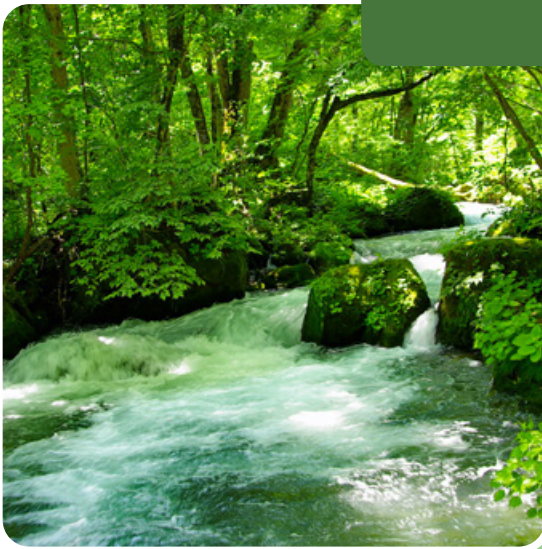




RICOH Group  
**TCFD Report**  
**2023**



# Editorial policy

In the Ricoh Group TCFD Report 2023, we report on our efforts toward a zero-carbon society in accordance with the TCFD framework, based on disclosure of information from such sources as our website and the Ricoh Group Integrated Report.

This report summarizes the Ricoh Group's basic approach to sustainability, its climate change policy, and the climate change risks and opportunities for us, and it gives examples of our countermeasures and initiatives. This report is published with the aim of providing a better understanding of the Group's climate change initiatives for all our stakeholders to enable them to offer suggestions for further improving these initiatives. Going forward, we will continue to improve this report to make it even more comprehensive by referring to your opinions.

## Date of publishing

October 2023 (published as an annual report)

## Reporting period

FY2022 (April 1, 2022 - March 31, 2023)

\* In some cases, information at the time of publication is included.

## Scope of coverage

Ricoh Co., Ltd. and its 240 consolidated subsidiaries (the Ricoh Group (Global)) Organizations covered by the data are specified in tables or graph.

## Related links

Ricoh Group Integrated Report



ESG Data Book 2023



Circular Economy Report 2023



Ricoh Group Sustainability Website



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b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning		
c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario		
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a) Describe the organization's processes for identifying and assessing climate-related risks	2-3 ESG promotion system 4-1 Scenario analysis for climate change 4-2 Climate change risks and response	P.06-08 P.17-19 P.19-25
b) Describe the organization's processes for managing climate-related risks		
c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management		
<b>Metrics and Targets: Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material</b>		
a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process	3-1 The Ricoh Group's environmental goal settings 5. Performance	P.09-11 P.30-32
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c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets		

# 1. Message from the CEO



Representative Director,  
President and CEO

**Akira Oyama**

The Ricoh Group remains unchanged in its esteem for the Spirit of Three Loves. We make our founding principles of “Love your neighbor, love your country, love your work” the starting points for our corporate activities, and put these principles into practice. The “love your country” component of the Spirit of Three Loves is derived from the fact that our founder, Kiyoshi Ichimura, launched the business to contribute to the reconstruction of postwar Japan. Reworking this for present times, “country” becomes the earth as a whole, and the thought can be interpreted as “love the earth.” To hand down the earth to the next generation and onward, we see our Mission Statement as putting into practice the things that should be done now. The preservation of a sound global environment is a requirement for achieving the advancement of companies and society.

The Ricoh Group is tackling this issue today, making the sustainable enhancement of our corporate value through the resolution of social issues a foundation of our management while advancing our transformation into a group of digital services companies. We express our vision for a sustainable future world as “Three Ps Balance,” a state in which the economy (Prosperity), society (People), and the environment (Planet) remain in balance. This way of thinking aligns with the concept of “Leave No One Behind,” a principle espoused in the SDGs set by the United Nations. Based on “Three Ps Balance,” we have identified seven materialities in the area of “resolving social issues through business” and in the area of “robust management structure”. We have further set 16 company-wide ESG targets linked to those materialities.

In the area of climate change, we have set “Zero-Carbon Society” as a materiality and have set challenging targets. Based on the international target of limiting temperature rise to less than 1.5°C, the Ricoh Group aims to reduce its own emissions (Scope 1 and 2) by 63% compared to fiscal 2015 and to reduce indirect emissions (Scope 3) by 40% compared to fiscal 2015 as our greenhouse gas (GHG) reduction targets for 2030. Natural disasters are particularly noteworthy as managerial risks that the Ricoh Group faces. To counter these, we conduct impact assessments for production sites and are advancing initiatives that anticipate future managerial risks.

At the same time, actively enacting initiatives to combat climate change also presents major business opportunities. As we undergo a transformation into a digital services company, we want to contribute to “Zero-Carbon Society” through the provision of products and solutions that support our customers’ decarbonization efforts, closely in tune with their work.

Through this TCFD Report, we will deepen exchanges of ideas with our shareholders, investors, and other stakeholders and will fulfill our responsibilities toward the achievement of a sustainable society while raising the level of our decarbonization initiatives and information disclosure.

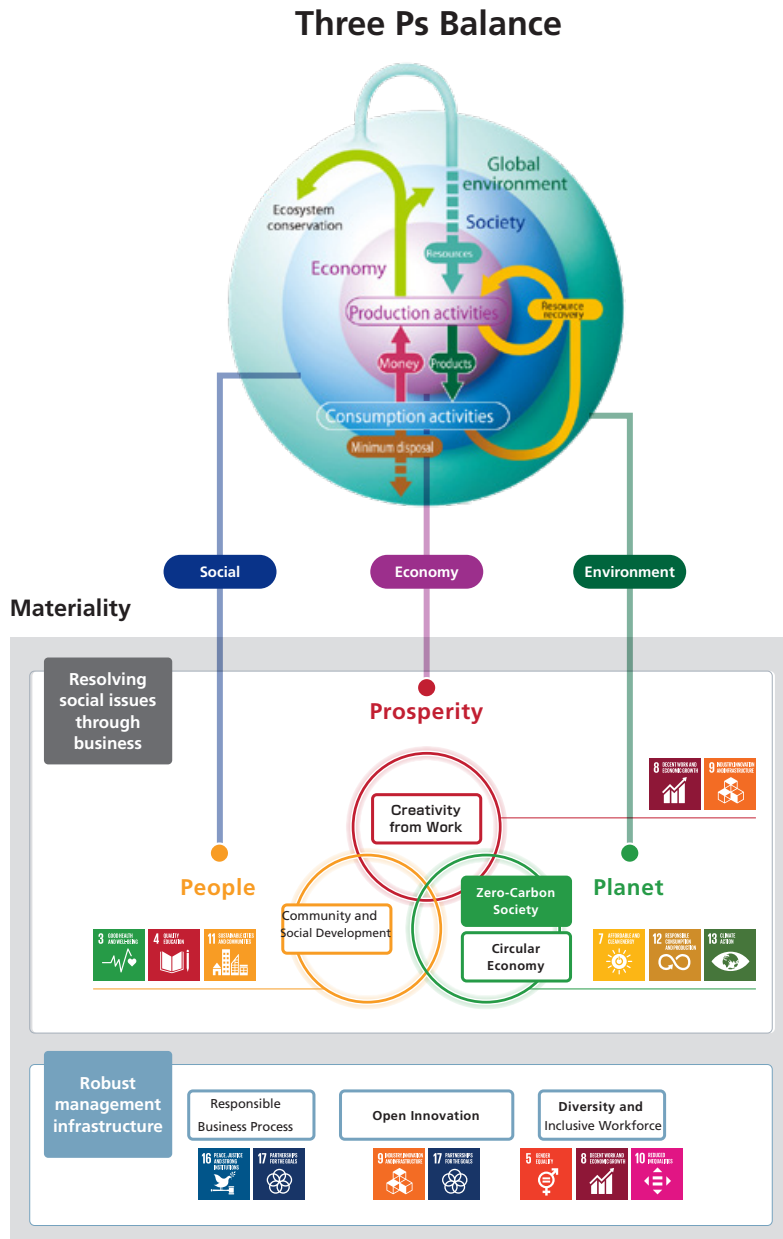
# 2. The Ricoh Group's sustainability policy

## 2-1 Basic approach to sustainability management and our materiality

The Ricoh Group, based on the Founding Principles of "Love your neighbor", "Love your country", "Love your work" (The Spirit of Three Loves), regards its mission as "Empowering individuals to find Fulfillment through Work by understanding and transforming how people work so we can unleash their potential and creativity to realize a sustainable future."

The Ricoh Group pursues such sustainability through the Three Ps Balance: Prosperity (economic activities), People (society), and Planet (environment). We will endeavor to resolve social issues through business, reinforce our operational underpinnings, and contribute to society, and will help to reach Sustainable Development Goals (SDGs) agreed to by the global community.

When expressing the current state of the world based on the Three Ps Balance, it is evident that the economy and society are causing damage beyond the Earth's regenerative capacity (sustainability), posing a threat to the sustainability of both the economy and society. Within the Ricoh Group, we are identifying challenges and expectations from stakeholders while striving for the realization of a society that continues to develop while maintaining the balance of the three Ps. We identify materiality for the economy, society, and local environment as "Resolving social issues through business" and have set the achievement of a decarbonized society as one of these objectives.



## 2-2 ESG targets

We are actively engaged in ESG initiatives, considering them essential for generating future financial success. As part of our 21st Mid-Term Management Strategy (MTS), which commenced in the fiscal year 2023, we have established seven material issues and 16 company-wide ESG targets, focusing on two main perspectives: "Respond to Global ESG Trends" and the overarching strategy of "Transformation into a Digital Services Company."

Specifically, these targets encompass addressing global issues such as climate change and human rights concerns, as well as goals related to digital service transformation, including digital service-related patents, information security, and digital talent development. In addition to Scope 1,2,3 and renewable energy targets, we have also introduced new target of Avoided Emission which tied to reducing society's GHG emissions.

For more information on the achievements of our 20th Medium-Term Management Plan's ESG targets, please refer to the link below.  
[www.ricoh.com/-/Media/Ricoh/Sites/com/sustainability/materiality/pdf/fy2022\\_result.pdf](http://www.ricoh.com/-/Media/Ricoh/Sites/com/sustainability/materiality/pdf/fy2022_result.pdf)

### Resolving social issues through business

Materiality	Strategic Intent	2030 Targets	Focus Domains	21st MTS ESG Targets(End of FY2025)	
<b>Creativity from Work</b> 	To provide digital services that transform how customers work and help them with productivity improvement and value creation.	Contribute to "Creativity from Work" of all customers to whom we deliver value	<ul style="list-style-type: none"> <li>Office services</li> <li>Printing industry digitalization</li> <li>Thermal media</li> <li>Industrial products</li> <li>Smart Vision</li> </ul>	(1) Customer survey scores* <sup>1</sup>	29%
<b>Community and Social Development</b> 	To contribute to the maintenance, development, and efficiency of community and social systems. We leverage our technical expertise and customer connections to expand the areas where we provide value	Contribute to the enhancement of social infrastructure for 30 million people	<ul style="list-style-type: none"> <li>GEMBA</li> <li>Biomedical</li> <li>Municipal digitalization solutions</li> <li>Educational ICT solutions</li> </ul>	(2) Number of people to whom we have contributed by improving social infrastructure	15 million to 20 million people
<b>Zero-Carbon Society</b> 	To decarbonize the entire value chain and create business opportunities by contributing to carbon neutrality	<ul style="list-style-type: none"> <li>Reduce Scope 1 and 2 GHG emissions by 63%, with 40% reductions for Scope 3</li> <li>Switch to 50% renewable electricity</li> </ul>	<ul style="list-style-type: none"> <li>Environment and energy</li> <li>Eco-friendly MFPs</li> <li>Commercial and industrial printing</li> <li>Silicone-top linerless labels and label-free printing</li> <li>PLAIR</li> </ul>	(3) GHG Scope 1, 2 reduction rate (vs. 2015)	50%
<b>Circular Economy</b> 	To create business opportunities by building a circular economy business model for ourselves and our customers	Ensure efficient use of resources throughout the entire value chain and achieve 60% or less of virgin material usage ratio		(4) GHG Scope 3 reduction rate (vs. 2015)	35%
				(5) Renewable energy utilization ratio for power consumption	40%
				(6) Avoided emissions	1.4 million metric tons
				(7) Virgin material usage ratio	80% or less

\*1: Percentage of customers recognizing Ricoh as a digital services company.

### Robust management infrastructure

Materiality	Strategic Intent	21st MTS ESG Targets(End of FY2025)	
<b>Responsible Business Process</b> 	To earn stakeholder trust by taking a holistic view of our supply chain and minimizing ESG risks in our business processes	(8) CHRB score* <sup>2</sup> (9) Compliant with NIST SP800-171 coverage of company's core business environment (10) Low-compliance risk group companies	ICT sector top 80% or more  80% or more
<b>Open Innovation</b> 	To shift from a self-sufficient approach to a new value creation process that creates businesses to quickly resolve social issues	(11) Contracted Joint R&D ratio (12) Digital service patent application ratio* <sup>3</sup>	25% 60%
<b>Diverse and Inclusive Workforce</b> 	To foster a corporate culture where diverse employees can demonstrate their potential and transform themselves and the company into one that is resilient to change	(13) Ricoh Digital Skills Level 2 or above rated employees (Japan) (14) Process DX Silver Stage certified employee ratio* <sup>4</sup> (15) Employee engagement scores* <sup>5</sup>	4,000 people  40% Global: 3.91 Japan: 3.69 North America: 4.18 Latin America: 4.14 EMEA: 4.01 APAC: 4.15 Global: 20% (Japan: 10%)
		(16) Female-held managerial position ratio	

\*2: Corporate Human Rights Benchmark: An international human rights initiative that institutional investors and nongovernment organizations established. It assesses the human rights disclosures of around 250 global companies across the agricultural products, apparel, extractives, ICT manufacturing, and automotive manufacturing sectors. If not included in these assessments, scores are calculated through self-assessments, including third-party reviews

\*3: Ratio of patent applications from businesses involved in digital services to Group total.

\*4: Percentage of employees trained with process improvement based on process digitalization model experienced in process improvements taking digitalization process training (parameter is the total number of employees in business units targeted for such training)

\*5: Based on Gallup Q12 Mean™

## Linking ESG to executive compensation

The progress of ESG targets, including responses to climate change, is supervised at the management level and is enhanced in its effectiveness by being integrated into executive compensation.

### Factoring ESG into bonus for directors and executive officers

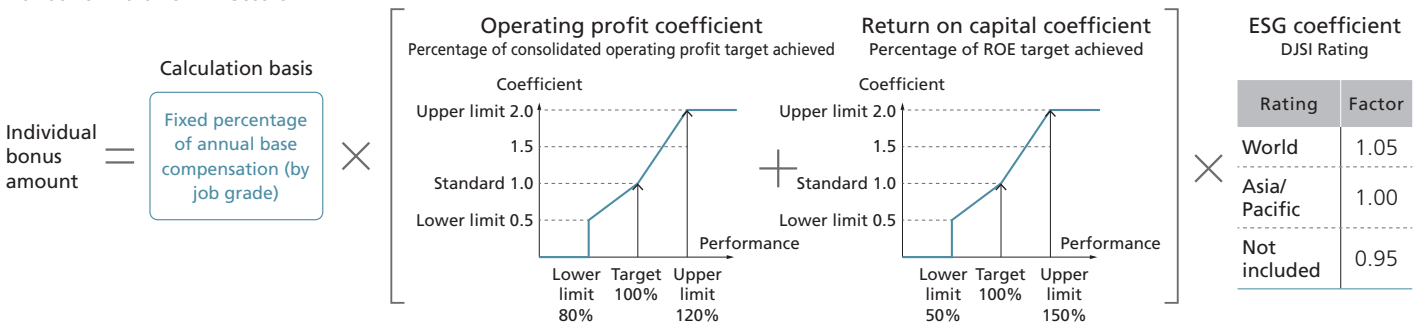
The annual Dow Jones Sustainability Indices Rating serves as a tool to confirm companywide ESG initiatives. We incorporate the rating in the bonus formulas for directors and executive officers to incentivize ESG initiatives. We strengthen business unit and Group headquarters commitments to achieving ESG targets by reflecting progress toward them in executive officers' assessments and compensations.

\* Dow Jones Sustainability Indices: Dow Jones & Company of the United States and sustainability investment research firm S&P Global jointly developed these indices, analyzing corporate sustainability from economic, environmental, and social perspectives.

