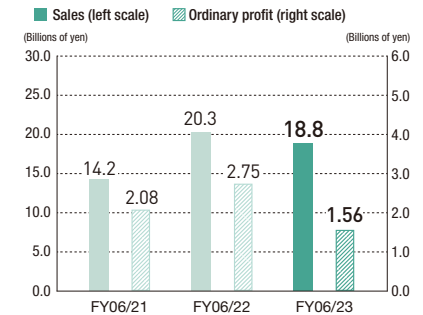




# Resource Circulation Business

Global resource consumption is on the rise, highlighting numerous environmental issues, including resource scarcity and excessive waste generation.

The ENVIPRO Group aims to promote a circular economy by producing and incorporating green materials into the supply chain.



## Recycling of Metals and Waste

Amid growing concerns over carbon neutrality and resource depletion, the concept of a circular economy is gaining attention worldwide, particularly in Europe. This has led to a renewed recognition of the importance of metal recycling, which has been a longstanding focus of the ENVIPRO Group.

The ENVIPRO Group entered the business of recycling composite materials with the introduction of a large shredder. At ECONECOL Inc., we crush and process up to 5,000 tons of raw materials per month, including automobiles, copiers, vending machines, and small household appliances. Through magnetic separation, we collect ferrous scrap, while non-ferrous metals and plastics undergo repeated physical sorting in subsequent processes to recycle each resource as green materials.

### New Recycling Plant Begins Operation

ECONECOL Inc. has commenced operations of its state-of-the-art recycling plant in the city of Fuji, Shizuoka Prefecture. The RE100 plant is designed to consider both the internal environment, such as working conditions, and the external environment, including landscape. Through processes such as wet and dry density separation, size separation, and sensor-based sorting, the RE100 plant efficiently and accurately sorts non-ferrous metals, precious metals, and plastics.



## Collecting Gold, Silver, and Copper Sediment Sludge\*1 from Incinerator Ash

Municipal waste incineration ash contains trace amounts of precious metals. Of these, riddling ash\*2, which falls from the grates of stoker-type incinerators, contains concentrated precious metals. The ENVIPRO Group collects gold, silver, and copper sediment sludge from this riddling ash and other sources.

\*1 Gold, silver, and copper sediment sludge is a mixture of gold, silver, copper, platinum.

\*2 Riddling ash is ash that falls through the grate of a stoker furnace when waste is incinerated.

## Flow of Collection for Gold, Silver, and Copper Sediment Sludge



In December 2022, Kuroda Recycle Co., Ltd. commenced operations of the Group's third plant for the collection of gold, silver, and copper sediment sludge. This plant enables the collection and resource utilization of gold, silver, and copper sediment sludge, which had previously been difficult to collect and had been disposed of as waste, including from riddling ash and residual waste from local government's incinerators, as well as from residual waste from automobile shredding.



## Cleaning and Dismantling Work at Buildings and Plant Facilities Across Japan

The ENVIPRO Group provides a one-stop service for dismantling work and ancillary services, including the cleanup of debris from buildings and grounds, preliminary investigation of asbestos-containing building materials, CFC collection, and building dismantling work. In fiscal 2022, we increased the number of projects and expanded the area in which we engage in the dismantling business through collaboration with financial institutions.

Circulating collected resources through the circular economy helps reduce costs and environmental impact.



## Resource Circulation Business

### Expanding Our Recycling of Wind Power Generation Facilities

Japan's northern island of Hokkaido already has a large number of wind power generation facilities, and the construction of offshore wind power generation facilities is also underway. The removal of facilities that have been in operation for over 20 years due to aging is increasing year by year. Kuroda Recycle Co., Ltd. possesses advanced processing facilities and is actively engaged in the recycling of wind power generation equipment. In particular, we actively recycle turbine blades from across the country, including from outside Hokkaido. We recycle the metals and special alloys used in this equipment, as well as waste plastics and hard-to-process materials.



