

## **Mitsui Chemicals, NRI, PLUS and KYOWA SANGYO Team up to Trial Digital Traceability in Horizontal Recycling of Office Supplies**

Mitsui Chemicals, Inc. (Tokyo: 4183; President & CEO: HASHIMOTO Osamu), PLUS Corporation (Minato-ku, Tokyo; President & COO: IMAIZUMI Tadahisa), KYOWA SANGYO Co. Ltd. (Konosu, Saitama; President & CEO: ANDO Taro) and Nomura Research Institute, Ltd. (NRI; Tokyo: 4307; President & CEO, Chairman, Member of the Board, Representative Director: KONOMOTO Shingo) have joined forces to trial the incorporation of traceability functions\*<sup>1</sup> into a horizontal recycling system\*<sup>2</sup> for plastic clear folders used as office supplies, aiming through this to help create a recycling-oriented society. This initiative is one of the fruits of ongoing efforts by the four companies to build stronger partnerships focused on realizing a society that recycles products and their component materials.

All four are members of the Pla-chain\*<sup>3</sup> consortium, which aims to achieve social innovation and respond to the pressing need for a recycling-oriented society. Going forward, the four partners will work with the consortium to share the findings and challenges emerging from this initiative, representing an effort to step up the pace of intersectoral moves to create a recycling-oriented society.

### ◆ Overview of the trial

Purpose	To establish a system equipped with traceability functions for the horizontal recycling of plastic clear folders used as office supplies
Outline of activities	<p>The initiative involves implementing a horizontal recycling process that is focused on plastic clear folders manufactured by PLUS and that encompasses the following series of recycling processes (the “Loop”): product use → product collection → grinding into resin for use as a material → manufacture of the same product using recycled material → transport to offices for use. The recent trial involved implementing the first cycle of these processes (Loop 1). (See the figure 1)</p> <p>The system is equipped with traceability functions, facilitating digital visualization of the usage of the recycled material. The mechanism enables traceability to be checked within each process. (See the figure 2)</p>
Roles of each company	<p><b>Mitsui Chemicals</b></p> <ul style="list-style-type: none"> <li>➤ Provision of the company’s abundant knowledge and skills in the fields of monomers and polymers, along with eco-friendly technologies and know-how in the realm of recycling and elsewhere</li> <li>➤ Provision of know-how and technology verification for each process in the trial</li> <li>➤ Separation of plastic clear folders as a collection partner</li> </ul> <p><b>PLUS</b></p> <ul style="list-style-type: none"> <li>➤ Provision of know-how concerning both discarded office products and the</li> </ul>

	<p>latest environmental and product trends</p> <ul style="list-style-type: none"> <li>➤ Traceable manufacture and quality checks of plastic clear folders</li> </ul> <p>KYOWA SANGYO</p> <ul style="list-style-type: none"> <li>➤ Provision of knowledge and know-how concerning recycling processes and the manufacture of recycled material</li> <li>➤ Grinding of used products and manufacture of recycled material</li> </ul> <p>NRI</p> <ul style="list-style-type: none"> <li>➤ Provision of know-how based on knowledge and experience of business model transformation and digitalization</li> <li>➤ Design and management of the overall operation</li> </ul>
Future prospects	<p>The challenges and findings that emerged in the course of Loop 1 will first be identified and then leveraged to speed up and refine these activities.</p> <p>The partners will continue to implement this initiative in an effort to make horizontal recycling systems equipped with traceability functions more prevalent. (Loop 2)</p>

#### ◆ Comments from each company

##### **SAMBE Masao, Managing Executive Officer, Digital Transformation Sector, Mitsui Chemicals, Inc.**

“Mitsui Chemicals established the Pla-chain consortium for the purpose of building a plastics traceability system (resource circulation platform) and encouraging collaboration among stakeholders, with a view in turn to resolving social issues such as the problem of plastic waste. Now, as a project aimed at building a horizontal recycling ecosystem, this trial seeks to translate those aspirations into reality. We will help to create a recycling-oriented society via solutions-based business models focused on resolving social issues, such as product design that reduces environmental impact and the development of recycling mechanisms that maximize the effective use of resources.”

##### **MORISAWA Ichiro, Senior Managing Director and Division Manager, Consulting Division, NRI**

“NRI aims to solve social challenges through co-creation with a diverse range of partners. In conjunction with the recently established Pla-chain consortium, we see this trial as a significant first step toward the creation of a recycling-oriented society. NRI will continue to provide support that encompasses social implementation of the kind seen in this trial, which goes beyond mere concepts to focus on actual products and businesses. In doing so, we will make full use of our strengths in navigating society and companies toward transformation and in solving issues, thereby helping to realize a recycling-oriented society.”

##### **SOEDA Shuichi, Acting General Manager, CSR Division, Stationery Company, PLUS Corporation.**

“Guided by PLUS’s philosophy, ‘Unique Values - Higher Satisfaction,’ we will deliver higher satisfaction and unique values by continuing to solve social issues through unique ideas. We aim through this trial to collaborate with our partners in creating a recycling system that ensures limited resources do not go to waste. Taking on such challenging issues as climate change in pursuit of a sustainable society, we will strive to create a resilient society capable of preserving a beautiful global environment.”

