



KONICA MINOLTA

# Sustainability Briefing

- Accelerating Both Environmental  
Contribution and Business Growth -

Konica Minolta, Inc.  
January 20<sup>th</sup>, 2026





### **Konica Minolta's sustainability management Industry Business growth and sustainability value creation**

**Noriyasu Kuzuhara**

Executive Vice President & Executive Officer, Industry Business



### **Technological Initiatives Contributing to Decarbonization and GX**

**Toshiya Eguchi**

Executive Vice President & Executive Officer, Technology

1

**On track to achieve Carbon Minus in FY2025**

2

**Industry business shows a significant contribution to avoided CO<sub>2</sub> emissions**

3

**Progress in initiatives for technologies contributing to decarbonization and GX**



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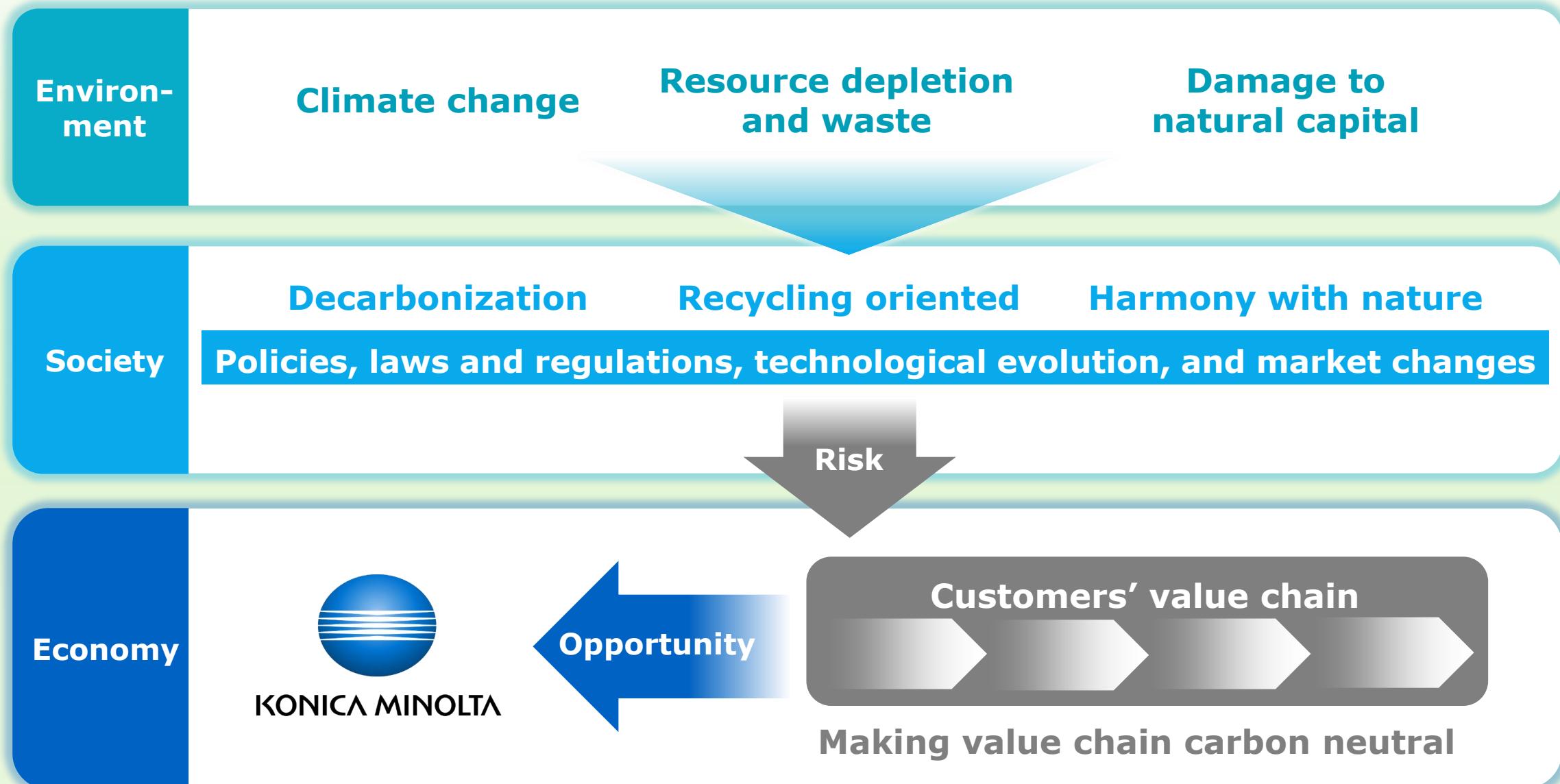
**Konica Minolta's sustainability management**

**Industry Business growth and  
sustainability value creation**

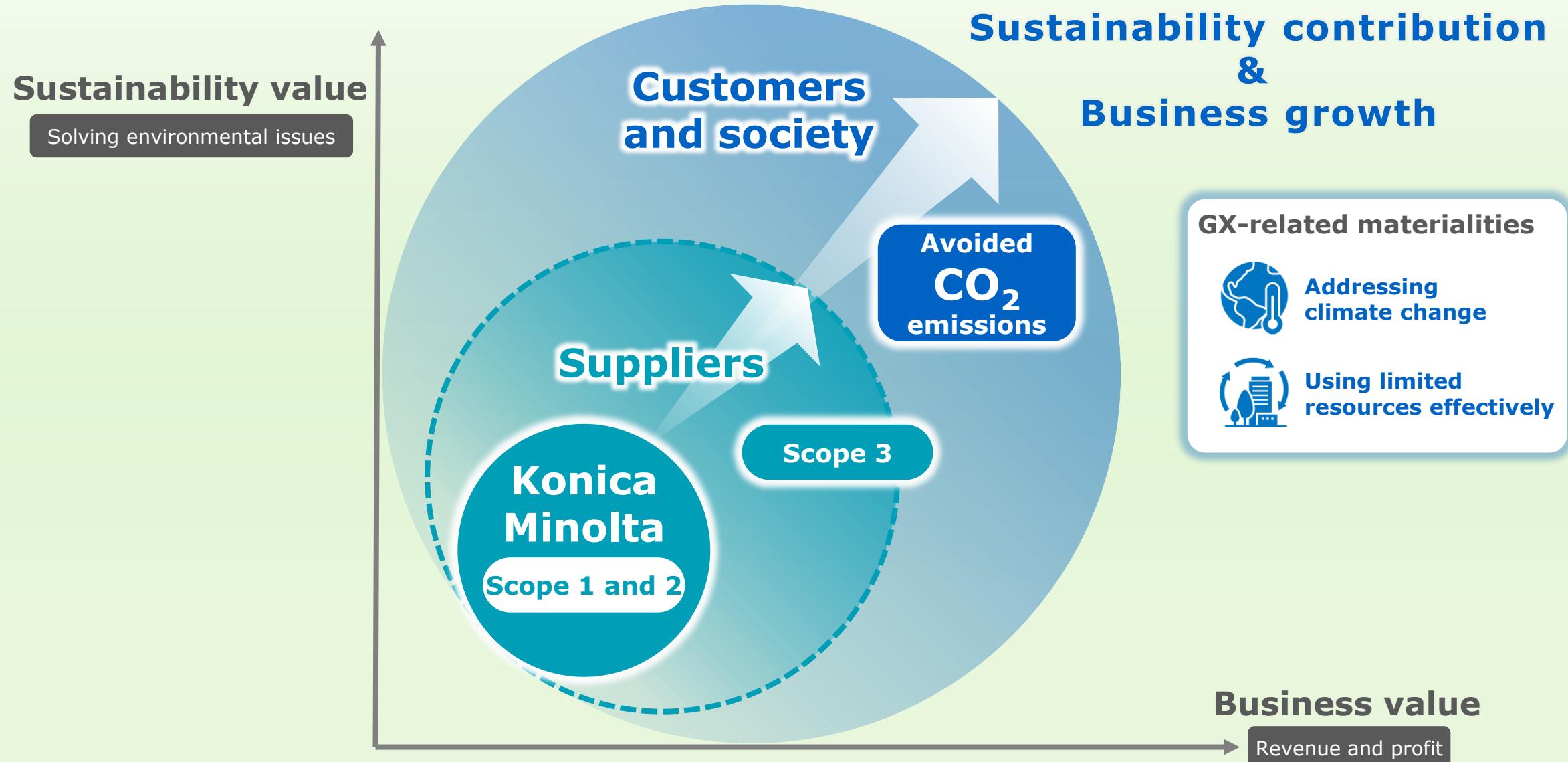
**Technological initiatives contributing to  
decarbonization and GX**