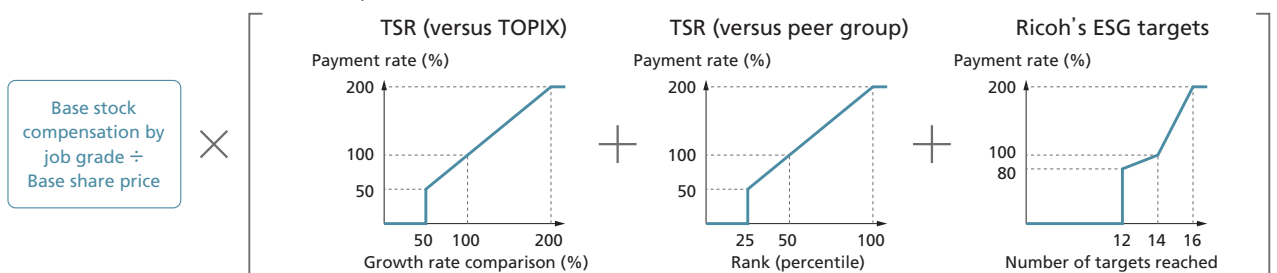
### Factoring ESG into stock compensation for executives

From the 21st MTS, we reflect ESG targets in director stock compensation in addition to bonuses. We evaluate progress toward achieving 16 companywide ESG targets, this factor accounting for 20% of director stock compensation.

#### Bonus formula for Directors



#### Formula for performance-linked stock-bases compensation for Directors from fiscal 2023



## 2-3 ESG Promotion system

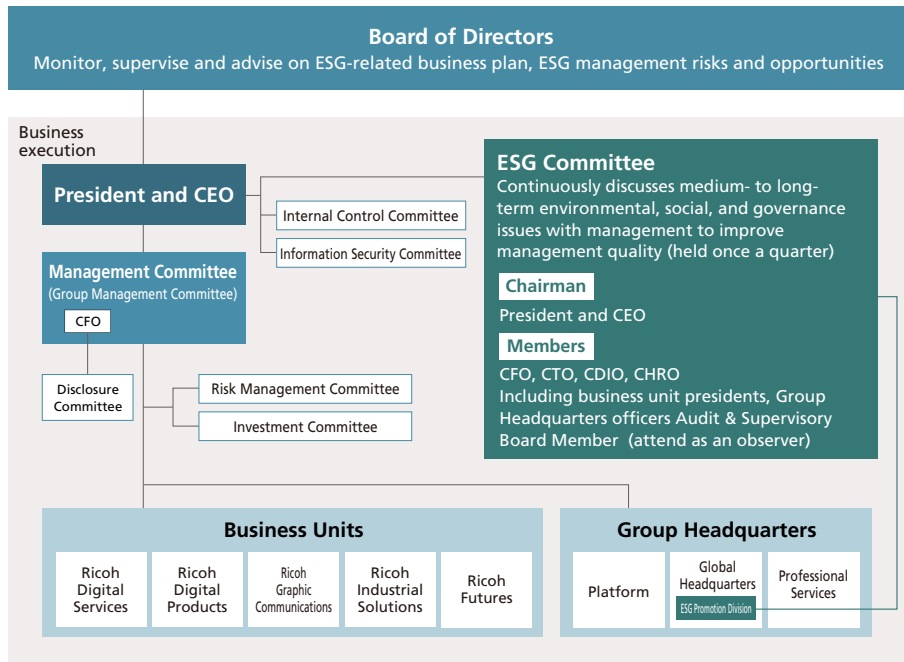
### Sustainability promotion structure within the business strategy

We have established the ESG Committee for the purpose of continuously discussing environmental, social, and governance issues faced by the Ricoh Group at a management-level and leading the discussions to the quality enhancement of the entire Group. The committee is a decision-making organization that meets quarterly chaired by the CEO and consists of GMC\* members including Internal Executive Director and business unit presidents.

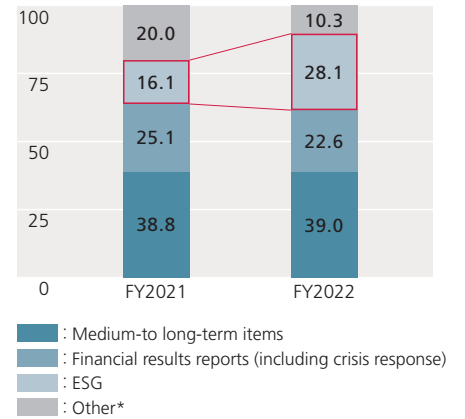
Within the Board of Directors, approximately 30% of the agenda is dedicated to discussions on ESG themes. ESG-related matters are positioned as crucial topics in the realm of management, and ongoing discussions are being held to advance their significance. Progress on ESG targets is overseen at the management level through the ESG Committee and the Board of Directors. The new material issues and ESG targets, which were set in conjunction with the 21st MTS starting in fiscal 2023, were also approved by the Board of Directors as indicators to be aimed for in tandem with the financial indicators.

\*GMC: The Group Management Committee consists of executive officers and is a decision-making body empowered by the Board of Directors.

Sustainability promotion structure



Time allocation by agenda item at the Board of Directors (%)



\*Resolutions in accordance with the provisions of the Companies Act, personnel matters, other individual proposals, etc.

Agenda of ESG committee in FY2022

FY2022		Agenda
First Meeting	May	<ul style="list-style-type: none"> <li>Report on the results of material ESG items and deliberation on draft disclosure for the convocation notice and the annual securities report</li> <li>Deliberations on information security system proposals</li> <li>Report on trends and points for enhancement in ESG activities</li> </ul>
Second Meeting	August	<ul style="list-style-type: none"> <li>Roadmap of the Ricoh Group's decarbonization efforts and deliberations on measures</li> <li>The Ricoh Group Integrated Report, ESG-related media publication reports</li> </ul>
Third Meeting	November	<ul style="list-style-type: none"> <li>Deliberations on renewable energy fiscal 2023 certificate budget and introduction of the 21st MTS</li> <li>Deliberations on materiality/ESG targets revisions</li> <li>Report on RBA* audit results</li> </ul>
Fourth Meeting	February	<ul style="list-style-type: none"> <li>Planning deliberations on 2023 the Ricoh Group Integrated Report</li> <li>Report on 20th Mid-Term Management Plan ESG improvement activities and external assessment results</li> <li>Report on changes in customer demands as seen from ESG benchmark and business talks in fiscal 2022</li> <li>Report on environmental appeal of new products</li> </ul>

\* RBA (Responsible Business Alliance): An alliance of more than 150 leading companies that have agreed to a uniform code of conduct and audit process for their suppliers.

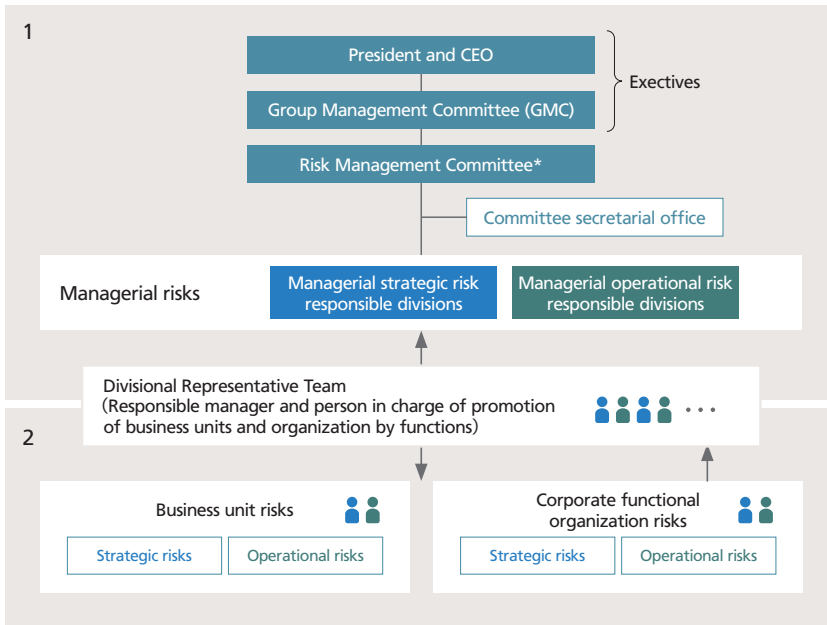
Risk management

As the business environment becomes increasingly complex and diverse, the Ricoh Group positions "risk management" as an indispensable tool for appropriately managing various internal and external uncertainties related to our business and executing our management strategies and business objectives, and all executives and employees of the Group are committed to its improvement. The Board of Directors assumes the role and responsibility of overseeing and monitoring whether the execution of risk management by executives is effective and efficient.

The Ricoh Group's risk management systems can be divided into two main levels. (1) Managerial risks, which are selected and managed autonomously by the GMC for management items of particular importance, within the management of the Ricoh Group. (2) Corporate functional organization risks and business unit risks that each business organization is responsible for managing its own business. These two levels exist for the purpose of clarifying bodies responsible for risk management so as to facilitate agile decision-making and swift action in response to each level of risk, and together form an integrated risk management system. The reevaluation and replacement of risks addressed at each level, based on changes in the level of impact due to environmental changes, are carried out at a frequency of at least twice a year.



## The Ricoh Group's risk management structure



\*Chaired by Executive Officer, Fellow, or a person in a similar role.

## Overview of roles

### Executives

- Determine the risk management activity policy for the entire the Ricoh Group.
- Regularly assess and modify the development and operation of the Group-wide risk management activities.

### Risk Management Committee\*

- Systematically and comprehensively extract and evaluate new risks and make recommendations to the GMC
- Create a highly effective system by reviewing the risk management system
- Enhance risk management activities of the entire Group through cooperation with corporate functional organizations and business units. (ie; Hold the "Group Risk Management Collaboration Reinforcement Conference")

## Decision-Making process for managerial risks

Managerial risks are classified and managed as "strategic risks" and "operational risks" based on their characteristics. The following items are managed at the management level as risks related to climate change.

Class	Item	Description	Urgency	Impact	Risk management level	
Managerial strategic risks	Responding to ESG and SDGs	Loss of business opportunities and loss of social credibility due to delayed response to issues related to ESG and SDGs such as human rights, climate change, and the circular economy	Response to human rights	5	1	C
			Decarbonization efforts	4	1	B
			Resource recycling	4	3	C
Managerial operational risks	Long-term delay and suspension in supply of products	Risk of losing business opportunities due to unpredictable circumstances such as major earthquakes, tsunamis, floods, pandemics, suspension of supply, and geopolitical risk resulting in: <ul style="list-style-type: none"> <li>• Delay or suspension in the supply of parts</li> <li>• Delay or suspension of manufacturing by factories</li> <li>• Delay or suspension of operations by distributing agents</li> <li>• Delay or suspension of supply to sales companies</li> </ul>	Infectious diseases	2	2	C
			Earthquakes, volcanic eruptions, typhoons	3	2	B
	Large-scale disasters / incidents or accidents	Risks of significant impact on business due to large-scale natural disasters, incidents, or accidents, such as human or property damage	Japan: wind, flood or snow damage	5	1	C
			Outside Japan: major natural disasters, accidents or incidents	3	1	C

## Risk level and risk management level

### Risk levels

Degree of impact* <sup>1</sup>		Level of urgency Degree of severity, greater than 50% probability of occurrence	
1	Impact on profit: ¥1.0 billion or less	1	Within 30 years
2	Impact on profit: Up to ¥20.0 billion	2	Within 10 years
3	Impact on profit: Up to ¥50.0 billion	3	Within 5 years
4	Impact on profit: Up to ¥100 billion	4	Within 3 years
5	Impact on profit: Over ¥100 billion	5	Within 1 year

\*1 Consideration of reputational damage and impact on business transactions

### Risk response

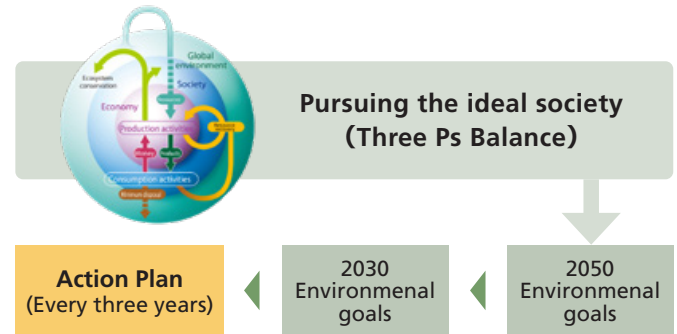
	Strategic risks	Operational risks
A	Risks are quantified and controlled to the satisfaction of the decision maker.	Response measures have reduced the risk and the residual risk* <sup>2</sup> is within an acceptable range.
B	The overall risk picture is identified, tied to countermeasures, and risk can be controlled/risk response measures are taken.	
C	Key elements to control/mitigate risk are identified and addressed.	
D	The potential events have been identified and at least one countermeasure has been taken for each measure element.	
E	Possible events are not understood, and responses are ad hoc. Response processes and regulations are not in place.	

\*2 Residual risks: Risk remaining after risk management (residual risk can contain unidentified risk. Source: ISO31000)

# 3. The Ricoh Group's efforts on climate change

## 3-1 The Ricoh Group's environmental goal settings

The Ricoh Group uses the backcasting method to set goals. In this approach, we first set final goals and then determine target values as milestones on the journey to these goals. As the milestones toward the final goal of the Three Ps Balance, we have set environmental goals for 2030 and 2050 in the areas of zero-carbon and resource conservation. Based on the Paris Agreement, the Ricoh Group has set a long-term environmental goal of "aiming for zero GHG emissions across the entire value chain by 2050." In addition, we have set ambitious environmental targets for "63% reduction in Scope 1 and 2 GHG emissions and a 40% reduction in Scope 3 GHG emissions, both in 2030 compared to 2015", which is certified as "SBT1.5°C" level by the International Climate Change Initiative SBTi (Science Based Target initiative).



### The Ricoh Group environmental goals (Zero-Carbon)

#### Goals for 2050

- Achieve zero GHG emissions across entire value chain
- Switch to 100% of electricity used in business operations to renewable energy

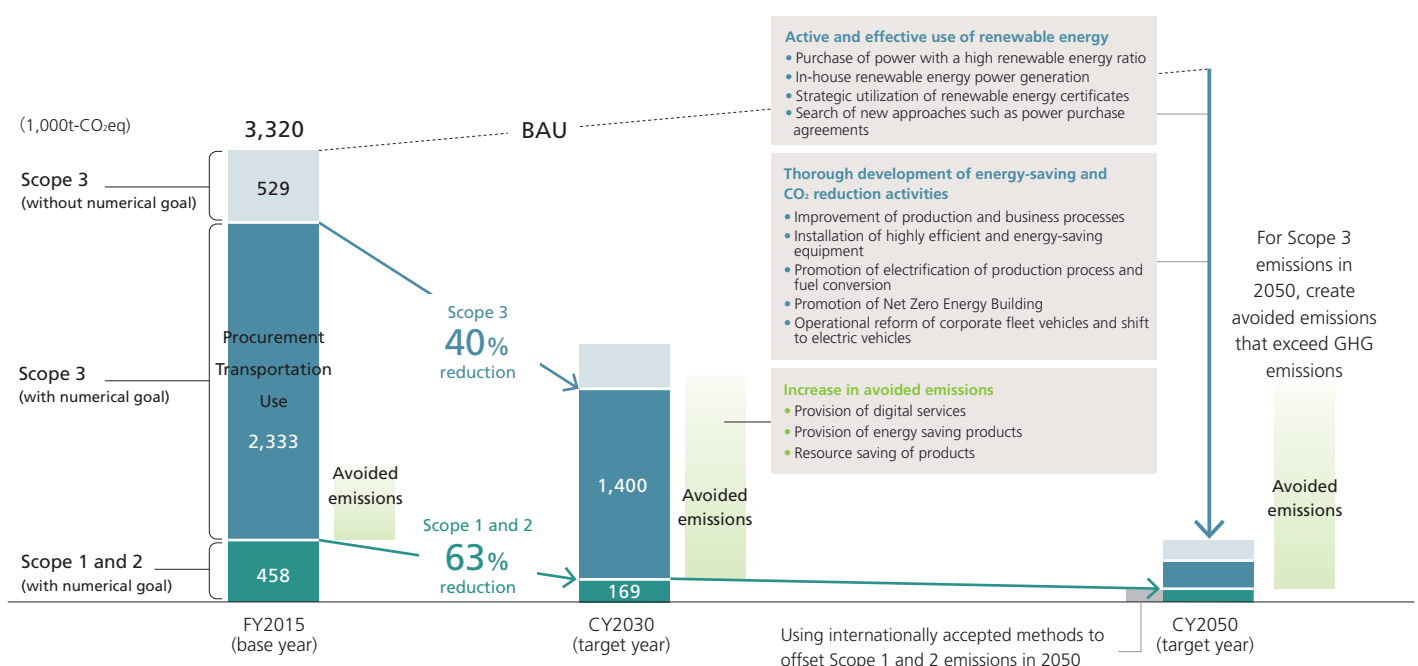
#### Goals for 2030

- GHG Scope 1\*<sup>1</sup> and 2\*<sup>2</sup>: 63% reduction compared to 2015 level
- GHG Scope 3\*<sup>3</sup>: 40% reduction compared to 2015 level
- Switch to 50% of electricity used in business operations to renewable energy

\*1 GHG Scope 1: All direct GHG emissions from our manufacturing plants, offices, vehicles, etc.

