

June 7, 2021

## **Kao is Participating in a Project to Efficiently Recycle Plastics through Integrated Arterial and Venous Physical Distribution in Tokyo's Dai-Maru-Yu Area**

Beginning in May 2021, Kao has been participating in a project to efficiently recycle plastics through integrated arterial and venous physical distribution<sup>\*1</sup> in Tokyo's Dai-Maru-Yu area<sup>\*2</sup>. Kao will evaluate the physical properties of the plastic collected through this project and study the feasibility of using this material in consumer product packaging.

\*1 Arterial physical distribution: from producers to consumers. Venous physical distribution: from consumers to producers.

\*2 Otemachi, Marunouchi and Yurakucho areas.

Much of the plastic waste currently produced in commercial facilities and office buildings is used for thermal recycling<sup>\*3</sup> rather than material recycling.<sup>\*4</sup> Given the focus in the past few years on marine plastic and other forms of plastic waste that fail to be recovered or reused properly, there is a need to recycle plastic waste more extensively and create a circular system for recovering and reusing plastic. One way to do so is to reuse post-consumer recycled (PCR) materials as raw materials. However, this entails several problems, such as the fact that the composition of the materials differs and volume generated is not uniform, so it is unclear how much volume each source produces and materials are of varying quality, which drives up recovery costs. In order for businesses to use PCR materials on a sustained basis, traceability must be guaranteed and the above-noted problems solved.

\*3 Recovery and use of energy generated from burning waste.

\*4 Reuse of consumed resources as raw materials for new products.

The Tokyo Metropolitan Government's Recycling Designation System<sup>\*5</sup> has made this project's integrated arterial and venous physical distribution possible. Through the integrated process of recovering, compressing and storing recycled materials and processing them into pellets and finished products, the issues related to establishing a circular system for plastic resources and the environmental load and costs associated with their overall lifecycle will be evaluated.

\*5 Under a Recycling Designation System, only firms in the business of processing industrial waste which can definitely be reused are designated by prefectural governors. These firms are not required to have an industrial waste processing permit, and the system facilitates reuse of industrial waste.

Since 2020, Kao has been working with the city of Kawasaki, a recipient of the Ministry of the Environment's FY2020 subsidy for projects to reduce CO<sub>2</sub> emissions (using decarbonization innovation to build a symbiotic circular area system), on a project to study building a model low-carbon cycle for conversion into new materials to create a circular economy in cities. In that project, similar to the one announced here, Kao has been working with other businesses to reuse PCR materials recovered from commercial facilities.

In this project and through its collaboration with the city of Kawasaki, Kao will provide plastics research technology and contribute to creating a circular society for plastics by working together with local authorities and with other businesses.

### **Project to Efficiently Recycle Plastics through Integrated Arterial and Venous Physical Distribution in the Dai-Maru-Yu Area**

#### **■Description**

Plastic film waste from apparel tenants in the Marunouchi and Shin-Marunouchi Buildings is recovered by suppliers when they make deliveries. After being compressed and stored, the discarded plastic film is shredded and melted to transform it into raw material and recycled into pellets. Kao will evaluate the physical properties of the pellets, develop new uses for the material and study the feasibility of using it in consumer product packaging. The aim of this project is, through an integrated process of recovering, compressing and storing recycled materials and processing them into pellets and finished products, to identify issues related to establishing a cycle for plastic resources and evaluate the environmental load and costs associated with their overall lifecycle.

#### **■Location**

Marunouchi and Shin-Marunouchi Buildings.

#### **■Target material**

Plastic film waste mainly from apparel tenants in the Marunouchi and Shin-Marunouchi Buildings.

#### **■Period**

Approximately two months, starting June 1, 2021 (planned).

#### **■Participating Entities and their Roles**

##### **Mitsubishi Estate Co., Ltd.**

To sort and provide waste plastic.

##### **Tokyo Nohin Daiko Co., Ltd. (Senko Group)**

To recover and transport waste plastic.

##### **Senko Shoji Co., Ltd.**

To compress and store recovered waste plastic.

**Envipro Holdings, Inc.**

To process waste plastic into pellets.

**Kao Corporation**

To evaluate the pellets' physical properties and study the feasibility of using them in consumer product packaging.

**Sojitz Corporation / Recotech Inc. / Nissho Electronics Corporation / NTT Communications Corporation**

To identify issues around the platform needed for creating a circular system for plastic using their Material Pool System platform for recycled resources.

**Murakami Laboratory, School of Engineering, the University of Tokyo / Deloitte Touche Tohmatsu LLC**

To evaluate the environmental load and costs pertaining to the process of collecting and transporting waste plastic under a designated integrated arterial and venous physical distribution reuse system.

