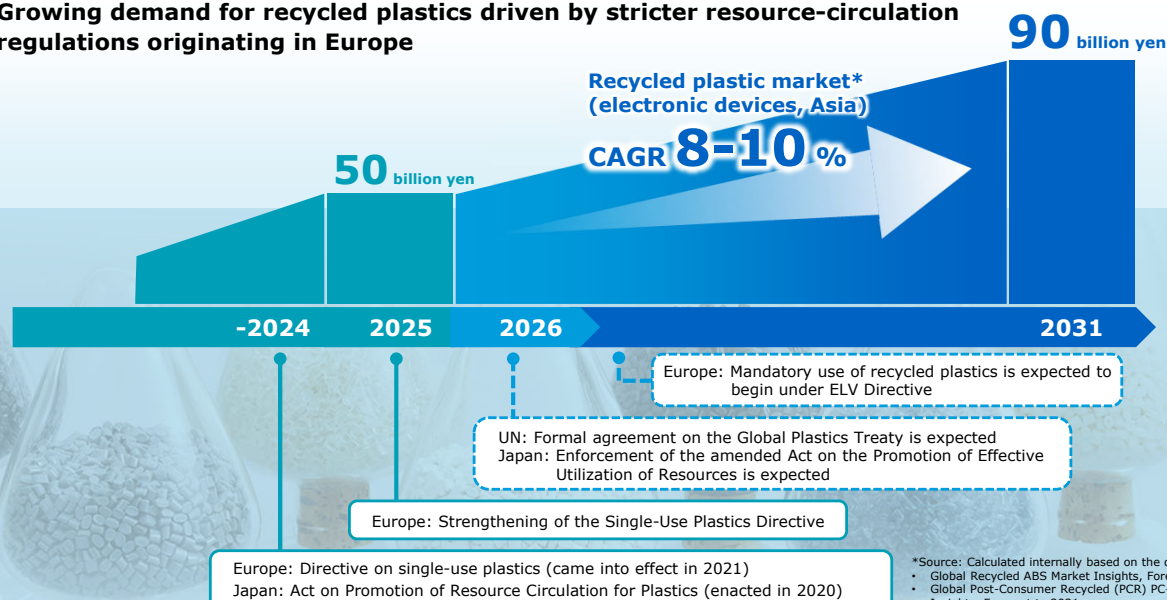
Konica Minolta has been developing mechanical recycled materials. While mechanical recycling is generally considered cost-effective, it has traditionally faced challenges in meeting required functionality and quality standards. The reason we are making this announcement now is that, through joint technological development with our partner, we have achieved a breakthrough in overcoming these challenges. We now have a clear path toward mass production starting next fiscal year, and we believe this is the right time to provide a thorough explanation to all of you.

Recycled Plastic Market Driven by Rising Environmental Awareness and Stricter Regulations



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Growing demand for recycled plastics driven by stricter resource-circulation regulations originating in Europe