\*2 GHG Scope 2: Indirect GHG emissions from the consumption of electricity and heat, purchased by the company

\*3 GHG Scope 3: Emissions in the supply chain from business activities (procurement, transportation and use categories)



## Approach to carbon neutrality by 2050

The entry into force of the Paris Agreement in 2016 has boosted momentum toward the setting of targets for constraining the post-Industrial Revolution temperature rise to below 2°C. The Ricoh Group has endorsed the “Call to Action” of the Science Based Targets initiative (SBTi), and in 2017 obtained SBTi 2.0°C certification for our GHG emission reduction target. We set the base year for our reduction target to 2015, which was the year of the most recent data at the time. We revised the target value in 2020 and obtained SBTi 1.5°C certification, with the Scope 1 and 2 reduction rate (63%) and Scope 3 reduction rate (40%) set according to SBTi standards for targets (identical rates of absolute contraction approach).

As three of the categories in Scope 3—category 1 (purchased goods and services), category 4 (upstream transportation and distribution), and category 11 (use of sold products)—account for over two-thirds of the total, these were subjected to targets in accordance with SBTi standards for setting targets.

Moreover, as a transition plan to achieve our GHG emission reduction target, for Scope 1 and 2 and for the three categories of Scope 3, we formulated a GHG reduction roadmap to be achieved by 2030. As active utilization of renewable energy is essential in achieving the targets for Scope 1 and 2, we became the first Japanese company to join RE100, an international initiative aimed at 100% conversion to renewable energy sources for electricity used.

## Our decarbonization roadmap to achieve our 2030 targets

In terms of scale and effects, we formulate individual measures to enable achievement of our 2030 targets by taking into account changes in the business scale and business structure of the Ricoh Group and the outlook for changes in the emission coefficients of energy and materials, based on our current policies and measures.

### Measures and plans aimed at 63% reduction for Scope 1 and 2 in 2030

#### ● Active utilization of renewable energy

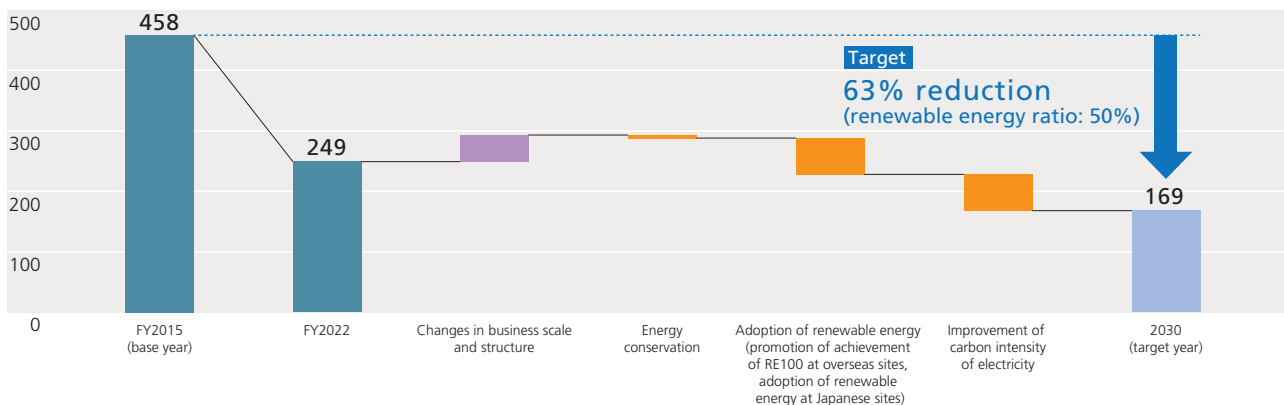
We will promote the purchase of renewable energy power certificates and the deployment of on-site PPA, with the aim of completing the achievement of RE100 overseas by 2030. Acting in concert with like-minded companies, in Japan we will encourage the government to reduce the cost of electricity from renewable energy sources and to diversify its procurement methods, as we work to accelerate the introduction of renewable energy.

#### ● Thorough energy conservation and CO<sub>2</sub> reduction activities

At our production sites, we are advancing improvements to manufacturing processes and the adoption of high-efficiency, energy-saving equipment. At non-production sites, we will expand ZEB office buildings in Japan and promote relocation to energy-saving offices overseas. We will also ensure environmentally conscious driving for company vehicles.

With regard to the issue of Scope 1 reductions for which transition to electricity is difficult at present, as measures from 2030 onward, we expect to carry out equipment electrification, make use of steam from boilers and waste heat loss from heat pumps, undertake full-scale adoption of future technologies such as hydrogen, and convert to electric vehicles (EVs) and fuel cell vehicles for our company-owned vehicles.

### Scope 1 and 2 (1,000t-CO<sub>2</sub>eq)



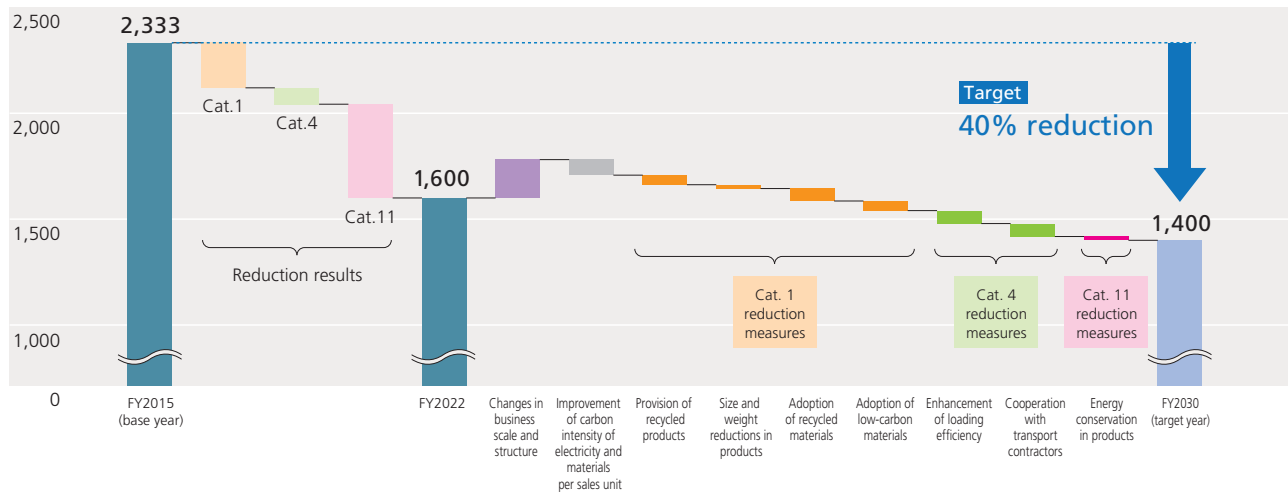
#### Potential measures through 2050

- Achievement of RE100 at Japanese site
- Promotion of equipment electrification
- Utilization of hydrogen and other next-generation energy sources
- Switch to EVs for company-owned vehicles

Measures and plans aimed at 40% reduction in the three major categories of Scope 3 in 2030

Our major measures for reduction to date have consisted of energy conservation as well as size and weight reductions for multifunctional copiers and printers, measures that we will continue. We will also expand measures related to the sale of recycled machines and the use of recycled materials. With regard to the expanded adoption of low-carbon materials and the transportation-related decarbonization activities that we are currently undertaking, we will undertake efforts to increase the efficacy of these from 2025 onward.

Scope 3 major categories (categories 1, 4, and 11) (1,000t-CO2eq)



Scale of initiative and reduction effect Small Large

Category	Measure	2015 to present	Present to 2025	2025 to 2030	Potential measures through 2050
Cat. 1	Provision of recycled products				Biomass-derived new resources (2050 target: ≤12%)
	Size and weight reductions in products	Image products			
		Resource conservation in heat-sensitive labels			
	Adoption of recycled materials				
	Adoption of low-carbon materials				
Cat. 4	Enhancement of loading efficiency				Promotion of renewable energy usage by stakeholders (logistics companies and customers)
	Cooperation with transport contractors				
Cat. 11	Energy conservation in products				

Actions for the neutralization of residual GHG emissions that cannot be reduced by 2050

- Offsetting of residual Scope 1 and 2 emissions through internationally recognized methods (forest absorption/afforestation, etc.)
- For residual Scope 3 emissions, creation of avoided emissions\* outside the supply chain, in excess of emissions volume

\*Avoided emissions: Emission reductions that are not counted as Scope 3 reductions but that can reduce GHG emissions in society

### 3-2 Initiatives for Scope 1 and 2 emissions reduction

The Ricoh Group has advanced thorough energy-saving activities and the active utilization of renewable energy. In 2018, we switched the electricity used in the reuse/recycling processes of nine sales headquarters in Europe and our French manufacturing subsidiary Ricoh Industrie France S.A.S. to 100% electricity from renewable energy sources. In 2019, we shifted five A3 multifunction copier assembly factories in China, Thailand, and Japan, as well as our central manufacturing and business development site in the UK, Ricoh UK Products Ltd., to renewable energy.


In July 2020, our new production site in China, Ricoh Manufacturing (China) Ltd., began operation as a factory achieving RE100, reducing its electricity usage by over 70% compared to the two former factories in Shenzhen and generating 10% of its electricity in-house. In fiscal 2021, our head office in Japan, our thermal media production site in China, Ricoh Thermal Media (Wuxi) Co., Ltd., and our production site in Thailand, Yamanashi Electronics (Thailand) Co., Ltd. switched to 100% electricity from renewable energy sources. In addition, 11 sites of our domestic sales company Ricoh Japan have obtained "ZEB\* Ready" or higher certification through the adoption of energy conservation, solar power generation, and power storage devices. In 2022, our Group signed its first domestic VPPA.

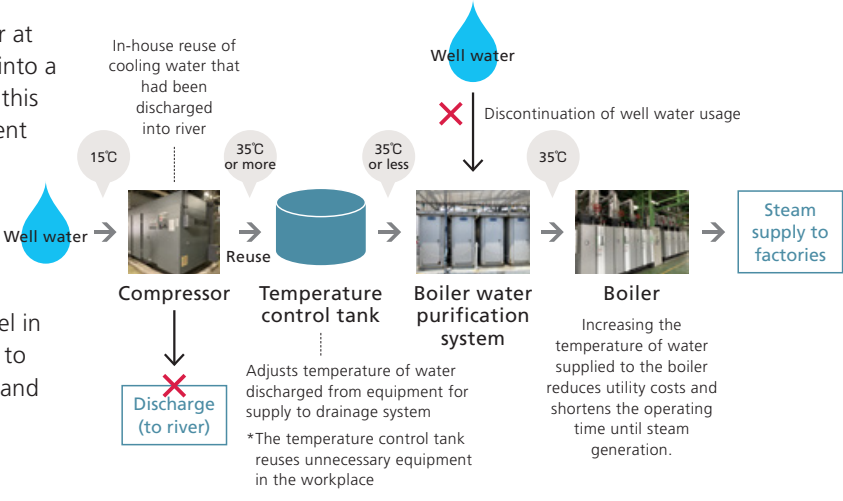
\*ZEB: Net Zero Energy Building, a building in which annual energy consumption has been significantly reduced. Energy conservation standards include the levels "ZEB" (reduction of 100% or more), "Nearly ZEB" (reduction of 75% or more), "ZEB Ready" (reduction of 50% or more), and "ZEB Oriented" (enacting of measures to achieve further energy conservation in addition to high building envelope performance and high-efficiency energy-saving equipment, in anticipation of acquiring ZEB Ready certification).

\*VPPA: Virtual Power Purchase Agreement

### Setting of internal carbon prices

As one criterion for decisions on capital investments in business units with high energy consumption, the Ricoh Group has set its internal carbon price (ICP) to ¥4,200/t-CO<sub>2</sub>eq. This price was set with reference to the IPR2019 carbon price policy forecast. (In use cases, this is shown as an ICP utilization case.)

Initiative 1: Adoption of waste heat recovery type heat pumps in factories	Contribution to Scope 1	Examples of ICP utilization
<ul style="list-style-type: none"> <li>In February 2022, the South Plant of the Numazu Plant introduced a waste heat recovery type heat pump.</li> <li>By using waste heat released into the atmosphere from the cooling tower of the chiller refrigerator on the rooftop of the No. 8 Factory, the system generates the 65°C hot water used in the desolvation process. This reduces the amount of steam used by approximately 60% (expected value), achieving reductions in both cost and CO<sub>2</sub> emissions (up to 540 tons/year; 363 tons in fiscal 2022). The ROI is approximately 5 years.</li> <li>While engaging in Scope 2 reductions through a switch to electricity from renewable energy sources, we have also begun to tackle Scope 1 issues that involve reduction difficulties, such as the use of steam.</li> </ul>		

Initiative 2: Reduction of groundwater consumption and CO <sub>2</sub> emissions through the reuse of water discharge	Contribution to Scope 1
<ul style="list-style-type: none"> <li>In September 2022, the South Plant of the Numazu Plant installed a water discharge reuse system</li> <li>Prior to installation, cooling water (groundwater at 15°C) supplied to the compressor was released into a river. The system was modified to instead reuse this as raw water for the water purification equipment that supplies the boiler. This enables a reduction in groundwater consumption of 35,963 m<sup>3</sup> per year and cost savings of about ¥360,000. In addition, the temperature of the groundwater that is reused rises to 35°C, reducing the use of gas fuel in the boiler. Installation of the system is expected to reduce the annual gas cost by about ¥2 million and reduce CO<sub>2</sub> emissions by 43.2 tons. The ROI is approximately 4 years.</li> </ul>	<p><b>Overview of reduced water consumption through reuse of water discharge</b></p>  <p>In-house reuse of cooling water that had been discharged into river</p> <p>Well water (15°C) → Compressor → Temperature control tank (35°C or more) → Boiler water purification system (35°C or less) → Boiler (35°C) → Steam supply to factories</p> <p>Discharge (to river) is discontinued.</p> <p>Discontinuation of well water usage</p> <p>Adjusts temperature of water discharged from equipment for supply to drainage system</p> <p>*The temperature control tank reuses unnecessary equipment in the workplace</p> <p>Increasing the temperature of water supplied to the boiler reduces utility costs and shortens the operating time until steam generation.</p>

### Initiative 3: Signing of VPPA and strengthening of adoption of renewable energy, with focus on supplementary potential

- Ricoh signed its first virtual power purchase agreement (VPPA) with KAMISATO KENSETSU, Inc. to promote the adoption of renewable energy. A VPPA provides a means for a user to virtually procure only the environmental value of renewable electricity generated from exclusive power plants built off-premise from the user. In Japan, it is a new form of renewable energy adoption that began in 2022.
- Since joining RE100 initiative, the Ricoh Group has worked to expand the use of renewable energy with supplementary potential through means such as on-site physical PPAs. Through the new VPPA, we aim to strengthen this supplementary potential to accelerate the adoption of renewable energy. The amount of renewable energy covered by the VPPA is about 2.24 GWh per year, corresponding to about 0.5% of the electricity consumption of the Ricoh Group (FY2022).

### Initiative 4: Expansion of ZEB office buildings and utilization of these in customer proposals

- Since 2021, the Ricoh Japan Miyazaki Office and Obihiro Office have obtained ZEB certification, while the Tsukuba Office has obtained Nearly ZEB certification. The Ueda Office and the Ricoh Eco Business Development Center have obtained ZEB Ready certification. As of April 2022, we have obtained ZEB Ready or higher certifications at 11 sites.
- Ricoh Japan will obtain ZEB Ready or higher certification for new company buildings\* in the future. Every company building functions as a showcase for customers and introduces our decarbonization practices to visitors.

\*Company-owned/wholly rented buildings only

#### ZEB certified offices



Miyazaki Office (new)



Obihiro Office (new)

#### Nearly ZEB-certified workplaces



Tsukuba Office (new)

#### Definitions of ZEB and adopting offices (year and month of start of business)

**ZEB:** Buildings that have achieved a 100% or greater reduction in primary energy consumption through energy conservation (50% or greater) + energy creation

•Wakayama Office (April 2020) •Obihiro Office (December 2021) •Miyazaki Office (January 2022)

**Nearly ZEB:** Buildings that have achieved a 75% or greater reduction in primary energy consumption through energy conservation (50% or greater) + energy creation

•Gifu Office (March 2019) •Kumamoto Office (March 2020) •Ueda Office\* (October 2021) •Tsukuba Office (March 2022)  
•Tono Office (February 2023)

**ZEB Ready:** Buildings that have achieved a 5% or greater reduction in primary energy consumption through energy conservation (50% or greater) + energy creation

•Akashi Office (May 2020) •Kakegawa Office (August 2020) •Odate Office (April 2021) •RicoH Eco Business Development Center

\*Obtained Nearly ZEB certification in June 2023

### 3-3 Initiatives to reduce Scope 3 emissions and yield avoided emissions

The Ricoh Group is carrying out focused initiatives to reduce emissions in category 1 (purchased goods and services), category 4 (upstream transportation and distribution), and category 11 (use of sold products), which account for over two-thirds of total Scope 3 emissions. In order to achieve “Zero-Carbon Society,” one of our identified materialities, the Ricoh Group believes that decarbonization not only in our value chain but throughout society will be vital.

