



Editorial Policy

In the Ricoh Group TCFD Report 2021, 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 2021 (published as annual report)

Reporting period

FY2020 (April 1, 2020 - March 31, 2021)

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

About TCFD



The Task Force on Climate-related Financial Disclosures (TCFD), established by the Financial Stability Board (FSB), published a report in June 2017 recommending disclosure of climate-related information with financial implications in annual financial reporting. It is a framework that requires companies to recognize the risks and opportunities of climate change and incorporate them into their business strategies. Since announcing our endorsement of the TCFD in August 2018, we have been promoting disclosure in accordance with the TCFD framework.

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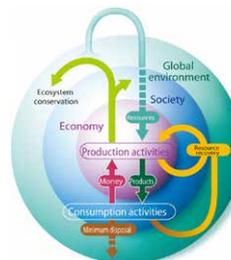
1. Introduction

1-1 Basic Approach to Sustainability Management

Based on the Founding Principles of “Love your neighbor”, “Love your country”, “Love your work” (The Spirit of Three Loves), the Ricoh Group's mission is “We are committed to providing excellence to improve the quality of living and to drive sustainability.”

The Ricoh Group pursues such sustainability through a Three Ps Balance-Prosperity (economic activities), People (society), and Planet (environment). We accordingly 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 international community.

Three Ps Balance



1-2 Sustainability Activities (Climate Change Related)

The Ricoh Group has been promoting climate change-related initiatives through years of environmental management. TCFD has been updated annually since we agreed to it in 2018.

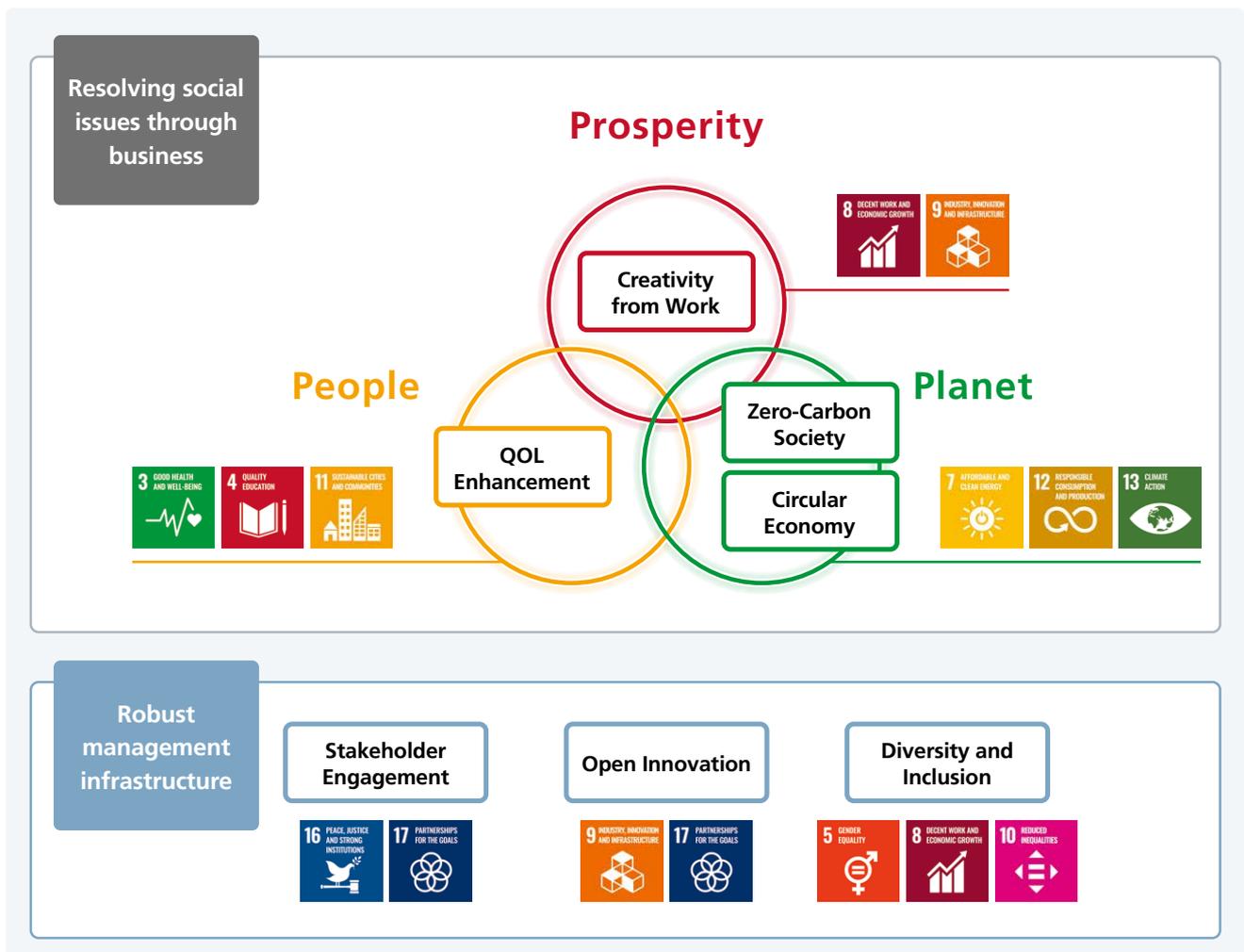
1976	<ul style="list-style-type: none"> Establishes the Environmental Promotion Section
1992	<ul style="list-style-type: none"> Establishes “Ricoch Group Environmental Principles”
1994	<ul style="list-style-type: none"> Establishes “Comet Circle”, the concept of a circular economy
1998	<ul style="list-style-type: none"> Advocates a concept of “Environmental Sustainability Management” Establishes the Environmental Action Plan
2002	<ul style="list-style-type: none"> Establishes “3Ps Balance” as a concept of a sustainable society Signs the United Nations Global Compact
2006	<ul style="list-style-type: none"> Sets the long-term environmental vision for 2050
2009	<ul style="list-style-type: none"> Participates in the Japan Climate Leaders’ Partnership as a founding member Sets medium-term environmental impact reduction goals
2012	<ul style="list-style-type: none"> Announces its support for The Carbon Price Communiqué to counter climate change
2015	<ul style="list-style-type: none"> Signs a contract to become an official partner of COP21
2016	<ul style="list-style-type: none"> Opens Ricoh Eco Business Development Center
2017	<ul style="list-style-type: none"> Sets Ricoh Group Environmental Goals for 2030/2050 Becomes the first Japanese company to join the RE100 Ricoh’s Zero-Carbon Goals obtains “2.0 degree” approval by the Science Based Targets Initiative (SBTi)
2018	<ul style="list-style-type: none"> Establishes the ESG Committee Commits to recommendations of TCFD (August)

2019	<ul style="list-style-type: none"> Establishes the Risk Management Committee Implementation of 100% renewable energy at A3 Multifunction Printer production sites worldwide Discloses information in accordance with the TCFD Framework (July)
2020	<ul style="list-style-type: none"> Revises Environmental Goals for 2030 and obtains "1.5 degrees" approval by the Science Based Targets Initiative (SBTi) Sets ESG Targets, including GHG reduction targets, to align with the Environmental Goals for 2030 and links them with executive remuneration Endorses Uniting Business and Governments to Recover Better Endorses the "Business Ambition for the 1.5°C" campaign Endorses the "Race to Zero" campaign Revises TCFD disclosure (September)
2021	<ul style="list-style-type: none"> Revises 2030 target to 40% reduction in Scope3 (compared to 15 years) and 50% renewable energy ratio Introduces of a comprehensive evaluation system for renewable energy "TCFD related information" was initially published in the Securities Report (statutory disclosure document) (June)

1-3 Materiality for the Ricoh Group (Material Issues)

We will work to solve social issues through business based on the material issues identified by reflecting Ricoh's Mission Statement, Mid-Term Management Plan (MPT) and expectations of our stakeholders.

Since FY2020, we have identified seven materiality areas in two areas: "Resolving social issues through business," and "Robust management infrastructure," and we are developing sustainability activities. One of the seven materialities is the realization of Zero-carbon society.



1-4 ESG Targets

The Ricoh Group has set 17 ESG targets in linkage with the seven material issues.

As for the “Zero-carbon Society”, we have set medium- to long-term targets for GHG scope 1,2, GHG scope 3, and renewable energy ratio in power used.

