

# ESG\_Environment

## Balancing conservation and business growth

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. >1

To achieve a sustainable society, we have positioned achieving a zero-carbon society and realizing a circular economy as our material issues, >2 and set environmental goals for 2030 and 2050 in the areas of preventing global warming and conserving resources through the backcasting method. We accordingly formulated specific measures under mid-term management plans, >3 undertaking activities in each field. From fiscal 2020, we framed environmental targets as ESG goals based on our management strategy, linking them to executive officer remuneration to clarify environmental management responsibilities.

### 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.

## Achieving a zero-carbon society

We are pushing ahead with extensive energy conservation activities while employing renewable energy with the aim of reducing GHG emissions across the entire value chain to virtually zero by 2050. In view of an acceleration in recent years of a global decarbonization shift, we now seek to cut our greenhouse gas emissions by 63% from the 2015 level by 2030, compared with a previous reduction target of 30%.

The new target met Science Based Targets Initiative >1 criteria for setting goals that help limit the rise in global temperature to 1.5°C above pre-industrial levels.

We concluded a sustainability-linked loan agreement with the MUFG Bank, Ltd., to help achieve our objectives by securing preferential interest rates aligned with our attainment of environmental targets.



### 1 Science Based Targets Initiative

This international initiative certifies that companies' greenhouse gas reduction goals are in keeping with scientific evidence

### 2 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)

### 3 BAU

Business As Usual

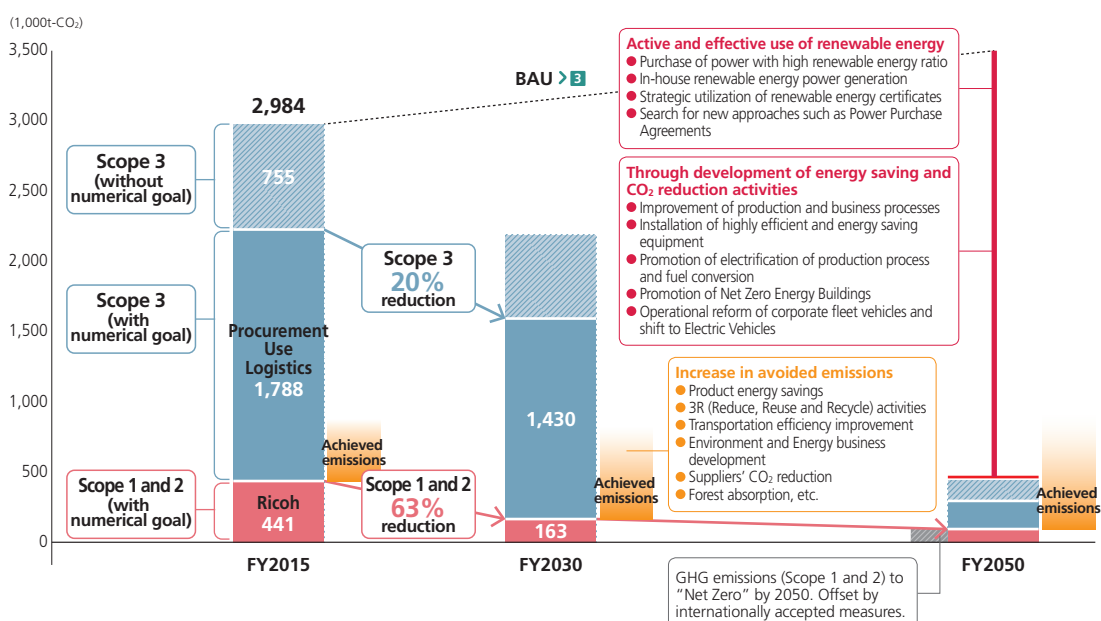
### Ricoh Group environmental goals (preventing global warming)

#### [Goals for 2030]

- GHG Scope 1 and 2: 63% reduction >2 compared to the 2015 level
- GHG Scope 3: 20% reduction >2 compared to the 2015 level (procurement, use, and logistics categories)
- Source at least 30% renewable electricity

#### [Goals for 2050]

- Targeting zero GHG emissions across the entire value chain
- Switch to 100% renewable electricity



Refer to our website

1 Environment [www.ricoh.com/sustainability/environment](http://www.ricoh.com/sustainability/environment)

2 Materiality [www.ricoh.com/sustainability/materiality/](http://www.ricoh.com/sustainability/materiality/)

3 Ricoh Group's 19th Environmental Action Plan (three years through March 31, 2020) [www.ricoh.com/sustainability/environment/plan/plan19th](http://www.ricoh.com/sustainability/environment/plan/plan19th)

## Decarbonization endeavors and achievements in fiscal 2019

We will improve production processes, deploy highly efficient facilities, and review logistics processes to propel intensive energy conservation activities through the entire supply chain while providing 100% renewable energy for the electricity that our businesses consume.