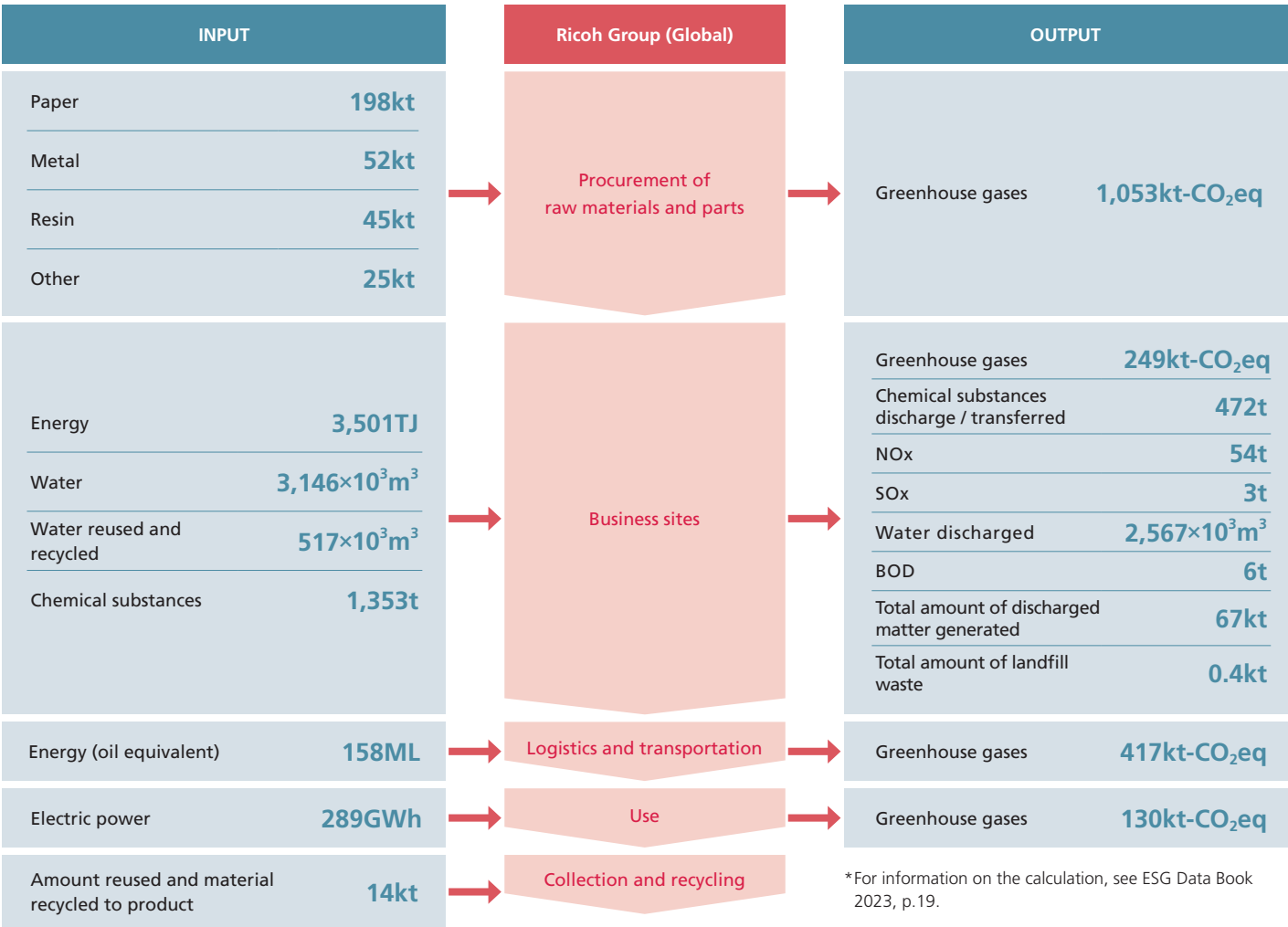
We are actively expanding the replacement of old products with new products featuring enhanced energy-saving performance along with adaptation to multi-mix, low-volume lots created through digital printing, as products and solutions capable of contributing to the decarbonization of society overall. We calculate the GHG emission reductions from these actions as avoided emissions.

#### Strengthening of activities to promote the use of life cycle assessments (LCAs)

The Ricoh Group assesses the environmental impacts that result from every process in our corporate activities and undertakes activities to reduce total impact. “Eco balance” refers to lists, or to the creation of lists, of input/output data on environmental impacts as a means of quantitatively measuring, assessing, and reporting the environmental impacts generated by companies. As a method, it facilitates the implementation of LCA in corporate activities overall. The decarbonization of products forms the foundation for decarbonization of the value chain and of the society. The need for disclosure of products’ GHG emissions, based on environmental impact assessments taking the LCA approach, is growing year by year.

The Ricoh Group began using LCA in the 1990s, primarily for imaging products. Since the start of the EcoLeaf Type III environmental labeling program in 2002, we have also undertaken quantitative information disclosure on our products. Amid this current, we have placed staff in charge of promoting the use of LCAs in every business unit to strengthen the disclosure and appeal of our quantitative information.

#### Eco Balance



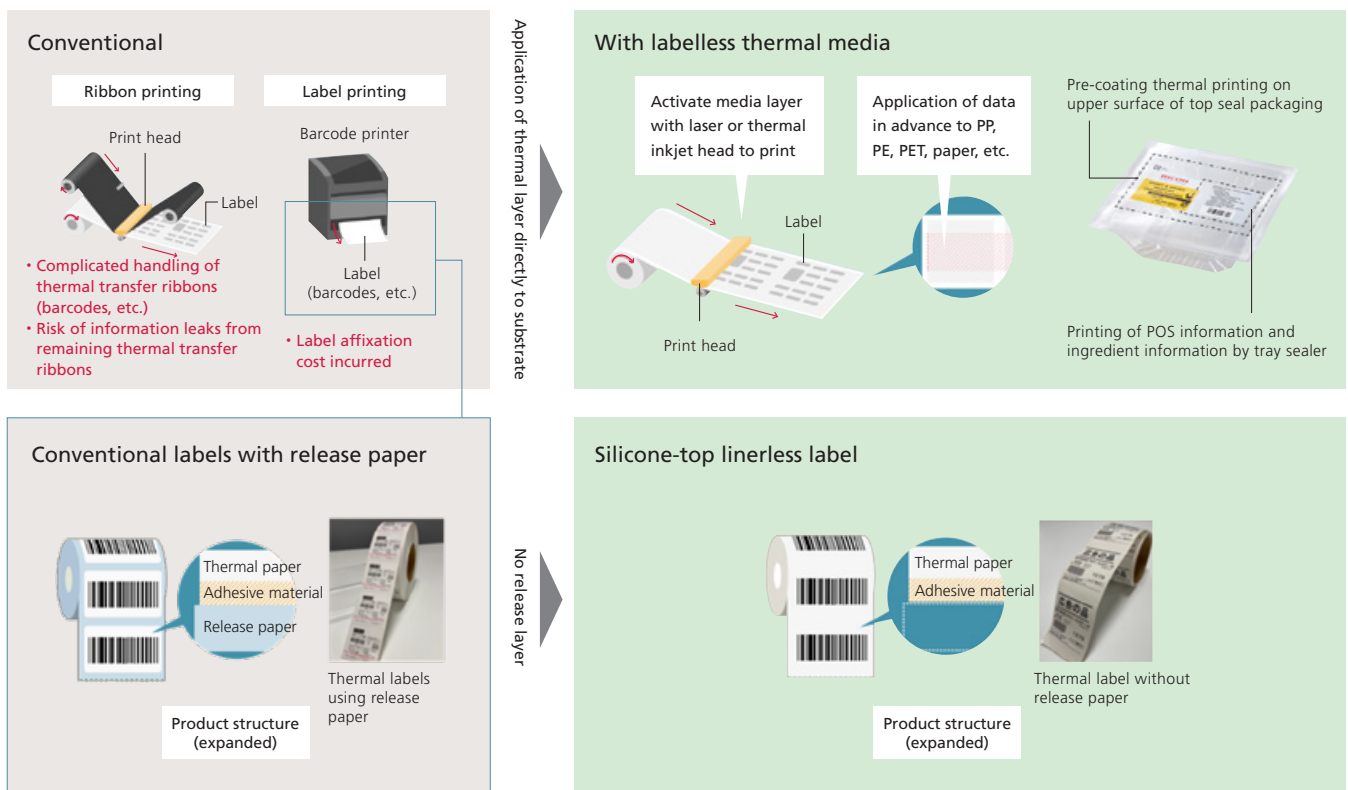
Initiative 1: Environmentally considerate linerless labels and labelless thermal media technologies

Cat. 1 reduction

Creation of avoided emissions

- Development of labelless thermal technology that enables application of a thermal layer to non-release paper labels (linerless labels) and to substrates such as product packages, for direct printing on thermal paper labels used in food POS and shipping
- Compared to conventional labels using release paper, GHG emissions over the life cycle are reduced by about 30% with linerless labels and about 80% with labelless thermal media\*
- Established joint venture RICOH NAKAMOTO SMART PACKAGING Co., Ltd. with Nakamoto Packs Co., Ltd. to enhance customers' productivity through labelless thermal media and other functional packaging materials
- Aim to contribute to the achievement of "Zero-Carbon Society" and expand business

\*Research by Ricoh. Comparison based on printable area. IDEA Ver. 3.2 (National Institute of Advanced Industrial Science and Technology) used as secondary data



Initiative 2: Expansion of digital printing in commercial printing

Creation of avoided emissions

- As digital printing does not require the plates used in analog printing, the carbon footprint (CFP) of small-lot printed materials in commercial printing tends to be smaller than that of analog printed materials
- We develop and provide tools to support the data input required for digital printed material CFP calculation, through input of equipment configuration, printed material specifications, and printing conditions for digital printing by the customer printing company
- By making the environmental impacts of digital printing visual, we support the selection of optimal printing methods based on printing cost and environmental action cost, and aim to expand digital printing particularly for small-lot printed materials

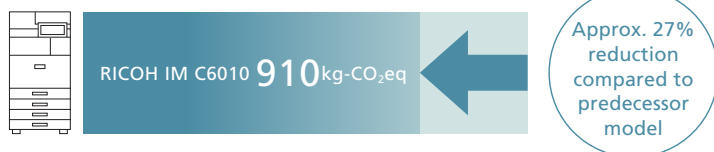


### Initiative 3: Carbon footprint (CFP) reduction in a mainstay multifunction color copier model\*1

Cat. 1 reduction    Cat. 11 reduction

- We use recycled plastic for over 50% of the total weight of plastic in the main unit (a world's first for A3 multifunction copiers\*2) and calculate the CFP of recycled plastic to assess the reduction in GHG emissions
- We achieve top-class\*3 standard power consumption through the use of a new toner with a low melting point
- We reduced the CFP by about 27%\*4 from the predecessor model through resource-saving and energy-saving measures
- We develop paid services that offset carbon using the J-Credit Scheme to support customers' contributions to decarbonization and their reporting under the Act on Promotion of Global Warming Countermeasures

#### Reduction of CFP\*5



#### Life cycle



CFP comparison of RICOH IM C6010 and predecessor model



Recycled plastic is used for nearly all the plastic exterior components

\*1 RICOH IM C6010/C5510/C4510/C3510/C3010/C2510/C2010

\*2 Research by Ricoh, based on registration data from the EPEAT (Electronic Product Environmental Assessment Tool) environmental evaluation system used by the US federal government as a acquisition requirement as of January 25, 2023

\*3 Comparison with products using the International ENERGY STAR Program (25-60 sheets/minute-class digital full-color multifunction unit with copy/fax/scanner functions). As of February 6, 2023. Research by Ricoh

\*4 RICOH IM C6010. Product main unit only (excluding paper feed table). Comparison with predecessor model (RICOH IM C6000) performed by Ricoh. CFPs for the RICOH IM C6010 product family are released under the Japan EPD Program by SuMPO(the Sustainable Management Promotion Organization).

\*5 CFP is the value of the amount of greenhouse gases emitted throughout the above life cycle (from raw material acquisition to disposal and recycling), converted to equivalent amount of CO<sub>2</sub>.

### Initiative 4: Reduction measures in marine transport

Cat. 4 reduction

#### Adoption of eco-shipping using biofuels

In fiscal 2022, we began contracting with the ECO Delivery service of Maersk. From May 2022 to April 2023, biofuel was used in the marine transport of 556 40-foot containers. This reduced CO<sub>2</sub> emissions by 77 tons for the extraction, refining, and transport of fuel and 1,270 tons for onboard fuel combustion, for a total reduction of 1,347 tons.

#### Improvement of container loading rate

As a measure to control soaring marine freight fares caused by lack of space amid global turmoil in logistics, in fiscal 2022 we undertook activities to improve container loading efficiency. By making changes to packaging design and to mixes of parts, supplies, and products, and by eliminating containers with a loading rate of under 70% (primarily in marine transport bound for Europe and the United States), we reduced the number of containers by over 100, reduced CO<sub>2</sub> emissions by about 2,000 tons, and achieved further cost reductions of about ¥200 million.



Maersk ECO Delivery CO<sub>2</sub> Emissions Reduction Certificate (for May to October 2022)

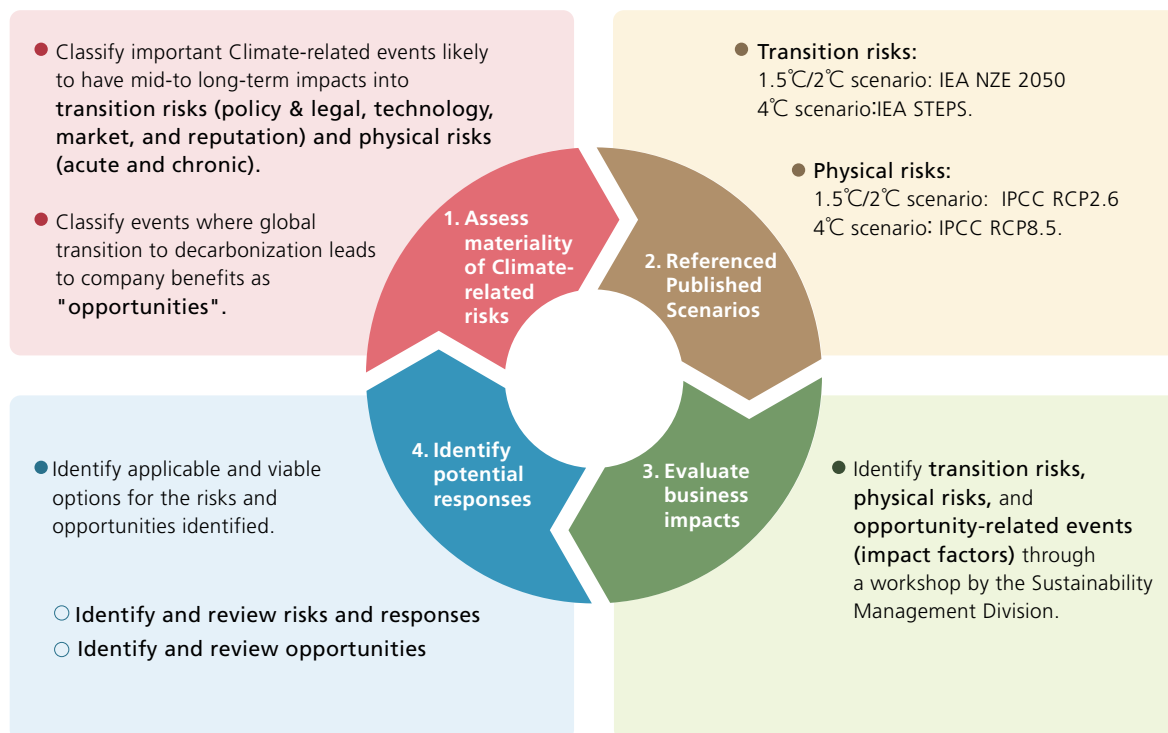
## 4. Risks and opportunities of climate change impact on the Ricoh Group

In August 2018, the Ricoh Group expressed its support for the TCFD recommendations. Taking the opportunity to express our support, we proceeded with discussions on climate change risks and opportunities in line with the TCFD framework. And we disclose the outcome of discussions held with executives at the ESG Committee every year.