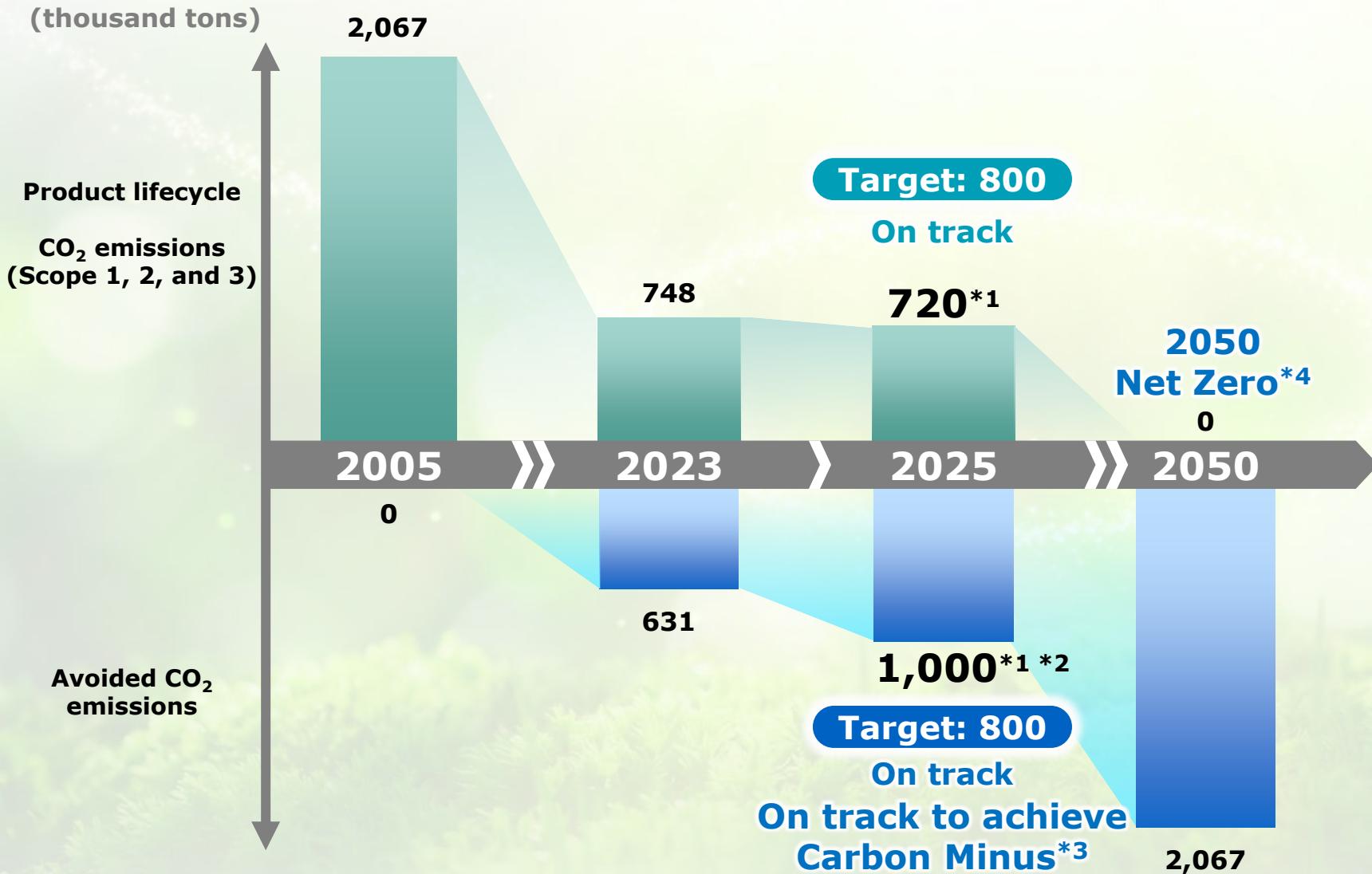
# Basic Principles of Sustainability Management



# Achieving Both Sustainability Contributions and Business Growth Through Co-Creation



# On Track to Achieve Carbon Minus in FY2025



Unless otherwise noted, all years referenced in this document refer to fiscal years.

\*1 2025 figures were estimated as of January 20, 2026.

\*2 Reflecting avoided CO<sub>2</sub> emissions from the Industry Business and the Imaging Solutions Business starting in 2025.

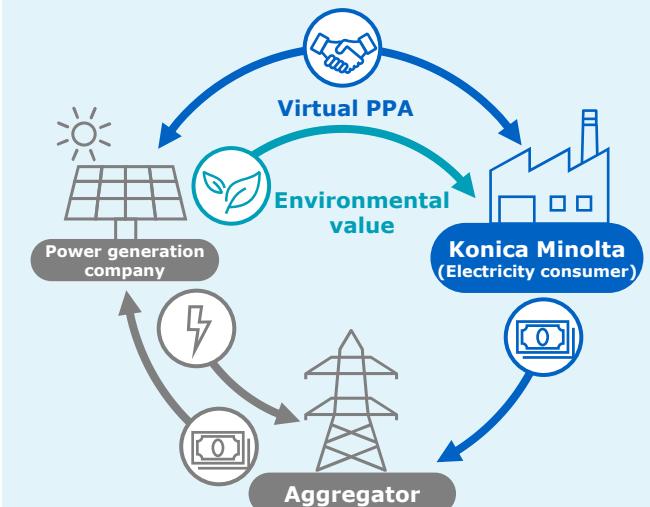
\*3 Carbon Minus: The condition in which the avoided CO<sub>2</sub> emissions exceeds CO<sub>2</sub> emissions in the company's product lifecycle (Scope 1, 2, and 3).

\*4 Net Zero: In July 2024, we received certification from the Science Based Targets (SBT) initiative for our Net Zero Target.

Achieved sourcing **100% renewable electricity** at all global production sites of our Business Technologies Business



Signed a long-term fixed-price virtual PPA for environmental value





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**Konica Minolta's sustainability management**

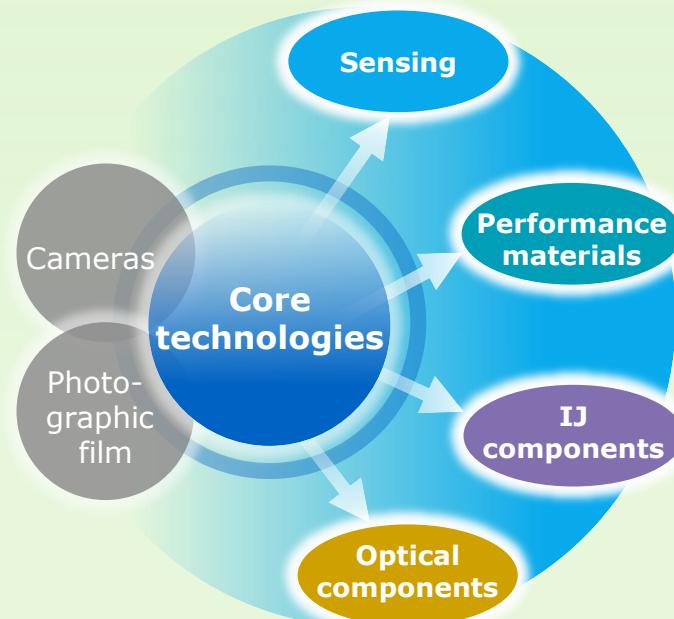
**Industry Business growth and  
sustainability value creation**

**Technological initiatives contributing to  
decarbonization and GX**

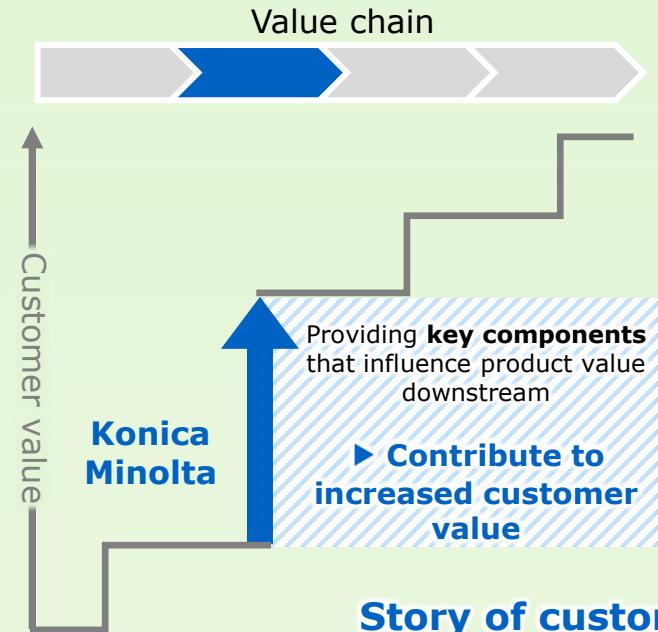


Amplifying customer value upstream in the value chain by taking a bird's-eye view of the entire industry, rather than focusing on the sales volume of end products