Resolving social issues through business				
Materiality (Material issues)	2030 Target	Resolution of social issues and business strategies	ESG Targets	
			KPIs	FY2022 Targets
<p>Creativity from work</p> 	Contribute to “Creativity from Work” of all customers to whom we deliver value	<p>Social issues</p> <p>For sustainable development, companies need to reform employees’ work styles, boost productivity by using IT and increase employees’ work satisfaction.</p> <p>Business strategies</p> <p>We will help customers achieve “Creativity from Work” by providing them with digital technologies and services.</p> <p>Major business area</p> <ul style="list-style-type: none"> Office printing/office services 	<p>Top score rate*¹ in customer surveys</p> <p>Fulfilling value proposition for customers</p> <p>Digital specialist development</p>	<p>30% or more</p> <p>20%*²</p> <p>IPA ITSS L3*³ 1.5 times</p>
<p>QOL Enhancement</p> 	Contribute to the enhancement of social infrastructure for 30 million people	<p>Social issues</p> <p>It is necessary to eliminate disparities in medical, educational and regional services between developed and developing countries and between urban and rural areas.</p> <p>Business strategies</p> <p>We will help improve medical, educational and regional services by utilizing the digital technologies and know-how that we have accumulated for office solutions.</p> <p>Major business areas</p> <ul style="list-style-type: none"> Healthcare Smart social infrastructure*⁴ 	Number of people to whom we have contributed by improving social infrastructure	10 million people
<p>Zero-carbon Society</p> 	<p>Reduce GHG emissions by 63% for scope 1 and 2, and 40% for scope 3</p> <p>Switch to 50% renewable electricity</p>	<p>Social issues</p> <p>As the impact of climate change is becoming more severe, it is necessary to enhance and speed up countermeasures.</p> <p>Business strategies</p> <p>Upholding the Science Based Target (SBT*⁵) of 1.5°C, we will work to reduce GHG emissions substantially and supply products and solutions that contribute to the decarbonization of society as a whole.</p> <p>Major business areas</p> <ul style="list-style-type: none"> Office printing/office services Environment 	<p>GHG scope1, 2 reduction rate (vs. FY2015)</p> <p>GHG scope3 reduction rate (vs. FY2015)</p> <p>Renewable energy usage rate</p>	<p>30%</p> <p>20%</p> <p>30%</p>
<p>Circular Economy</p> 	Ensure efficient use of resources throughout the entire value chain and achieve 60% or less of virgin material usage rate	<p>Social issues</p> <p>For sustainable use of natural resources, it is necessary to foster the recycling of resources and reduce the use of new resources.</p> <p>Business strategies</p> <p>We will further enhance our 3Rs measures and reduce the use and foster the substitution of plastic materials and provide on-demand printing service, thereby helping customers make efficient use of resources.</p> <p>Major business areas</p> <ul style="list-style-type: none"> Office printing/office services Commercial printing/industrial printing Thermal media 	Virgin material usage rate	85% or less

Robust management infrastructure

Materiality (Material issues)	Requests from society and management strategies	ESG Targets	
		KPIs	FY2022 Targets
Stakeholder Engagement  	Requests from society For the sustainable development of society, companies are required to enhance the sustainability of their entire global value chains. Management strategies We will strengthen collaboration with our business partners and build Win-Win-Win relationships between our company, business partners and society.	Production sites with RBA* ⁶ certified	6 sites
		Suppliers signing on RICOH Group Supplier Code of Conduct	100% signed
		International security standard	Bolstered security based on ISO/IEC* ⁷ NIST* ⁸
		Evaluation scores* ⁹ given by each partner (suppliers, distributors/dealers, development partners)	
		Attain top levels for primary ESG external evaluations	DJSI, CDP* ¹⁰ , etc.
		Selected in Digital Transformation stock (by Ministry of Economy, Trade and Industry))	Selected
Open innovation  	Requests from society For sustainable development, innovation needs to be promoted across a range of industrial sectors. Management strategies We will attribute importance to open innovation with universities, research institutes, other companies and business partners, and foster collaboration with these partners to solve social issues through efficient research and technological development as well as to create new value.	Increase rate of patent ETR* ¹¹ score (vs. FY2020)	20%
Diversity and Inclusion   	Requests from society For sustainable development and innovation, it is necessary to promote decent work, which gives satisfaction and is humane, and respect diversity in society. Management strategies We will respect the diversity of employees, upholding the empowerment of self-motivated employees in our management policy and strive to create workplaces where employees can work with vigor.	RFG* ¹² engagement score	50 percentile or more in each region
		Female-held managerial position rate	Global: 16.5% or more (Japan: 7.0% or more)

*1 Top score rate: Highest score selecting rate

*2 Scrum-package customers ratio

*3 IPA: Information-technology Promotion Agency. ITSS: IT Skill Standard set by IPA (level 0-6)

*4 Smart social infrastructure: Social infrastructure infrastructure-related business by digital technology

*5 SBT: Science Based Targets

*6 RBA: Responsible Business Alliance

*7 ISO/IEC: International Organization of Standardization/International Electrotechnical Commission

*8 NIST: National Institute of Standards and Technology

*9 Evaluation score: Evaluation results from each partner for Ricoh

*10 CDP: Evaluation by an international NGO working in climate change and other environmental issues.

*11 ETR: ETR(External Technology Relevance): Score indicating the number of patents cited by other companies

*12 RFG: Ricoh Family Group

2. Ricoh Group's Efforts on Climate Change

2-1 Ricoh Group's Environmental Goals

Ricoh Group Environmental Declaration

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

The Ricoh Group uses the back-casting 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.



2-2 Climate Change Goals and Achievement Approaches

Based on the Paris Agreement, the Ricoh Group has set long-term environmental goals of "aiming for zero GHG emissions across the entire value chain by 2050." In addition, it has set ambitious environmental goals for "63% reduction in Scope 1 and 2 GHG emissions in 2030 compared to 2015", which is certified as "SBT1.5°C" level by the International Climate Change Initiative SBTi (Science Based Targets Initiative).

In order to achieve this goal, we have formulated a roadmap to reduce GHG emissions by 2030, and are promoting thorough energy-saving activities and actively utilizing renewable energy. For this reason, we became the first Japanese company to participate in "RE100", an international initiative aimed at converting electricity used to renewable energy by 100%.

Aims of participating in "RE100"

- ① Clarify our stance on the active use of renewable energy globally and raise internal awareness
- ② To encourage the development of energy-related businesses which are currently being promoted
- ③ To improve our reputation in ESG investment and various corporate evaluation systems.
- ④ To express the need for renewable energy from the standpoint of electricity consumers, and to encourage changes on the supply side

Net-Zero achievement approach: "Development of thorough energy conservation and CO₂ reduction activities" and "active use of renewable energy"

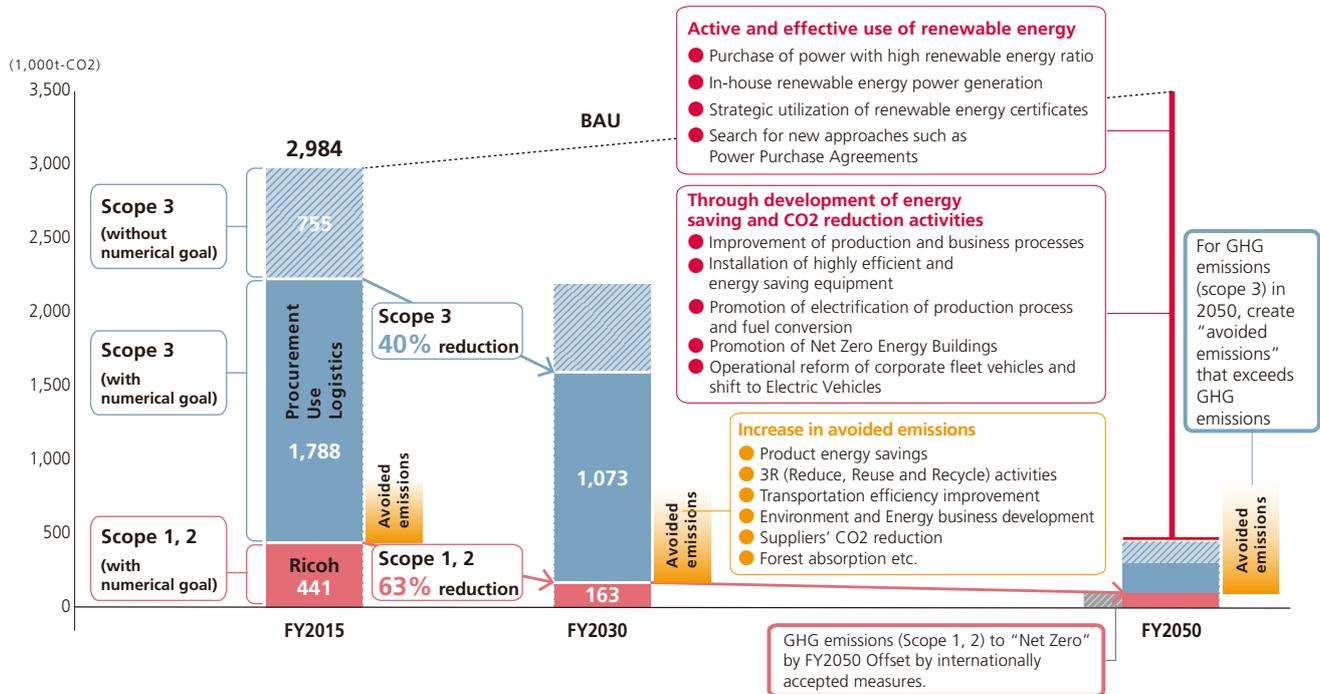
Main areas of activity in FY2020 and beyond