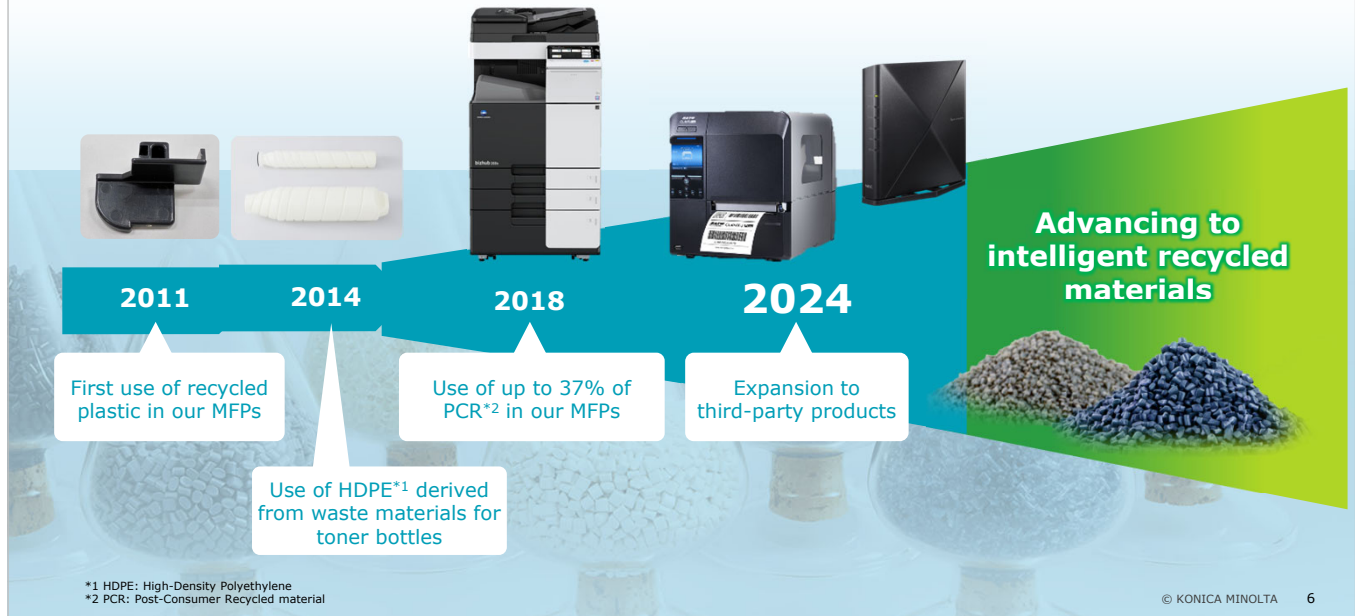


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Next, let me address the second question: “Why recycled plastic?”

As many of you are aware, environmental awareness is rising globally, and regulations surrounding plastics are being strengthened in response. In industries such as information technology, there is growing momentum toward the use of recycled materials, creating a favorable environment for adoption. We expect the market for recycled plastics to continue growing at an annual rate of approximately 8% to 10%. The reason we are focusing on recycled plastics is that the market for recycled materials in electronics and home appliances—where we can leverage our expertise—is expanding. Naturally, we are targeting this segment as we advance our business development efforts for intelligent recycled materials.

Konica Minolta's Use of Recycled Plastics | Leading the Business Technologies Industry for 15 years



This slide addresses the third question: "Why is Konica Minolta taking on this initiative?"

To answer this, I will explain our company's history of utilizing recycled plastics. Going back to the 2000s, Konica Minolta has been committed to environmental management. In fact, we began adopting recycled plastics as early as 2011—well ahead of many in the industry. By 2014, we expanded the scope to include HDPE, and subsequently raised the recycled plastic ratio in our multifunctional peripherals to 37%.

Last year, we extended our efforts to external products, including those from NEC and SATO.

Now, with the development of new technologies, we are ready to take the next step and begin full-scale efforts in intelligent recycled materials.

Konica Minolta's Use of Recycled Plastics | Collaboration with MJ MATERIAL



Konica Minolta has been engaged in recycled plastic material development for 15 years, collaborating with MJ MATERIAL on technology development during part of that period

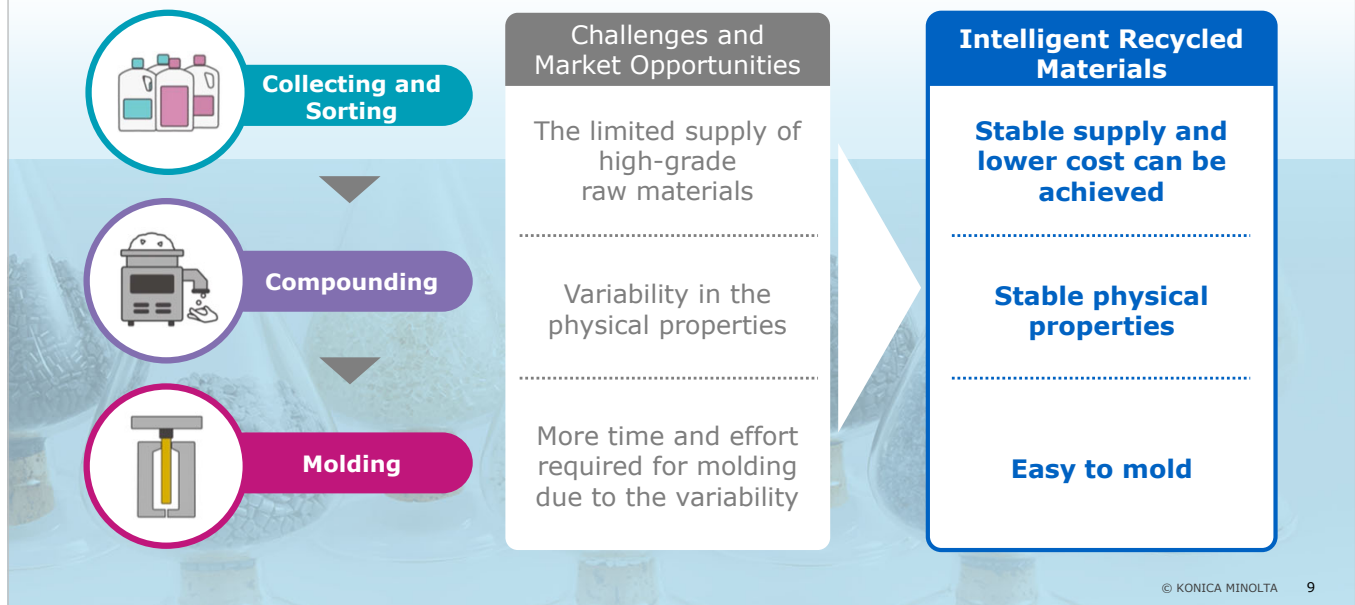
By newly integrating sensing and AI technologies, we have successfully evolved our work into intelligent recycled materials



