

Balancing conservation and business growth

We will transform our business model from long-term perspectives and contribute to social sustainability improvements.

Setting targets and formulating action plans in implementing environmental management

The Ricoh Group considers it important to undertake environmental conservation and profit generation simultaneously. We practice environmental management, through which we proactively endeavor groupwide to lower our environmental impact and improve the Earth's regenerative capabilities.

We have leveraged backcasting to materialize a sustainable society, setting environmental goals for

2030 and 2050 in the areas of preventing global warming and conserving resources. We include these goals in environmental action plans set every three years, and undertake highly effective initiatives in each area to achieve our goals. In keeping with the 19th Environmental Action Plan, which we launched in April 2017, we pursue sustainable progress for society and the Ricoh Group. >1



1 GHG Scope 1, 2 and 3

- GHG Scope 1: All direct GHG emissions from our manufacturing plants, offices, vehicles etc.
- GHG Scope 2: Indirect GHG emissions from the consumption of electricity and heat that we purchase
- GHG Scope 3: Emissions in the supply chain from business activities (excludes GHG Scope 1 and 2)

2 Reduction goals in keeping with Representative Concentration Pathway (RCP) 2.6 emission scenario as adopted by Intergovernmental Panel on Climate Change

3 Product resource conservation rate
Rate of reduction in new resource inputs to total resource inputs

Ricoh Group environmental declaration

We proactively reduce environmental impact and strive to improve the Earth's self-recovery capabilities to achieve a zero-carbon society and a circular economy through business.

Ricoh Group environmental goals

2030 goals

- GHG Scope 1, 2* >1 30% reduction >2
- GHG Scope 3* >1 15% reduction
- Product resource conservation rate >3 : 50%

* Figures compared with 2015 levels

2050 goals

- Targeting zero GHG emissions across the entire value chain
- Product resource conservation rate: 93%

19th Environmental Action Plan highlights in the year ended March 31, 2019 >2

| | |
|--|--|
| 1. Conserving energy and preventing global warming | <ul style="list-style-type: none"> • We expanded the sales ratio of color MFPS offering outstanding energy savings, greatly exceeding our yearly targets of voluntary product energy savings standards • The Group significantly increased its renewable energy ratio by switching to such energy at its French plant |
| 2. Conserving resources and recycling | <ul style="list-style-type: none"> • We improved our resource conservation rate by expanding the use of recycled plastics in products and making products smaller and lighter |
| 3. Preventing pollution | <ul style="list-style-type: none"> • We boosted the reduction amounts both in the use and the emissions of environmental impact substances by reorganizing business sites and improving product defect rates |
| 4. Conserving biodiversity | <ul style="list-style-type: none"> • We steadily expanded the number of forestation activities and participation in them by collaborating with stakeholders while enhancing these initiatives |
| 5. Enhancing the basis for environmental management | <ul style="list-style-type: none"> • By the end of the term, 94.2% of our offerings were certified under the Ricoh Sustainable Products Program • Suppliers harnessed independent power producer electricity, while we initiated activities to map CO₂ emissions reductions stemming from production process improvements |



Information disclosure based on TCFD framework >3 >4

We operate in keeping with the belief that climate change presents both operational risks and opportunities. We are accelerating decarbonization efforts while keeping stakeholders informed of our endeavors based on the Task Force on Climate-Related Financial Disclosures (TCFD) framework.



4 TCFD

The Financial Stability Board established this entity to manage the physical and transition risks associated with climate change. The TCFD encourages businesses and organizations committed to its principles to disclose the risks and opportunities of climate change. It also aims to stabilize financial markets to streamline transitions to low-carbon economies.

Overview of scenario analysis findings

In analyzing scenarios based on the TCFD framework, we confirmed that even if the international community decarbonizes rapidly the risks for the Ricoh Group associated with such a transformation will not be all that great. That is because we have long practiced environmental management. We learned that there are opportunities to deliver products and solutions that draw on energy-saving

technologies in our printing business and services to help customers decarbonize. There is also tremendous potential for expanding environmental and energy businesses and creating new businesses. At the same time, we confirmed that the Ricoh Group faces risks in its business from the impacts on the entire supply chain of frequent and more extreme weather if global warming continues unabated.

Refer to our website

- 1 Environment** www.ricoh.com/sustainability/environment
- 2 Ricoh Group's 19th Environmental Action Plan (the year ended March 31, 2018 to the year ending March 31, 2020)** www.ricoh.com/sustainability/environment/plan/plan19th
- 3 Information disclosure based on TCFD framework** www.ricoh.com/sustainability/environment/management/tcfd

It is in view of our findings that we began reviewing our long-term environmental goals to contribute to a swift switch to a decarbonized economy in accordance with the Intergovernmental Panel of Climate Change's

(IPCC) Special Report on Global Warming of 1.5°C. We are also strengthening the resilience of our business continuity plans in preparation for extreme weather while endeavoring to expand our environmental and energy businesses.