1. Development of thorough energy conservation and CO₂ reduction activities

- Process improvement at production sites, implement of high-efficiency and energy-saving equipment
- Promote non-production sites to ZEB-Zero Energy Building (Japan). Promote relocation to energy-saving offices (global)
- Reduction of fuel consumption by optimizing the number and mileage of company-owned vehicles
- Planned switch to low-environmental impact vehicles

2. Active use of renewable energy

- We have already advanced the introduction renewable energy at our facilities in Europe and China, so we are now addressing the following activities in Japan, Asia, and the United States (including Latin America)
 - Expansion of strategic use of renewable energy certificates and strengthening renewable energy purchase activities
 - “On-site”: Expansion of in-house power generation (solar + small wind power)
 - “Off-site”: Consideration of securing renewable energy power supply
- Use of the Sustainability Link Loan by MUFG Bank, Ltd. (a system in which interest rates are reduced if GHG emissions reduction is made in line with the SBT1.5°C target)



2-3 Initiatives for renewable energy introduction

2018	<ul style="list-style-type: none"> • Nine European sales subsidiaries and our French production company, Ricoh Industry France S.A.S., switched to 100% renewable electricity for its reuse-recycle operation
Summer 2019	<ul style="list-style-type: none"> • All five A3 multifunction machine plants in China, Thailand, and Japan switched to renewable electricity
October 2019	<ul style="list-style-type: none"> • Ricoh U.K. Products Ltd., a manufacturing and business development site in the U.K., switched to renewable electricity
November 2019	<ul style="list-style-type: none"> • PPA was introduced to Ricoh Thermal Media (Wuxi) Co., Ltd., a Chinese manufacturing company, and about 20% of usage was converted to renewable electricity.
2019 to 2020	<ul style="list-style-type: none"> • Five Ricoh Japan sales locations received “ZEB* Ready” certification or higher due to energy conservation and introduction of solar power generation and storage devices <p>* Abbreviation of Net Zero Energy Building. In Japan, it is certified as a cutting-edge building that consumes the same amount of energy that is equal to the amount of renewable energy created on the site</p>
July 2020	<ul style="list-style-type: none"> • Ricoh Manufacturing (China) Ltd., a new production site in China, began factory operations using 100% renewable electricity. (Compared with the former two Shenzhen factories, electricity consumption has been reduced by 70% or more, and 10% of the total power has been supplied by in-house power generator.)

FY2020 global renewable electricity initiatives including CO₂ reduction and renewable electricity consumption

Initiatives to introduce Renewable Energy	CO ₂ reduction effect	Amount of renewable energy
<ul style="list-style-type: none"> Achieved RE100 at all 22 sales locations in 12 Latin American subsidiaries 	<ul style="list-style-type: none"> Approx. 800 tons/year 	<ul style="list-style-type: none"> 3.0 GWh/year
<ul style="list-style-type: none"> Achieved RE100 in Ricoh China 	<ul style="list-style-type: none"> Approx. 400 tons/year 	<ul style="list-style-type: none"> 0.6 GWh/year
<ul style="list-style-type: none"> Introduced solar panels at Yamanashi Electronics (Thailand) Co., Ltd. production site and started in-house power generation 	<ul style="list-style-type: none"> Approx. 450 tons/year 	<ul style="list-style-type: none"> 0.8 GWh/year
<ul style="list-style-type: none"> Installed solar panels at Ricoh U.K. Products Ltd., 	<ul style="list-style-type: none"> Approx. 400 tons/year CO₂ reduction equivalent 	<ul style="list-style-type: none"> 1.6 GWh/year

2-4 Case Study of Climate Change initiatives

**Initiative (1):
Implementation of 100% renewable energy at A3 Multifunction Printer production sites worldwide**

- Since the summer of 2019, all power used for the assembly and production of A3 multifunction devices at all our global production sites (equivalent to 37 GWh) has been 100% renewable.
- Plants in China and Thailand are realized with the renewable energy certificate I-REC, and sites in Japan are recognized through J-Credit and renewable energy power menus
- With our multifunctional devices actively appealing to customers as products with a lower environmental impact, we foster momentum for the active use of renewable energy and contribute to the realization of a Zero-carbon society together with customers and local communities.



Shanghai Ricoh Digital Equipment *



Rico Manufacturing (China)



Rico Manufacturing (Thailand)



Rico Industries Tohoku Plant (Japan) *



Rico Eco Business Development Center (Japan) *

* Only buildings that produce A3 multifunction printers

Initiative (2):

New production site in China started operation as an RE100 facility

- In July 2020, an environmentally advanced plant* started operations in Dongguan, China (Photo 1). Implementing digital manufacturing by utilizing IoT and the introduction of robots and automation equipment, and improving productivity by managing equipment maintenance signs and analyzing worker behavior
- Solar power generation provides 10% of all electricity (Photo 2), enabling it to operate as an RE100 compliant plant utilized I-REC certificate.
- By integrating the operations of Ricoh's two existing plants (in Shenzhen) into the new facility in Dongguan, the amount of electricity used in our production of office printing machines in China has been reduced by more than 70%.

* Facility has obtained best-possible three stars under the Chinese Green Building System



Photo 1: Environmental State-of-the-Art Factory (RMC)



Photo 2: Solar panels installed on the roof

Initiative (3):

Ricoh Japan will use the newly established building *1 as "ZEB*2 Ready" or higher for customer proposals

- After the Gifu branch acquired "Nearly ZEB" certification in March 2019, the Kumamoto branch acquired "Nearly ZEB" and the Wakayama branch acquired "ZEB" certification in 2020. In addition, the Akashi branch of the Hyogo office, the Kakegawa office of the Shizuoka Branch, and the Odate office of the Akita Branch acquired "ZEB Ready" certification in 2021. Each company building has a function as a showcase for customers, and introduces the practical situation of decarbonization to visitors.

* 1 Owned by the company/Rented a whole building

* 2 Net Zero Energy Building



Gifu Branch Nearly ZEB



Kumamoto Branch Nearly ZEB



Wakayama Branch ZEB

Initiatives (4):

Introduction of a comprehensive evaluation system for renewable energy

- In addition to its competitive price, we comprehensively evaluate the fact that it is an additional power source that promotes new development, that the environmental burden is lower, and that it is a power plant funded by the local community.
- At a site where it is decided to procure renewable electricity in Japan, we select an electricity supplier using this system. By utilizing this system, Ricoh has converted 100% of the electricity used at its Head Office (Ota-ku, Tokyo) to renewable electricity from FY2021 (CO₂ reduction effect: 2,000 tons/year; Renewable- electricity: 4.3 GWh/year).

Evaluation items	
Price	• High score for cost effectiveness
Additionality	• High score for newer power plants
Renewable energy type	• High score for low environmental impact
Proximity	• High score if power plant and purchasing office are close to each other
Power configuration	• High score if the electricity itself is renewable energy
Evaluation of retail contractors	• Points are awarded for the most recent CDP climate change score of A- or higher
Evaluation of power generators	• Points are awarded for the most recent CDP climate change score of A- or higher
Local investment ratio	• High score for high local investment ratio
Other local contributions	• Qualitative evaluation of local donations, job creation, etc.



3. Information disclosure based on the TCFD Framework

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 discussed with executives at the ESG Committee. The biggest issue was the definition of risk. As the Ricoh Group aims to realize a zero-carbon society, we are progressing activities in line with the SBT 2 °C level target which have already been incorporated into our activities, and the biggest risk for the company is that it assumes that society will rapidly shift to the 1.5 °C target level in the future.

Therefore, based on the IPCC's 1.5 °C special report, we decided to revise the target in line with the highest standard, SBT 1.5 °C. Based on this decision, we revised our 2030 environmental goals and obtained SBT 1.5 °C certification in 2020.