Up to now, our efforts in utilizing recycled plastics have been carried out in collaboration with MJ MATERIAL, a partner with comprehensive manufacturing expertise—from collection to pelletization. Within this partnership, Konica Minolta has accumulated deep insights from the perspective of a brand owner, particularly in component molding and final product manufacturing through our multifunctional peripheral production. By combining the assets of both companies and integrating Konica Minolta's proprietary sensing and AI technologies, we believe we can deliver optimal value to our customers—brand owners—through intelligent recycled materials. This initiative will be jointly developed and deployed by Konica Minolta and MJ MATERIAL. Now, Toru Komatsu will provide further details on intelligent recycled material.



Once again, my name is Toru Komatsu from the Corporate Planning Division. It's a pleasure to be here. From this point forward, I will provide a more detailed explanation under the theme: "Paving the path to growth with intelligent recycled materials."



Through our ongoing efforts to utilize recycled plastics, we have come to understand the various challenges and needs faced by brand owners—including ourselves. First, as momentum builds around the use of recycled plastics, competition for waste plastic feedstock has intensified. This has led to limited availability in the supply chain and, consequently, rising material costs. Second, because waste plastics originate from different components and usage conditions, their material properties tend to vary significantly. Third, during the molding process, recycled plastics—unlike virgin materials—can exhibit instability due to varying degrees of degradation, resulting in a higher risk of defects.

To address these challenges, we have developed intelligent recycled materials as a technological solution. By applying sensing and AI technologies, we can stabilize the physical properties of the materials and ensure a high yield of quality products even in mass production.

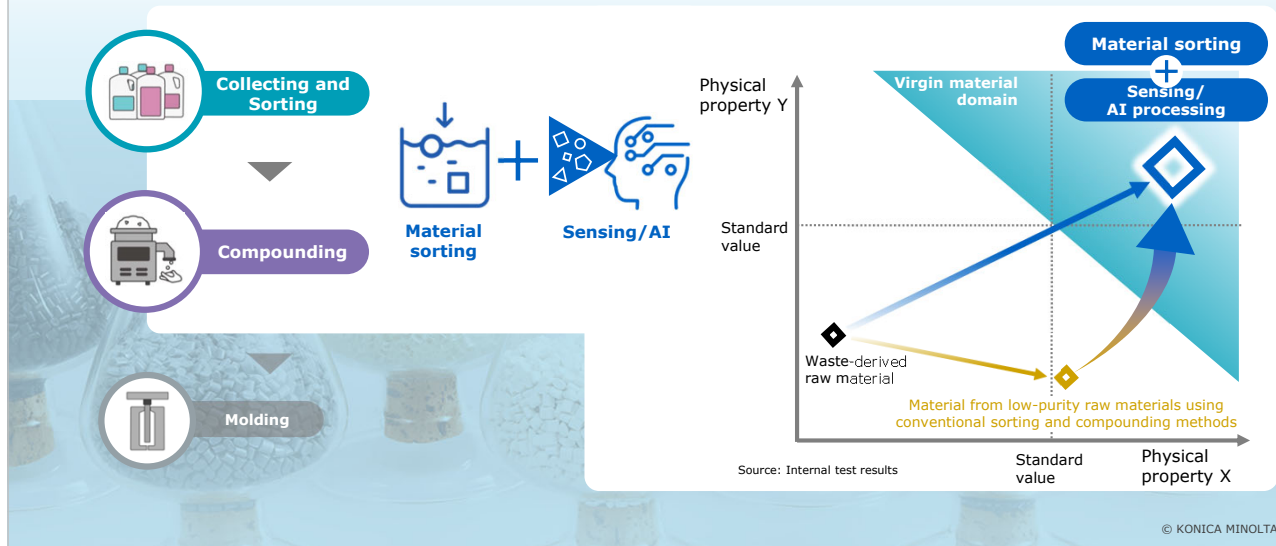
This approach enables us to utilize a broader range of waste plastics as raw materials, thereby improving supply stability and reducing costs. Let me now explain our approach in more detail.

