

Use of sustainable resources

Social value targets	Fiscal 2024 targets		
	Fiscal 2024 targets	Fiscal 2030 targets	Fiscal 2050 targets
use of sustainable resources (%) ^{*1}	1% improvement from fiscal 2021 results ^{*3}	25%	100%
Resource recycling (%) ^{*2}	5% improvement from fiscal 2021 results ^{*3}	50%	100%

^{*1} Rate of resources with lower risk of depletion that can be used sustainably by building a recycling scheme, etc. (potentially depletable resources: Ag, Ni, etc.)
^{*2} Rate of Murata's discharges (waste + valuable material) that are recycled as resources
^{*3} Actual figures for fiscal 2021 are currently being compiled.

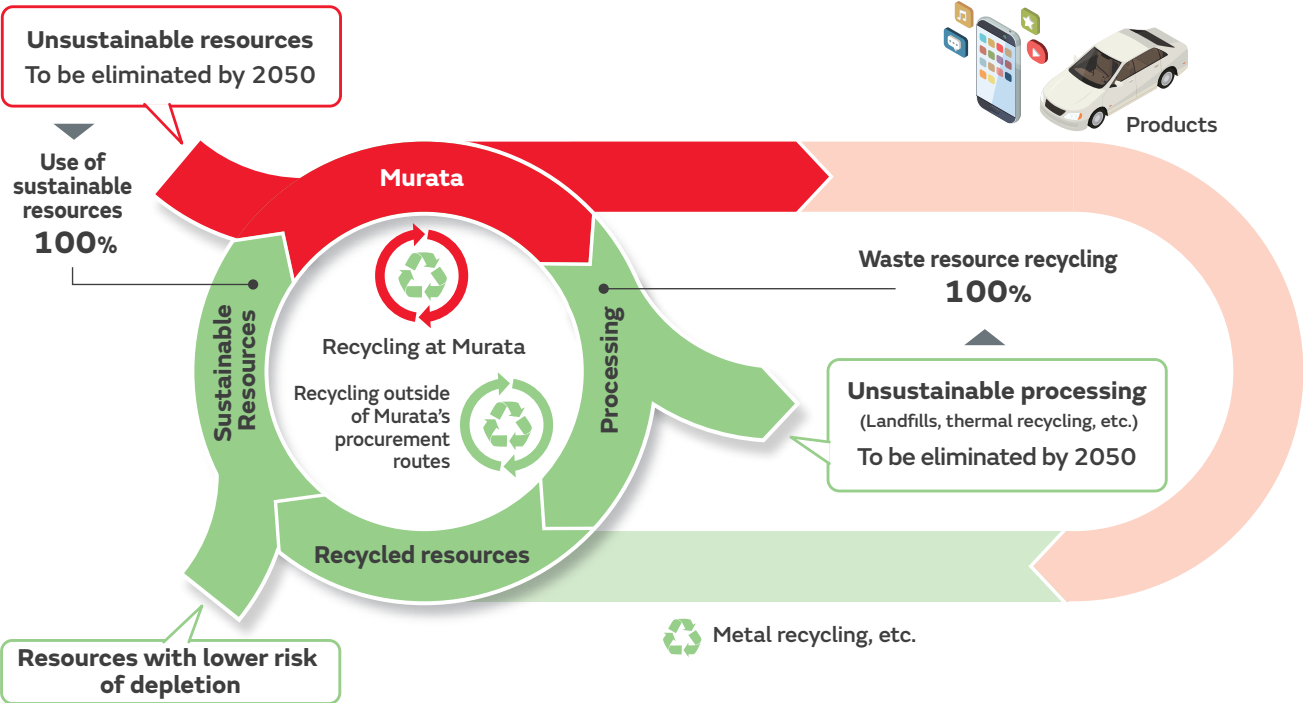
Basic view

As the global population increases, social issues such as resource depletion and increased waste have become more severe. Murata intends to contribute to the development of culture by addressing these social issues. We will therefore promote the use of sustainable resources by realizing it in our own business activities. Murata has set two targets for fiscal 2050: Rate of use of sustainable resources for procured materials, and resource recycling rate for waste, and is promoting efforts to achieve them.

Rate of use of sustainable resources : For parts and materials used in our products, we aim not to use (1) resources with higher risk of depletion and (2) resources that our stakeholders prohibit or discourage their use. For this reason, we will conduct our business activities so that we can use resources sustainably in the future by switching to resources that do not fall under (1) or (2), by for example, discontinuing the use of virgin materials of resources that are at risk of depletion.

Resource recycling rate : Murata has been committed to zero emissions, emphasizing the elimination of landfill and working on measures such as material recycling and thermal recycling (heat recovery). In recent years, however, there has been a growing demand from stakeholders for processing with less environmental burden, in addition to avoiding landfill. In view of these demands and social trends, we will strive to achieve processes that harmonize with the society in the world in 2050. To this end, we are working on resource recycling to use all waste generated during manufacturing processes as resources for Murata or other companies.