From fiscal 2019, all facilities in China, Thailand, and Japan that assemble A3 MFPS, our primary products, sourced all of their electricity (corresponding approximately to 37 gigawatts) from renewables. Five

of our domestic sales sites have obtained ZEB (Net Zero Efficiency Building) >4 certification so far. Overseas business sites are expanding renewable energy usage by installing solar panels in their buildings and obtaining renewable energy certification.

Because of these efforts, Scope 1 and Scope 2 greenhouse gas emissions totaled 338,000 metric tons in fiscal 2019, down 9.8% from a year earlier and 23.4% from 2015. Our renewable energy ratio 12.9%, up 3.5 percentage points from the previous year.

RE100

CLIMATE GROUP | CDP

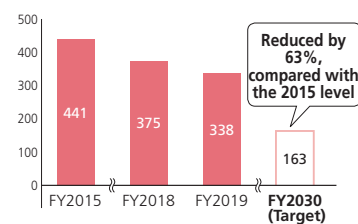


### 4 Net Zero Energy Buildings (ZEBs)

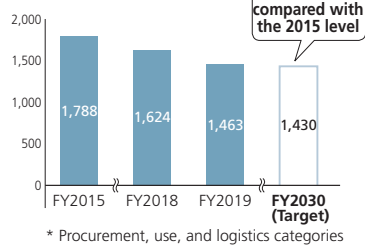
These structures consume less energy every year. A ZEB conserves more than 100% of its standard primary energy. The savings for Nearly ZEB and ZEB Ready are 75% or 50% or more.

### [Results of fiscal 2019]

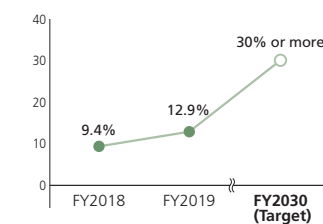
#### GHG emission (Scope 1 and 2) (Thousand-ton)



#### GHG emission (Scope 3) (Thousand-ton)



#### Renewable energy ratio (%)



## Social leadership

### ● Supporting Uniting Business and Governments to Recover Better statement >4

In June 2020, Ricoh expressed its support for Uniting Business and Governments to Recover Better, a joint statement from companies in the Science Based Targets Initiative and the UN Global Compact-led Business Ambition for 1.5°C. The statement recognizes that while the COVID-19 pandemic has greatly affected economies, recovery efforts should not hamper national endeavors to tackle climate change.

### ● Exchanging climate change views with Japanese Minister of the Environment

In June 2020, Ricoh President and CEO, Jake Yamashita was among representatives of companies participating

in the Japan Climate Initiative >5 who gathered to exchange views with Shinjiro Koizumi, Minister of the Environment, about policies for a green recovery from the pandemic. Mr. Yamashita stressed that economic and ecological turnaround efforts should progress together. He highlighted the challenges of procuring renewable energy in Japan and sought the government's assistance in that respect.

### ● Shortlisted for RE100 Leadership Awards >6

In September 2020, Ricoh was the sole Japanese company shortlisted for the RE100 Leadership Awards, which recognize leadership among RE100 companies in transitioning to wholly renewable energy.



### 5 Japan Climate Initiative

This is a network of 500 companies, local governments, nongovernment organizations, and other entities (as of September 2020) tackling climate change.

## Information disclosure based on TCFD framework >6

The Ricoh Group views climate change as a management risk and a growth opportunity.

In fiscal 2020, we continued to analyze scenarios as we did in the previous year. We have addressed a rising number of natural disasters every year by

holding workshops with representatives from sustainability management, general affairs, risk management, corporate planning, purchasing, and manufacturing divisions to explore supply chain risks and responses, including for our sites. We accordingly added flood

Refer to our website

4 Uniting Business and Governments to Recover Better [www.ricoh.com/info/2020/0610\\_2/](http://www.ricoh.com/info/2020/0610_2/)

5 RE100 Leadership Awards [www.ricoh.com/info/2020/0914\\_1/](http://www.ricoh.com/info/2020/0914_1/)

6 Information disclosure based on TCFD framework [www.ricoh.com/sustainability/environment/management/tcfd](http://www.ricoh.com/sustainability/environment/management/tcfd)

damage risks at domestic and overseas sites to our assessment list. We also included risks and opportunities for infectious diseases associated with climate change in view of the great impact of COVID-19.

The Risk Management, ESG, and Group Management committees, in which executives participate, are looking into countermeasures based on evaluation findings.