Intelligent Recycled Materials | Achieving Virgin-Equivalent Material Properties Through Proprietary Technology



Proper impurity removal through combined separation techniques

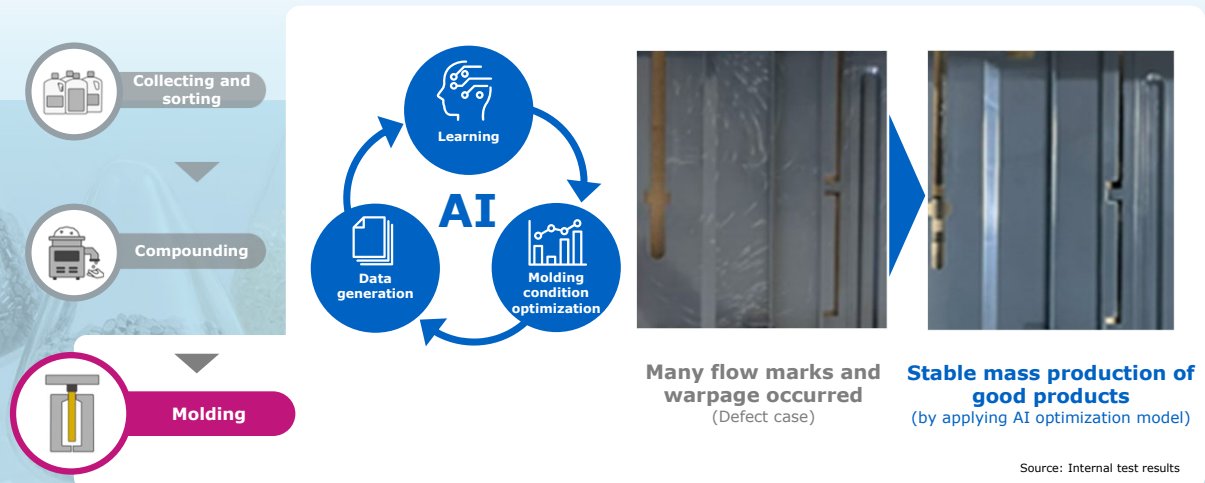
Compounding condition optimization with proprietary sensing and AI technologies



Here, I would like to introduce the technologies involved in the process of sorting waste plastics and converting them into resin materials prior to molding.

First, in the material sorting stage, we utilize MJ MATERIAL's expertise to separate waste plastics using multiple methods, sorting them by resin type. Next, using Konica Minolta's proprietary sensing technology, we identify the specific properties of each resin. Based on this data, our AI proposes the optimal manufacturing conditions—known as compounding—to achieve the desired material characteristics.

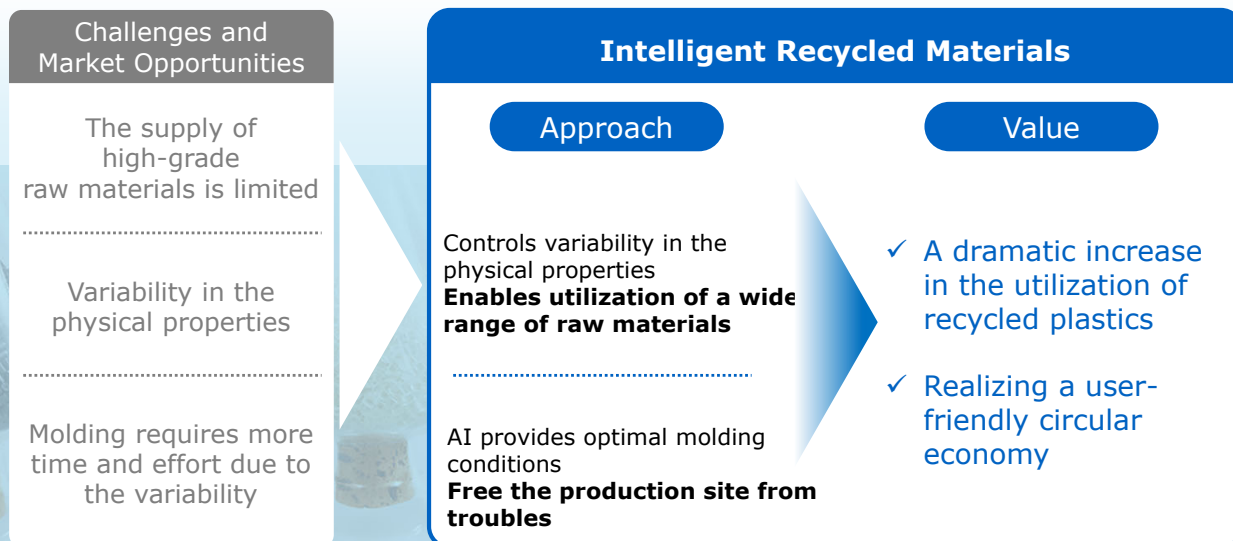
As shown in the graph on the right, when low-purity raw materials are processed using conventional methods, some physical properties may fall short of required standards. However, by applying sensing and AI technologies, we can elevate the material performance to levels equivalent to virgin materials. This means that regardless of the raw material quality, AI can suggest the best conditions to ensure consistent performance, thereby stabilizing material quality and securing a stable supply.

