Realizing a Circular Society

KPI	FY2024	FY2031
Recycled material utilization rate (cathode materials, copper foil)	—	Compliance with local regulations in each country
Recycling rate (in-house waste)	**97.6%**	99% or more (less than 1% going to landfill)

Policy

As a company that uses large amounts of natural resources in its business, we believe that using the earth's limited resources in a sustainable manner and passing them on to the next generation is crucial. For the future of children born today, we are increasing recycling to reduce the consumption of new natural resources while reducing waste to lower our environmental impact. We are also working to reduce CO_2 emissions related to the production of materials and disposal of products. We will advance these efforts in tandem with our commitment to achieving decarbonization.

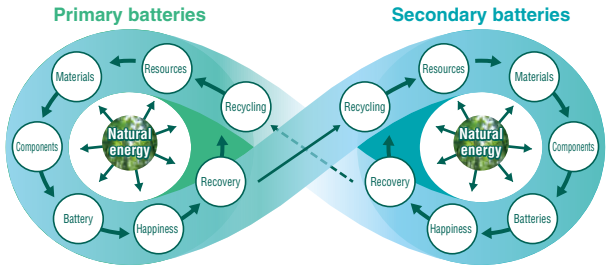


Image of the "Yarushika Circular Concept," which transcends the boundaries between primary and secondary batteries to realize resource recycling

Circular economy initiatives

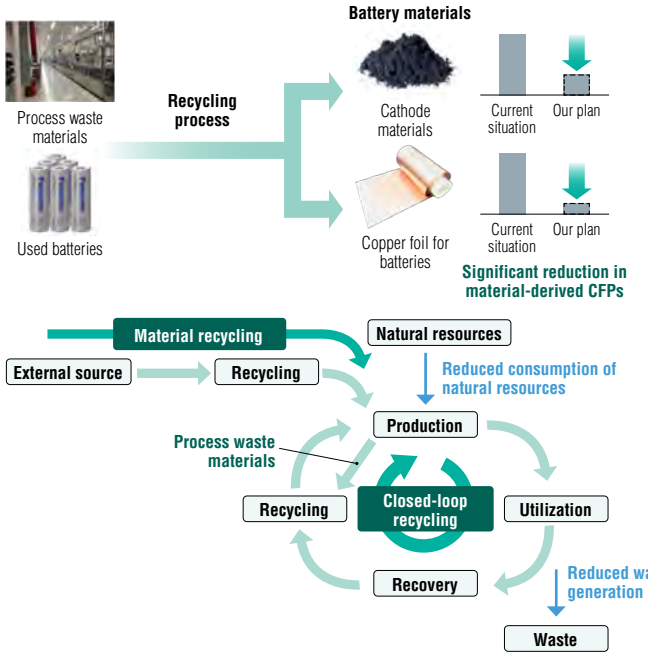
Activities with co-creation partners

In our battery production, we have been using recycled materials, mainly recycled PET and other plastics, because using such materials instead of newly manufactured materials leads to lower consumption of natural resources and lower CO_2 emissions. Committed to realizing a recycling-oriented society and reducing CO_2 emissions, we are also stepping up efforts to extend the use of recycled materials to electrode materials and other components.

In fiscal 2023, we signed an agreement with Redwood Materials Inc., a U.S. battery recycling company, to purchase recycled cathode materials and copper foil for EV lithium-ion batteries. Under the agreement, we will establish a system to recycle process waste and used batteries into lithium-ion battery materials, such as cathode materials and copper foil. Recycled cathode materials derived from waste generated at our US factories will be used at our new factory in Kansas, while recycled copper foil will be used at our factory in Nevada. By also increasing the local procurement rate, this initiative will also lead to lower CO_2 emissions in the resource extraction and logistics processes.

In addition to the United States, we will verify the use of material recycled*1 cobalt, nickel, and lithium cathode materials with material suppliers and gradually start using cathode materials containing recycled materials in some of our products. In addition, we aim to start utilizing our process waste and other materials as battery materials. To this end, we have established a recycling system for reusing black mass*2 generated from process waste materials and used lithium-ion batteries, as a cathode material. In 2024, we gradually started to use this material.