Going forward, we will continue to actively promote efforts and disclosure toward the realization of a zero-carbon society through consideration in line with the TCFD framework.

Efforts to address the four TCFD recommendations and progress in FY 2020

	Ricoh's Initiatives	Progress in FY 2020
Governance	<ul style="list-style-type: none"> The CEO-chaired ESG Committee established to ensure management-level supervision for climate change-related activities. The ESG Committee discusses proposals for decarbonization roadmaps, confirms progress toward environmental goals, and decides on investments in decarbonization-related projects. The Group's climate change action plans approved by the ESG Committee and implemented under the leadership of the ESG Promotion Division. 	<ul style="list-style-type: none"> Climate change-related issues discussed and decided at ESG Committee meetings (four meetings in total) <ul style="list-style-type: none"> Climate change risks and opportunities in line with the TCFD Progress in decarbonization activities Reinforcement of renewable energy measures to accelerate decarbonization activities GHG reduction targets for executives and senior management Introduced an ESG-linked compensation system for directors and senior management that varies depending on the level of achievement of GHG reduction targets
Strategy	<ul style="list-style-type: none"> Contribution to SDGs given priority in formulating a Mid-Term Management Plan "Zero-carbon Society" included in material issues Identify risks and opportunities through scenario analysis that considers not only 2°C scenarios but also 1.5°C scenarios. 	<ul style="list-style-type: none"> Conduct cross-departmental workshops to discuss natural disaster risks and responses to natural disasters. Progress in decarbonization activities and customer appeal Signed a "Sustainability Link Loan" agreement with MUFG Bank, Ltd. to promote decarbonization activities.
Risk management	<ul style="list-style-type: none"> The Risk Management Committee established to manage major focus managerial risks, which are risks that can significantly affect business performance categorized into two groups: strategic risks and operational risks 	<ul style="list-style-type: none"> Documentation of initial response to emergencies, reporting methods, and establishment and roles of each task force Create a BCP that is appropriate for the region and business, including regular facility inspections and disaster drills. Conducted a survey of flood risk at 19 major sites in Japan
Indicators and target	<p>Goals for 2050</p> <ul style="list-style-type: none"> Aim for zero GHG emissions across the entire value chain Switch to 100% renewable electricity <p>Goals for 2030</p> <ul style="list-style-type: none"> GHG Scope 1 and 2: 63% reduction compared to 2015 level GHG Scope 3*1 : 40% reduction compared to 2015 level Switch to 50% renewable electricity 	<p>Performance in FY2020</p> <ul style="list-style-type: none"> GHG Scopes 1 and 2 compared to 2015 level: 36.5% reduction GHG Scope 3*1 compared to 2015 level: 31.7% reduction Renewable energy usage rate: 17.6%

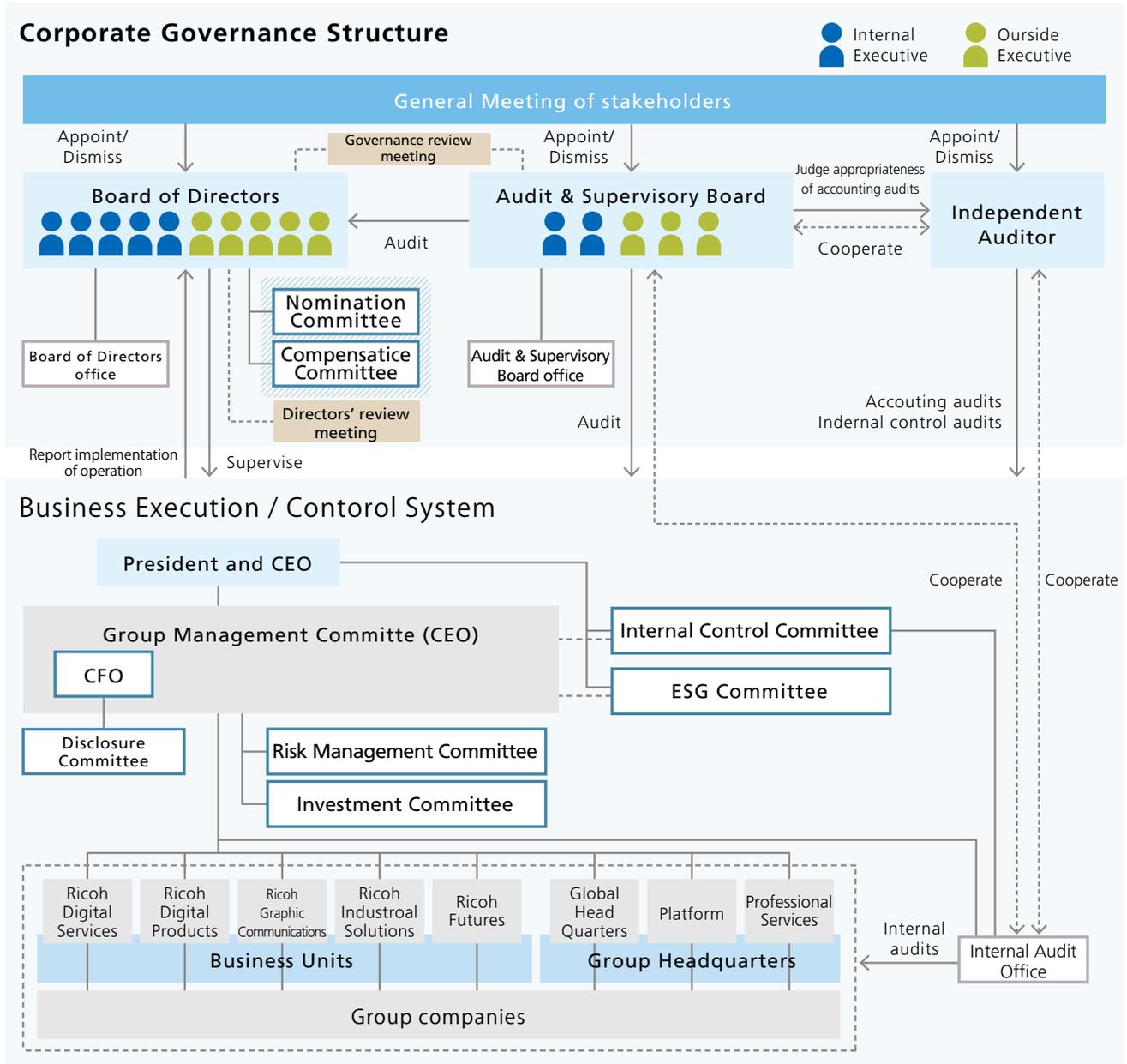
*1: Procurement, use, and logistics categories