Providing proprietary AI solutions for molding**Enables stable mass production of high-difficulty molded parts with customer-required quality**

Next, I will introduce the technologies used in the molding process.

When molding with recycled plastics, variability in material properties can lead to defects such as flow marks or warpage—as shown in the photo on the left—even when the material itself meets the required specifications. Compared to virgin materials, recycled plastics tend to produce more visual and functional defects. However, since most recycled resin manufacturers only cover the scope up to material sales, brand owners are left to experiment with molding conditions on their own. This trial-and-error process can be time-consuming, and in the worst case, may result in the need to repurpose or discard entire material lots.

Konica Minolta's approach addresses this issue by analyzing molded components made from intelligent recycled materials. Our AI, trained on the molding expertise we have accumulated over the years, then proposes optimal molding conditions. This enables stable molding performance and allows for mass production with a yield comparable to virgin materials. As a result, we can help brand owners overcome the difficulties and inefficiencies often associated with molding recycled plastics. In our own trials, even with components that are considered difficult to mold, we have confirmed that using AI-recommended conditions leads to improved appearance and higher yield, as shown in the photo.



To summarize our approach to intelligent recycled materials in addressing the challenges and market opportunities surrounding recycled plastic utilization: First, by applying sensing and AI technologies, we can mitigate variability in raw materials and enable the use of a wide range of waste plastics—even for components that require high-quality standards. This leads to greater stability in both supply and material quality. Second, in the molding process, our AI proposes optimal molding conditions to counteract defects caused by variability between material lots. This helps resolve issues on the production site and ensures consistent, high-quality output.

Through these two approaches, we believe the use of recycled plastics can expand significantly, contributing to the realization of a circular economy that is more sustainable and brand-owner friendly.

Target Markets for the Intelligent Recycled Materials



Starting with electronic device and home appliance market in Asia

Expanding target markets by broadening target products, regions and resin type coverage

Approx.
50 billion yen
Electronic devices/
home appliances
Asia

+Europe/North America
**Total: Approx.
180 billion yen**
Electronic devices/
home appliances
Asia
Approx.
90 billion yen

+Automobile
+Expansion of resin types



**Electronic devices/
home appliances
Asia/Europe/
North America**



Sources: Calculated internally based on the data below
• Global Recycled ABS Market Insights, Forecast to 2031
• Global Post-Consumer Recycled (PCR) PC-ABS Market Insights, Forecast to 2031

FY2025

FY2031

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Next, I would like to discuss the target market for intelligent recycled materials.

In the near term, we will focus on the Asian market for electronic devices and home appliances—an area where our expertise can be fully leveraged, and which represents a market of approximately 50 billion yen. As the market continues to grow at an annual rate of 8% to 10%, we plan to expand our application of intelligent recycled materials to the European electronics and home appliance sectors as well. By fiscal 2031, we aim to deliver value to a total addressable market of approximately 180 billion yen. Looking further ahead, we are already conducting preliminary discussions with stakeholders in the automotive industry, with the goal of entering that sector in the future.