### A Platform for Collecting Community Resources Mottainai BOX and Community-Based Initiatives

SYN ECO Inc., headquartered in Matsumoto, Nagano Prefecture, is actively engaged in local community initiatives through its Mottainai BOX and other regionally integrated efforts. Across the Chushin district of Nagano Prefecture, the company has set up 23 Mottainai BOX Stations, which serve as collection points for community resources. SYN ECO also operates a resource recycling facility in the city of Azumino, called SYN ECO Plaza Azumino. The convenience of these stations and the plaza has led to an annual increase in the volume of resources collected, and a portion of the earnings from the collected resources are returned to the local community. We aim to become a trusted entity in the region by providing attentive support and prompt responses to the concerns and needs of local residents. Moving forward, we will actively engage in regional collaboration and contribute to the circular economy that supports the local community.



Mottainai BOX

ENVIPRO HOLDINGS Inc. and NEWSCON Inc. have collaborated with the Akita Northern Happinets, a professional B.League basketball team, to set up a Mottainai BOX to collect resources in the city of Akita. The station aims to collect cardboard, magazines, newspapers, and metal for recycling, with a portion of the proceeds from recycling being returned to support the activities of the Akita Northern Happinets.



### Production of Low-Carbon Raw Fuel from Waste Plastic (RPF)

RPF\* is a solid fuel produced by compressing difficult-to-recycle waste plastics and paper waste. This environmentally conscious fuel offers substantially lower CO<sub>2</sub> emissions than fuels such as coal, while providing stable quality. ECONECOL Inc. produces approximately 23,400 tons of RPF annually and continuously supplies it primarily to paper companies as boiler fuel. The factory is currently in production 24 hours. ECONECOL is looking to expand the customer base and establish a system to increase production further.



RPF

\* RPF, which stands for "Refuse derived paper and plastics densified Fuel," is a high-grade solid fuel made mainly from collected paper and plastics (mainly from industrial waste) that are difficult to recycle as materials.

### Expanding Reused Items, Such as PC Components

Instead of disposing of used electronic equipment as waste, we strive to make effective use of its resources through reuse and recycling, thereby reducing waste.

In fiscal 2022, we began extending our efforts beyond the recycling of personal computers to include the dismantling and extraction of CPUs and memory for component reuse. Moving forward, we will focus on refurbishing collected laptops and undertake various initiatives to maximize the resource value of electronic devices. We are committed to promoting a CE supporting manufacturing, and we plan to further expand our initiatives to other products, in addition to PCs.

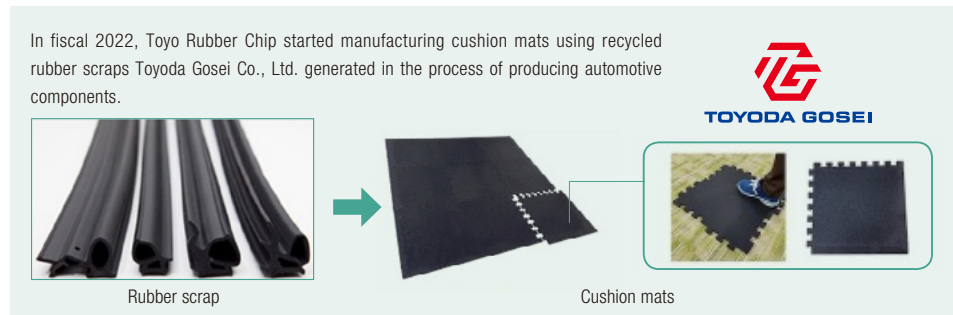


\*Refurbishing is the process of collecting defective products and bringing them back to life. We refurbish a wide range of PCs, from those that are no longer usable to those that are nearly new, thereby helping to reduce waste.

## Resource Circulation Business Manufacturing Polymer Products

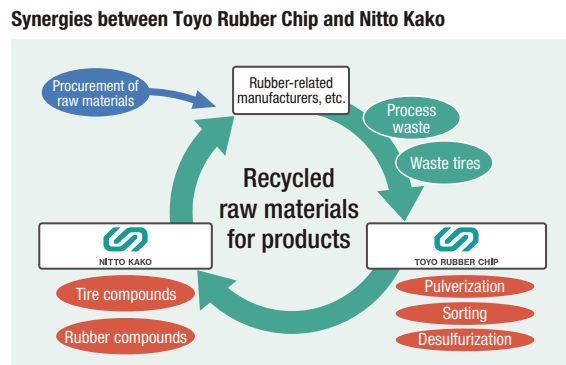
### Working with Toyoda Gosei Co., Ltd., to Realize a Circular Economy Model for Rubber