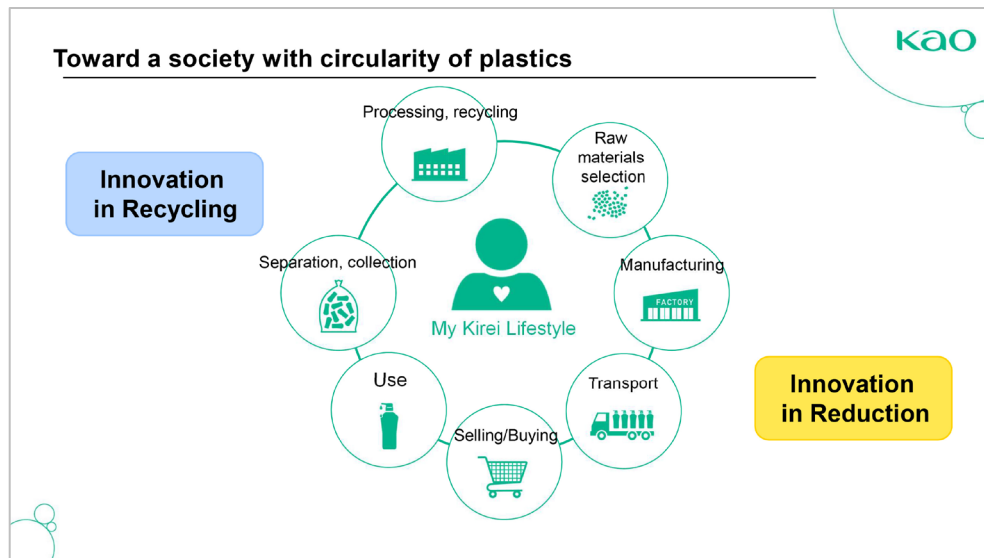
\* Content and period subject to change depending on state of COVID-19 contagion spread.

**[Initiatives for Kao's ESG Strategy, the Kirei Lifestyle Plan and plastic circularity in society]**

Recognizing its responsibility as an enterprise that provides products which people use on a regular basis in their daily lives, the Kao Group takes active steps to reduce the environmental footprint of its products throughout the entirety of the product lifecycle. In April 2019, Kao launched the Kirei Lifestyle Plan, its ESG (environmental, social and governance) strategy, which incorporates 19 key leadership actions. Kao's purpose is to create a Kirei life for all. The Japanese word 'kirei' describes something that is both clean and beautiful. For Kao, Kirei not only encapsulates appearance, but also attitude—to create beauty for oneself, other people, and for the world around us. The Kirei Lifestyle Plan aims to integrate ESG as the foundation of its management to accelerate business growth and create products and services of better value for consumers and society.

Regarding the issue of plastic waste, which is a significant problem for society, in 2018, Kao announced its "Our Philosophy & Action on Plastic Packaging" declaration, and are abiding by the 4Rs: Reduce, Replace, Reuse, Recycle. We are substantially reducing the amount of plastic used in our packaging, by making them thinner, reusable, refillable, and reduced in volume, as well as improving our liquid concentration. We are also developing packaging that is easier to recycle. Plus, we will make efforts to switch away from fossil fuel-based plastics toward the use of sustainable materials. In September 2019, Kao announced that it would be focusing on Innovation in Reduction and Innovation in Recycling, so as to help realize a society characterized by effective plastic resource circulation.

In the future, the Kao Group will continue to implement its unique ESG activities globally, so as to deliver satisfaction and enriched lives for people around the world, and contribute to the sustainability of society.



### About Kao

Kao creates high-value-added products that enrich the lives of consumers around the world. Through its portfolio of over 20 leading brands such as *Attack*, *Bioré*, *Goldwell*, *Jergens*, *John Frieda*, *Kanebo*, *Laurier*, *Merries*, and *Molton Brown*, Kao is part of the everyday lives of people in Asia, Oceania, North America, and Europe. Combined with its chemical division, which contributes to a wide range of industries, Kao generates about 1,400 billion yen in annual sales. Kao employs about 33,000 people worldwide and has 130 years of history in innovation. Please visit the Kao Group website for updated information.

<https://www.kao.com/global/en/>

### Media inquiries should be directed to:

Corporate Strategy  
Kao Corporation  
Tel.: +81-3-3660-7043

<Related Information>

■Kao Sustainability website

<https://www.kao.com/global/en/sustainability/>

■Kao launches new ESG Strategy “Kirei Lifestyle Plan” to support consumer lifestyle changes

<https://www.kao.com/global/en/news/sustainability/2019/20190422-001/>

■Kao’s New Challenges for the Future: Accelerating Purposeful Business Commitment with ESG

<https://www.kao.com/global/en/news/business-finance/2019/20190926-001/>