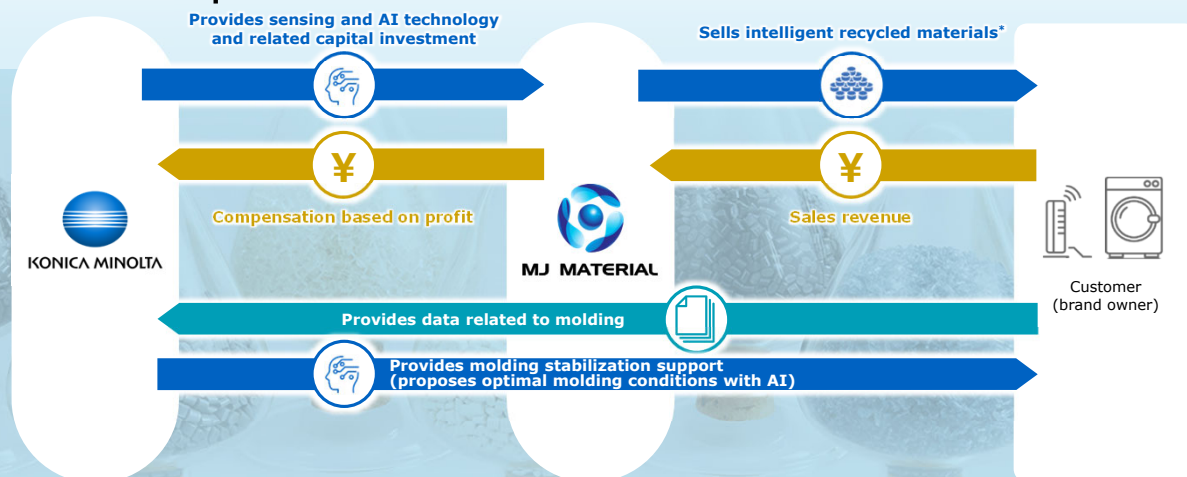
In this way, we believe intelligent recycled materials can steadily expand as a business, in line with both market growth and the broadening of applicable domains.

Maximizing Value Through Partnership with MJ MATERIAL



Ensuring material performance of intelligent recycled materials by leveraging proprietary sensing and AI technologies

Achieving high profitability by utilizing MJ MATERIAL's assets and reducing capital investment
A virtuous cycle business model that provides customer-supporting solutions and builds long-term relationships



*Konica Minolta also plans to conduct sales activities using its own sales channels

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In the next slide, I will explain the business model with MJ MATERIAL. Konica Minolta will provide MJ MATERIAL with proprietary sensing and AI technologies to help stabilize both supply and quality. These technologies will be installed as equipment on the production lines at MJ MATERIAL's newly established facility, while keeping initial technical investment relatively low. MJ MATERIAL will manufacture and sell intelligent recycled materials, and Konica Minolta will receive compensation for the technology licensing based on profit, aiming to achieve high profitability. Furthermore, by continuing to provide molding support solutions even after the sale, we will build ongoing relationships with customers and encourage broader application of intelligent recycled materials across more components—creating a positive cycle of adoption and value creation.

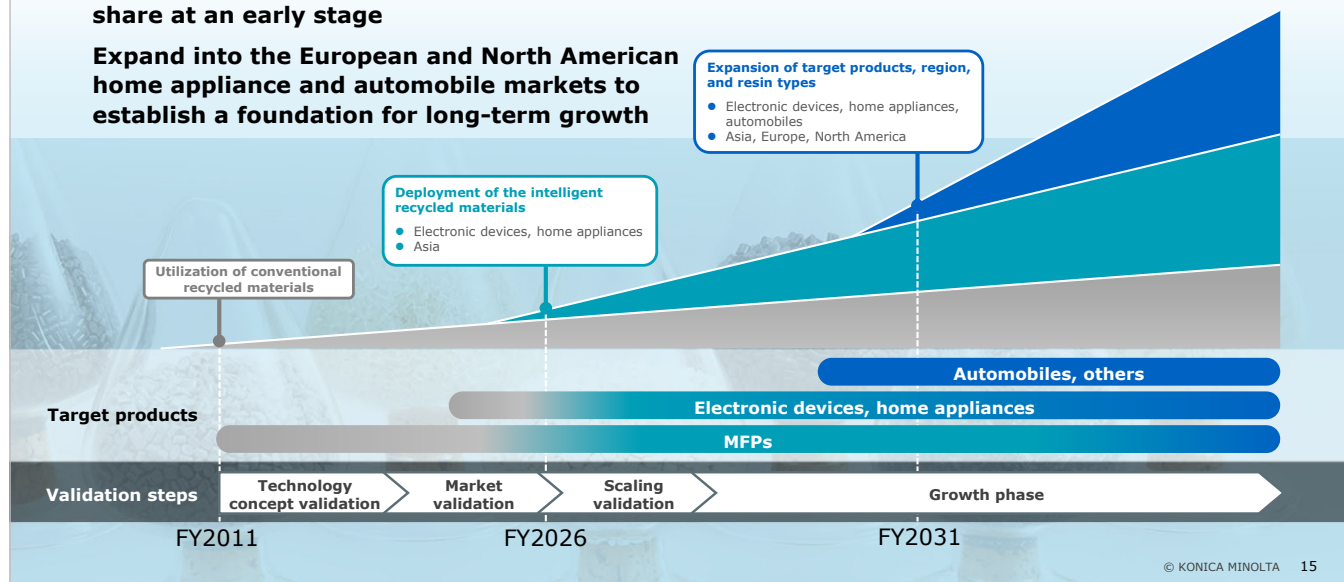
Business Growth Concept of the Intelligent Recycled Materials



Sales scheduled to start in FY2026

Start with Asian electronic device and home appliance market; aiming for a 10% market share at an early stage

Expand into the European and North American home appliance and automobile markets to establish a foundation for long-term growth



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This brings us to the final slide from Konica Minolta.