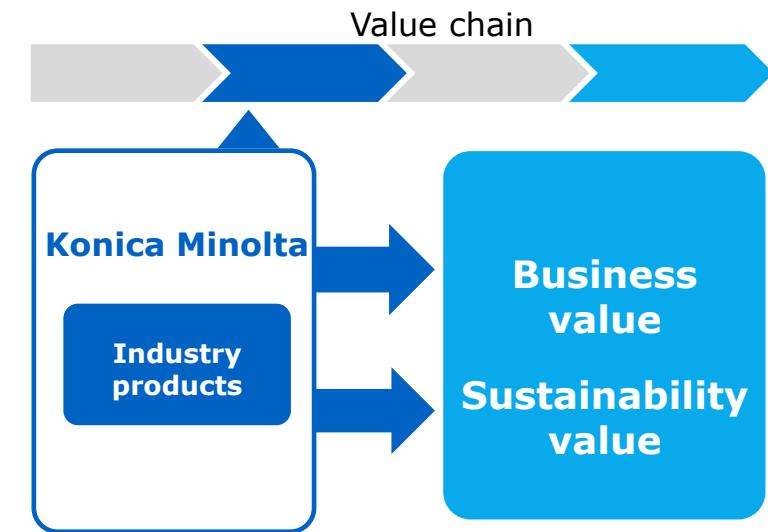
Breakdown mature products into core technologies and deploy key components in new markets



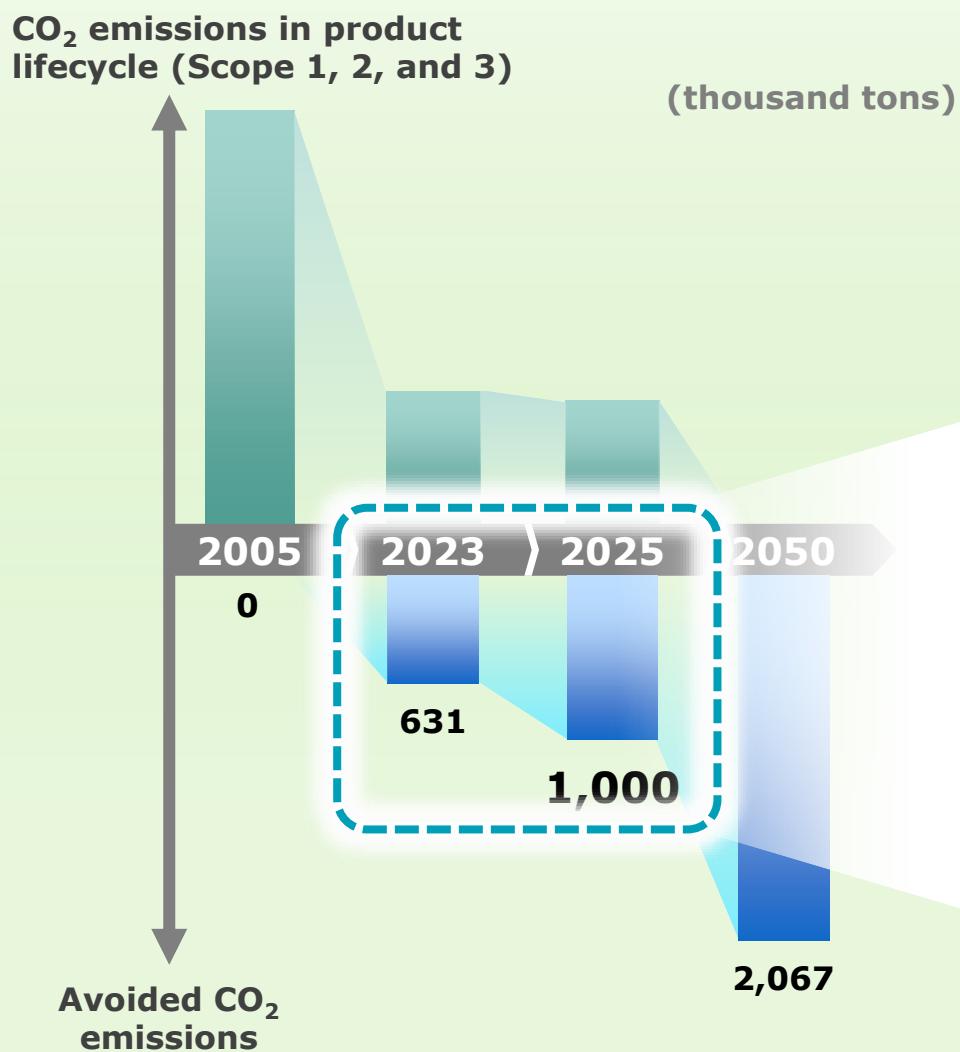
Capturing the core of the industry upstream to achieve a top position in the field and high profit margins



Delivering business and sustainability value to the end market by creating added value upstream

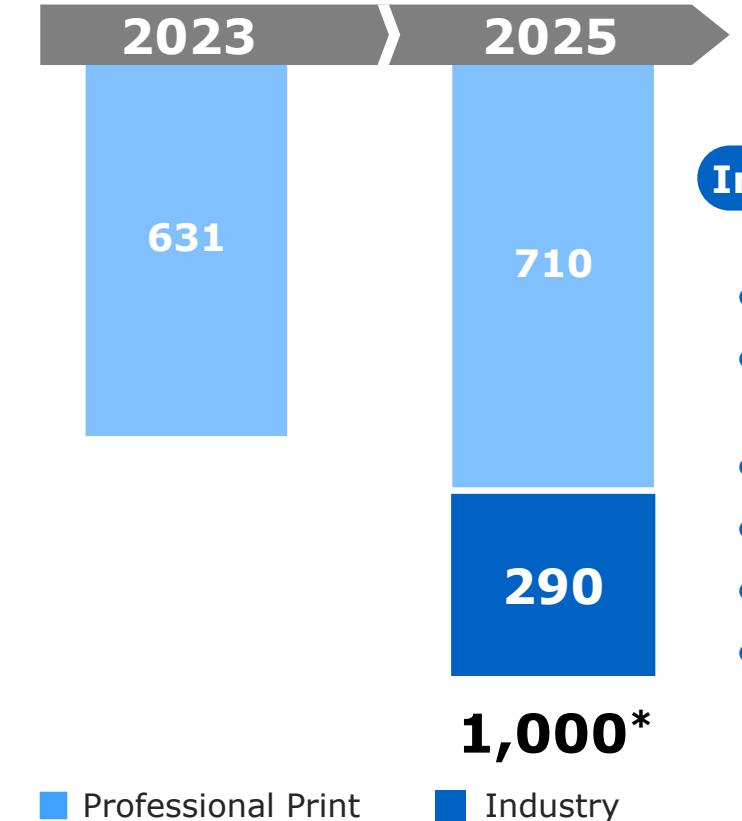


Story of customer value enhancement achieved through utilization of technology



## Avoided CO<sub>2</sub> emissions

(thousand tons)



### Industry contribution products

- Lens for digital cinema projectors
- Inkjet printhead for production and industrial printing
- Inkjet solder resist
- Label-less printing for food packages
- Hyperspectral imaging
- Anti-reflection film for OLED TVs

\* 2025 figures are provisional estimates

Value chain

Lens unit

Projector

Cinemas

**Konica Minolta****Industry product****Strength**

- Optical design, polishing, and other precision processing technologies cultivated in the camera business
- 60%+ market share in DCI\*-compliant optical units for DLP\* Cinema  
(Source: Konica Minolta)

**Business value**

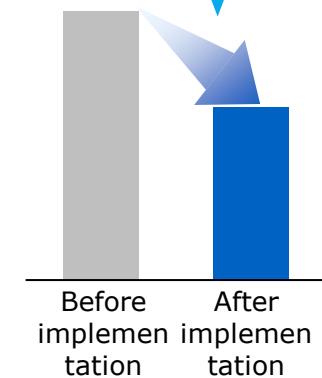
- Capable of projecting a high-brightness laser-light source without any loss of image quality  
Clearer, higher-resolution images than a xenon lamp
- Leveraging our accumulated technologies to expand into new industrial domains

**Sustainability value****CO<sub>2</sub> reduction impact**

Enables high-resolution projection with laser light, contributing to energy savings by replacing xenon lamps and reducing CO<sub>2</sub> emissions by

**approx. 178,000 tons/year**

(2025 estimate)

**30%** reduction  
in CO<sub>2</sub> emissions

\* Digital Cinema Initiatives (DCI): A specification created to set the standards for digital cinema

\* Digital Light Processing (DLP): A projection method widely adopted in digital cinema and related applications

\* Conditions for calculating sustainability value are provided in the Appendix.

Value chain

Inkjet printhead

IJ printer

Printing companies

**Konica Minolta****Industry product**

- For sign graphics
- For commercial print
- For textile
- ...