In 2019, our disclosure primarily focused on risk assessment outcomes, whereas from 2020 onward, we have been providing quantified information related to risks and opportunities. It's important to note that the term 'quantified opportunities' here refers not to future opportunities, but rather to the actual financial contributions derived from our ongoing environmental management efforts, such as their impact on revenue. We will continue to actively pursue efforts and disclosures towards achieving a decarbonized society through assessments aligned with the TCFD framework in the future.

### 4-1 Scenario analysis for climate change

The Ricoh Group conducts annual analysis and evaluation in four steps during the scenario analysis review process.



#### Step 1: Assessment of the importance of climate change-related risks

First, we forecast social and regulatory trends in 2030 and 2050. And next, we listed a wide range of risks and opportunities associated with climate change in companies, based on the risks and opportunities set out in the TCFD recommendations. The scope of the analysis included our own operations, as well as upstream and downstream activities.

Risks are generally classified into two categories. One is the transition to a low-carbon society. The other is the physical risk of intensifying climate change. Transition risk will break down into policy regulations, markets, technologies, reputations (changes in customer reputation, changes in investor reputation), etc. Physical risk is classified into chronic risks (e.g., rise in average temperature, changes in precipitation and weather patterns, rise in sea level) and acute risks (e.g., extreme weather events).



## Step 2: Identification of scenarios

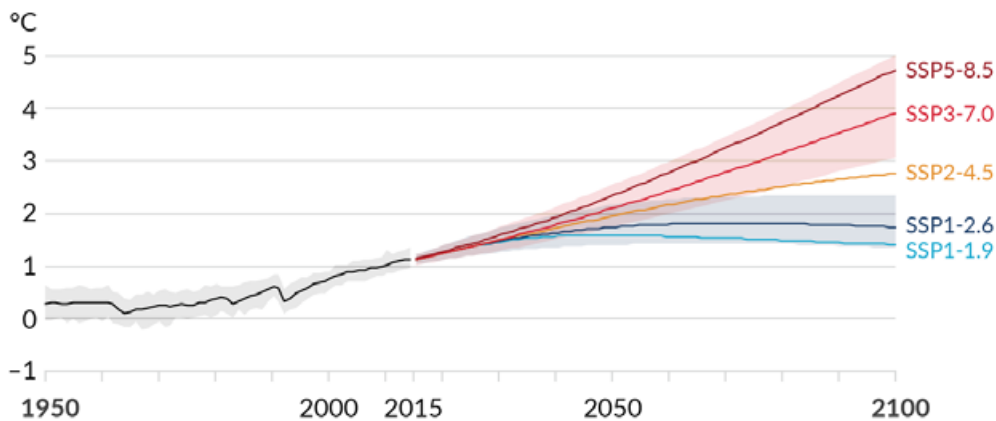
In studying transition risks, we made reference to reports by the International Energy Agency (IEA), as we are aiming for the SBT 2°C /1.5°C targets. We selected IEA NZE 2050, a scenario that would reduce global greenhouse gas emissions to net zero by 2050 and limit temperature increase to less than 1.5°C. We also referred to the nationally determined contribution (NDC) GHG emission reduction targets submitted by countries under the Paris Agreement.

Addressing an uncertain future requires selecting and setting multiple temperature band scenarios, including those of 2°C or less. With reference to information from the United Nations Intergovernmental Panel on Climate Change (IPCC), we selected two scenarios: the 2°C/1.5°C (RCP2.6) as Scenario 1 and the 4°C(RCP8.5) as Scenario 2.

We took the approach that treating the two scenarios' average temperature rises as the high and low extremes would lead to elimination of the unexpected.

In order for us to remain in our current mainstay printing business and thermal media business, we must envision changes in the supply of forest and paper resources and the scale and the frequency of typhoons, heavy rains, floods, and other natural disasters affecting the supply chain, including our production sites, caused by future climate change through 2050. Utilizing the new Shared Socioeconomic Pathways (SSP) socio-economic scenarios, we used the storyline of a world of growth and equality (SSP1: Sustainability) as reference, emphasizing sustainability as a prerequisite for the social and economic environment under a rise of 2°C or less. For a 4°C rise, we assumed the SSP3: Regional Rivalry storyline by which countries do not advance global warming prevention policies, corporations' voluntary activities to address global warming issues are limited, the transition to a zero-carbon society does not progress, temperature rise is not mitigated, and more serious weather abnormalities occur frequently.

According to the Sixth Assessment Report of the IPCC, no large temperature rise difference occurs between the two scenarios as of 2030 (see graph). Based on this, Scenario 1 primarily assesses risks of transition to a zero-carbon society while Scenario 2 assesses physical risks due to the intensification of climate change.



Source: IPCC AR6 WGI SPM Fig. SPM.8(a)

### Scenario 1: 2°C/1.5°C scenario

**A world in which the average temperature rise is constrained to less than 2°C through 2100**

- Ambitious policies and technological innovations advance, including the shift to renewable energy and the introduction of carbon taxes
- Society in which changes associated with the transition to a zero-carbon society are highly likely to affect businesses

### Scenario 2: 4°C scenario

**A world with an average temperature rise of 4°C through 2100**

- Abnormal weather intensifies under climate change and risks of wind and flood damage, depletion of raw materials, and infectious disease outbreaks increases beyond expectations
- Society in which physical damage caused by climate change is highly likely to affect businesses

### Step 3: Business impact assessment

Regarding the risks and opportunities listed in Step 1, we will evaluate and consider possible business impacts while discussing with internal stakeholders based on our business model.

Specifically, we held a workshop in the Sustainability Department to identify the impact factors of events that lead to transition risks, physical risks, and opportunities. On top of that, we consulted with related departments such as the Corporate Planning Department, Material Procurement Department, Risk Management Department, and General Affairs Department to organize and consolidate business impacts qualitatively, and to estimate the economic impact assuming future scenarios as of 2030.

The risks and opportunities associated with climate change compiled are finalized by the ESG Committee after deliberations from a management perspective.



### Step 4: Consider and implement countermeasures

As for the risks related to climate change determined by the ESG Committee, we place them in the priority management risk category as necessary, and plan and execute specific measures such as management and action plans.

#### 4-2 Climate change risks and response

Based on the scenario analysis conducted following four steps, the identified risks have been assessed and weighted within the Ricoh Group's risk management system. Starting from the fiscal year 2022, we have enhanced disclosure to provide a clearer picture of the impact on our business by applying the assumed impact amount and duration in the Ricoh Group's risk management. We have re-evaluated the risks associated with natural disasters, which are increasing year by year, within our supply chain, including our own facilities, and prioritized high-risk key production sites for specific investments to address flood risks in particular within Japan.

Natural disaster risks are an urgent issue that cannot be postponed, as they could have a significant impact on our business. While the urgency related to infectious disease risks associated with climate change is not as high, they could lead to substantial financial losses once they occur. Therefore, we will continue to work on strengthening our Business Continuity Planning (BCP). Additionally, we have reaffirmed that taking proactive measures for climate change mitigation and adaptation holds significant potential for generating future financial benefits.

#### Climate change risks

Impact of climate change on the Ricoh Group		Impact	Urgency
Transition risks	<b>Transition risk 1 (2°C /1.5°C scenario*1)</b> Carbon taxes and emissions trading systems applied to suppliers	• Carbon pricing (carbon tax/emissions trading) will be applied to all suppliers and the price will be passed on to raw materials, resulting in higher procurement costs. • Impact of carbon pricing (carbon tax/emissions trading) on the Ricoh Group is minimal (Implement systematic reduction of GHG under the SBT of 1.5°C)	Below ¥1.0 billion Within 5 years
	<b>Transition risk 2 (2°C /1.5°C scenario)</b> Response to accelerated transition to decarbonized society by consumers and investors	• Due to demand for achieving the target of 1.5°C and RE100 ahead of schedule, additional costs for implementing measures such as energy saving/renewable energy facility investment and switching to renewable energy are incurred	Below ¥1.0 billion Within 5 years
Physical risks	<b>Physical risk 1 (4°C scenario*2)</b> Rapid increase of natural disasters	• Due to climate change, the severity of weather has become more extreme, causing production stops and sales opportunity losses due to disruption of the supply chain, etc. as a result of greater than expected storms and rain damages to Group production sites and suppliers	Up to ¥20.0 billion Within 5 years
	<b>Physical risk 2 (4°C scenario)</b> Regional epidemics of infectious diseases	• Impact on production plans due to parts supply disruption • Insufficient inventory due to lower operating rates at production sites • Decrease in sales opportunities due to difficulty of face-to-face business	Up to ¥20.0 billion Within 10 years
	<b>Physical risk 3 (4°C scenario)</b> Declining forest resources	• Forest damage such as forest fires and increase of pests due to global warming results in deterioration of stable supply of paper raw materials and leads to a rise in paper procurement costs	Below ¥1.0 billion Within 10 years

\*1 2°C /1.5°C scenario: A scenario where the global average temperature increase is below 2°C by 2100

\*2 4°C scenario: A scenario where the global average temperature increase is 4°C by 2100

## Transition risk 1 (2°C/1.5°C scenario): Carbon taxes and emissions trading systems applied to suppliers.

### Risk scenario

- Carbon pricing (carbon taxes and emissions trading) is applied to all suppliers, price transfer to raw materials moves forward, and procurement costs rise
- Carbon taxes are calculated from the latest information in the 2021 Inevitable Policy Response (IPR) report commissioned by Principles for Responsible Investment (PRI)
- A pilot version of emissions trading has started in China and directions for carbon pricing are being discussed in Japan, on the assumption of introduction within several years

Impact  
¥1.0 billion or less

Urgency  
Within 5 years

## Transition plan

### ● Reduction of new resource usage through the sales of recycled equipment and utilization of recycled materials

The Ricoh Group makes efforts to improve resource efficiency through promotion of the 3Rs\* in our products. To reduce the use of new resources at the manufacturing stage, we are also making efforts to reduce the size and weight of products, expand the use of recycled materials, and design products for ease of recycling. We are further developing non-petroleum-based materials in preparation for risks including resource shortages, environmental impacts, and wastes.

We are globally expanding our businesses for the collection, recycling, and sales of used products. In Japan, we offer reconditioned equipment with a reuse rate of 80% and guaranteed to meet prescribed quality standards; overseas, we offer refurbished equipment with a reuse rate of approximately 90% or more, selected and restored according to regional standards. Our reconditioned equipment released in June 2021 has reduced CO<sub>2</sub> emissions by about 62% in the manufacturing process and about 19% throughout the life cycle, compared to new equipment.

We use plastic made from 100% commercially available recycled materials in toner bottles. The recycled plastic toner bottles are used for over 95% of the office-use toner bottles manufactured by the Ricoh Group. In 2023, we launched an A3 multifunction copier with recycled plastic accounting for about 50% of the total weight of plastic in the main unit. (See p.16, "Carbon footprint (CFP) reduction in a mainstay multifunction color copier model")

\*Reduce, Reuse, and Recycle

### ● Actively supporting decarbonization activities by suppliers and addressing the risks of procurement costs increases

The Ricoh Group is working to strengthen our environmental conservation initiatives in cooperation with suppliers to reduce environmental impacts throughout the supply chain. "Ricoh Group Supplier and Partner Code of Conduct" calls for the setting of GHG emission reduction targets and encourages the minimization of energy consumption and GHG emissions in accordance with environmental management systems.

In advancing GHG emission reduction activities aimed at decarbonization, the Ricoh Group also cooperates with suppliers. In March 2022, we held informational sessions on decarbonization for suppliers, and requested that these set Scope 1 and 2 reduction targets that meet the SBTi 2°C standard. To achieve this goal, we offer support that includes one-on-one consultation drawing on examples of the Ricoh Group practice and know-how concerning the assessment of Scope 1 and 2 emissions and the switch to low-GHG-emissions-factor electrical power.

To date, 10 suppliers have carried out GHG emission reduction activities in collaboration with the Ricoh Group, resulting in a total reduction of 986t-CO<sub>2</sub>eq.

**RICOH**  
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#### Ricoh Group Supplier and Partner Code of Conduct

Ricoh Group's basic policy is to comply with the laws and regulations of each country and region in which it operates, and to conduct our businesses in a sincere and ethical manner.

Based on this basic policy, in 2019 Ricoh joined the Responsible Business Alliance (RBA), a corporate alliance that promotes corporate social responsibility in the global supply chain. Ricoh endorses the RBA philosophy and conducts its corporate activities in a responsible manner.

Ricoh Group believes that the RBA Code of Conduct is also helpful for the Ricoh Group's suppliers and partners as they strive to fulfill their social and environmental responsibilities. Accordingly, Ricoh Group has adopted the RBA Code of Conduct as the "Ricoh Group Supplier and Partner Code of Conduct" and now employs it as the code of conduct throughout the Ricoh Group supply chain.

Ricoh Group believes it is important to develop mutually beneficial relationships with our suppliers and partners with the aim of promoting a better society and a more stable global environment that can handle the increasing demands of society to the supply chain in addition to those placed upon it by our own business activities. To fulfill this social responsibility, Ricoh Group will strive to comply with this Code of Conduct. Ricoh group would like to ask our suppliers and partners to understand the purpose of this Code of Conduct and promote business activities in accordance with it.

April 2023

General Manager, Procurement Management Department,  
Professional Services Division,  
Ricoh Company, Ltd.

**Transition risk 2 (2°C/1.5°C scenario): Response to accelerated transition to decarbonized society by consumers and investors**

**Risk scenario**

- Transition to a "Zero-Carbon Society" progresses rapidly, resulting in a world in which achievement of companies' 1.5°C targets and of RE100 is commonplace
- Consumers stray from products that are not carbon neutral, with the result that companies are pressed to enact prompt shifts to electrical power from 100% renewable energy sources
- Transition to a zero-carbon society is assumed to have progressed rapidly over several years

**Impact**  
¥1.0 billion or less

**Urgency**  
Within 5 years

**Transition plan**

● **Active development of energy-saving and renewable energy measures that contribute to the SBTi 1.5°C target (strategic use of renewable energy certification, etc.)**

In April 2017, the Ricoh Group set out The Ricoh Group Environmental Goals. These goals aim to reduce Scope 1 and 2 GHG emissions by 30% in 2030 (compared to 2015) and achieve net zero GHG emissions throughout the entire value chain in 2050. The goals were certified by the international Science Based Targets initiative (SBTi) as consistent with the 2°C target sought by the Paris Agreement. At the same time, we also became the first Japanese company to join the international RE100 initiative that aims to have 100% of electrical power used in businesses come from renewable energy sources.

Ricoh further revised The Ricoh Group Environmental Goals in 2020 to achieve "Zero-Carbon Society," setting the Scope 1 and 2 GHG target for 2030 to a 63% reduction and the Scope 3 target to a 40% reduction (compared to 2015). These are challenging targets that meet the level recognized by SBTi as "1.5°C targets." We accelerated our decarbonization activities in 2021, raising our global renewable energy ratio target for 2030 from the previous 30% to 50%.



SCIENCE  
BASED  
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

● **Fundraising by using sustainability initiatives**

Ricoh actively engages in financing that makes use of our sustainability initiatives. Recognition of our active initiatives aimed at decarbonization allowed us to sign our first sustainability linked loan with MUFG Bank, Ltd. in April 2020. Sustainability linked loans are financial products that offer preferential interest rates to companies that set and achieve high environmental targets and actively tackle climate change issues. Under the agreement, the interest rate will be determined according to our status in achieving the GHG reduction targets set by Ricoh in line with the 1.5°C target of SBTi. Although sustainability linked loans can be used as business funds without restriction on use, Ricoh plans to use a portion of the funds to invest in energy-saving equipment and expand our adoption of renewable energy aimed at achieving our GHG reduction targets. In March 2022, we signed a loan agreement with Mizuho Bank, Ltd. for its Mizuho Eco Finance environmental assessment-based loan product. This is a loan which Mizuho Bank has determined will contribute to climate change response under the Bank of Japan's framework for funds-supplying operations to support climate change response.

In July 2022, we signed a loan agreement with Sumitomo Mitsui Trust Bank, Limited for its Positive Impact Finance (PIF; investment financing type for businesses without restriction on the use of funds), in line with the financial principles advocated by the United Nations Environment - Finance Initiative. Positive Impact Finance seeks to comprehensively analyze and evaluate the positive and negative impacts of corporate activities on the environment, society, and economy, and to contribute to the achievement of the SDGs through corporate activities. The PIF that we concluded adopted targets in five fields as evaluation items, including ESG targets that lead to the achievement of a zero-carbon society. In this way, the Ricoh Group's sustainability initiatives are also expanding into the area of financing that contributes to business growth.