Currently, intelligent recycled materials are being shipped as samples for proof-of-concept (PoC), with full-scale sales planned to begin in fiscal 2026. We will start external sales in Asia, targeting the electronics and home appliance sectors, in addition to use in our own multifunctional peripherals. Together with MJ MATERIAL, we aim to quickly capture a 10% market share. Building on this, we will expand into Europe and broaden the range of applicable resin types to support future entry into the automotive market. Through these efforts, we intend to establish a solid foundation for long-term growth.

Now, to share expectations for intelligent recycled materials from a partner's perspective,

we would like to invite Mr. Weng, President of MJ MATERIAL, to speak.



Thank you very much, Mr. Komatsu, for the introduction. My name is Weng, President of MJ MATERIAL. From here, I would like to speak from the perspective of a co-creation partner about the future we envision with intelligent recycled materials.



Company Name	MJ MATERIAL TECHNOLOGY SDN BHD
Establishment	2014
Location	Penang, Malaysia
Customer	Electronic device manufacturers, chemical manufacturers, consumer goods manufactures, etc.
Business	Development and production of recycled materials through material recycling • A group company serving as the main development and production base for Meibun Industry Co., Ltd. (Toyohashi, Aichi), which operates an integrated process from collection to sales of recycled plastics • Business partnership with about 20 companies in the U.S., U.K., Hungary, Australia, and the Middle East for collection of recyclable raw materials

Let me begin with a brief introduction of our company.

MJ MATERIAL is a recycled resin manufacturer founded in 2014, specializing in the development and production of recycled materials through material recycling. We are headquartered in Penang, Malaysia, and supply recycled plastics to clients in the electronics, chemical, and consumer goods industries. MJ MATERIAL is a group company of Meibun Industry Co., Ltd., based in Aichi Prefecture, Japan. As a group, we operate an integrated process for recycled plastics—from collection to sales—and MJ MATERIAL plays a central role in development and production. In terms of raw material collection, we have established partnerships with 20 companies across the United States, United Kingdom, Hungary, Australia, and the Middle East, among other regions. These partnerships are designed to ensure a stable supply of recycled plastics, particularly from a Business Continuity Planning (BCP) perspective.

Why Malaysia?



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Next, this slide explains “Why we produce in Malaysia.”

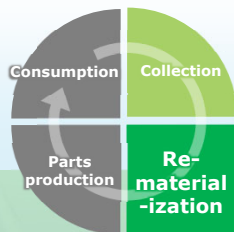
We believe there are advantages from legal, geographical, and cultural perspectives.

From a regulatory standpoint, Malaysia enforces a strict licensing system for waste plastic importers compared to other Southeast Asian countries. This is based on the government’s policy that waste plastics should be treated not as garbage, but as valuable resources. Malaysia is actively promoting the industrialization of recycled plastics, supported by enhanced transparency and legal frameworks, which also make it easier for foreign companies like ours to enter the market.

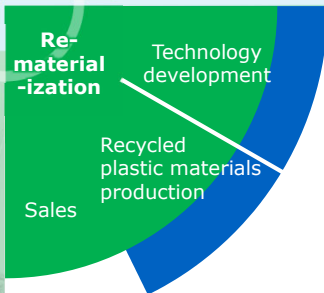
Geographically, Malaysia is home to Port Klang, one of the world’s top ten container ports, and is well-connected by expressway networks, enabling efficient international logistics. Its proximity to major Southeast Asian markets and low risk of natural disasters are additional advantages.

Culturally, the widespread use of both English and Chinese facilitates smooth communication among employees and stakeholders. These factors collectively make Malaysia an ideal location for our production operations.