Governance

In April 2018, we set up the ESG Committee to support ongoing management deliberations about Group challenges over the medium and long terms on the environmental, social, and governance fronts and enhance the Group's overall operations. > 1

Refer to this page
 1 ESG Committee
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Strategies

We analyzed scenarios in keeping with the following steps. These were to assess climate-related materiality, identify and determine scenarios, and evaluate and identify business impacts (risks and opportunities). We accordingly identified risks and opportunities relating to climate change.

Scenario analysis and preconditions

- We have categorized key events associated with climate change as transition risks (encompassing policies and regulations, technology, market, reputation) and physical risks (acute and chronic).
- We adopted the IPCC's RCP 2.6, a representative scenario that assumes a 2°C increase in the world's average temperature for transition risks, and the IPCC's RCP 8.5, a scenario for a 4°C temperature rise for physical risks. In addition, we considered the IPCC's Special Report on Global Warming of 1.5°C (SR15).

Risks and opportunities

| | Category | Business impact | Impact level High: 10 billions of yen; Medium: billions of yen; Low: 100 millions of yen |
|----------------------|---|--|---|
| Risks | Transition risks (2°C/1.5°C scenario) | ● Procurement costs increased due to carbon taxes and emissions trading systems applied to suppliers | Medium |
| | | ● Increase in costs required to respond to accelerated transition to decarbonized society | Low |
| | Physical risks (4°C scenario) | ● Procurement costs increased due to declining forest resources | Medium |
| | | ● Impact on business activities from increased natural disasters | Medium |
| Opportunities | [Products/Services] ● Expand sales of services to support customers' decarbonization efforts | | |
| | [Markets] ● Expand/create new businesses in the environment and energy sectors (energy creation/storage/conservation) | | |

Risk management

We have positioned the impact of climate change a key operational risk. We control such risks within a companywide risk management framework. > 2 > 4

Refer to this page
 2 Risk Management Committee
 P.60

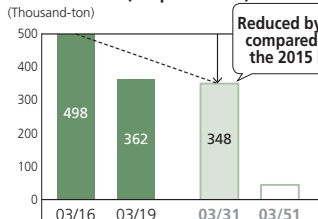
Metrics and targets

We globally promote our activities to achieve a zero-carbon society based on the Ricoh Group environmental goals. > 3

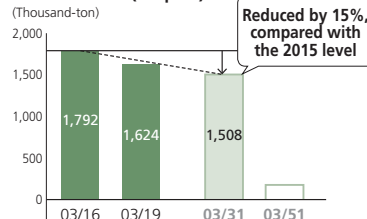
Ricoh Group environmental goals
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[Results of the year ended March 31, 2019]

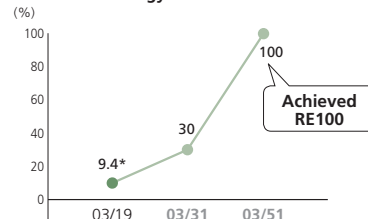
GHG emission (Scope 1 and 2)
(Thousand-ton)



GHG emission (Scope 3)
(Thousand-ton)



Renewable energy ratio
(%)



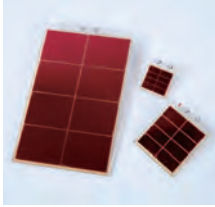
* The ratio including renewable energy from electric power company electricity supply sources is 18%. > 3

Refer to our website

4 Risk Management Committee www.ricoh.com/sustainability/governance/risk

Pursuing decarbonization

We are leveraging three strategies which help decarbonize economies to contribute to corporate and social progress. The strategies are developing technologies, providing energy efficiency and renewables businesses, and decarbonating our operating sites.



Dye-sensitized solar cells



1 Energy harvesting technologies

These technologies harvest small amounts of energy from such sources as sunlight, indoor light, vibration, and heat, and convert it into electricity.

Technology development

● Dye-sensitized solar cells

Technology that harvests energy >1 to power IoT and other devices has attracted great attention.

It is against this backdrop that we successfully created a solid electrolyte material for dye-sensitized solar cells >1. This setup enhances safety and durability by eliminating liquid electrolyte, which could leak and cause corrosion, and boosts generating performance. The cells can generate power efficiently under LED lights and other weak indoor illumination.

Ricoh's first energy-harvesting offering was an indoor solar panel in the battery-fitted LOOPLINE T1 desk.

● Reducing carbon dioxide emissions by providing energy-efficient products

Our MFPs incorporate proprietary offerings that enable quick recoveries from Energy Saver Mode, including Quick Start-Up technology and low-melting-point toner. Color MFPs that we launched in January 2019 employ a human detection sensor that wakes systems from energy saver mode in just 0.5 second to enable key operations.

Running energy efficiency and renewables businesses

Conducting verification tests for decarbonization solutions

Model for tapping wood biomass heat

We deployed a local energy production and consumption model that taps heat from biomass boilers fueled by woodchips from thinned timber.