Due to its nature, rubber is known to be difficult to recycle, and the mainstream methods of disposal include thermal recovery and landfill. To promote the circular economy of rubber products, Toyo Rubber Chip Co., Ltd. is collaborating with other members in its supply chain to work towards the realization of a circular economy for rubber products. The company's headquarters factory operates on 100% renewable energy. In line with the vision of becoming carbon-neutral by 2050, Toyo Rubber Chip Co., Ltd. manufactures low-carbon products using low-carbon processes.



### Toyo Rubber Chip Co., Ltd., and Nitto Kako Co., Ltd., Cooperate in the Rubber Product Supply Chain

In April 2023, Nitto Kako Co., Ltd. became a part of the ENVIPRO Group. A pioneer in recycled rubber, Nitto Kako will collaborate with Toyo Rubber Chip Co., Ltd. to enhance polymer product manufacturing. Recycled rubber is not widely used in tire manufacturing at present, as braking performance and other requirements demand high-quality rubber. However, we are leveraging Group synergies and taking on the challenge of



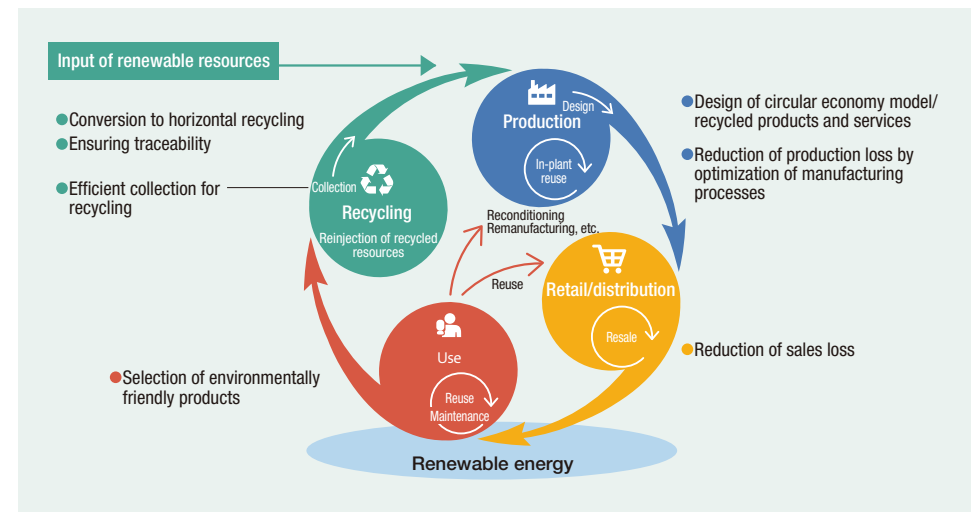
realizing a circular economy model that achieves tire-to-tire recycling.

### Leveraging the Polymer Circular Laboratory to Achieve a Circular Economy in the Manufacture of Polymer Products

By utilizing its expertise in the regeneration of rubber and resin products, the Polymer Circular Laboratory provides a one-stop service for a series of processes involving the development of recycled products that in the past were conducted separately.

We are accelerating the flow to molded prototypes while reducing time and effort by centralizing the contact point for coordination with vendors for each process, technology selection, pre-processing, and prototype production. We can quickly share our vision for recycled products within the company, which allows us to accelerate the product development cycle. Furthermore, having a concrete vision also helps promote sustainability within the organization.

