Identifying Environmental Impact (LCA)

Conducting LCA[1] research to identify a product's environmental impact and disclosing the relevant information to customers

To manufacture products with less environmental impact, it is important to identify the environmental impact that products cause throughout their life cycles. It is also important to disclose LCA information[2] to help more customers use products with less environmental impact. Ricoh uses the LCA method to identify the environmental impact of its products and verifies environmental improvement measures by modifying the design and manufacturing processes. LCA is therefore useful in promoting sustainable management.

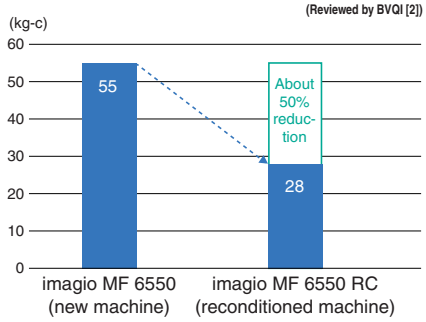
1. LCA is a means of quantitatively determining the level of environmental impact generated throughout a product's life cycle, from resource procurement through manufacturing, transportation, use, maintenance, recovery, recycling, to disposal. Even a partial level of impact can be used.
2. See page 59.

LCA Research

Ricoh established an LCA research team in 1994 to conduct practical research on LCA and has released a variety of case study reports. With more case studies being conducted, such issues as the importance of explaining the usage of LCA and difficulties of collecting data and setting research conditions are being clarified. Making use of the knowledge obtained by the LCA research team, manufacturing subsidiaries are conducting their own LCA. Ricoh participates in government committees and other gatherings to help improve the LCA method and conduct research with scholars and company representatives. Ricoh disclosed LCA information about printers and copiers in fiscal 2000 and about facsimiles in fiscal 2001. Furthermore, for the purpose of endorsing the environment-friendly functions of recovered machines, Ricoh made an LCA comparison* between a new machine, the imagio MF 6550, and a reconditioned machine, the imagio MF 6550 RC.

* See the figure on the right.

LCA Comparison between a New Machine and Reconditioned Machine (CO_2 Emissions)



* A comparison of annual environmental impact was made.
* Figures for CO_2 emissions while being in operation at customer's site was not included in the calculation of the data.
* The imagio MF 6550 RC is only available in Japan for rent.

LCA Information on the imagio MF7070 (Aficio 700) (Type III Environmental Impact Disclosure)*

	Environmental Impact Item		Preliminary Process	Manufacturing	Transportation	Use and Maintenance	Recycling and Disposal
Input	Electric power (kWh)		7,730 (MJ)	37.9	0	3,494	13.7
	Fossil fuel (MJ)			167	381	2,569	—
	Water usage	Tap water (ℓ)	—	3.65	0	0	0
		Industrial water (ℓ)	—	0	0	0	0
		Underground water (ℓ)	—	0	0	2,219	0
	Resource input	Principal resource (kg)	—	Metal 116 Plastic and rubber 38.8 Glass 2.2 Others 45.1	0	Copy paper 12,200 Toner 86.7 Photosensitive materials 3.63 Developer 10.0 Maintenance parts 27.9 Others 27.4	0
		PRTR substances (g)	—	58.4	0	1,374	0
		Volatile organic substances (g)	—	0	0	73.6	0

	Environmental Impact Item		Preliminary Process	Manufacturing	Transportation	Use and Maintenance	Recycling and Disposal
Output	Emission into air	CO_2 (kg-C) Power consumption/others	250	6.03/3.20	0/7.0	291/45.4	1.11/0
		SO_x (g) Power consumption/others	3,460	10.2/13.3	0/31.5	412/3.63	1.23/0
		NO_x (g) Power consumption/others	711	12.9/8.35	0/79.2	568/20.6	1.78/0
		PRTR substances (g)	—	0	0	1,374	0
		Volatile organic substances (g)	—	0	0	73.6	0
	Emission into water	Amount emitted (ℓ)	—	3.65	0	2,219	0
		BOD (g)	6,560	0.255 or less	0	0.31	0
		COD (g)	7,570	0.236 or less	0	—	0
		PRTR substances (g)	—	0.00439	0	0	0
	Recycled (kg)		—	0.697	14.9	11.2	177.4
	Waste	Incineration (kg)	—	0.0294	0.845	0.864	8.60
		Landfill (kg)	—	0.0008	0	37.9	

* Obtained JEMAI program Ver. 2 certification from the Japan Environmental Management Association for Industry.

*http://www.ricoh.co.jp/ecology/e-/label/type3/index.html