**Strength**

- Chemical technology cultivated in the film business
- Precision processing technology cultivated in the camera business
- Customization capabilities for a wide range of media and inks

**Business value**

- A product line of highly durable inkjet printheads customizable for a wide range of commercial and industrial applications
- Expanding the scope of small-lot, high-mix printing by digitizing the printing process and eliminating the need for plate making

Workflow of digital inkjet printing

Data creation

No need to make printing plates

Printing

**Sustainability value****CO<sub>2</sub> reduction impact**

Reduces CO<sub>2</sub> emissions associated with the creation of printing plates and related processes by

**approx. 41,000 tons/year**  
(2025 estimate)

**Reducing environmental impact**

Also contributes reductions in VOC emissions

\* Conditions for calculating sustainability value are provided in the Appendix.

Value chain

Inkjet printhead

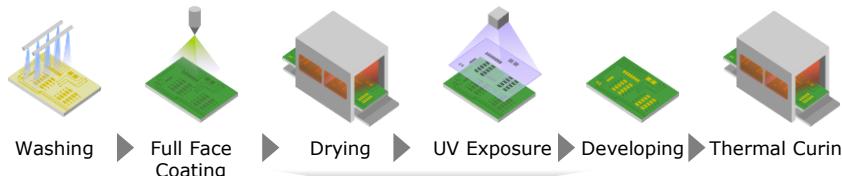
IJ printer

Printing companies

## Konica Minolta

### Industry product

#### Photolithography method



#### Inkjet method



### Strength

- Chemical technology cultivated in the film business
- Precision processing technology cultivated in the camera business
- Customization capabilities for a wide range of media and inks

### Business value

- Simplifies the solder-resist formation process for printed circuit boards
- Supplies printed circuit board manufacturers with inks offering excellent adhesion to substrates and inkjet printheads with high solvent resistance.

### Sustainability value

#### CO<sub>2</sub> reduction impact

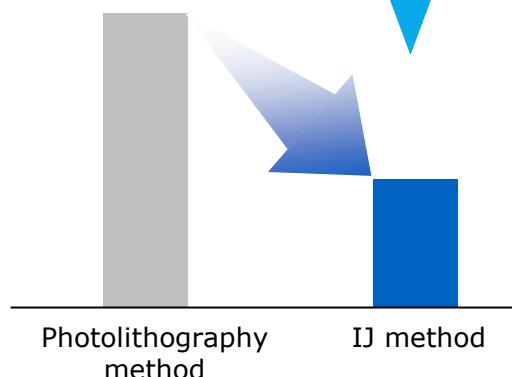
By reducing power consumption through process optimization, CO<sub>2</sub> emissions are reduced by **approx.**

**50 tons/year** (2025 estimate)

#### Reducing environmental impact

Also contributes to reductions in VOC emissions and industrial wastewater discharge

**50%** reduction  
in CO<sub>2</sub> emissions through  
lower electricity consumption



\* Conditions for calculating sustainability value are provided in the Appendix.

Value chain

Inkjet printhead

IJ printer

Printing companies

**Konica Minolta****Industry product**

Applying a  
gravure-printed label  
to the packaging film



Printing directly on the  
packaging film with  
inkjet (label-less)

**Strength**

- Chemical technology cultivated in the film business
- Precision processing technology cultivated in the camera business
- Customization capabilities for a wide range of media and inks

**Business value**

- Simplifies processes by printing directly on food-packaging film, eliminating label creation and application
- Supplies high-adhesion inks to film
- Already adopted by a major convenience store chain

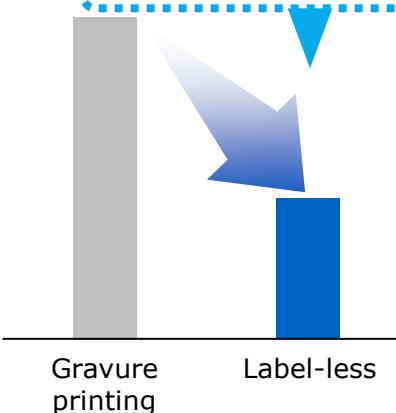
**Sustainability value****CO<sub>2</sub> reduction impact**

Reduces CO<sub>2</sub> emissions associated with the creation of printing plates and related processes

**Resource savings**

Eliminates the need for labels and the thermal-transfer ribbons for label printing

50% reduction  
in CO<sub>2</sub> emissions



\* Conditions for calculating sustainability value are provided in the Appendix.

Value chain

Hyperspectral imaging

Sorting machine

Recycled resin manufacturers

**Konica Minolta**

**Industry product**



### Strength

- Captures a wide range of wavelengths, enabling identification of resin components and other material properties
- Enables high-precision, non-destructive identification and inspection

Human eye/RGB camera



### Hyperspectral imaging



### Business value

- Enables identification of plastics (e.g., black resins) and fibers (e.g., nylons), expanding the range of recyclable materials.
- Can also be integrated into inline sorting systems

### Sustainability value

#### CO<sub>2</sub> reduction impact

Reduces CO<sub>2</sub> emissions by **approx. 69,000 tons/year** by promoting material recycling through high-purity sorting of mixed waste (2025 estimate)

### Resource savings

Efficient use of resources through automated waste sorting in the recycling industry

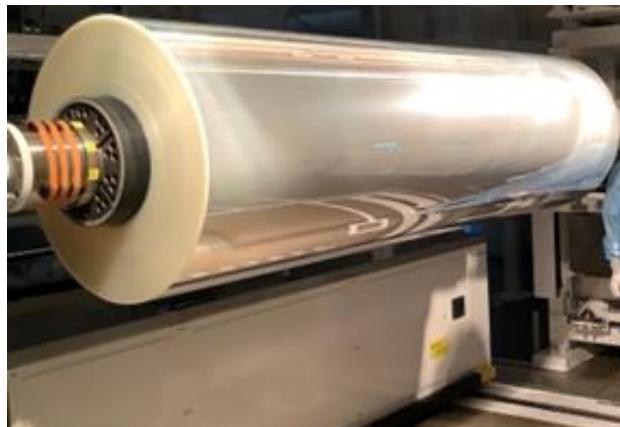
\* Conditions for calculating sustainability value are provided in the Appendix.

Value chain

Film

Polarizer/Panel manufacturers

TV manufacturers

**Konica Minolta  
Industry product****Strength**

- Film-forming technology and proprietary optical-control technology for diagonal film stretching
- Design capability tailored to customer requirements

**Business value**

- Our anti-reflection film eliminates a temporary protection film used and discarded during the manufacturing process



Eliminates a temporary protection film

**Anti-reflection film**

Temporary protection film

Before implementation

**Konica Minolta's  
anti-reflection  
film**For manufacturing process  
(discarded during the process)**After  
implementation****Sustainability value****CO<sub>2</sub> reduction impact**

Eliminates the need for the previously required temporary protection film  
Reduces emissions associated with raw materials and manufacturing

Reduces **approx. 1,120 tons/year** through film elimination  
(2025 estimate)

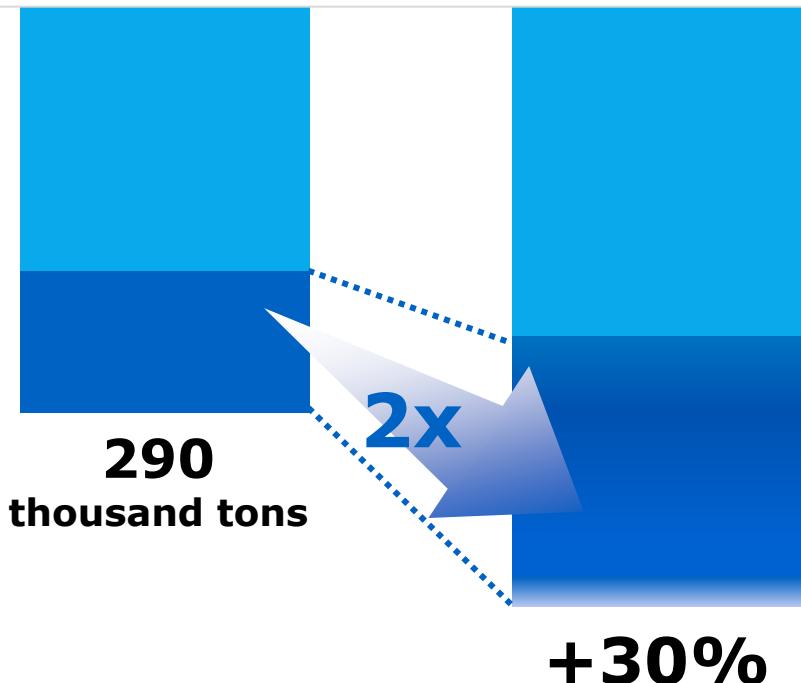
\* Conditions for calculating sustainability value are provided in the Appendix.