**Physical risk 1 (4°C scenario): Rapid increase of natural disasters**

**Risk scenario**

- Abnormal weather intensifies under climate change, wind and flood damage exceeds expectations, and production suspensions and losses of sales opportunities expand due to disruption not only of in-house operations but also the supply chain
- Evaluation is conducted along the axes of impact of disasters (physical damage to our Japanese and overseas sites) and long-term delays in product supply (impact on sales due to product shortages)
- The frequency of heavy rains and flooding is high, with incidents Rapid increase termed “once a century” occurring frequently in Japan and overseas

**Impact**  
Up to ¥20.0 billion

**Urgency**  
Within 5 years

**Mitigation plan**

● **Assessment of flood damage risks**

For our business sites in Japan, we assessed risks of flood damage with reference to information including national and local government hazard maps and recent precipitation volumes. For overseas business sites, we used the Aqueduct Water Risk Atlas of the international environmental non-governmental organization World Resources Institute (WRI), and in fiscal 2021 assessed flooding risks at 14 major business sites with the cooperation of Sompo Japan Insurance Inc.

Based on the countries' hazard maps, we evaluated floods occurring when water volume on land cannot be fully drained, such as during heavy rains, typhoons, and increase in river level, as well as the storm surge phenomenon by which the sea level rises due to storms and changes in atmospheric pressure, causing seawater to flow inland.

Doing so, we confirmed the frequency of these two risks and the zones at risk.

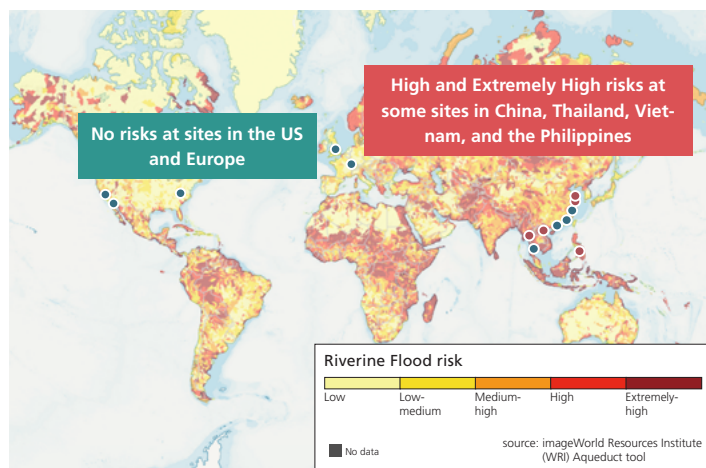
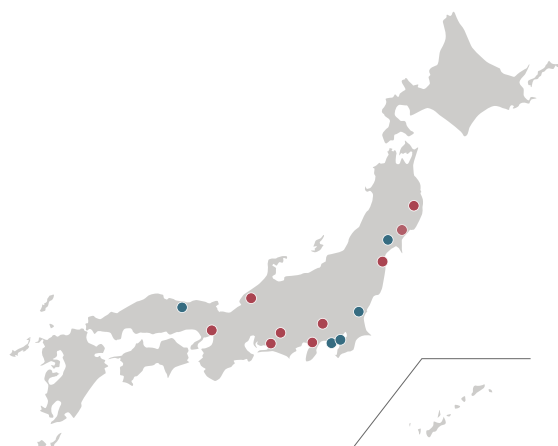
● **Flood risks at major overseas sites (in cooperation with Sompo Japan Insurance Inc.)**

Risk of Flooding		
Recurrence interval (years)	Number of sites	Percentage
Once in 50 years	1	7.14%
Once in 200 years	1	7.14%
Once in 500 years	1	7.14%
Less than once in 500 years	3	21.43%
Out of scope	8	57.14%
<b>Total</b>	<b>14</b>	<b>100.00%</b>

Storm surge risk		
Recurrence interval (years)	Number of sites	Percentage
Once in 50 years	0	0.00%
Once in 100 years	1	7.14%
Once in 250 years	1	7.14%
Less than once in 500 years	1	7.14%
Out of scope	11	78.57%
<b>Total</b>	<b>14</b>	<b>100.00%</b>

As a result, we confirmed the following as production and R&D sites in the Ricoh Group for which risks are a concern:

- Japan: 9 out of 14 sites face risks (5 sites do not)
- Overseas: 5 out of 14 bases face risks (9 sites do not)
- No risks (3 production sites, 2 research and development sites)
- Risks (8 production sites, 1 research and development site)



● Addressing supply chain risks

In the risk management process of the Ricoh Group, departments that manage production operations globally act as the responsible divisions addressing risks. They engage in business continuity planning (BCP) throughout the supply chain, from parts procurement to production and sales, and carry out reviews as necessary. In terms of specific measures, in preparation for delays and suspension of parts supply, suspension of manufacturing at production plants, suspension of activities by transport firms, and so on, our production facilities in Thailand, Japan, China, and other locations secure surplus inventory of products and components and select multiple suppliers for key components.

● Strengthened addressing of risks at Japanese sites

Status of key production and research and development sites

The Ricoh Group has set criteria for selection of sites that face flood damage risks, based on sources including hazard maps from national and local governments and on up-to-date precipitation data from the Japan Meteorological Agency. Since 2020, we have been strengthening our efforts to combat flood risks. Based on detailed surveys of flood risks at our group sites, since 2021 we have continuously engaged in necessary construction and other work at three sites where risk is judged to be relatively high, based on our criteria. We have also formulated a recovery action plan to respond to floods, and conduct ongoing drills based on this plan.



High-voltage power receiving equipment; retaining walls (RI Tohoku)



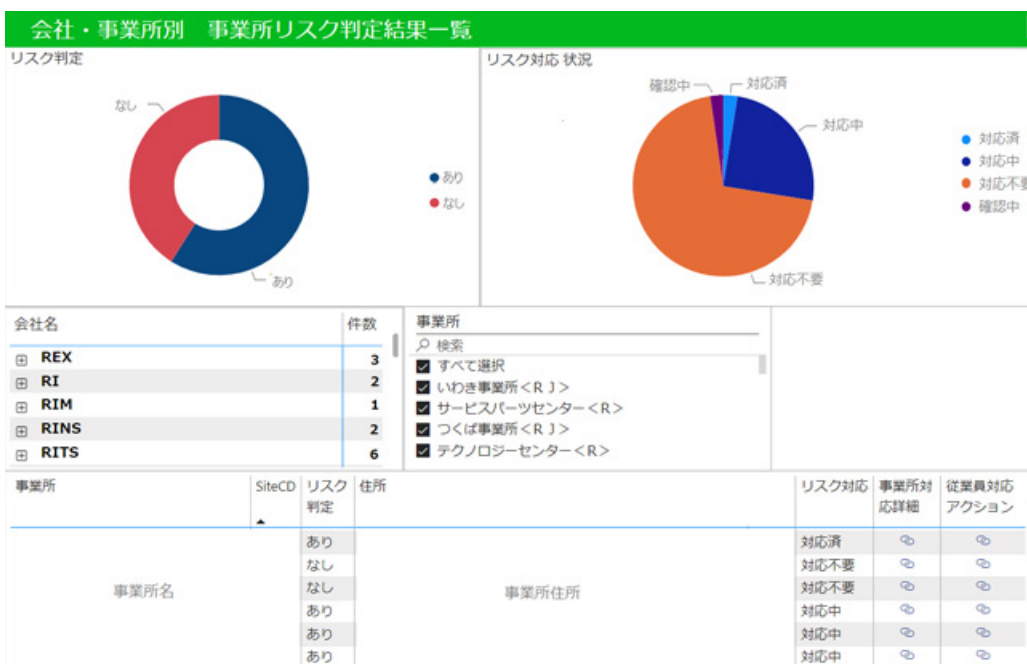
Extra high voltage substation; retaining walls (RTC)



Emergency generator raised off ground (RTC)

Construction of flood risk information infrastructure

Based on our flood risk criteria, we have constructed an in-house system to review hazard maps and precipitation data every six months and to register risk status from fiscal 2022. This system targets sales sites as well as production sites. Registration is scheduled for completion at all the Ricoh Group sites in Japan (about 480 sites) by June 2023. The information, which is viewable by all employees and management team members, is put to use in strengthening flood countermeasures at sites, assessment of risks to business activities, reinforcement of BCP, strategizing from a management perspective, and review of employee safety.



A view of the in-house Ricoh Group Flood Risk Information system



**Physical risks 2 (4°C scenario): Regional epidemics of infectious diseases**

**Risk scenario**

- Mosquito-borne infectious diseases appear due to climate change
- The scope of impact assumes a regionally limited infectious disease appearing approximately every 10 years
- Financial impact is estimated on the basis of impacts of the COVID-19 pandemic

**Impact**  
Up to ¥20.0 billion

**Urgency**  
Within 10 years

**Mitigation plan**

● **Strengthening of infectious disease countermeasure BCP**

The Ricoh Group has established a structure to address infectious disease risks based on the following policies, and carries out necessary actions.

1. We will prioritize the life and health of Group employees and their families
2. We will prevent increases in numbers of infected people to the degree possible, taking impact on society into account
3. We will strive for the continuous provision of services and products demanded by society and customers
4. We will strive to maintain our management foundation
5. We will strengthen infectious disease countermeasures BCP

As with our natural disaster countermeasures, departments that manage production operations globally act as the responsible divisions addressing risks. They engage in BCP throughout the supply chain, from parts procurement to production and sales, and strengthen infectious disease countermeasure BCP through means such as digitalization of work and business negotiations, decentralization of production sites, automation of processes, and accumulation of parts and product inventory, conducting reviews as necessary.

**Physical risks 3 (4°C scenario): Declining forest resources**

**Risk scenario**

- Wildfires, pest infestations, and other forms of damage to forests increase due to global warming, and stable supplies of paper raw materials deteriorate
- Prices soar for paper, the key material of the thermal media business, placing pressure on business profits

**Impact**  
¥1.0 billion or less

**Urgency**  
Within 10 years or less

**Mitigation plan**

● **Reduction of base paper usage through linerless labels and label-less thermal media technology**

Ricoh sells linerless labels that use no release paper. We have also developed label-less thermal media technology that directly applies a thermal layer to packaging instead of to the paper substrate. These technologies are expected to not only reduce GHG emissions and the use of paper, a forest resource, but also to enhance productivity through omission of the release and pasting processes. (See p.16, "Initiative 1: Environmentally considerate linerless labels and label-less thermal media technologies")

● **Ricoh's forest conservation activities: the One Million Trees Project**

While reducing GHG emissions, the Ricoh Group also undertakes activities worldwide to conserve forests, which are increasingly important as sources of CO<sub>2</sub> sequestration. With both preservation and increase as goals, we are advancing the One Million Trees Project that seeks to plant one million trees between fiscal 2020 and fiscal 2030. During the three years from fiscal 2020 to fiscal 2022, we planted a total of 338,000 trees. We also engage in forest conservation in cooperation with local governments and other bodies. We have joined the 30by30 Alliance for Biodiversity, which works to halt the loss of biodiversity by 2030 and to preserve over 30% of land and sea as natural environment areas.

From February 2020, our sales company Ricoh Japan has been working to plant mangroves in Indonesia and the Philippines, matched to deliveries of products featuring high energy-saving performance. The company presents information on degree of contribution to the SDGs when introducing the products to customers, and further plants trees upon delivery of the products, as an SDGs initiative conducted together with customers.



Mangrove tree planting in Indonesia

### 4-3 Opportunities related to climate change

The Ricoh Group recognizes that climate change leads not only to business risks but also to opportunities to enhance the value of our products and services and our corporate value.

It brings about a variety of opportunities including provision of products and solutions that make use of our energy-saving technologies and services to support decarbonization by customers, expanded sales of solutions that lead to infectious disease countermeasures, business expansion in the environmental and energy fields, and creation of new businesses. At present, eco-friendly office equipment, infectious disease countermeasure solutions, and the environmental and energy businesses contribute to sales on the scale of ¥1 trillion. Within the environmental management that we have undertaken since the 1990s, the Ricoh Group has committed to the development of energy-saving technologies and has continually provided customers with products and services that contribute to mitigation of climate change. We will continue to pursue thorough energy-saving performance in the products and services that we sell.

As climate change becomes ever more pronounced, sales of products and services that contribute to adaptation to climate change are growing. With the impacts of climate change expected to continue growing, we will strive to develop and to provide customers with products and services that aid in avoiding or lessening the impacts of climate change that are already occurring or that are predicted to occur.

Areas of contribution	Overview of fiscal 2022 results	Financial effect
<b>Contribution to mitigation</b> We will pursue thorough energy-saving performance in our products and services that contribute to the mitigation of climate change.		Approx. ¥1,165 billion
<ul style="list-style-type: none"> <li>• Sales of eco label-certified products that contribute to the decarbonization of society</li> <li>• Sales through business negotiations based on ESG performance</li> <li>• Sales in the products and parts recycling business</li> <li>• Sales in the energy creation and energy saving businesses</li> <li>• Contribution through new businesses (sales of eco-friendly paperless labels and foamed PLA sheets)</li> </ul>		Approx. ¥1,060 billion Approx. ¥40 billion Approx. ¥30 billion Approx. ¥30 billion Approx. ¥5 billion
<b>Contribution to adaptation</b> We will strive to develop products and services that avoid or mitigate the impacts of climate change.		Approx. ¥130 billion
<ul style="list-style-type: none"> <li>• Solution sales that support new workstyles (Scrum Package, Scrum Asset*<sup>1</sup>, LCAW*<sup>2</sup>)</li> <li>• Contribution from new businesses (sales of Energy Harvest*<sup>3</sup> products, etc.)</li> </ul>		Approx. ¥130 billion —

\*1 Scrum Asset: An issue-adapted solution model for medium-sized enterprises, sold in Japan

\*2 LCAW (Leading Change at Work): Packaged solutions sold in Europe

\*3 Energy Harvest: Eco-power generation from light, heat, and vibration present in the surrounding environment

## Area of contribution to climate change mitigation: approx. ¥1,165 billion

### Mitigation 1 : Development of products that contribute to decarbonization

We actively obtain environmental labels globally so that we can provide eco-friendly products to our customers. Under the International Energy Star Program that promotes energy conservation in office equipment, 94% of our imaging equipment, including products launched in fiscal 2022, have obtained Energy Star certification and are contributing to decarbonization. In advancing manufacturing that contributes to the environment, we also operate the Ricoh Sustainable Products Program that evaluates products under our own strict standards for energy and resource conservation, pollution prevention, comfort, and ease of use.

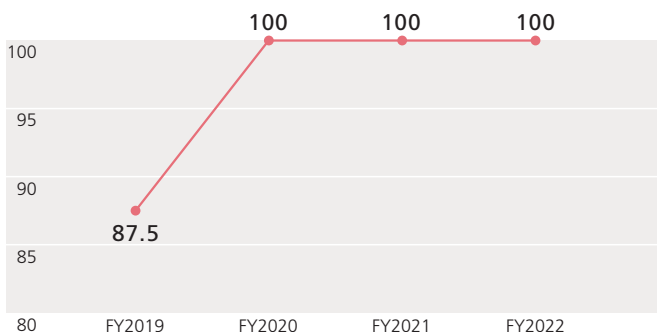
#### ● QSU (Quick Start-Up) energy-saving mode

In conserving energy in multifunction copiers, an important issue is how to reduce power consumption during the standby period (said to be about 90% of the day) when the product is not operating.\*<sup>1</sup> In response to this, we created an energy-saving mode that automatically switches to a reduced power consumption state when the product has been in standby for a certain length of time. QSU (Quick Start-Up) is a technology that allows the quick use of multifunction copiers from energy-saving mode (sleep state). What determines the time required for start-up is the speed at which the cooled fixed roller can be heated to the required temperature. The Ricoh Group has engaged in full-scale development of QSU technology for 20 years to enable stress-free use of energy-saving mode by customers in offices. We have greatly reduced the time for return from sleep mode, and in terms of energy conservation have achieved industry-leading typical energy consumption (TEC) values\*<sup>2</sup>.