3-1 Governance

Basic Approach to Corporate Governance

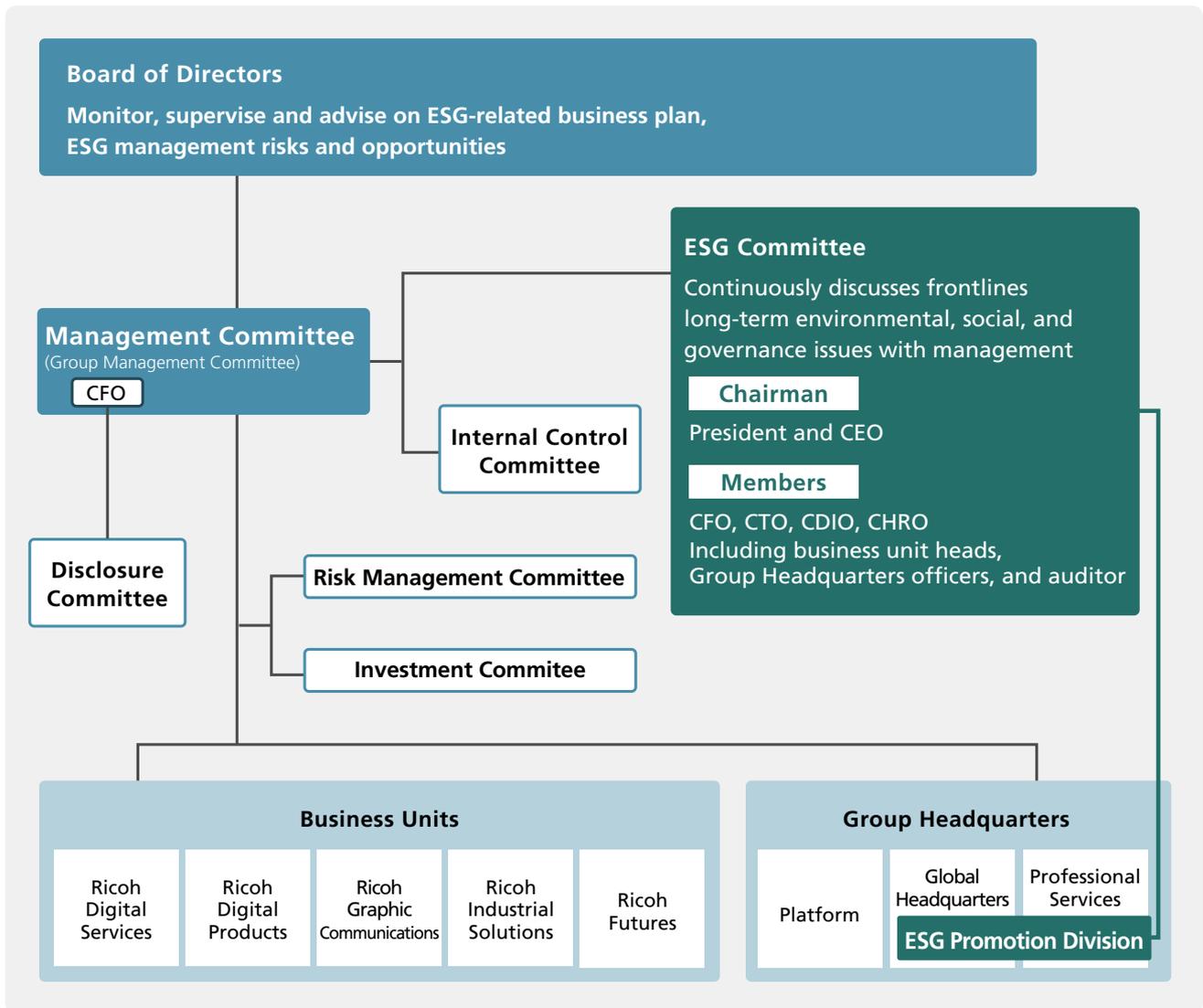
The Ricoh Group is working to enhance corporate governance with the aim of strengthening competitiveness while ensuring management transparency based on the spirit of corporate ethics and legal compliance, so that all corporate activities, including the activities of each layer of management, correspond to the perception of social common sense and meet the expectations of diverse stakeholders.

With regard to the nomination and remuneration of directors and executive officers, more than half the members of the Nominating Committee and the Compensation Committee—both committees report to the Board of Directors—are outside directors, which ensures greater transparency in decision making.



ESG Promotion System

The ESG Committee was established in May 2018 to continuously discuss the Ricoh Group's medium- to long-term issues in the fields of environment, society, and governance at the management level. The committee, which meets quarterly, invites business unit managers according to the topics discussed, and has established a system to consider and discuss ESG issues across the board.



ESG Committee

The ESG Committee aims to respond promptly and appropriately to the expectations and needs of stakeholders by continuously discussing medium- to long-term 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 ESG Committee has the following specific responsibilities:

- ① Formulate the Ricoh Group Sustainability Strategy to resolve social issues through business, such as initiatives toward introducing SDGs into the foundation of the Company's management
- ② Identify medium- to long-term sustainability risks and opportunities as well as material issues faced by the entire Group (including those regarding investment decisions on risks and opportunities related to climate change recommended by the TCFD)
- ③ Supervise and advise on sustainability strategies, material issues, and progress on KPIs for each business division throughout the entire Group
- ④ Identify sustainability issues to be submitted for discussion at the Board of Directors meetings

The committee is chaired by the CEO, and is composed of GMC members, an Audit and Supervisory Board Member, and the General Manager of the ESG Promotion Division. The committee convenes quarterly and invites representatives of the business divisions associated with the subject of discussion and provides a system to examine and discuss sustainability issues across the board.

In FY2020, ESG Committee meetings were held four times to discuss the following.

	Agenda
First Meeting	<ul style="list-style-type: none"> • Status of response to ESG evaluation / improvement • Climate change risks and opportunities (TCFD relate)
Second Meeting	<ul style="list-style-type: none"> • Climate change risks and opportunities (TCFD relate) • Progress of decarbonization activities and pollution prevention measures • About the FY2020 integrated report
Third Meeting	<ul style="list-style-type: none"> • Reports of various ESG evaluation results • Revision of ESG targets • Report of RBA audit status • Formulation of Ricoh Group's Human Rights Policy • Strengthening renewable energy measures to accelerate decarbonization activities
Fourth Meeting	<ul style="list-style-type: none"> • Responses and efforts for ESG evaluation • Strengthening RBA efforts • Formulation of Ricoh Group's Human Rights Policy • Revision of ESG targets and environmental goals

While setting GHG scope 1, 2, scope 3, and renewable energy rate targets as medium- to long-term environmental targets, we have positioned the GHG Emission Reduction Target as one of our ESG targets based on our management strategy from 2020, and are promoting effective initiatives in conjunction with the remuneration of members of the Board of Directors and other executives.

3-2 Strategy

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).

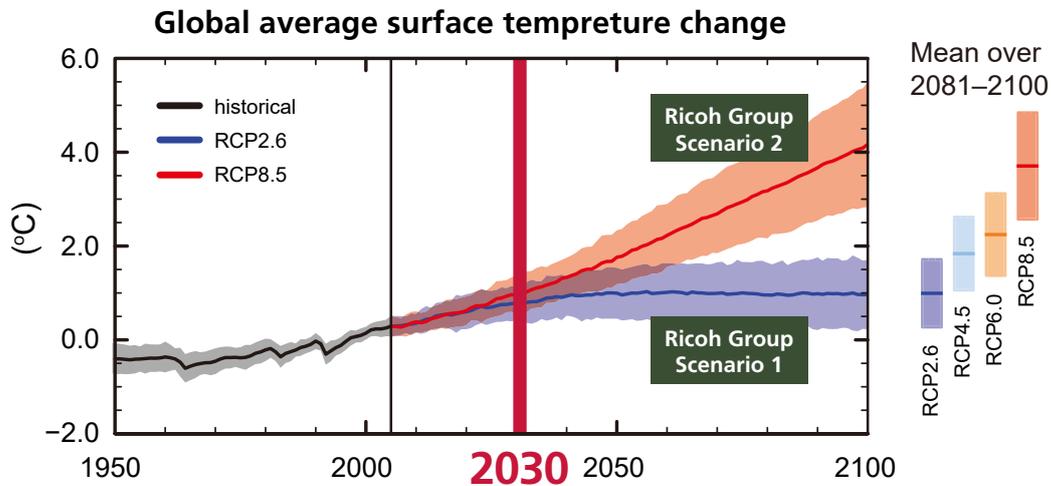


Step 2: Identify scenarios

To meet an uncertain future, we need to select and set up multiple temperate scenarios, including scenarios below 2°C. Therefore, referring to information from the United Nations Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA), we selected two scenarios: the 2°C/1.5°C scenario (RCP2.6) [Scenario 1] and the 4°C scenario (RCP8.5) [Scenario 2].

According to the IPCC's Fifth Report, there is no significant difference between the two scenarios in regard to temperature increases as of 2030 (see* graph), so [Scenario 1] primarily assesses the risk of transition to a zero-carbon society, and [Scenario 2] assesses the physical risks associated with the intensification of climate change.

1: Forecast of temperature rise as of 2030 by 2 scenarios



Source: image IPCC AR5 WGI SPM Fig.SPM7(a)

Scenario 1 Analysis based on RCP2.6

A world where the average global temperature rise by 2100 is kept below 2 °C

- Dynamic policies such as the introduction of carbon taxes as well as the development of innovative technologies for renewable energy will proceed.
- A society in which changes associated with the transition to a zero-carbon society are likely to have a significant business impact will emerge.

Scenario 2 Analysis based on RCP8.5

A world where the average global temperature will rise by 4 °C by 2100

- Extreme weather due to climate change increases risks of unexpected storm and flood damages, depletion of raw materials, and outbreaks of infectious diseases.
- A society in which physical damages by climate change is likely to affect businesses will emerge.

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.