**Building on continued growth of our No.1 market-share products, future growth drivers will further amplify CO<sub>2</sub> reduction impacts as our business expands.**

## Breakdown of avoided CO<sub>2</sub> emissions in the Industry Business

2025

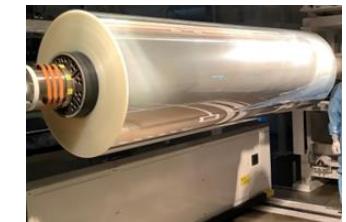
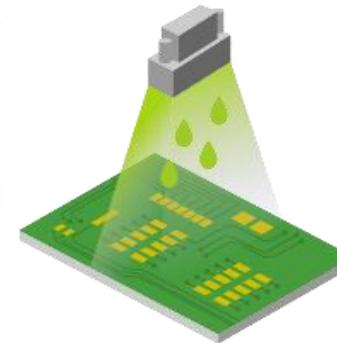
2028



### No.1 products in market share and others



### Future growth drivers



*Support Human Decision with AI*

Value chain

Automotive  
visual inspection

Automobile  
manufacturing companies

## Industry product



## Strength



- Product development expertise
- Expertise in quality inspection processes
- Co-creation relationships with automotive manufacturers



- AI imaging technology
- Optical technology
- Global sales network

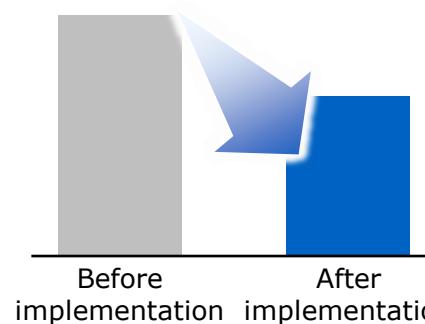
## Business value

- High-precision defect detection
- Leveraging defect classification data enabled by DX
- Process improvement through data analysis

## Sustainability value

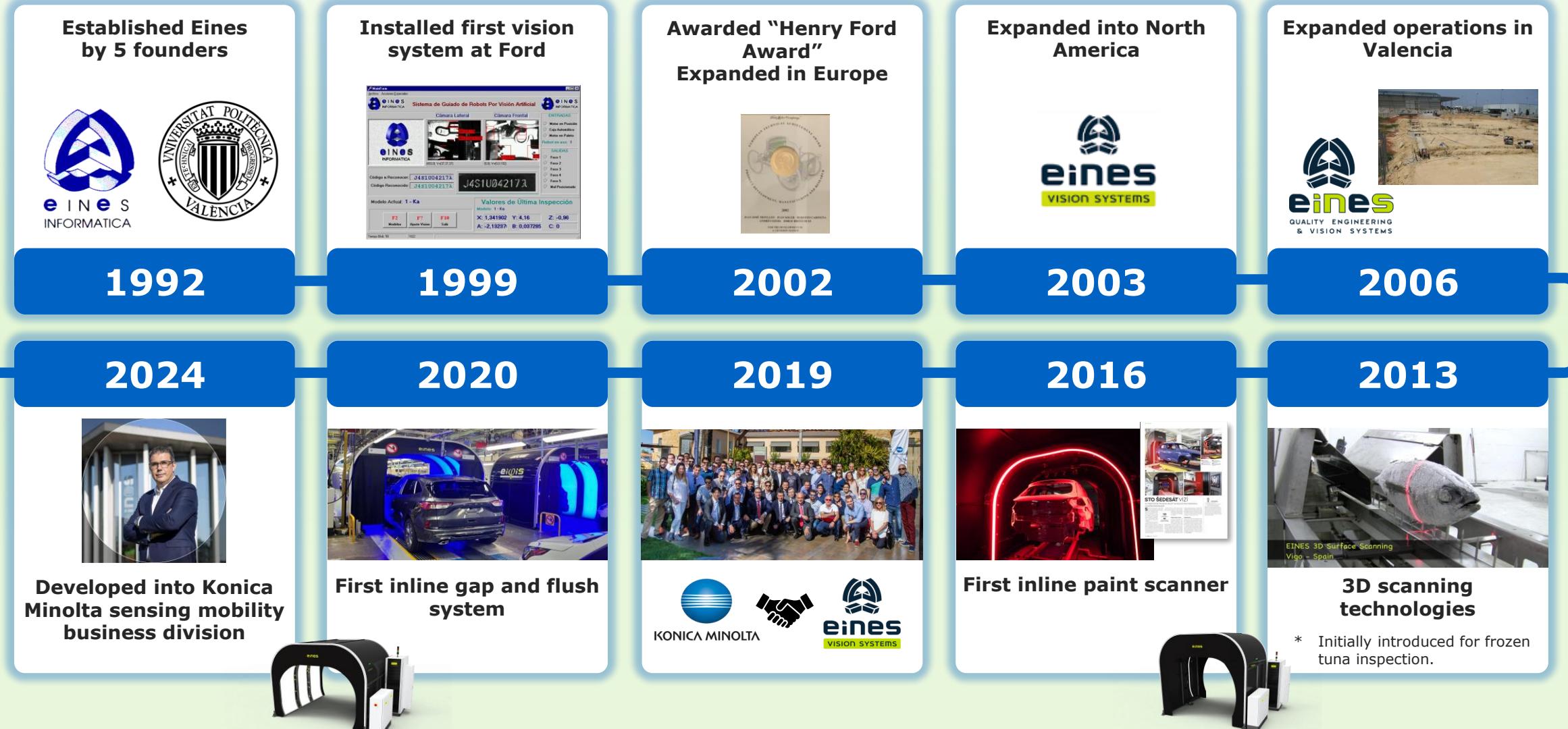
- Streamlining operations and improving work efficiency
- Minimizing oversight and operational burden from manual visual inspections

**33%** reduction  
in workload achieved for  
paint quality inspection



\* Source: Konica Minolta

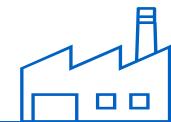
# Sensing Automotive Visual Inspection: Eines History



**100M**  
vehicles produced  
per year worldwide



**500**  
factories worldwide



**2,000**  
potential installations



### Global Automobile Manufacturing Companies Market

Approx.  
**200 billion yen**  
total addressable market



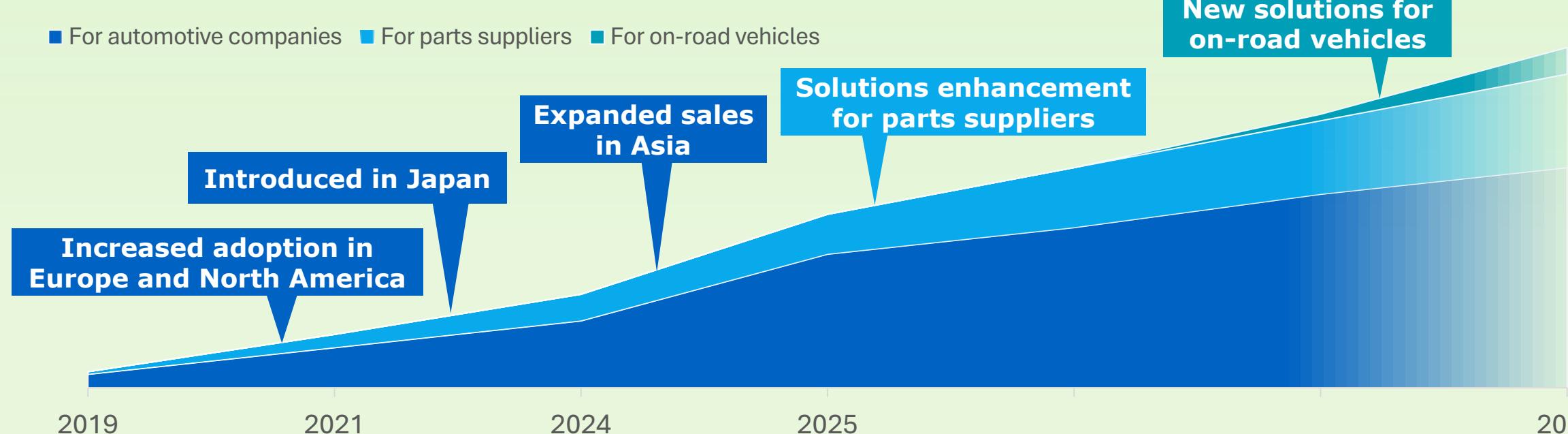
Approx.  
**50 billion yen**  
total addressable market\*

**On-road  
vehicle market**  
**Parts supplier  
market**

\* Company estimates (2025)

