

The Ricoh Group contributes to the development of a sustainable society that recirculates resources based on the Comet Circle concept.

Comet Circle

The Comet Circle represents a sustainable society that recirculates resources, the kind of society we pursue. The circles in the diagram represent the partners in that recycling-based society. The upper route represents the arteries of the system, and the lower route the veins of the system. Resources taken from the natural environment by materials suppliers shown at the upper right are processed into products, moving from right to left along the upper route, and are finally delivered to users (customers). The economic values of these resources increase in the process and are highest when the final products are delivered to users. The end-of-life products move from left to right along the lower route. To achieve a sustainable society that recirculates resources, it is necessary to recycle products through the inner loops of the Comet Circle and promote recirculation that is highly economical and causes less environmental impact. Partnerships among the partners represented by the circles are also important. The Ricoh Group contributes to the development of a recycling-based society by emphasizing the following five activities that make the Comet Circle more effective.

(1) Determine and Reduce Environmental Impact at All Stages

A society that recirculates resources must minimize the total environmental impact it causes by reducing it at all stages, including the transportation stage (the entity represented by a sphere in the Comet Circle diagram). For this reason, the Ricoh Group, suppliers, customers, and recycling companies must first determine the degree of environmental impact at all stages, including the transportation stage, by using a sustainable environmental management information system and then reducing it by using the latest environmental conservation technologies and promoting recycling and collection systems all over the world.

(2) Priority on Inner Loop Recycling

Resources have the highest economic value when they are manufactured into products and used by customers. The Ricoh Group puts priority on reducing, reusing, and recycling products on the inner loops of the Comet Circle, aiming at minimizing the resources, cost, and energy needed to return used products to their highest economic value.

(3) Promoting a Multitiered Recycling System

Repeated recycling to the greatest extent possible (i.e., multitiered recycling) reduces the consumption of new resources and the generation of waste. The Ricoh Group is promoting the effective use of resources by establishing a system in which products recovered from the market are supplied to the market again.

The diagram illustrates the RICOH Green Loop concept, a circular flow system for product lifecycle management. It shows the flow of materials and products through various stages, from initial use to final disposal and recycling back into the system.

Stages and Flow:

- User:** The starting point of the product lifecycle.
- Sales company:** Distributes the product to the user.
- Maintenance company:** Provides long use and maintenance services.
- Collection center:** Collects products for recycling or reuse.
- Recycling center:** Processes collected products for reuse or recycling.
- Shredder company:** Crushes products into parts and materials.
- Parts recovery center:** Recovers parts for reuse or recycling.
- Materials recovery company:** Recovers materials for reuse or recycling.
- Oil recovery company, smelting company:** Processes materials for reuse or recycling.
- Thermal energy collection company:** Recovers energy and CO2 from materials.
- Final disposal company:** Disposes of materials in a landfill.

Key Processes and Labels:

- Reuse of parts:** Flow from Parts manufacturer to Product manufacturer.
- Reuse of products:** Flow from Product manufacturer to Sales company.
- Long use:** Flow from User to Maintenance company.
- Sorting and disassembly:** Flow from Collection center to Recycling center.
- Crushing of products:** Flow from Recycling center to Shredder company.
- Closed loop materials recycling:** Flow from Shredder company to Materials recovery company.
- Open loop materials recycling:** Flow from Materials recovery company to Oil recovery company, smelting company.
- Generation of raw materials:** Flow from Oil recovery company, smelting company to Materials supplier.
- Metals:** Flow from Oil recovery company, smelting company to Thermal energy collection company.
- Disassembly oil:** Flow from Oil recovery company, smelting company to Thermal energy collection company.
- Energy recovery (Energy, CO2):** Flow from Thermal energy collection company to Final disposal company.
- Shredder dust:** Flow from Shredder company to Final disposal company.
- Landfill:** Final destination for materials not recycled.

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A society that recirculates resources must also establish a recycling system in which products and money flow in opposite directions in both post-product-use stages and original production and marketing stages. The Ricoh Group, making use of an upgraded design, is promoting a more economically rational recycling system in partnership with recycling companies. At the same time, it is important to establish a social system that helps people to be aware of environment-friendly business activities and buy products with less environmental impact.

The Ricoh Group is limited in what it can do to reduce the environmental impact at each stage of production. In order to reduce the environmental impact effectively, partnerships are essential. The Ricoh Group can effectively reduce the environmental impact from all its business areas just by decreasing the amounts of chemical substances it uses in cooperation with materials and parts manufacturers. It also urges its customers to use products that have less environmental impact, and to use those products in ways that produce less environmental impact. Improving efficiency when transporting products to their markets, as well as when transporting used products, and reducing recycling costs and the environmental impact generated by recycling are also important. Thus, environmental impact can be reduced effectively in an economically rational way by forming partnerships at every stage. Also, the Ricoh Group helps reduce the environmental impact caused by society as a whole by disseminating and sharing the information and know-how it has obtained through its activities in the community.