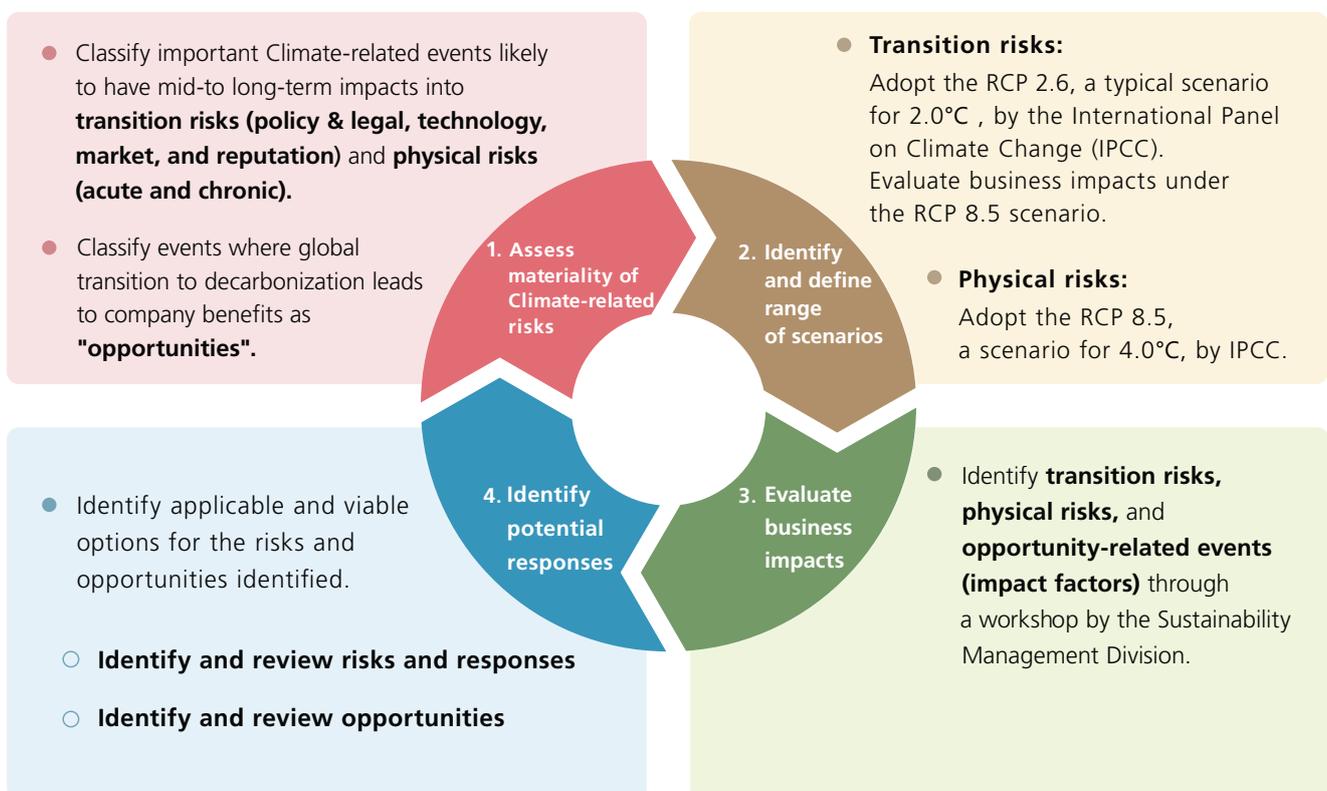
Results of scenario analysis

In FY 2020, we conducted scenario analysis in four steps.

With regard to natural disasters that are increasing year by year, we reevaluated the risks impact on the supply chain, including our own business sites, and considered countermeasures. In addition, we continued to evaluate the business risks and opportunities of infectious diseases associated with climate change, which was added to the items to be examined in FY2019.

As a result of the scenario analysis, it was reconfirmed that natural disaster risk is an urgent issue that could have a significant impact on Ricoh's business if we do not take action, and that infectious disease risk associated with climate change is not as urgent, but once it occurs, it could cause significant financial losses. Therefore, it was reaffirmed that we need to continue to strengthen our BCP.

On the other hand, it was also reaffirmed that proactive measures to mitigate and adapt to climate change have great potential to generate financial benefits in the future.



Risks from climate change

The risks extracted from the scenario analysis were evaluated based on the two axes of financial impact and urgency.

The financial impact is evaluated on three levels of large, medium, and small, and the urgency is also evaluated on three levels based on the timing when risk may appear: high, medium, and low.

Financial impact: Large (+50 billion yen), Medium (Billions to 50 billion yen), Small (Hundreds of millions of yen)

Urgency: High (within 1 year), Medium (within 5 years), Low (5 years or more)

Impact of Climate Change on Ricoh group		Financial impact	Urgency
Transition risk (2°C/1.5°C scenario) Carbon taxes and emissions trading systems applied to suppliers	<ul style="list-style-type: none"> Carbon pricing (carbon tax and emissions trading) was applied and the price will be passed on to raw materials, and procurement costs will increase. The impact of carbon pricing (carbon tax and emissions trading) on the Ricoh Group is negligible (planned GHG reduction under the SBT 1.5°C target) 	Medium	Medium
Transition risk (2°C/1.5°C scenario) Response to accelerated transition to decarbonized society by consumers and investors	<ul style="list-style-type: none"> Due to the advanced demands for achieving the target of 1.5°C and achieving RE100, additional costs for implementing measures such as energy saving/renewable energy facility investment and switching to renewable energy are incurred. 	Small	Medium
Physical risk (4°C Scenario) Rapid increase of natural disasters	<ul style="list-style-type: none"> Due to climate change, extreme weather has become more severe, causing more wind and flood damage than expected at primary production sites (China, Thailand, Japan). Production stops and sales opportunity losses due to disruption of the supply chain, etc. 	Medium	High
Physical risk (4°C scenario) Regional epidemics of infectious diseases	<ul style="list-style-type: none"> 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 	Medium	Low
Physical risk (4°C scenario) Declining forest resources	<ul style="list-style-type: none"> Forest damage such as caused by 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. 	Small	Low

Addressing climate change risks

2°C/1.5°C scenarios

Transition Risk1: Carbon taxes and emissions trading systems applied to suppliers

Risk scenario

- Carbon pricing (carbon tax and emissions trading) will be applied to all suppliers, and procurement costs will rise as prices are passed on to raw materials.
- Carbon tax calculations are based on the latest information in the “2021 Inevitable Policy Response (IPR)” report commissioned by the Principles for Responsible Investment (PRI).
- Pilot version of emissions trading has started in China, and the direction of carbon pricing is being finalized in Japan within this year, so it is assumed that it will be introduced within a few years.

Financial
impact
Medium

Urgency
Medium

Transition Plan

Reduction of new resources by selling recycled machines and utilizing recycled materials

The Ricoh Group is working to improve resource efficiency by promoting 3R*1s of its products. In order to reduce the amount of new resources input, we are focusing on miniaturization and weight reduction of products, expansion of the use of recycled materials, and design of products that are easy to recycle at the manufacturing stage. We are also developing non-petroleum-based materials to prepare for risks such as resource shortages, environmental impacts, and waste.

Currently, we are expanding our global collection, recycling, and sales of used products. For example, Japan has a reuse rate of 80% that guarantees the product according to predetermined quality standards. In our global site, there are re-use machines with a reuse rate of about 90% or more that are sorted and regenerated according to local standards. Compared to new machines, the reconditioned machine released in June 2021 has reduced CO₂ emissions by 62% in the manufacturing process and 19% in the entire life cycle.

As from 2016, Ricoh developed recycled materials for interior materials that can be used repeatedly as raw materials for commercially available recovered materials, and installed them on multifunction machines together with exterior recycled materials developed in the same way. In addition, recycled plastic made of 100% commercially available recovered materials is used for toner bottles. This recycled plastic toner bottle is used in more than 95% of the office toner bottles manufactured by the Ricoh Group.

*1: Reduce Reuse Recycle



Actively support supplier decarbonization activities and address the risk of rising procurement costs

The Ricoh Group is working to strengthen environmental conservation initiatives in cooperation with suppliers to reduce the environmental impact of the entire supply chain. In order to establish an environmental management system (EMS) for suppliers, we have established EMS Guidelines and Green Procurement Standards, and procure raw materials and parts used in products in accordance with these standards.

In addition, the Ricoh Group not only proceeds with CO₂ reduction activities for decarbonization on its own, but we also provide suppliers with support for switching to electricity with low CO₂ emission coefficient, and we are working in cooperation with suppliers based on the Ricoh Group's practical examples and know-how.