## Business Growth Concept (Machines in the Field)

■ For automotive companies ■ For parts suppliers ■ For on-road vehicles



## Suzuki Motor Corporation

Implemented paint quality inspection system | 2023\*



**Tunnel-type inline  
Surface Paint Quality  
Inspection System**

Example of  
paint defects



## Subaru Corporation

Decided to implement gap and flush system | 2026\*



**Tunnel-type inline  
Gap and Flush  
Inspection System**

Example of  
gap and flush



**Implementation expansion in progress**



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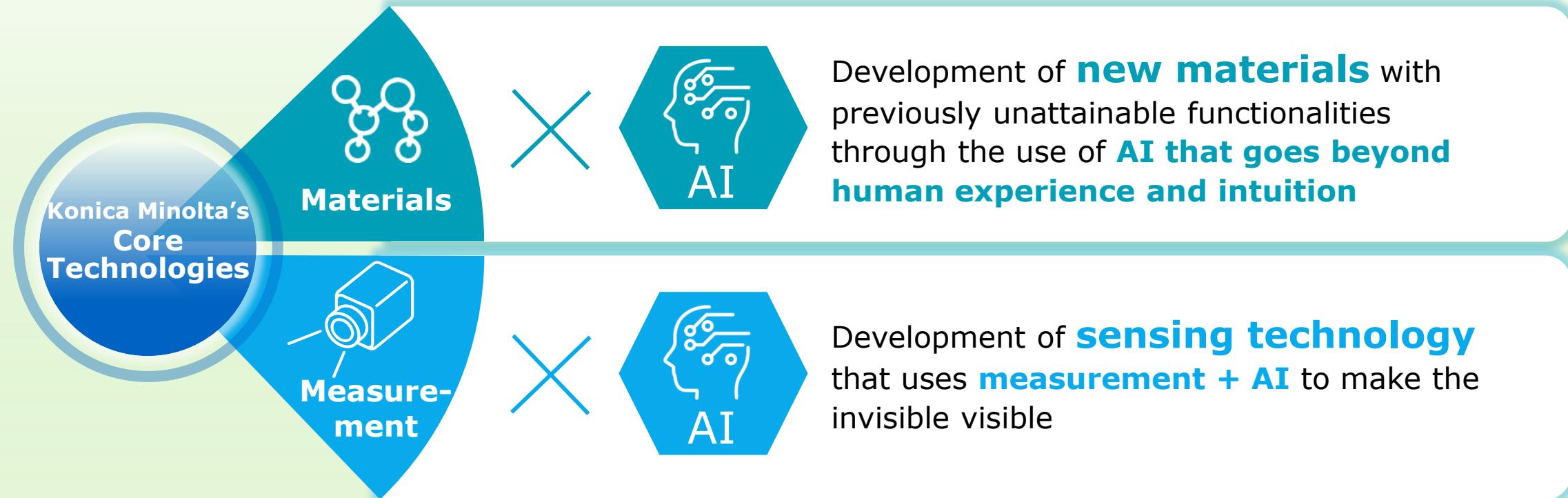
**Konica Minolta's sustainability management**

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# Technology Strategy to Contribute to Decarbonization and GX Based on Core Technologies



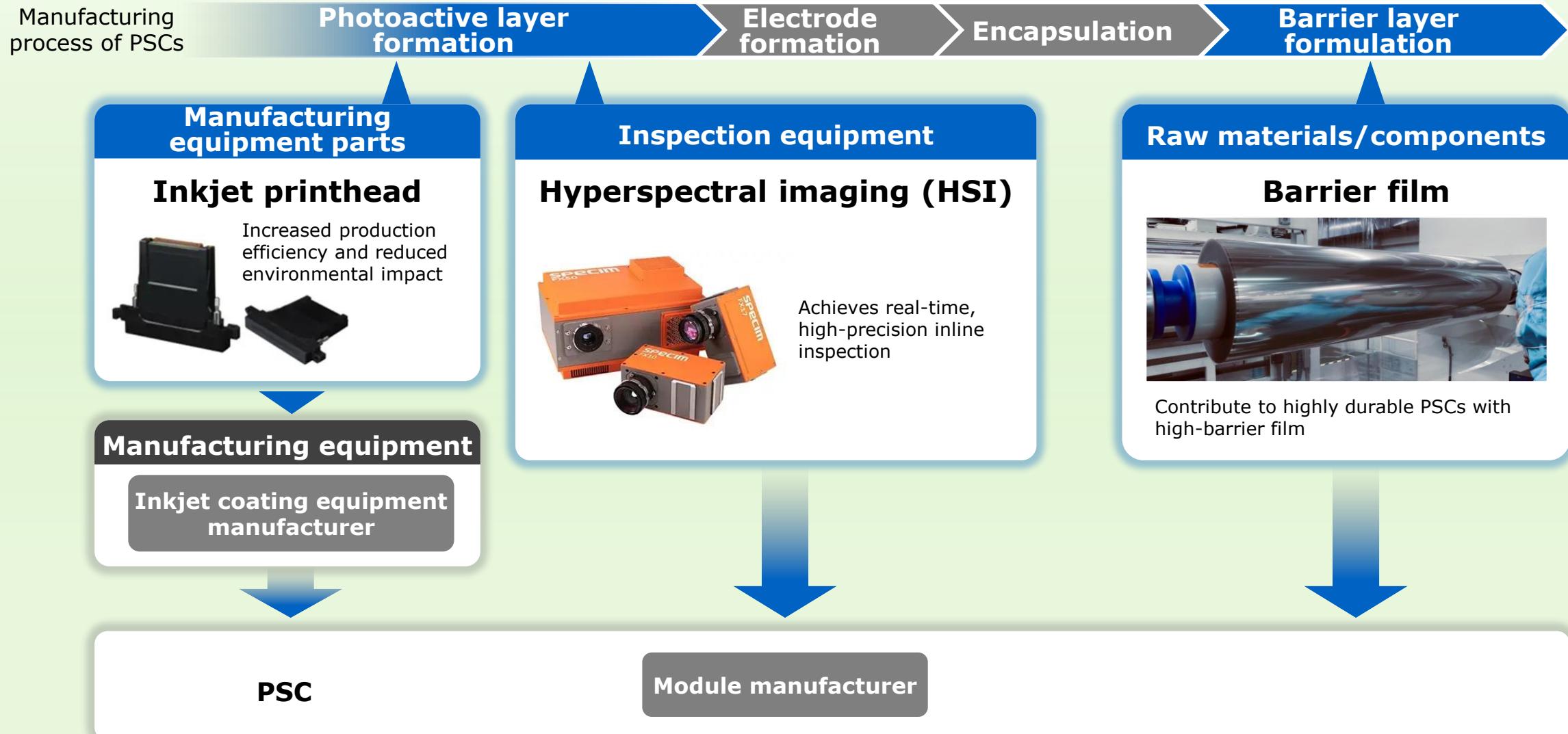
**Providing new value to GX  
through new materials and sensing technologies**

**PSC\*<sup>related</sup>  
technologies**

**Process monitoring of  
biomanufacturing**

**Intelligent recycled  
materials manufacturing**

# PSC-Related Technologies: Addressing Key Challenges for Product Adoption Through Inkjet Printhead, HSI, and Barrier Film

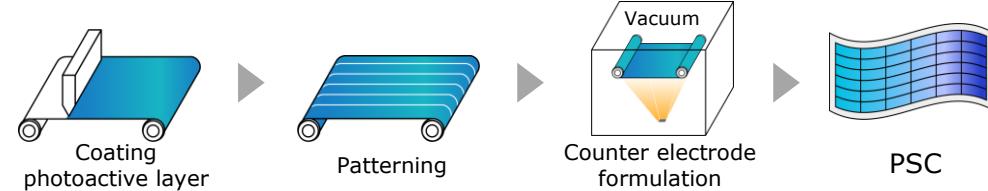


# Inkjet Printhead: Increased Production Efficiency and Reduced Environmental Impact Through Depositing Perovskite Layer

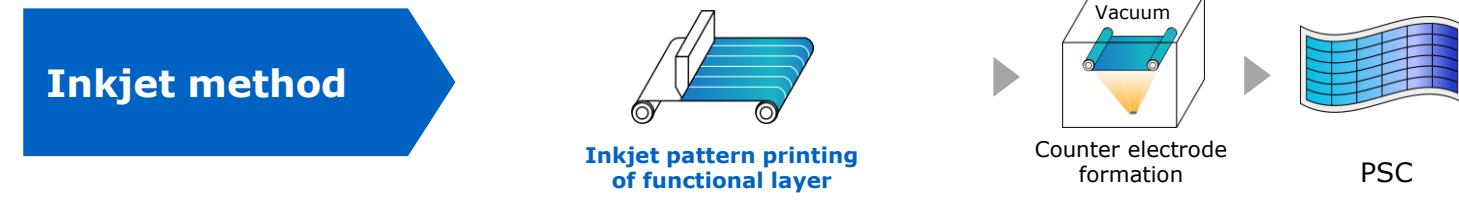
## Needs

- More efficient use of materials during manufacturing
- Lower costs through increased production efficiency

## Die-coating and patterning method



## Inkjet method



The diagram shows a sequential process: 1. Inkjet pattern printing of functional layer (a blue grid pattern on a substrate), 2. Counter electrode formation (a yellow/orange layer in a vacuum chamber), and 3. PSC (Perovskite Solar Cell, a blue and yellow grid structure).