Building Partnerships for Realizing a Circular Economy



Meibun Group provides a one-stop service covering the entire recycling process, from collection to re-materialization



Sensing technology
AI technology



Production technology
Polymer technology

Collaboration with a reliable partner

Ensuring stable material procurement regardless of raw material type
Improving efficiency and stabilizing quality in material production

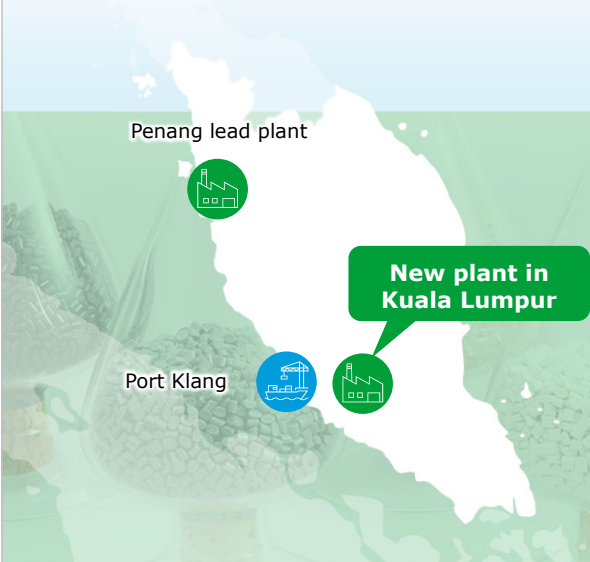
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As we continue production in Malaysia, we also carry out raw material collection in Japan, enabling the Meibun Group to offer a one-stop service across the entire reverse logistics chain—commonly referred to as the “venous industry”—from collection to reprocessing. Our materials are used by many manufacturers, including Japanese companies. Through these efforts, we have long collaborated with Konica Minolta on technical development in recycled plastics. Now, by combining Konica Minolta’s new sensing and AI technologies with our own expertise in production and polymer engineering, we have established a stronger partnership through the development of intelligent recycled materials. This collaboration allows us to expand the range of usable raw materials, ensuring a more stable supply. Moreover, by offering molding support solutions—an area that is often difficult to cover from the perspective of recycled resin manufacturers—we can improve production efficiency and stabilize quality in component manufacturing. This strengthens trust with our customers, the brand owners, and we are confident that together with Konica Minolta, we can further expand our business.

Delivering the Value of Intelligent Recycled Materials to Customers



In 2026, a new plant will open in Kuala Lumpur
Production line for intelligent recycled materials is scheduled to begin operation with Konica Minolta’s technology



New plant in Kuala Lumpur	
Location	Negeri Sembilan, Malaysia
Scheduled opening	Spring 2026
Site area	51,000m ²
Production capacity	75,000 tons per year (5 times the capacity of the Penang plant)

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To deliver the value of intelligent recycled materials—ensuring both supply stability and quality consistency—to a broader range of customers, we will be opening a new plant in Kuala Lumpur next spring. This facility will feature a production line equipped with Konica Minolta’s sensing and AI technologies, enabling us to manufacture intelligent recycled materials and provide high-value recycled plastics to society.

An industry-first solution



MJ MATERIAL

Supplier
perspective



Customer
perspective



KONICA MINOLTA

End-to-end model: collection/shredding/washing and sorting/
compounding/molding

Enabling the accelerated deployment of
intelligent recycled materials
with superior supply reliability and quality consistency

- **Acquiring new customers**
- **Expanding sales to existing customers**

This partnership goes beyond simply combining new technologies. To the best of my knowledge, there are no other solutions in this industry that deeply integrate the perspective of a recycled plastic supplier with that of a customer who uses recycled plastics in molding. By offering a fully integrated model, we can accelerate the value proposition of intelligent recycled materials. We are confident that this will enable us to acquire new customers and expand our business with existing ones.

MJ MATERIAL's Vision



Intelligent recycled materials enable stable supply and consistent quality regardless of raw material source

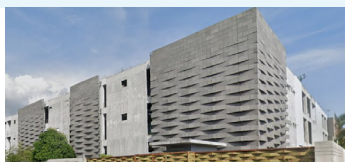
Giving new value to what was once discarded – Toward a clean, zero-waste society



MJ MATERIAL

Vision:

- Giving used plastics a new future
- Transforming resources into new value through our unique technology – Shaping a sustainable future



Sales of 10 billion yen
in the short term
Toward further growth
in the medium to long term



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Finally, I would like to share our vision for the future.

The intelligent recycled materials developed in partnership with Konica Minolta enable stable supply and consistent quality, regardless of the raw material source. This naturally brings benefits to brand owners and creates new opportunities for business expansion for both of our companies. As a result, we aim to achieve short-term sales of 10 billion yen, with further growth potential beyond that.

More importantly, I believe this initiative holds significant meaning in giving new value to plastic materials that were once discarded. It represents a step toward realizing a clean, zero-waste society—an aspiration that aligns perfectly with our company's long-term vision. Together with Konica Minolta, MJ MATERIAL is committed to driving the intelligent recycled materials business forward in pursuit of that goal.

That concludes my presentation. Thank you very much for your attention.



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