2°C/1.5°C scenarios

Transition Risk 2: Response to accelerated transition to decarbonized society by consumers and investors

Risk scenario

- The transition to a decarbonized society will be rapid, and it will become commonplace for companies to achieve the 1.5°C target and RE100.
- Companies will be forced to achieve 100% energy efficiency as soon as possible because customers will leave the company unless they use carbon-neutral products.
- Assumed that the transition to a decarbonized society progresses rapidly within a few years

Financial
impact
Small

Urgency
Medium

Transition Plan

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

Ricoh set the Ricoh Group Environmental Goals in April 2017. They aim to reduce Scope 1 and 2 GHG by 30% by 2030 (compared to FY2015) and to reduce GHG emissions across the value chain to zero by 2050 and they were certified by the International Science Based Targets (SBT) Initiative to align with the Paris Agreement's 2°C target. At the same time, we became the first Japanese company to join RE100, an international initiative aimed at supplying 100% renewable energy for electricity used in business. Furthermore, Ricoh revised the Environmental Goals by 2020 to reduce the GHG reduction target by 63% in FY2030 (compared to FY2015). This is a challenging goal at a level that is certified as the SBT's "1.5°C target". In 2021, we will accelerate decarbonization activities by setting a global renewable energy ratio target of 50% by 2030 from prior 30%.



SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

Sustainability Link Loan Financing

Ricoh signed a sustainability link loan agreement with MUFG Bank, Ltd. in April 2020.

Sustainability Link Loans are financial products targeting companies that have high environmental goals and are actively engaged in climate change issues, and can receive preferential interest rates by achieving each goal.

Under the agreement, interest rates will be determined based on the status of Ricoh's GHG reduction targets set in line with the SBT Initiative's 1.5°C target. Sustainability Link Loans are characterized by being able to be used as business funds without limiting the use of funds, but Ricoh plans to use some of this funds to expand the introduction of renewable energy and to make capital investments in energy conservation, while working to achieve GHG reduction targets.

4°C scenario

Physical Risk 1. Rapid increase of natural disasters

Risk scenario

- Due to climate change, extreme weather conditions are becoming more severe, causing more wind and flood damage than expected, resulting in production stoppages and increased loss of sales opportunities due to supply chain disruptions.
- Estimated financial impact based on past damage at production sites in Thailand (The floods in Thailand in 2011 had a negative impact on the Ricoh Group's sales of approximately 8 billion yen.)
- Frequent occurrence of heavy rains and floods, said to occur once every 100 years, both in Japan and global.

Financial impact
Medium

Urgency
High

Mitigation Plan

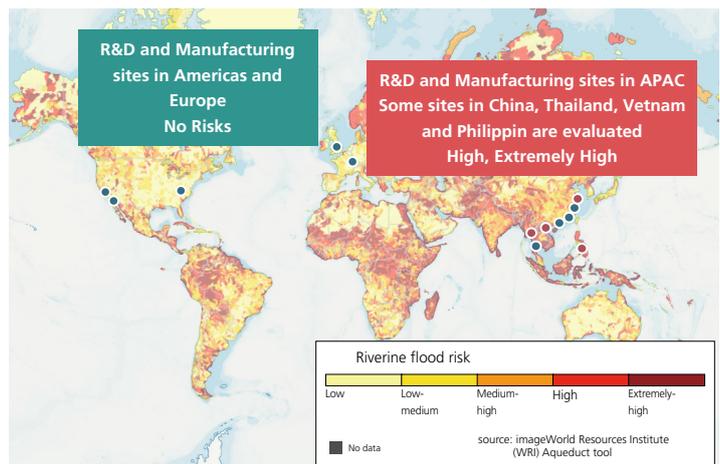
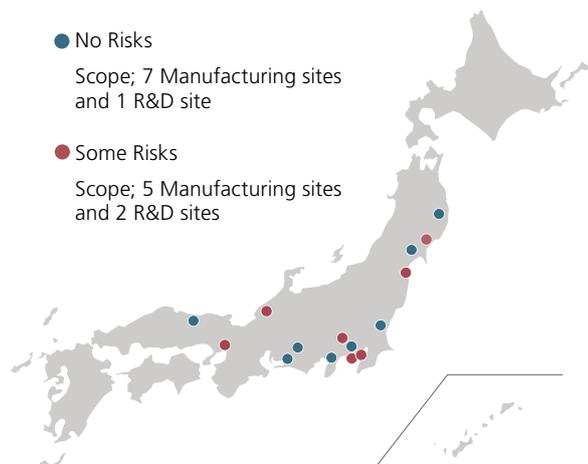
Risk assessment and actions for natural disasters

For Japanese business sites, we assessed flood risk based on hazard maps of each municipality.

In addition, we assessed our global sites using the "Aqueduct Water Risk Atlas" from the World Resources Research Institute (WRI), an international environmental NGO, to confirm flood risks in rivers.

As a result, the production and R&D bases where risks are a concern in the Ricoh Group are as follows.

- Japan: 7 out of 15 locations at risk (8 without risk)
- Global: 5 out of 16 locations at risk (11 without risk)



Supply chain risk addressing

In the risk management process, the department that manages production operations globally becomes the main district for addressing risks, formulating business continuity plans (BCP) throughout the supply chain from parts procurement to production and sales, and reviewing them as necessary. Specific measures include securing surplus inventory of products and parts at production plants in Thailand, Japan, China, and other countries, as well as selecting multiple suppliers for important parts, in preparation for delays and suspensions in parts supply, production suspension of production plants, and suspension of transportation activities.

Strengthen risk response at Japanese sites

In recent years, the risk of flood disasters has been increasing in Japan due to climate change, and the damage caused by typhoons and heavy rainfall in 2019 was particularly devastating.

Although the impact on the Ricoh Group was minimal, we followed a company-wide risk management process to reassess the risk of flooding disasters (as a significant risk to management) at our 19 major sites as well as our production and R&D sites.

In FY 2020, the BCP functional team, consisting of members from the divisions in charge of production and supply chain management and the bases, took the lead in examining countermeasures. As a result, based on the results of hearings with the relevant local governments and the river office of the Ministry of Land, Infrastructure, Transport and Tourism, and their advice, a policy to take measures against flooding at the level of "once in 100 years" was formulated and deliberated by the Management Committee, and measures focusing on the four sites considered to be at particularly high risk were decided. We will begin necessary construction work in cooperation with relevant local governments, including the installation of breakwaters, under a three-year plan starting in FY 2021.

We will continue to survey prefectural disaster scenarios every year to confirm the maximum rainfall in the areas where our bases are located, and take necessary measures for risky bases according to changes. As for the five overseas bases that were identified as risk concerns in the Aqueduct Water Risk Atlas of the World Resources Institute, local hazard maps and past flood surveys for FY 2020 have confirmed that there is no significant risk of flooding.

4°C scenario

Physical Risk 2. Regional epidemics of infectious diseases

Risk scenario

- Climate change causes outbreaks of mosquito-borne infectious diseases
- Impacts are based on the assumption of regional outbreaks occurring approximately every 10 years
- Financial impact is estimated based on COVID-19 impact

Financial
impact
Medium

Urgency
Low

Mitigation Plan

Strengthening the BCP against infectious diseases

The Ricoh Group has established a system to deal with the risk of infectious diseases based on the following policies, and is taking the necessary measures.

- ① Give priority to maintaining the lives and health of Group employees and their families
- ② Prevent the increase in the number of infected people as much as possible, taking into consideration the impact on society.
- ③ Make efforts to continuously provide services and products that are demanded by society and customers.
- ④ Strive to maintain the management base.
- ⑤ Strengthen BCP against infectious diseases

As in the case of natural disasters, the department in charge of global management of production operations will formulate a BCP for the entire supply chain, from parts procurement to production and sales. In addition, we are strengthening our BCP for countermeasures against infectious diseases, including the use of IT for business operations and negotiations, decentralization of production sites/automation of processes, and stockpiling of parts and products.

4°C scenario

Physical Risk 3. Declining forest resources

Risk scenario

- Global warming has led to an increase in forest damage caused by wildfires, insects, etc., which has worsened the stable supply of raw materials for paper.
- As a result, the price of paper, a key material in the thermal business, soared, putting pressure on business profits.

Financial
impact
Small

Urgency
low

Mitigation Plan

Reducing use of release paper with Environmentally Friendly Paperless Labels

In general, it is common practice to use release paper for adhesive labels. In recent years, however, there has been a desire to reduce waste and CO₂ emissions, and we have developed the silicone top liner-less label (SLL) as a thermal label that does not use release paper.

Since SLLs do not use release paper, they contribute to the reduction of environmental impact (reduction of CO₂ emissions).

Ricoh's Forest Conservation Activities - 1 Million Future Forest Projects

The Ricoh Group is working to reduce GHG emissions and to protect forests around the world, which are becoming increasingly important sources of CO₂ absorption. In February 2020, Ricoh Japan, a Japanese sales company, launched a new activity to plant mangroves in Asia in line with the delivery results of products and services. When proposing products and services to customers, we present and introduce their contribution to the SDGs, and we are developing them as an initiative to achieve the SDGs in a united way with customers by planting trees according to the delivery results. In FY 2020, the Ricoh Group globally planted approximately 92,000 trees.