**Implemented scenarios**

Transition risks: 2°C (IPCC RCP2.6) and 1.5°C scenarios

Physical risks: 4°C scenario (IPCC RCP8.5)

**Risks and actions**

Financial impacts: Large, medium, and small (hundreds of millions through tens of billions of yen)  
Urgency: High, medium, and low (less than one year through more than five years) risk materialization time frames

	Impact on Ricoh	Financial impacts	Urgency	Actions	
Transition risks	<b>Application of carbon tax and emissions trading regimes to suppliers</b>	<ul style="list-style-type: none"> <li>Higher procurement costs from supplier carbon pricing (carbon tax and emissions trading)</li> <li>* Minor carbon pricing impact on the Ricoh Group</li> </ul>	Medium	Low	<ul style="list-style-type: none"> <li><b>Conserve resources</b> <ul style="list-style-type: none"> <li>Reduce new resource inputs by selling recycled machines and using recycled materials</li> </ul> </li> <li><b>Support suppliers</b> <ul style="list-style-type: none"> <li>Cut procurement costs by supporting supplier decarbonization efforts</li> </ul> </li> </ul>
	<b>Swift changes in consumer and investor behavior in decarbonized societies</b>	<ul style="list-style-type: none"> <li>Higher costs from responses to meet 1.5°C target and reach RE100 goals early</li> </ul>	Small	Medium	<ul style="list-style-type: none"> <li><b>Decarbonize</b> <ul style="list-style-type: none"> <li>Deploy measures to save energy and use renewables to help reach the Science Based Targets 1.5°C target (such as by strategically renewable energy certificates)</li> <li>Finance through sustainability-linked loans</li> </ul> </li> </ul>
Physical risks	<b>Rapid increases in natural disasters</b>	<ul style="list-style-type: none"> <li>More storm and flooding damage than expected at the key production sites owing to exceptionally abnormal weather</li> <li>Greater losses from production halts and lost sales opportunities as a result of supply chain fragmentation</li> </ul>	Medium	High	<ul style="list-style-type: none"> <li><b>Reduce business continuity planning exposure to floods, heavy rains, and typhoons</b> <ul style="list-style-type: none"> <li>Implement disaster measures at production sites</li> <li>Formulate business continuity plans for procurement and logistics</li> </ul> </li> </ul>
	<b>Infectious disease epidemics</b>	<ul style="list-style-type: none"> <li>Production planning impacts of parts supply fragmentation</li> <li>Inventory shortages from lower plant capacity utilization rates</li> <li>Fewer sales opportunities because of face-to-face selling challenges</li> </ul>	Medium	Low	<ul style="list-style-type: none"> <li><b>Solidify business continuity planning to tackle infectious diseases</b> <ul style="list-style-type: none"> <li>Digitize business processes and deal negotiations</li> <li>Decentralize manufacturing sites and automating processes</li> <li>Increase parts and product inventories</li> </ul> </li> </ul>
	<b>Forest resource declines</b>	<ul style="list-style-type: none"> <li>Destabilized supplies of paper materials as a result of greater forest damage, notably from wildfires and pests, and higher paper procurement costs</li> </ul>	Small	Low	<ul style="list-style-type: none"> <li><b>Pursue green procurement</b> <ul style="list-style-type: none"> <li>Use certified paper from managed forest resources</li> </ul> </li> <li><b>Conserve resources</b> <ul style="list-style-type: none"> <li>Reduce base paper usage with silicon linerless labels and rewritable paper</li> </ul> </li> </ul>

**Opportunities**

Opportunities for 2030	Current initiatives	Financial impacts
Increase service solutions sales to help customers decarbonize	<ul style="list-style-type: none"> <li>Supply energy-saving products that significantly surpass eco label standards</li> <li>Provide decarbonization support solutions</li> <li>Offering office optimization solutions</li> </ul>	<b>Fiscal 2019</b> Decarbonized product sales (Energy Star- certified): Around ¥1,100 billion
	<ul style="list-style-type: none"> <li>Increase sales opportunities by enhancing eco brands and supplying eco-friendly products</li> </ul>	<b>Fiscal 2019</b> Sales from major ESG-compatible business deals: Around ¥12 billion
Enhance sales of solutions for new times	<ul style="list-style-type: none"> <li>Provide telemedicine, education, meeting, work practice reform, and other solutions that reduce infection risks</li> </ul>	<b>Fiscal 2019</b> Sales of solutions packages that help reduce infectious diseases and decarbonize: Around ¥30 billion
Expand environmental and energy businesses to create, store, and conserve energy	<ul style="list-style-type: none"> <li>Expand product recycling and parts regeneration businesses</li> <li>Reuse and recycle recovered products</li> </ul>	<b>Fiscal 2019</b> Product and parts recycling business sales: Around ¥36 billion
	<ul style="list-style-type: none"> <li>Expand energy creation and conservation businesses, including electricity sales with low carbon dioxide emission factors, solar power operations and maintenance, and lighting and air conditioning management systems)</li> </ul>	<b>Fiscal 2019</b> Energy creation and conservation sales: Around ¥30 billion
Create and develop new businesses	<ul style="list-style-type: none"> <li>Develop and sell alternative plastics materials</li> </ul>	<b>Outlook</b> In 2020, we began shipping samples of packaging made of polylactic acid foam, a biodegradable plant-derived polymer, as an alternative to containers and packaging materials made with regular plastics. We aim to expand sales by marketing our materials to diverse industries, including for Ricoh's products, offering manufacturing solutions, and licensing production.
	<ul style="list-style-type: none"> <li>Develop and sell dye-sensitized solar cells</li> </ul>	<b>Outlook</b> One energy harvesting >1 effort will be to expand sales by deploying dye-sensitized solar cells >1 for a range of applications.
	<ul style="list-style-type: none"> <li>Develop and sell silicon linerless labels, rewritable laser systems, and labelless printing</li> </ul>	<b>Outlook</b> We seek to increase sales by helping reduce paper consumption and waste in societies through label-free printing and release paper-free label seals.