\*1 Assumes operation of a 40 sheets/minute multifunction copier running for 20 days in an office that outputs 50,000 sheets per month

\*2 Typical energy consumption (TEC) value: A numerical value measured as stipulated by the International Energy Star Program

#### Targets and outcomes for ratio of standards-conforming products (%)



\* Ratio of products confirming to Sustainable Products and Sustainable Products Premium



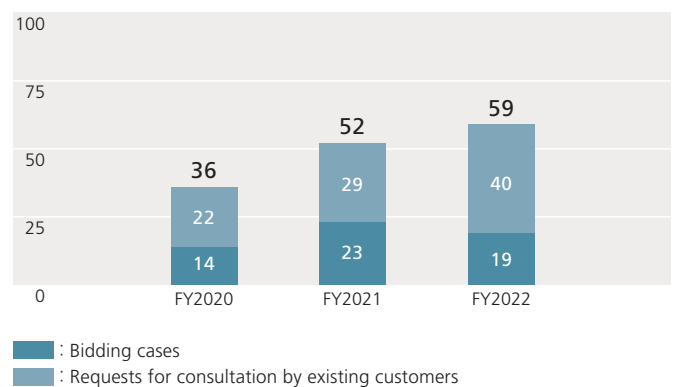
### Mitigation 2: Contribution to business negotiations based on ESG performance

ESG-related demands from customers have greatly increased in recent years. In particular, there is an accelerating movement by European public bodies and global companies to incorporate the status of ESG efforts into supplier selection criteria. As an example, in public procurement negotiations in Spain, cases existed in which the assessment percentage of CSR aspects such as environmental labeling status and energy-saving performance exceeded 10%. In Japan, hearings by customers concerning our ESG initiatives are increasing year by year, contributing to the strengthening of our customer relations and providing a boost to our business.

#### Standards for calculation of sales through business negotiations based on ESG performance

- For successful business negotiations, value of order
- For existing customers, sales results for the target fiscal year in the target country or region

#### Number of cases of overseas business negotiation support by the head office ESG department



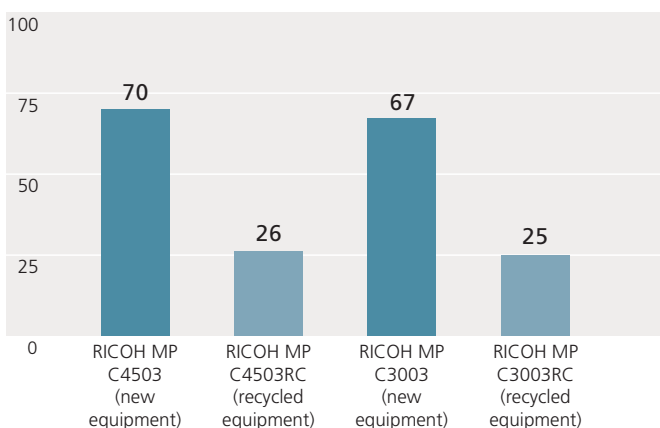
**Mitigation 3: Expansion of the product and parts recycling business**

We have actively engaged in the product and parts recycling business, utilizing the 3Rs-related technology and global collection structure that we have built up since 1994. Based on our unique "The Comet Circle™" concept for achievement of a circular economy, we promote the 3Rs and maintain a high 80-90% level of reuse of parts from recycled products. By enhancing our product lineup to align with recent trends toward a circular economy, we will address the needs of customers and contribute while also contributing to the achievement of "Zero-Carbon Society" and a circular economy.

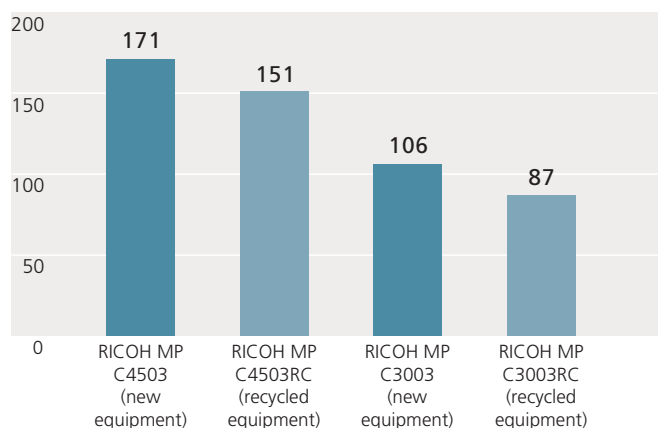


Details of our product and parts recycling business are presented in the "Rico Group Circular Economy Report."

Environmental impact ratio in the manufacturing process (comparison of CO<sub>2</sub> emissions) (kg/year)



Results of life cycle assessment (LCA) (comparison of CO<sub>2</sub> emissions) (kg/year)



**Mitigation 4: Expansion of the energy saving- and energy creation-related businesses**

Amid the accelerating current of decarbonization, in Japan we provide customers with decarbonization solutions from the perspectives of "reducing," "choosing," "creating," and "accommodating" energy.

Utilizing the monitoring services that we have developed in the field of IT and network equipment, we engage in energy saving- and energy creation-related businesses including operation and maintenance (O&M) of customers' solar power generation facilities, maintenance of EV charging equipment, and lighting and air conditioning control systems.

● **"Reduce energy used": RICOH Smart MES (lighting and air conditioning control)**

Leveraging our proprietary sensing technology and cloud technology, we achieve energy conservation while maintaining productivity and comfort for workers.

Our system enables effective use of lighting and air conditioning according to time and place while reducing operational load, through automated, detailed, cloud-based control of lighting and air conditioning for actions such as placing air conditioners in energy-saving mode and dimming lights when people are not present, adjusting the brightness of window-side lighting through the use of outside light on bright day time, minimizing temperature variations at different points in offices, and automatically running air conditioning ahead of business hours to welcome customers at the right temperature. It contributes not only to energy conservation but also to the improvement of comfortable workstyles and workplaces. It can also be used to optimize layouts for usage scenarios by changing the illuminance and color temperature of lighting at the end of work to encourage leaving the office and by capturing and analyzing temperature and humidity data at locations where people are and are not present.

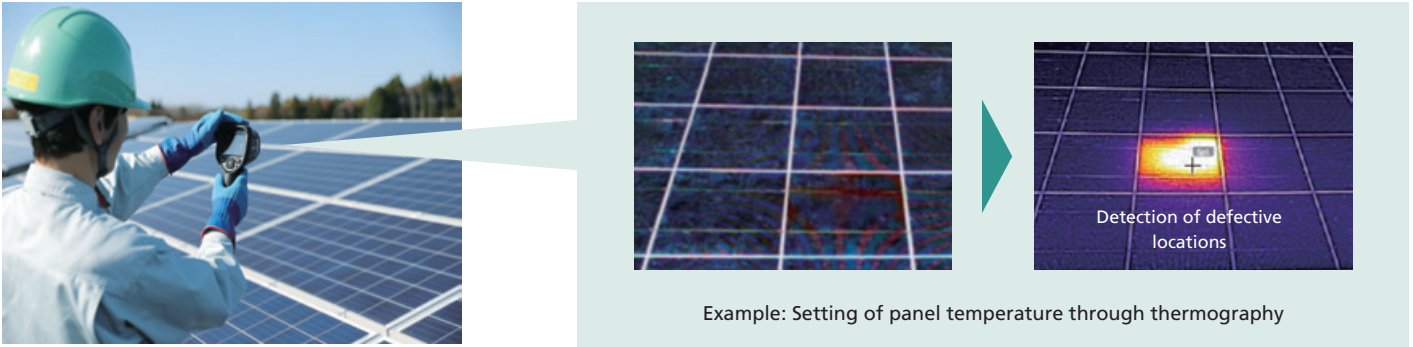
● **"Choose the energy to use": Installation and maintenance of EV chargers**

Amid the accelerating current of decarbonization, the power source of automobiles is undergoing a switch from internal combustion engines to electric-driven motors, with Europe and China at the forefront. This trend is accelerating in Japan as well, where the move by companies toward EVs is considered unavoidable from the standpoints of decarbonization and economic rationality and where demands are being made for the promotion of infrastructure construction and planning at an early stage. To contribute to the reduction of global warming-originating greenhouse gases through the improvement of EV charger facilities, Ricoh Japan offers total support that spans the sale, installation, operation, and maintenance of charging facilities.



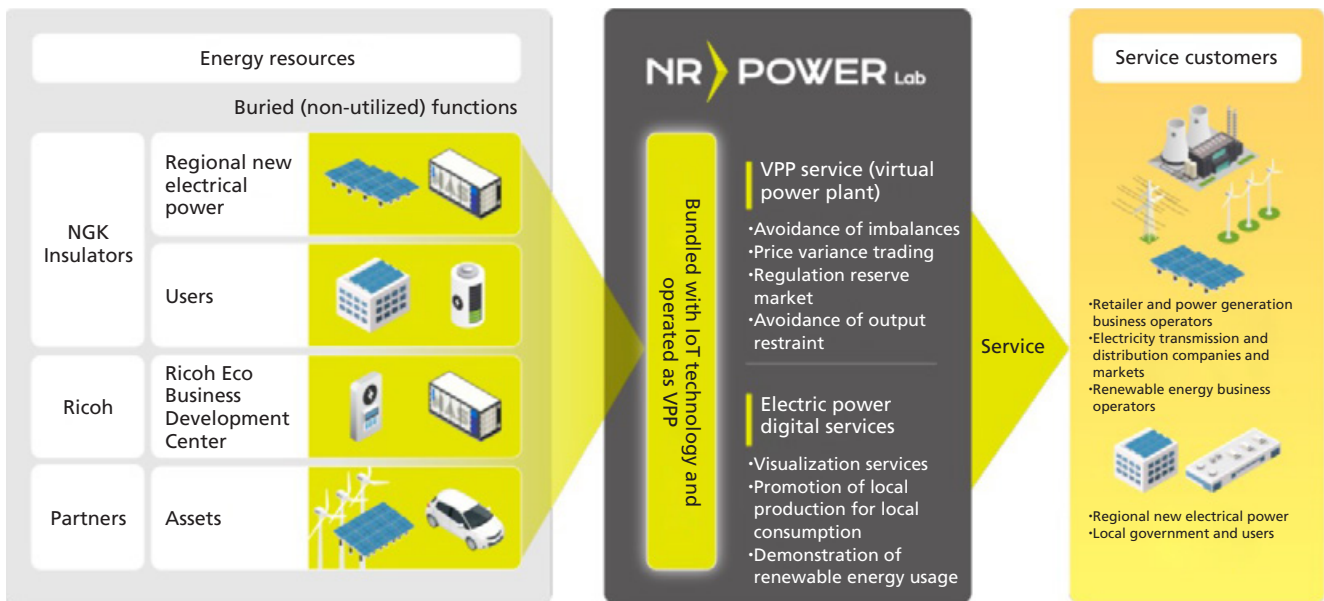
● **“Create new energy”**: Solar power generation operation and maintenance (O&M)

Ricoh Japan performs monitoring of customers' solar power generation facilities 24 hours a day, 365 days a year. We are able to quickly detect and resolve equipment problems and power generation outages and drops due to natural disasters and other causes. In the event of a failure, we quickly go to the site from a nearby service base to provide support for stable operation and to limit the decline in electricity sales revenue.



● **Commercialization of VPP and electrical power digital services**

In 2023, Ricoh established NR-Power Lab as a joint venture with NGK Insulators, Ltd., with the proliferation of renewable energy as its aim. The company offers a renewable energy distribution recording platform that combines NGK Insulators' storage battery control technologies and Ricoh's digital technologies. With virtual power plant (VPP) services and electrical power digital services as its main businesses, the company integrates and controls energy resources to promote the stable use of renewable energy. Both companies have joined RE100 and aim to leverage their experience in reusable energy tracking demonstration projects to achieve early commercialization.



● **“Accommodate energy used”**: Utilization of storage batteries

We support the creation of mechanisms to store and make effective use of energy, such as the use of electric vehicles as storage batteries and the deployment of stationary storage batteries and portable storage batteries. Ricoh Japan carries a wide lineup of storage batteries, from easily deployed types to long-running, large-capacity types. Portable storage batteries do not require installation work and are movable, making them immediately adaptable to emergencies. In addition to decarbonization, they also enable the operation of work and equipment that must be kept running even in the event of a power outage, making them effective in business continuity planning (BCP) for disasters.



Mitigation 5: Contribution through new businesses

● **PLAiR foamed PLA sheets: A new material derived from plants and air**

PLAiR is a new material developed by Ricoh. The main raw material is PLA (polylactic acid), which is derived from plants and has a compostable property. Using Ricoh's foaming control technology with supercritical CO<sub>2</sub>, we succeeded in the foaming of PLA, a material that is difficult to process. This foaming control technology makes it possible to create sheets with a small amount of raw materials. By using foamed PLA sheets, it is possible to achieve molding into various applications, and we can expect to reduce plastics derived from fossil resources by replacing them.



PLAiR sheets

Furthermore, it is estimated that CO<sub>2</sub> emissions over the product life cycle of PLAiR can be reduced by approximately 32%\* per weight compared to conventional polystyrene paper (PSP), contributing to the realization of a zero-carbon society.

\* Trial calculation by the Sustainable Management Promotion Organization (SuMPO) (calculation per weight, assuming 100% incineration after use)

Area of contribution to adaptation to climate change: approx. ¥130 billion

Adaptation 1: Provision of solutions to support new workstyles

The Scrum package offered by the Ricoh Group combines customers' and their partners' edge devices, software, and cloud services to support new workstyles and digitalization of work for customers. By offering services in tune with the era of "the new normal," we contribute to the reduction of GHG emissions through enhancement of customers' productivity.

As reform of workstyles has spread and the working population has declined under a falling birthrate and aging population, enhancement of productivity and regional revitalization leveraging the latest digital technologies have become major social issues. In reality, however, the utilization of ICT has not sufficiently progressed among the small and medium-sized companies that account for over 75% of Japan's GDP, for reasons of lack of information and restrictions on resources such as human resources and budgets. Since 2020, the COVID-19 pandemic has led to calls for companies to reform workstyles and to improve their environments for telework and working from home.

Since October 2017, Ricoh Japan has offered a Scrum package for small and medium-sized enterprise customers that combines the customers' and their partners' edge devices, software, and cloud services to digitalize and streamline processes unique to the industry and the work. Rather than the fragmentary business improvements offered by conventional, separate products and services, the Scrum package captures customers' workflows in their entirety to offer support not through large-scale IT investments but through solutions that combine necessary items.




Telework All-in Package

These solutions lead to the reduction of GHG emissions through increased productivity and to the control of the spread of infectious diseases such as coronavirus disease (COVID-19).

Adaptation 2: Contribution through new businesses

There is a need for monitoring of CO<sub>2</sub> concentration to check crowding conditions and the state of ventilation as a part of measures to combat COVID-19 and other infectious diseases.


Applying organic photosensitive technology born from the development of multifunction copiers, the Ricoh Group has developed a solid-state dye-sensitized solar cell that generates electricity from low-intensity indoor light. The D101 CO<sub>2</sub> sensor equipped with this cell is capable of sensing CO<sub>2</sub> concentration in a room and other environmental factors without battery replacement or wiring, achieving high-precision, maintenance-free CO<sub>2</sub> concentration monitoring.



**RICOH EH DSSC Series**

Features

- High electrical power generation even in low-intensity indoor light
- High electrical power generation over a range of low to high temperatures
- Safety due to no use of battery electrolytes



**D101 CO<sub>2</sub> sensor**

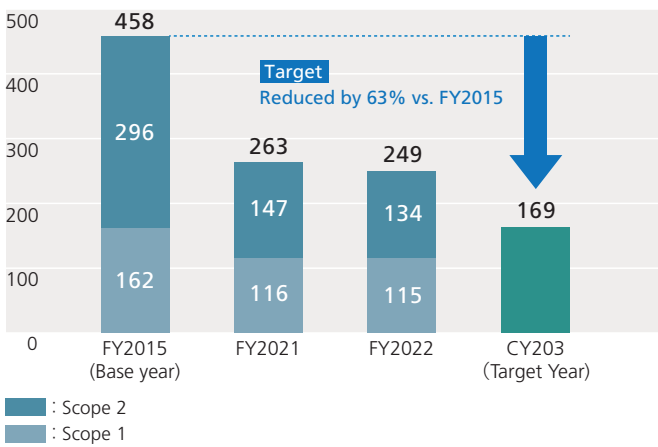
# 5. Performance

## Scope 1,2,3 emissions

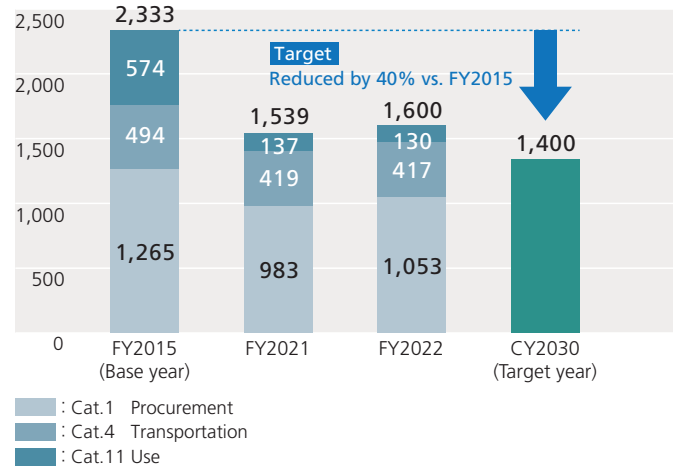
In the fiscal year 2022, our revenue increased by 21.4% compared to the previous year due to business activity recovery. Additionally, through the promotion of renewable energy adoption and active energy-saving initiatives, our GHG Scope 1 and Scope 2 emission reduction rate improved by approximately 2.8 percentage points compared to the fiscal year 2021. When compared to the emissions from the base year of 2015, which is the reference year for Science-Based Targets (SBT), there was a significant reduction of 45.5%.