*1 Reuse of waste as materials or raw materials for products
*2 Black powder containing cobalt, nickel, lithium, etc., obtained by heat-treating batteries



Establishing a battery recycling scheme in collaboration with stakeholders

1. Initiatives related to secondary batteries

For secondary batteries, countries around the world are developing legal systems and mechanisms for recycling aimed at using resources more effectively and preventing environmental pollution. In Japan, we are a member of Japan Portable Rechargeable Battery Recycling Center (JBRC), a recycling promotion organization established mainly by Matsushita Battery Industrial Co., Ltd. and SANYO Electric Co., Ltd. (our predecessors). In this role, we engage in collection and recycling of secondary batteries from cooperating stores, municipalities, and businesses nationwide. In fiscal 2023, the industry as a whole collected and recycled 1,700 tons of secondary batteries (around 50% of which were made by our company). In North

America, we collaborated with other battery manufacturers to launch the Call2Recycle program, which offers recycling schemes for secondary batteries in the United States and Canada. We are also helping various other countries create the most efficient systems that match the actual recycling infrastructure situation in each country.

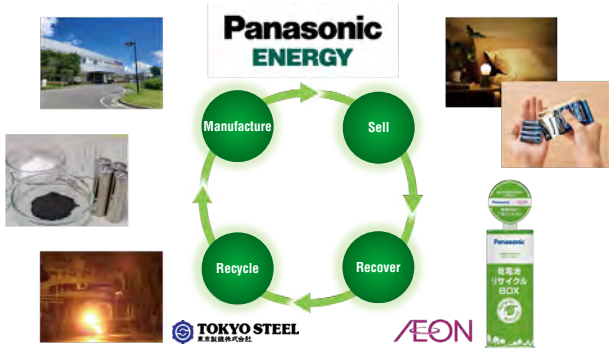
2. Initiatives to end the use of disposable dry cell batteries

For dry batteries, which are primary batteries that cannot be used repeatedly, we are conducting demonstration tests of dry battery collection and recycling efforts.

In Thailand, where the battery collection system is still underdeveloped, we have started a demonstration test to collect and recycle waste dry batteries at 31 stores in cooperation with CP ALL (a convenience store operator) from fiscal 2023. This initiative is to be expanded to 1,000 stores in fiscal 2025. In Japan, a similar demonstration test has been started in cooperation with AEON Retail and Tokyo Steel Manufacturing since fiscal 2024. Recycling of collected dry batteries as steel materials has been started in both Japan from June 2023 and Thailand from March 2024.

We will continue to expand our collection areas and full-scale operations in Thailand and Japan while also expanding the expertise that we have gained to other regions. In terms of recycling, we are promoting research and development with a view to future use in dry battery components, aiming to realize "battery-to-battery" recycling.

Dry battery recovery model in Japan



Initiatives to reduce plastic use

While plastic is an indispensable material in modern society, its impact on climate change and the challenges it poses as a waste material are driving our efforts to reduce plastic use and recycle resources.

As one of our initiatives, we launched dry batteries in "ethical packages" in both Japan in fiscal 2022 and Thailand in fiscal 2023. These packages are designed to reduce packaging materials and eliminate plastics, as products that appeal to the ethical consumption orientation (consumption activities that consider not only the functional value of products and services but also their ethical value). The introduction of this ethical packaging reduces the amount of packaging materials used (including plastic) by 38–59% compared to conventional products. It also contributes to a reduction in total CO_2 emissions throughout the lifecycle of packaging materials, including obtaining raw materials, manufacturing, use, and disposal.

From 2023, we expanded our lineup to include the rechargeable nickel-metal hydride battery "eneloop" and coin cell batteries* with ethical packaging. We have also accelerated our business globally, starting with the Asia-Pacific region.

Furthermore, in September 2023, we received the Japan Star Award (Minister of Economy, Trade and Industry Award).

*Sold only through certain online shopping websites.

In addition, customers have requested further use of recycled resin in response to growing environmental concerns, such as the reduction of waste volume and CO_2 emissions.

To continue reducing environmental impact, we have therefore raised the ratio of recycled resin used in battery pack outer cases from 25% to 50% for some models. This contributes to the reduction of energy required for plastic production and the recycling of plastics scheduled for disposal. Since mechanical properties such as strength and heat resistance are reduced with the use of recycled resin, risk verification was also conducted before introduction.

In the future, we will contribute to environmentally friendly activities by expanding the use of recycled resin and other measures.

Products with ethical packaging

Waste reduction initiatives

Reduced waste from the factory

We work continuously to reduce waste generated by our factories and increase the volume of valuable materials and resources recycled. Our aim is to reduce the final disposal amount (amount of waste ending up in landfill) to as close to zero as possible. We have set the factory recycling rate (Amount recycled ÷ [Amount recycled + Final disposal amount]) as a KPI, with a target of 99% or higher. In fiscal 2023, we achieved a factory recycling rate of 97.6% globally.