- More efficient material use and lower environmental impact
- No need for laser patterning process

## Strength

- High solvent resistance enables stable operation
- Micro droplets enables precise deposition



## Achieve- ments

Samples have been provided to several manufacturing-equipment manufacturers and are currently under evaluation

# HSI: High-Precision, Real-Time Inline Inspection Essential for the Production Process

## Needs

- Quality verification of film thickness and color tone (during production and at final inspection)
- High-efficiency inline inspection

## Strength

- High-precision, immediate evaluation of perovskite-layer quality
- Capability for inline inspection of objects



## Achieve- ments

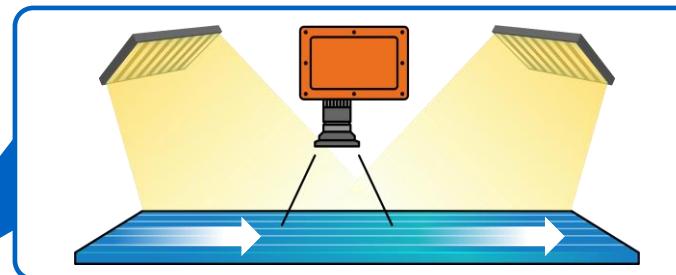
Proposing solutions to multiple PSC manufacturers, and these solutions are currently being evaluated

Manufacturing process of PSCs

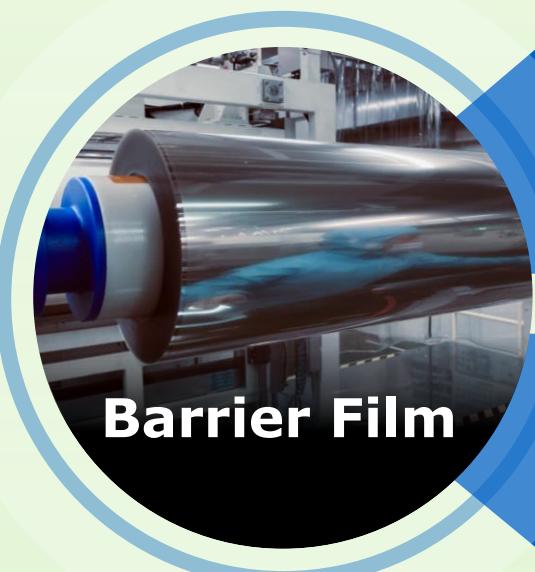
Photoactive layer formulation

Electrode formulation

Encapsulation



## Steady Progress of Barrier Film Development



Aiming to integrate PSCs into commercial EVs  
for the logistics industry

EneCoat Technologies confirmed  
**2,000-hour\*** durability in real-world solar cell testing.

\* confirmed by accelerated reliability testing

# Barrier Film: Integrating PSCs into Commercial EVs for the Logistics Industry by EneCoat Technologies Co., Ltd. & Konica Minolta, Inc.



- Exploring a PoC with the logistics industry to install PSCs on commercial EVs and supply power to refrigeration equipment



Verify power supply to refrigeration equipment in delivery vehicles

Accelerate the commercialization of PSCs for automotive applications



ENECOAT

Provide PSC modules

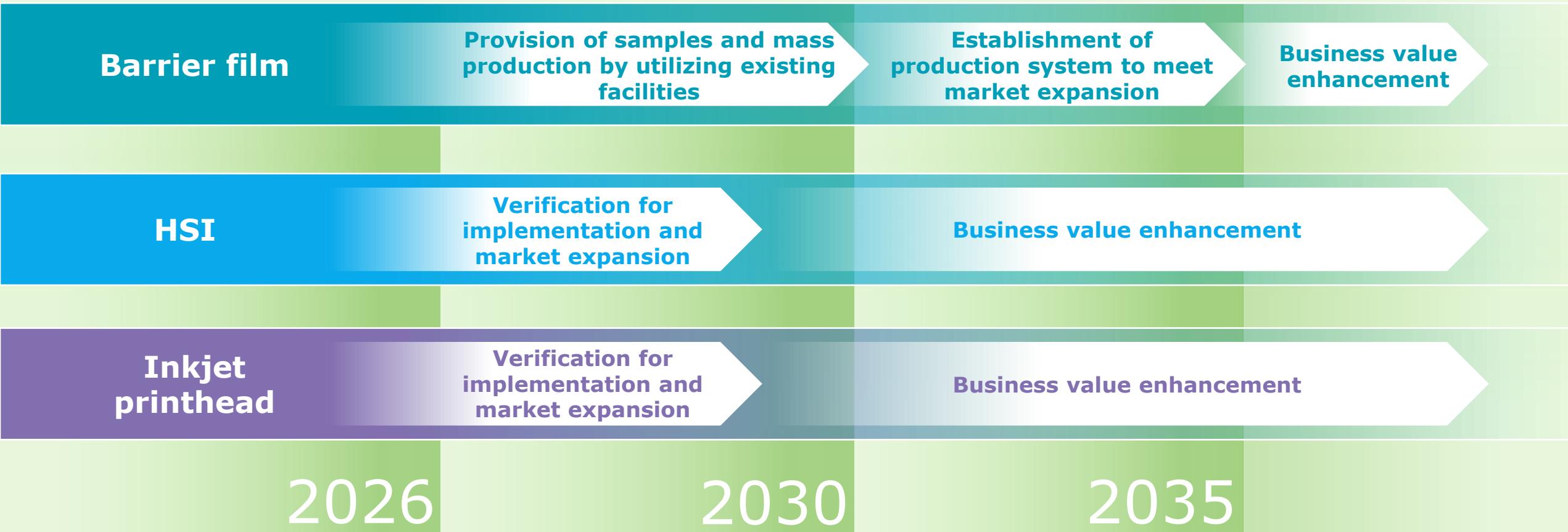


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Provide highly durable barrier films

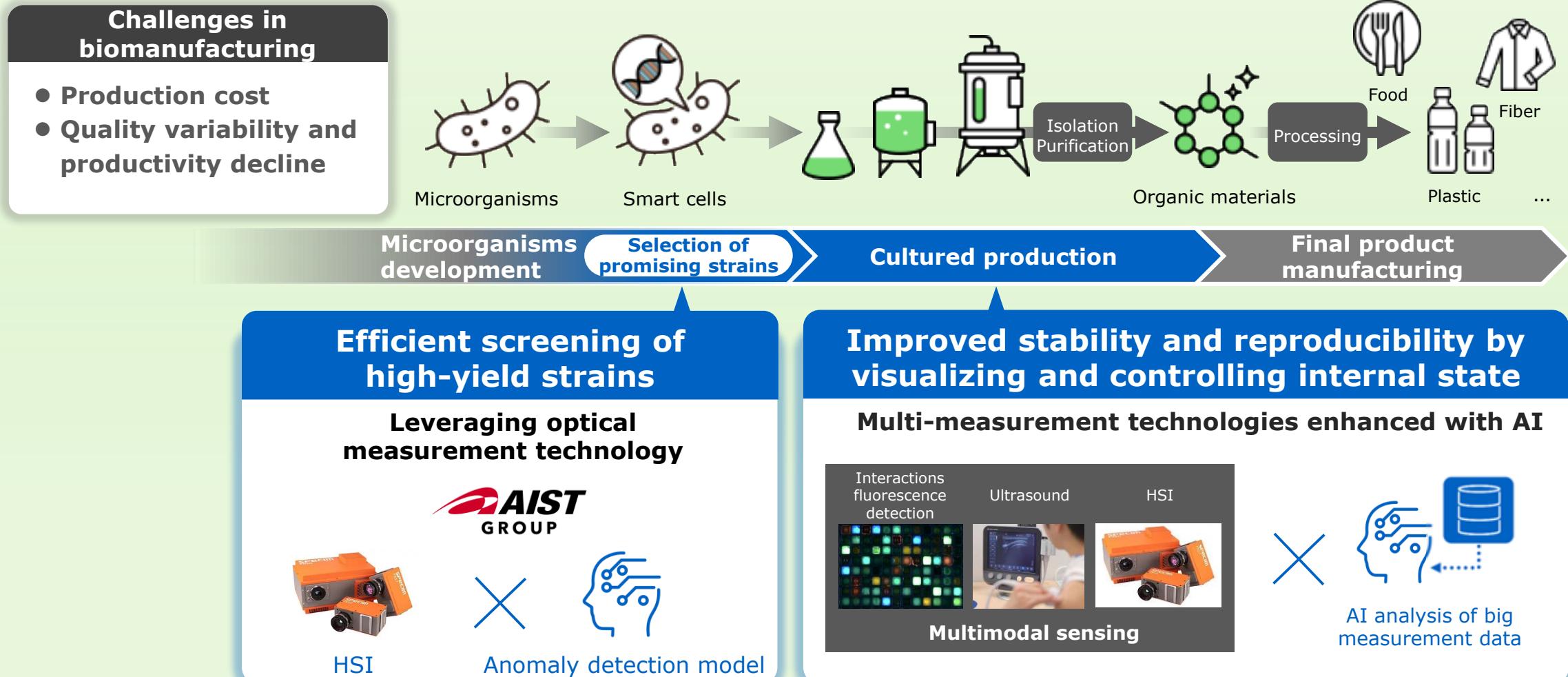
## Promoting technical verification based on our core technologies