While GHG Scope 3 emissions increased from the fiscal year 2021, they have decreased by 31.4% compared to the base year, indicating that we are on track to achieve our goals through future reduction measures. We will continue to advance our reduction efforts in line with the decarbonization roadmap through 2030, working towards the goal of achieving carbon neutrality by 2050.

GHG emissions (Scope 1 and 2)(1,000t-CO<sub>2</sub>eq)



GHG emissions (Scope 3 [Cat. 1,4,11])\*(1,000t-CO<sub>2</sub>eq)



Figures for FY2015, FY2021 and 2030 have been revised due to M&As and a review of some regional data.

\*Within Scope 3 emissions, categories 1, 4, and 11 have significant emissions, and therefore, we have set these as important environmental targets for reduction.

Figures for FY2015, FY2021 and 2030 have been revised due to M&As and a review of some regional data.

GHG emissions (Scope 1 and 2)

	Unit	FY2015 (Base Year)	FY2020	FY2021	FY2022
Emissions	1,000t-CO <sub>2</sub> eq	458	290	263	249
Reduction rate (Compared to the 2015 level)	%	—	36.7	42.7	45.5

GHG emissions (Scope 3 [Cat. 1,4,11])

	Unit	FY2015 (Base Year)	FY2020	FY2021	FY2022
Emissions	1,000t-CO <sub>2</sub> eq	2,333	1,593	1,539	1,600
Reduction rate (Compared to the 2015 level)	%	—	31.7	34.0	31.4

## GHG emissions (Scope 3)(FY2022)

Scope 3 Category		Unit	GHG emissions	Calculation Methodology
Cat.1	Purchased goods and services	1,000 t-CO <sub>2</sub> eq	1,053	Calculate by multiplying the total amount of purchased resources by the emission factor for each of the materials
Cat.2	Capital goods		152	Calculate by multiplying the annual amount of capital investment by the emission factor
Cat.3	Fuel- and energy-related activities not included in Scope 1 or Scope 2		45	Calculate by multiplying annual energy consumption at each base by the emission factors for resource extraction, production and transportation
Cat.4	Upstream transportation and distribution		417	Calculate for the transportation of cargo shipped by suppliers to the manufacturing site and that shipped by the Ricoh Group from the manufacturing sites to customers, by multiplying the actual transportation distance and weight, etc. by the emission factor (excluding emissions included in Scope 1 and 2 totals)
Cat.5	Waste generated in operations		3	Calculate by multiplying by the emission factor the disposal weight of waste from the facilities for each type classified in terms of disposal method
Cat.6	Business travel		14	Calculate by multiplying by the emission factor the amount paid for travel expenses by transportation mode
Cat.7	Employee commuting		63	Calculate by multiplying by the emission factor the amount paid for travel expenses by transportation mode
Cat.8	Upstream leased assets		—	Not applicable (Emissions from upstream leased buildings and vehicles are included in Scope 1 and Scope 2)
Cat.9	Downstream transportation and distribution		0.1	Calculate emissions from the transportation of products that are not shipped by the Ricoh Group, by multiplying the average transportation distance and weight by the emission factor
Cat.10	Processing of sold products		12	Calculate by multiplying the amount of products that are not final products by the emission factor
Cat.11	Use of sold products		130	Calculate based on the assumed usage and life of the sold products
Cat.12	End-of-life treatment of sold products		30	Calculate based on the weight of the sold products and LCA data on emissions from the disposal of Ricoh products
Cat.13	Downstream leased assets		—	Not applicable (The Ricoh Group has no emissions from this category due to non-consolidated lease business.)
Cat.14	Franchises		—	Not applicable (The Ricoh Group has no emissions from this category.)
Cat.15	Investments		1	Calculate based on emissions from the companies of which Ricoh Co., Ltd. owns shares as well as based on the shareholding ratio
<b>Total (Cat. 1,4,11)</b>			<b>1,600</b>	
<b>Total (excludes Cat. 1,4,11)</b>			<b>320</b>	
<b>Total (Scope 3)</b>			<b>1,920</b>	

We calculate greenhouse gas (GHG) emissions resulting from our own business activities (Scope 1, 2, and 3) and set reduction of these emissions as environmental goals. However, as our business grows and we venture into new activities, GHG emissions tend to increase. Nevertheless, for instance, by enhancing the energy efficiency of newly developed multifunctional printers and reducing power consumption, we can reduce societal GHG emissions through the replacement of older models. Additionally, Ricoh's digital printing machines, which we aim to expand in the market, can reduce the overall environmental impact in society by meeting the growing demand for a wide variety of small quantity print runs compared to traditional offset printing machines, leading to inventory reduction and reduced power consumption. In this manner, GHG reductions achieved in society through Ricoh's products and solutions are quantified as "reduction contribution amounts," with a target set to achieve 1,400,000 tons by the end of the fiscal year 2025. The reduction contribution amount for the fiscal year 2022, when converted to CO<sub>2</sub>, reached 1,045 kt-CO<sub>2</sub>eq.

Avoided emissions (FY2022) 1,045 kt-CO<sub>2</sub>

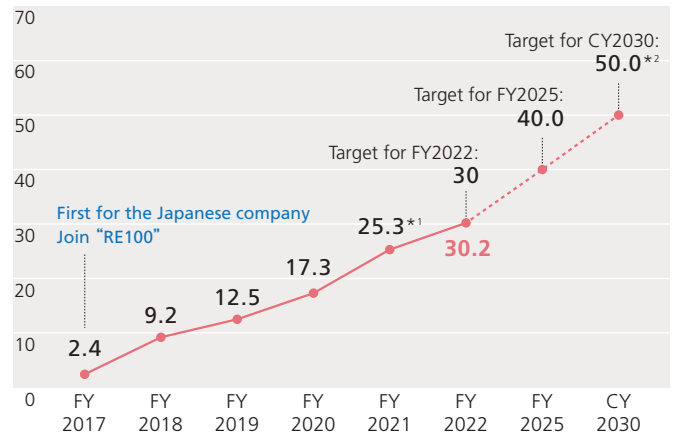
The means of contributing to the reduction of environmental impact	Calculation breakdown	Unit	FY2019	FY2020	FY2021	FY2022
Provision of digital services	Amount (CO <sub>2</sub> equivalent) reduced through the introduction of energy efficient solutions/services to customers' sites, including conversion from offset printing to digital printing and duplex and with suppliers.	1,000 t-CO <sub>2</sub> eq	155	124	762	752
Provision of energy saving products	Amount (CO <sub>2</sub> equivalent) reduced through the introduction of models to customers' sites with enhanced energy-saving functions for Multi Function Printers (MFPs), printers and other equipment as well as lighting and air-conditioning control systems.		212	244	197	226
Resource saving of products	Amount (CO <sub>2</sub> equivalent) reduced associated with procurement of raw materials and parts by lowering the input of new resources as a result of promoting reuse of recovered equipment, use of recycled materials, production of more compact, lightweight models, and use of ecological silicone-top linerless labels.		67	64	74	67
<b>Total</b>			<b>434</b>	<b>432</b>	<b>1,033</b>	<b>1,045</b>



## Renewable energy

The Ricoh Group became the first Japanese company to join "RE100" in 2017. In the fiscal year 2022, the overall renewable energy ratio for the Ricoh Group reached 30.2%, which represents an increase of approximately 5 percentage points compared to the previous year. We achieved the ESG target of a 30% renewable energy ratio for the fiscal year 2022. Regarding the energy-related CO<sub>2</sub> emissions breakdown for Scope 1 and 2 in the Ricoh Group for the fiscal year 2022, 53% was attributed to electricity consumption, highlighting the significance of transitioning to renewable electricity sources. In terms of regional electricity usage, Japan accounted for approximately 60%, followed by the Americas, Europe, China, and Asia-Pacific in descending order.

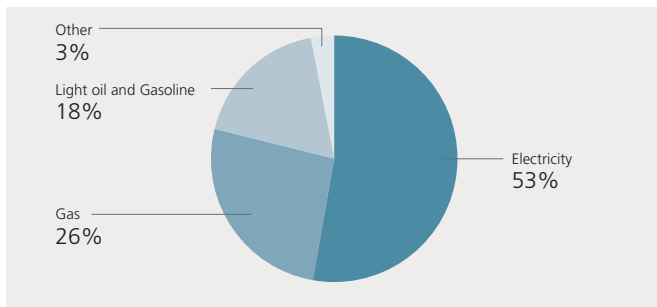
Renewable energy ratio (%)



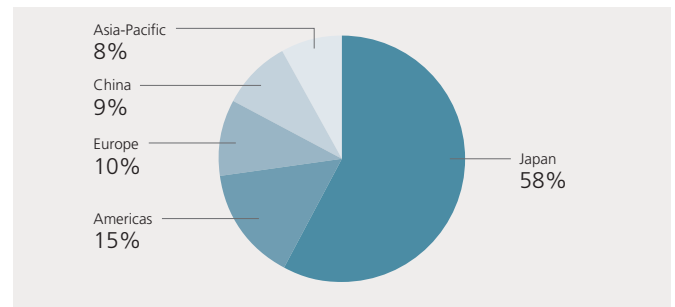
\*1 Figures for FY2021 have been revised due to M&As and a review of some regional data.

\*2 Target of 35% or more for renewable energy with additionality

GHG emissions by energy (FY2022)



Power consumption by region (FY2022)



In the fiscal year 2022, the Ricoh Group continued its efforts to transition to green electricity, primarily at overseas production facilities, through initiatives such as purchasing renewable energy certificates. These efforts led to a significant increase in the proportion of renewable energy in electricity consumption. In China, the renewable energy ratio exceeded 95%, and in Asia, it surpassed 60%. Additionally, in Japan, where the renewable energy ratio was approximately 2%, it increased to around 14%. The utilization of FIT non-fossil fuel certificates within Japan contributed to this increase, as the environment for their use in the country improved.

Furthermore, in 2022, the Ricoh Group entered into its first Virtual Power Purchase Agreement (VPPA) in Japan (scheduled to commence in the summer of 2023). We will continue to focus on procuring additional renewable energy with additionality while accelerating efforts to reduce the cost of renewable energy and diversify procurement methods. Collaborating with like-minded companies, we will also engage with the government to facilitate advanced renewable energy adoption, ultimately supporting the realization of progressive renewable energy initiatives.

Renewable energy ratio by region in FY2022

	Unit	Japan	Americas	Europe	China	Asia-Pacific
Renewable energy ratio	%	13.6	25.0	47.5	97.2	62.9

## 6. The Ricoh Group's advocacy activities related to climate change

### Basic policy

Since advocating environmental management in 1998, Ricoh has been working on climate change measures based on the scientific point of view, such as The Paris Agreement and IPCC, and aims to create momentum in society as a whole. We prioritize this basic policy and take a leadership role in introducing necessary climate change policies and activating corporate climate change measures by actively participating in domestic and international initiatives on climate change, beyond the scope of existing economic or industry organizations. We periodically verify the consistency between climate change measures taken by Ricoh and those taken by other participating organizations, and if there are any insufficient measures, we work with other companies to strengthen them.

### Advocacy activities

Mr. Masamitsu Sakurai, predecessor chairman of Ricoh, who served as the representative secretary of Keizaidoyukai (Japan Association of Corporate Executives) from 2007 to 2010, published a policy proposal stating that Japan should also set high reduction targets for COP15, and showed an attitude that the industrial sector should actively engage in achieving the targets.

In 2009, Ricoh participated as a founding member in JCLP (Japan Climate Leaders' Partnership), an industry-crossing group of companies that proactively tackle climate change, and has been making various policy proposals on climate change as a core member ever since.

In 2017, Ricoh announced its participation in RE100, the first Japanese company to do so, and visited the Ministry of the Environment, where the current chairman, Mr. Yoshinori Yamashita, requested that the environment minister strengthen policies on introducing electricity from renewable energy sources. We continue to promote the participation of Japanese companies in RE100 and engage with the Japanese government, while also cooperating in the establishment of JCI (Climate Change Initiative) in 2018, and working to create momentum towards decarbonization in Japan.

In 2021, Mr. Yamashita was appointed as the co-representative of JCLP, and next year he visited the Prime Minister's Office to hand over JCLP's opinion paper on climate change policies to the Prime Minister. We are advancing dialogue and policy involvement with the Japanese government and international organizations.

### Initiatives participate in related to climate change

RE100



Science Based Targets initiative (SBTi)



Task Force on Climate-Related Financial Disclosures (TCFD)



Japan Climate Leaders' Partnership (JCLP)



Climate Change Initiative (JCI)



## Appendix: The Ricoh Group's progress in climate change

The Ricoh Group has been promoting climate change-related initiatives through years of environmental management and is particularly focused on decarbonization efforts, with an emphasis on the utilization of renewable energy sources.

1976	<ul style="list-style-type: none"> <li>Establishes the Environmental Promotion Section</li> </ul>
1992	<ul style="list-style-type: none"> <li>Establishes "The Ricoh Group Environmental Principles"</li> </ul>
1994	<ul style="list-style-type: none"> <li>Establishes "Comet Circle™", the concept of a circular economy</li> </ul>
1998	<ul style="list-style-type: none"> <li>Advocates a concept of "Environmental Sustainability Management"</li> </ul>
2006	<ul style="list-style-type: none"> <li>Sets the long-term environmental vision for 2050</li> </ul>
2009	<ul style="list-style-type: none"> <li>Participates in the Japan Climate Leaders' Partnership as a founding member</li> <li>Sets medium-term environmental impact reduction goals</li> </ul>
2012	<ul style="list-style-type: none"> <li>Announces its support for The Carbon Price Communique to counter climate change</li> </ul>
2015	<ul style="list-style-type: none"> <li>Signs a contract to become an official partner of COP21</li> </ul>
2016	<ul style="list-style-type: none"> <li>Opens Ricoh Eco Business Development Center</li> </ul>
2017	<ul style="list-style-type: none"> <li>Sets The Ricoh Group Environmental Goals for 2030/2050</li> <li>Becomes the first Japanese company to join RE100</li> <li>Ricoh's Zero-Carbon Goals obtains "2.0 degree" approval by the Science Based Targets initiative (SBTi)</li> </ul>
2018	<ul style="list-style-type: none"> <li>Establishes the ESG Committee</li> <li>Commits to recommendations of TCFD (August)</li> </ul>
2019	<ul style="list-style-type: none"> <li>Establishes the Risk Management Committee</li> <li>Implementation of 100% renewable electricity at A3 Multifunction Printer production sites worldwide</li> <li>Discloses information in accordance with the TCFD Framework (July)</li> </ul>
2020	<ul style="list-style-type: none"> <li>Revises Environmental Goals for 2030 and obtains "1.5 degrees" approval by the Science Based Targets initiative(SBTi)</li> <li>Sets ESG Targets, including GHG reduction targets, to align with the Environmental Goals for 2030 and links them with executive remuneration</li> <li>Endorses Uniting Business and Governments to Recover Better</li> <li>Endorses the "Business Ambition for the 1.5°C" campaign</li> <li>Endorses the "Race to Zero" campaign</li> </ul>
2021	<ul style="list-style-type: none"> <li>Revises 2030 target to 40% reduction in Scope 3 (compared to 15 years) and 50% renewable energy usage ratio</li> <li>Introduces of a comprehensive evaluation system for renewable energy</li> <li>"TCFD related information" was initially published in the Securities Report-statutory disclosure document(June)</li> <li>Publishes the first TCFD Report on decarbonization activities (September)</li> </ul>
2022	<ul style="list-style-type: none"> <li>Selected as one of the Top 200 Climate Leaders Asia-Pacific 2022</li> <li>Ricoh has signed a loan agreement for "Mizuho Eco Finance" which leverages the "Operation to Provide Funds to Support Climate Change Initiatives (Climate Change Response Operation)" operated by the Bank of Japan with Mizuho Bank, Ltd.</li> </ul>
2023	<ul style="list-style-type: none"> <li>Continued to be included in climate change "A List", the highest rating by CDP</li> <li>Ricoh selected as "Excellent TCFD Disclosure" by GPIF's external asset managers for the second consecutive year</li> </ul>

For comments and inquiries concerning this report,  
please contact us at the address below.

**Ricoh Co., Ltd.**  
**ESG Strategy Division**

3-6, Nakamagome 1-chome, Ohta-ku,  
Tokyo 143-8555, Japan  
Tel: +81 3-3777-8111 (switchboard)