Wood biomass boilers

● RICOH Smart MES lighting and air-conditioning system

In May 2019, we began offering the RICOH Smart MES lighting and air-conditioning system. This setup automatically and centrally controls lighting, air-conditioning, and demand monitoring devices to conserve energy and maintain comfort and convenience.

The system makes it possible to fine-tune lighting and air-conditioning controls, notably by turning lights off and putting air-conditioning in energy-saving modes when nobody is in an area or by adjusting light near the windows on bright days.



2 Nearly ZEB

The Agency for Natural Resources and Energy of Japan's Ministry of Economy, Trade and Industry defined a nearly ZEB structure as conserving 75% or more of its standard primary energy, or more than 50% after factoring out renewable energy.



Solar panels at Gifu Branch

Decarbonizing business sites

We engage in thorough energy conservation activities and participate in RE100. We seek to leverage 100% renewable energy in our business activities.

● In-house 100% renewable energy certification program

We have certified 74 Group business sites under this initiative as of August 2019.

● Renewable energy usage at Shanghai Ricoh Digital Equipment Co., Ltd.

From December 2018, this Chinese production subsidiary began sourcing power from solar panels installed at its facilities, and looks to lower its carbon dioxide emissions by around 336 metric tons annually.

● Energy conservation at new Ricoh Japan site

March 2019 saw the Gifu branch of Ricoh Japan Corp. obtain Nearly ZEB (for Net Zero Energy Building) certification for its new office for extensively conserving energy >2 and employing solar generation and power storage equipment.

● Sourcing 100% renewable electricity for MFP assembly

From the year ending March 31, 2020, all facilities assembling A3 MFPs in China, Thailand, and Japan use electricity sourced wholly from renewable energy.



Refer to our website

1 Complete Solid-State Dye-Sensitized Solar Cell www.ricoh.com/technology/tech/066_dssc

Materializing a circular economy

Recycling and reduction are key concepts for reaching this goal. We are accordingly constraining the use of new resources in our offerings, recycling products, and using recycled resources to enhance resource efficiency in our operations.

Product initiatives

● Making products smaller and lighter

We set weight targets for each product, which has enabled us to use resources more efficiently and lower environmental impact by making products smaller and lighter.

We carried out extensive strength and impact simulations for digital full-color MFPs that we rolled out in January 2019 >3. These efforts enabled us to create thinner plastic parts and metal sheets while developing new lightweight frames with stronger surfaces and corners, making these models more than 65% lighter than conventional offerings.

● Implementing eco design

In 1993, we formulated responsive design principles based on recycling. We accordingly display the grades of plastic on molded parts, ensure that design strengths are compatible with reusability, reuse high value-added components, recycle high-quality materials, improve dismantling and separability. We also enhanced our expertise, notably through more robust engineering to reduce packaging materials.

● Reuse

The MFPs that we collect are reused globally as reconditioned machines >4 and for parts. In Japan, we

maintain an efficient, wide-ranging collection setup. It includes a system that predicts MFP collection times and quantities and a stock management system that shows the conditions and quantities of collected products.

● Proactive use of recycled materials

We take a closed recycling approach to recycled plastics from recovered MFPs. We have developed technologies as part of an open recycling approach to reusing Styrofoam and other collected conventional plastics in our products. We optimally use recycled plastics in keeping with quality requirements, not just from office equipment exterior and interior parts but also toner containers as part of efforts to cultivate an array of products incorporating recycled parts and materials.

Developing technologies that help reduce plastic waste

We have developed laser technology to write text and designs directly on plastic bottles and eliminate labels.



3 Digital full-color MFP models that we launched in January 2019

RICOH IM C6000/C5500/C4500/C3500/C3000/C2500



Reused plastic exterior materials

4 Reconditioned machines

This offers quality equivalent to that of new models while employing an average of 77% of parts from recovered products.

Business activity initiatives

We are endeavoring to improve quality and yields and thereby cut resource losses by separating wastes and reusing them as resources while undertaking ongoing management to ensure proper treatment.

● Constraining waste discharges

Our efforts focus on areas associated with the greatest such discharges, notably polymerized toner production, thermal media operations, and production packaging materials for shipments between domestic and overseas business sites.

● Waste management firm auditing program >2

We established a program in Japan to audit industrial waste management firms to ensure that we only use trusted partners to treat our waste. This is part of

efforts to strengthen our commitment to our obligations as a waste producer. In the year ended March 31, 2019, we audited the 183 sites around the nation.

● Evaluating water risks and ensuring effective usage

We tackle water issues, which are a growing focus around the globe, by assessing water risks at each business site and focusing on environmental protection while formulating and effectively leveraging groupwide targets.

Refer to our website

2 Auditing waste disposal service providers www.ricoh.com/sustainability/environment/office/resource/03_01