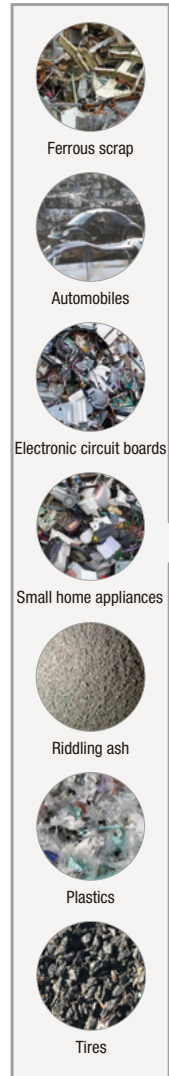
### Circular Economy for Polymer Product Manufacturing



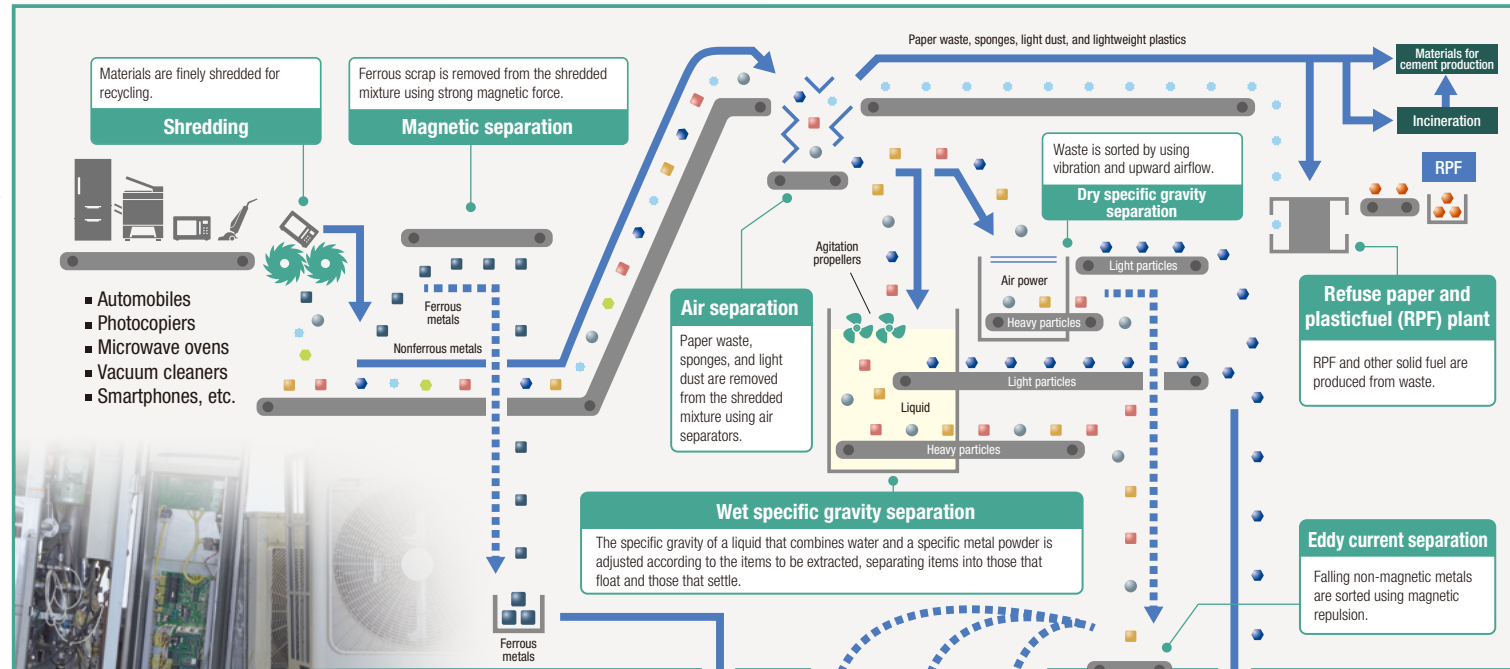
# Flow of Treatment/Processing in the Resource Circulation Business

## INPUTS

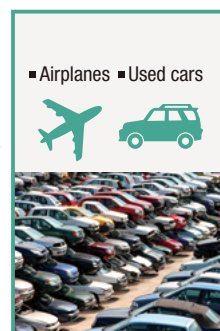
Above-ground resources (waste)



## RECYCLING



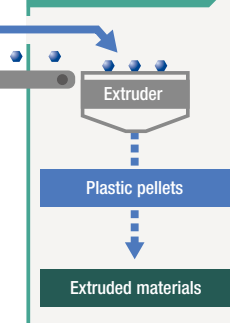
## REUSE



## GLOBAL TRADING



## REMANUFACTURING



## OUTPUTS

Recreating resource value