Murata's initiative towards realization of use of sustainable resources



Going forward, we will look into the potential of circulating products sold to our customers based on the basic approach described above. We will also continue our efforts to reduce our total waste, including the reduction of waste liquids.

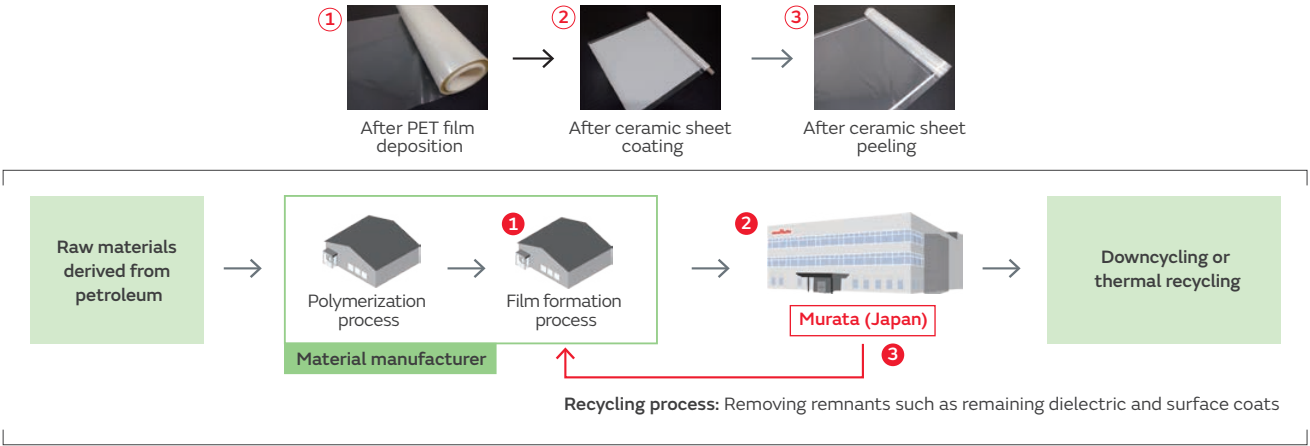
Efforts to utilize recyclable resources

Murata has become the first company in the electronic component manufacturing industry to successfully create a closed-loop recycling system for polyethylene terephthalate (PET) film used in the manufacturing process of multilayer ceramic capacitors (MLCC). Conventionally, used PET film for MLCCs was thermal-recycled or downcycled (recycling with degradation). However, this is the first time that the closed-loop recycling of PET film for sheet forming in MLCCs, converting it back into PET film to be used again for the same purpose, has been attempted in the electronic component manufacturing industry (as of May 2022, according to the company's study).

In the new recycling system, closed-loop recycling has been made possible by working with a partner company to take

the PET film used in the dielectric sheet-forming process and convert it back into PET film to be used again for the same purpose. The recycling system has been introduced in stages, starting from May 2022. We are working to further improve the PET film recycling scheme so that in the future we will be using 100% recycled PET film.

In promoting this initiative, it is necessary to build collaborative relationships throughout the supply chain, including suppliers and customers. We are contributing to the use of sustainable resources and achieving a competitive edge through our pioneering use of this new system, creating a continuous cycle of social value and economic value.



Initiatives to reduce waste

Murata Electronics Singapore (Pte.) Ltd. has introduced a membrane distillation unit (MDU) in 2021, which uses a membrane instead of the conventional sedimentation process in the treatment of plating waste liquid. This waste liquid treatment system employs a new technology designed jointly with Kurita Water Industries. By combining reverse osmosis (RO) membrane and distillation membrane^{*1}, the system is capable of concentrating plating waste liquid up to 60 times from the current level. No chemicals are used in the treatment process, eliminating the possibility of new contaminants being mixed in with the waste liquid. Intermediate waste is recovered and reused as new products, contributing to improved recycling rates and a circular economy.

With this initiative, Murata Electronics Singapore (Pte.) Ltd. was featured in ENVISION Magazine^{*2} published by the National Environment Agency (NEA) of Singapore, as a key player in the field of green & sustainability in Singapore, providing an opportunity for Murata's stakeholders, especially customers and suppliers, to learn about our commitment to use of sustainable resources.

Murata will continue to focus on creating innovation through partnerships with external parties with the aim of solving social issues.

^{*1} A technology that allows vapor to permeate through a membrane by utilizing the difference of the boiling points between water and the substance to be filtered in the water.
^{*2} Published bi-annually, the magazine is distributed free of charge to a 15,000-strong readership comprising the senior government officials, as well as key decision makers in environment-related industries in Singapore.