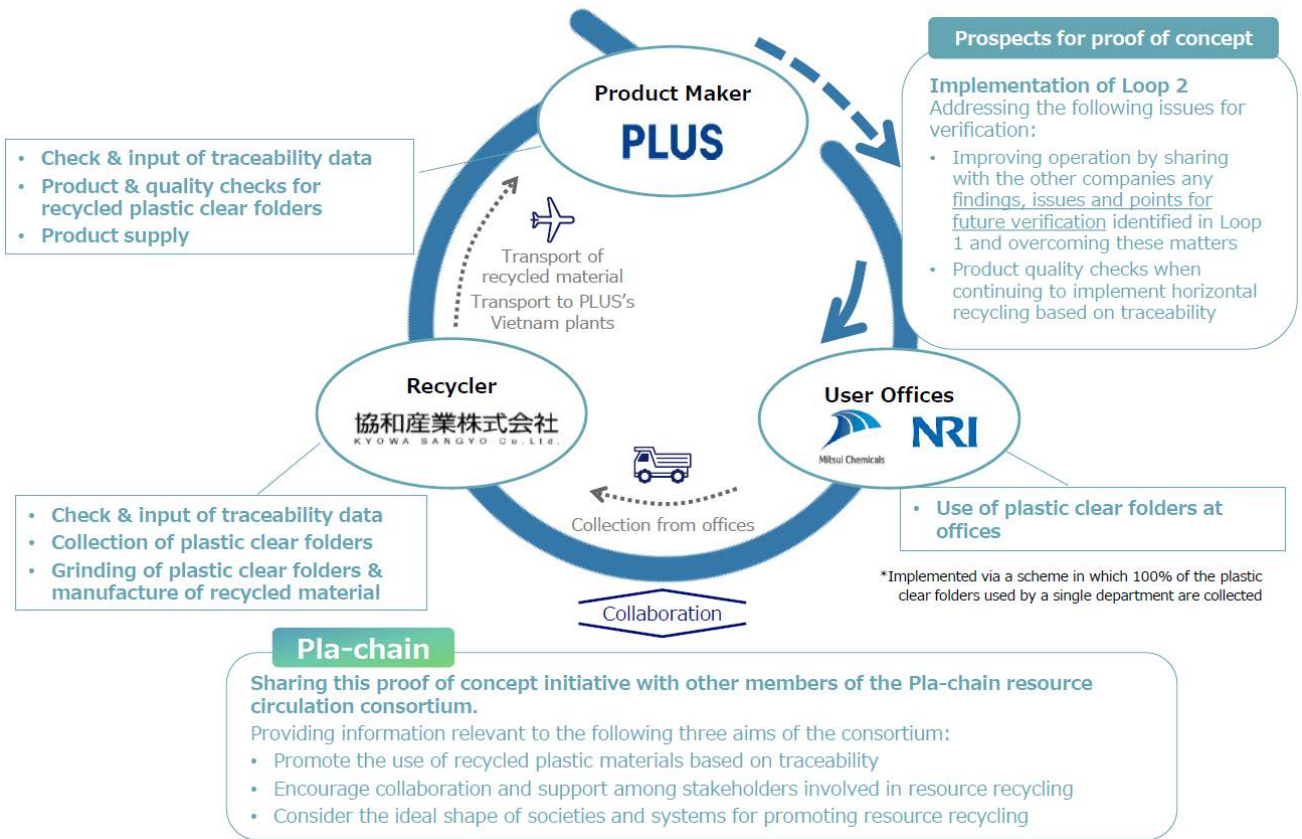
**ANDO Yuji, Managing Director, KYOWA SANGYO Co. Ltd.**

“As a pioneer in the field of plastics recycling, KYOWA SANGYO plans, proposes and develops recycling systems for used plastic products, and also carries out recycling itself. The objective of our activities is to ensure that the earth’s precious resources – in the form of used plastic products – can be effectively managed, used and recycled as environmental assets. Using our knowledge, experience and know-how as a manufacturer specializing in plastics recycling, we will strive to develop solutions and work with our partner companies to achieve a recycling-oriented society through this trial.”

- \*1 Traceability in materials covers the whole resource life cycle. This life cycle covers raw materials like monomers and polymers through to the manufacturing, sales and use of products. It also covers the recycling process thereafter, in which used products are recovered, dismantled, shredded and sorted into raw materials that can be reused to manufacture new products.
- \*2 Horizontal recycling: A recycling system that breaks down used products into component resources and recycles them into the same product.
- \*3 Related news release (October 13, 2022):  
[https://jp.mitsuichemicals.com/en/release/2022/2022\\_1013.htm](https://jp.mitsuichemicals.com/en/release/2022/2022_1013.htm)

◆reference

- Figure 1. About this implementation of Loop 1 and the relationship with "Pla-chain"



- Figure 2. Overview of Linking traceability data