- **Barrier film:** Scale up in phases based on demand leveraging our established production technology and equipment
- **HSI & inkjet printhead:** Advance verification for implementation, aiming to enhance business value



# Biomanufacturing: Pursuing Open Innovation with the National Institute of Advanced Industrial Science and Technology (AIST)

- Established Bioprocess Technology Cooperative Research Laboratory with AIST in June 2023
- Started joint research as **the first partner company** upon the opening of the newly established Biomanufacturing Research Building by AIST



# Initial Outcome of Joint Research with AIST: Successful Development of a System for Rapid Detection of High-Yield Strains



**"This technology drastically improves the efficiency of screening, which traditionally required extensive effort, and is expected to revolutionize the entry point to biomanufacturing"**

**ISHIMURA Kazuhiko, President, AIST**

## Conventional screening



- Comprehensive screening dependent on the intuition and experience of the researcher
- The repeated cycles of cultivation and yield assessment lead to increased workload and higher costs

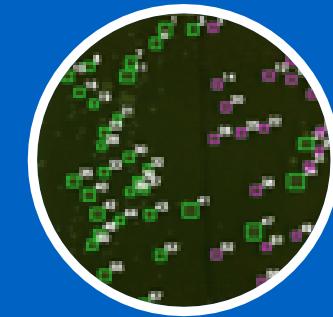
Requires **months** for cultivation and yield evaluation

## Konica Minolta's high-yield strain detection system



Anomaly detection model

- **Drastic improvement in screening efficiency**
- **Non-destructive detection of high-yield strains during early-stage cultivation**



Developed a system enabling detection **within days**

"Detection systems of overproducing microbial strains using hyperspectral imaging and anomaly detection model"  
Japan Society for Bioscience, Biotechnology, and Agrochemistry 2025 Annual Meeting, March 8, 2025  
[JSBBA\\_2025\\_5E102.pdf](https://jsbba2025.org/program/5E102.pdf)

**Initiated value validation for substances and ingredients added to processed foods such as frozen foods**

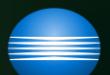


## Accelerating customers' sustainable manufacturing through our new GX-contributing technologies

Technology theme	Key technology establishment	Sample evaluation	Mass production technology establishment	Progress across all themes
PSC-related technologies	○	○		<p>Inkjet printhead under evaluation by multiple manufacturing equipment manufacturers</p> <p>Quality inspection with HSI under evaluation by multiple PSC manufacturers</p> <p>2,000-hour durability confirmed in testing of EneCoat Module</p> <p>Aiming to integrate PSCs into commercial EVs</p>
Intelligent recycled materials	○	○		<p>Began providing samples to electronics and automotive parts manufacturers</p>
Process monitoring of biomanufacturing	○			<p>A system for rapid detection of high-yield strains under development (presented at Japan Society for Bioscience, Biotechnology, and Agrochemistry)</p>
Membranes for CO <sub>2</sub> capture	○			<p>Established key enabling technologies for high-performance, low-cost membranes for CO<sub>2</sub> capture</p>



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# Appendix



# Sustainability Value Calculation Method\*1



The avoided CO<sub>2</sub> emissions of the products presented in this document has been estimated by the Company with reference to the Guidance on Avoided Emissions v2.0\*2 published by the World Business Council for Sustainable Development (WBCSD).

The products for which the Company currently accounts avoided CO<sub>2</sub> emissions (estimated at 1 million tons of CO<sub>2</sub> in 2025) are expected to account for approximately 9 % of the Company's total revenue in 2025.

- **Lens for Digital Cinema Projectors**

**Our contribution:** We supply DCI-compliant optical units that are effective in the use of laser light sources for digital cinema projectors. We have the largest market share in DLP cinema applications.

**Calculation method for the avoided emissions:** Power consumption reductions achieved by replacing xenon lamps with laser light sources were calculated by projector size.

- **Inkjet Printhead for Production and Industrial Printing**

**Our contribution:** We supply inkjet printheads and inks that serve as key components of digital printing presses.

**Calculation method for the avoided emissions:** This was calculated from CO<sub>2</sub> emissions associated with plate-making processes that become unnecessary through the transition to inkjet printing. The avoided CO<sub>2</sub> emissions presented in this document are calculated for inkjet printheads sold externally on the premise that they are incorporated into printing presses. The contribution attributable to the inkjet printheads is adjusted based on the market size ratio (inkjet printhead market size divided by printing press market size).

- **Inkjet Solder Resist**

**Our contribution:** We supply inkjet printheads, inks, and a printing process capable of directly printing a solder resist layer on printed circuit boards.

**Calculation method for the avoided emissions:** The reduction in electricity consumption was calculated based on measured results from multiple customers, reflecting the elimination of processes (drying, UV exposure, and developing) achieved by replacing photolithography method with an inkjet method for solder resist formation, as well as on the ink application are and ink sales volume.

- **Label-less Printing for Food Packages**

**Our contribution:** We supply inkjet printhead and inkjet inks that enable direct printing on food packaging films.

**Calculation method for the avoided emissions:** For the lifecycle CO<sub>2</sub> emissions associated with printing 4,000 meters of four types of flexible packaging, the avoided CO<sub>2</sub> emissions attributable to plate-making and printing plate processes were calculated based on a comparison between (i) printing all four types using gravure printing and (ii) printing only one base design using gravure printing while printing the remaining three types using inkjet printing.

- **Hyperspectral Imaging**

**Our contribution:** We supply high-precision plastic identification camera systems applicable to plastic sorting machines for various material recycling separation technologies (such as optical, electrostatic, and density-based methods), holding the largest market share in comparable camera market.

**Calculation method for the avoided emissions:** The avoided emissions were calculated based on the increased amount of high-purity plastics diverted from incineration and thermal recycling to material recycling through the use of our camera systems.

- **Anti-reflection Film for OLED TVs**

**Our contribution:** Our anti-reflection film helps eliminate the need for a temporary protection film used and discarded during the polarizer production process

**Calculation method for the avoided emissions:** The calculation was based on the CO<sub>2</sub> emissions attributable to the protection film that can be eliminated through the adoption of our anti-reflection film.

\*1 Estimated by the Company based on information available as of January 2026.

\*2 Source: <https://www.wbcsd.org/resources/guidance-on-avoided-emissions-helping-business-drive-innovations-and-scale-solutions-toward-net-zero/>

- **Scope 1**  
Greenhouse gas emissions that are directly emitted by a company or organization through activities such as fuel combustion and on-site power generation.
- **Scope 2**  
Greenhouse gas emissions that are indirectly generated through the consumption of electricity, heat, or steam supplied by external companies or organizations.
- **Scope 3**  
Greenhouse gas emissions that are indirectly generated along the supply chain and other activities related to a company's operations, excluding Scope 1 and Scope 2 emissions.
- **Avoided CO<sub>2</sub> emissions**  
Greenhouse gas emissions, expressed in CO<sub>2</sub>-equivalent terms, that are reduced for customers and their supply chains through a company's solutions or activities and are not included in Scope 1, Scope 2, or Scope 3 emissions.
- **Carbon Minus**  
A state, defined by the Company, in which avoided CO<sub>2</sub> emissions exceed the Company's own lifecycle CO<sub>2</sub> emissions (Scope 1, Scope 2, and Scope 3).
- **Net Zero**  
A state in which net greenhouse gas emissions are effectively zero.
- **Aggregator**  
An entity in the power industry that aggregates renewable energy sources and distributed energy resources and manages the balancing of electricity supply and demand.
- **VOC (Volatile Organic Compounds)**  
A collective term for organic compounds that readily evaporate and becomes gaseous in the atmosphere, and are regarded as one of the causes of air pollution.
- **Hyperspectral imaging**  
An imaging technique in which a wide range of wavelengths are divided into multi-wavelengths. This technique can be used to sort different types of plastics that cannot be identified by the human eye or an RGB camera.
- **Die-coating**  
A coating method in which a liquid is continuously dispensed across a surface through a slit-shaped die while being applied uniformly onto substrates such as films.
- **Patterning**  
A method for patterning a perovskite layer coated over an entire surface into individual photoactive cells.
- **Inline**  
The practice of performing inspection processes directly on the production line, enabling inspection to be carried out without stopping production.
- **Smart cell**  
Cells that have been artificially modified to enable the production of valuable substances by leveraging their inherent production capabilities; synonymous with high-yield strains.



KONICA MINOLTA