**1 Energy harvesting**  
Generating power from light, heat, vibration, and other external sources

 **Refer to our website**

**1 Solid-state dye-sensitized solar cell** [www.ricoh.com/release/2020/0204\\_1/](http://www.ricoh.com/release/2020/0204_1/)

## Realizing a circular economy

Interest in a circular economy has surged in recent years. We have established resource conservation goals for 2030 and 2050, and are actively recycling resources while reducing resource inputs for products and business activities. We formulated a new policy on plastics usage, set reduction targets across the medium through long terms, and are accelerating efforts regarding plastics.

### Ricoh Group environmental goals (resource conservation)

#### [Goal for 2030]

- Product resource conservation rate >2: 50%

#### [Goal for 2050]

- Product resource conservation rate: 93%

#### Ricoh Group plastic policy for products

Ricoh has set targets for resource conservation for the realization of a Circular Economy. To achieve this, we are promoting “a comprehensively efficient use and recycling of resources” and “switching to sustainable resource use.” In addition, while aiming to address social issues by “shifting to a Circular Economy” and tackling “ocean micro-plastic pollution,” we will establish a plastic policy for products and packaging materials as shown below and develop relevant business activities.

1. Breakaway from dependence on virgin plastic derived from fossil resources
2. Material recyclable design

#### Specific targets and goals for plastic

- Reduction in packaging materials for virgin plastic derived from fossil resources  
Goals for 2030: 50% or more, compared to the conventional model
- Use of post-consumer recycled plastics for imaging products  
Goals for 2030: Post-consumer recycled plastic content rate of 50% or more
- Display resin identification code and single material use  
Goals for 2025: Clearly indicated on all parts and all packaging materials



#### 2 Product resource conservation rate

New resource input reductions percentage for total input resource amounts

## Resource conservation initiatives and fiscal 2019 results

We strive to improve resource efficiency by pursuing the product 3Rs of reduce, reuse, and recycle. At manufacturing stages, we reduce new resource inputs by downsizing and decreasing product weight, expanding recycled materials usage, and engineering offerings that are easier to recycle after use. We also develop non-petroleum-based materials to minimize risks associated with resource shortages, environmental impacts, and waste. As a result of these efforts, our resource conservation rate in fiscal 2019 was 22.0%.

### ● Implementing End-of-Life design

In 1993, we formulated design policies based on recycling. We accordingly developed various kinds of know-how, including grade labeling on plastic molded parts, strength design to allow reuse, reprocessing of high-value-added parts, recycling of high-quality materials, easier dismantling and sorting, and strength design to reduce the use of packaging materials. We internally assess eco-friendliness and pursue further improvements at each product design stage.

### ● 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 2019. 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.

### ● Using recycled plastics and developing new eco materials

We maintain the quality of recycled materials by displaying resin grades on individual parts during manufacture, recycling for each grade after product recovery. From 2016, we developed recycled materials made from commercially sold recovered materials for interior and external usage, starting to incorporate them in our MFPs. More than 95% of [office toner bottles](#) >3 made by the Ricoh Group employ recycled plastic materials.

We leveraged proprietary technology to develop [polylactic acid foam](#) >4 from renewable resources to replace petroleum-based plastics.

### ● Our reuse and recycling network

Each of our sites around the world has deployed programs to optimally reuse and recycle resources. We employ uniform standards to sort and recycle recovered MFPs and supply customers. We provide prepaid shipping labels for collecting used cartridges at no charge.



#### 3 Office toner bottles

Toner bottles made with polyethylene terephthalate

#### 4 Polylactic acid foam

A new material made by foaming PLA (polylactic acid) made from plant-derived starch. This new material helps reduce global warming and marine pollution. It does not increase carbon dioxide emissions when incinerated and decomposes into water and carbon dioxide even if ending up in landfill or oceans.