The Ricoh Group believes that forest conservation is important not only from the perspective of biodiversity conservation, but also from the perspective of global warming prevention and sustainable community development. Therefore, we are promoting forest development both in terms of protection and in the increase of trees called "One Million Tree Project"



Opportunities for Climate Change

The Ricoh Group recognizes that climate change is not only a business risk, but also an opportunity to enhance the value of its products and services and its corporate value. At present, our environmentally friendly office equipment & services, infectious disease control solutions, and environmental and energy businesses are contributing to sales of around 1 trillion yen.

The Ricoh Group has been committed to the development of energy-saving technologies in the course of its environmental management efforts since the 1990s, and has continued to provide customers with products and services that contribute to "Mitigation to climate change". We will continue to pursue thorough energy-saving performance in the products and services we continue to sell.

In addition, as climate change becomes more prominent, sales of products and services that can contribute to "Adaptation to climate change" are growing. As the impact of climate change is expected to increase in the future, we will strive to develop products and services that can avoid or reduce the impact of climate change that has already occurred or is expected to occur in the future, and provide them to our customers.

Ricoh Group's Financial Effects in FY 2020

Opportunities at Ricoh group (Contribution areas related to climate change)	2020 Result	
Contribute to climate change mitigation		Approx. 960billion yen
Ricoh has been providing customers with products and services that can contribute to "mitigation of climate change" while working on environmental management since the 1990s. We will continue to pursue thorough energy-saving performance for products and services that can contribute to the mitigation of climate change.	Sales of products contributing to society's decarbonization	Approx. 900 billion yen
	Sales of major business negotiations based on ESG performances	Approx. 10 billion yen
	Sales in the products and parts recycling business	Approx. 30 billion yen
	Sales in energy creation and energy saving business	Approx. 20 billion yen
	Creating and developing new businesses; Sales of eco-friendly products such as Siliconetop linerless labels and Formed PLA sheets	—
Contribute to climate change adaptation		Approx. 70 billion yen
Ricoh will endeavor to develop products and services that can contribute to "adaptation". The products and services can avoid or mitigate the effects of climate change which has already occurred or predicted in the future.	Solution sales to support new ways of work (Sales of Scrum packages*¹, Scrum assets *¹ and WTA *²) Includes approximately 35 billion yen in sales of non-face-to-face infectious disease countermeasure solutions such as the "Telework All-in Package".	Approx. 70 billion yen
	Creating and developing new business; Sales of dye-sensitized solar cells	—

* 1: Packaged solutions for small and medium-sized companies to be sold in Japan

* 2: Work Together Anywhere: packaged solution to be sold in Europe

About business opportunities in the Ricoh Group

Contribution Area of "Mitigation to Climate Change"

1 Development of decarbonization-contributing products - simultaneous realization of ease of use and energy saving

In order to save energy, it is important to reduce the power consumption of multifunction devices (copiers) in standby mode which is said to be about 90%*1 of a day. Therefore, an "energy-saving mode" was developed that automatically shifts to a state of reduced power consumption after a certain period of time while the product is in standby mode. QSU (Quick Start-Up) is a technology that enables a multifunction printer to be used quickly from the energy-saving mode (sleep mode). The time required for startup depends on the speed at which the once cooled fixing roller is heated to the required temperature. The Ricoh Group has been fully engaged in the development of QSU technology for the past 20 years so that office workers can use the energy-saving mode without feeling stressed. Today, the time required to recover from sleep mode has been significantly reduced, and we have achieved the industry's highest level of energy savings in terms of standard power consumption (TEC value) *2.



*1: Assume that 40 MFDs will operate 20 days in an office that outputs 50,000 copies per month

*2: Value based on the measurement method specified in the International Energy Star Program

2 Expansion of product and parts recycling business

Since the Ricoh Group launched its first refurbished machine in 1997, we have been providing them tailored to the times to meet the needs of our customers. Ricoh Group refurbished machines are products that decompose products recovered from the market into units or parts, replace and remanufacture the necessary parts according to predetermined quality standards, and maximize the effective use of resources. Since 2009, we have been able to provide refurbished machines for color multifunction printers.

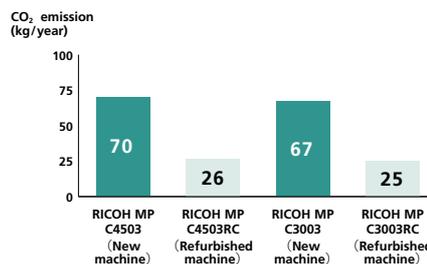
By weight, approximately 80% of the parts of the product are reused, greatly contributing to the reduction of new input resources.

In addition, CO₂ emissions have been reduced by approximately 16% throughout the life cycle.

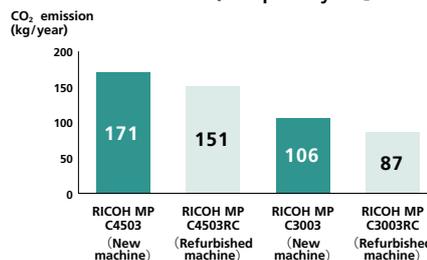
Taking advantage of the 3R-related technology and a global recovery system we have cultivated for more than 20 years, we plan to expand sales of recycled products in the future.



Environmental load ratio in the manufacturing process (Compare by CO₂ emissions)



Results of LCA*1 ratio (Compare by CO₂ emissions)



*1: Life Cycle Assessment

3 Expansion of energy creation and energy-saving business

EVs charger installation and maintenance

As the decarbonization trend accelerates, there is a switch in the automobile industry from gas engines to electric-powered motors, which is being led by Europe and China. Though the decarbonization movement is accelerating in Japan is not yet so advanced, corporate response to the shift to electric vehicles (EVs) is considered inevitable from the viewpoint of CSR and economic rationality. Consequently, it is required for companies to build infrastructure and promote planning at an early stage. Ricoh Japan provides total support from sales to construction, operation, and maintenance of charging facilities in order to contribute to the reduction of greenhouse gases caused by global warming through the development of EVs charger facilities.

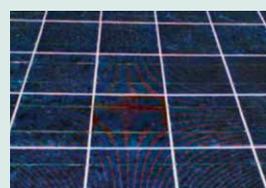


Solar Power O&M (Operations & Maintenance)

Ricoh Japan monitors customers' solar power generation facilities 24 hours a day, 365 days a year. We can detect and resolve equipment problems, power generation outages and declines due to natural disasters at an early date. In the event of a failure, we will promptly rush from the local service site to support stable operation and control of the decrease in electricity sales revenue.



Panel temperature setting by using thermography



Finding a defective part

RICOH Smart MES (Lighting and Air Conditioning Control System)

By utilizing our unique sensing and cloud technologies, we can achieve energy saving while maintaining worker productivity and comfort. No one is in a place where there is “no one to reduce the illuminance of the lighting or put the air conditioning in energy-saving mode”, “no one to adjust the brightness of the lighting by the window using the outside light in bright daytime”, “no one to minimize the variation in temperature by the point of the office”. At the same time, during business hours, conditions will be set so that doors open automatically, air conditioning is set to welcome customers at the appropriate temperature, and control of lighting and air conditioning from the cloud will be automatic, so it will be effectively used according to time and place while reducing the load on operation. In addition to saving energy, it also contributes to the improvement of comfort at work and in the workplace. For example, by changing the brightness and color temperature of the lighting according to the time of day can make people notice when they should return home. Ricoh Smart MES makes it possible to propose the optimum layout change according to the actual usage by collecting and analyzing the temperature information and the presence or absence of people.



4 Contribution through new businesses Foamed PLA Sheet "PLAiR" : New plastic material made of plants and air

Polylactic Acid (PLA) is a type of polyester that is derived from renewable resources, such as corn starch. As a biomass product, PLA is carbon neutral and decomposes into water and carbon dioxide under certain conditions. Ricoh offers to compliment petroleum-derived plastic with a foamed PLA sheet developed with Ricoh's own foaming technologies.

Ricoh has started to ship samples of the foamed PLA in 2020 and aims to expand sales by selling the material to a wide range of industries including those manufacturing Ricoh products, providing manufacturing solutions, and licensing production.

The image shows a large, white, textured foamed PLA sheet being processed on a machine. The sheet is labeled 'PLAiR 要回収' (PLAiR Recycle). The machine has 'RICOH' branding. The background is a factory setting.

Realization of new carbon-neutral material with compostability

Developed a foamed PLA sheet that has both suppleness and strength using Ricoh's unique foaming technology

Contribution Area of "Adaptation to Climate Change"

1 Solutions to support new ways of working- Sales of Scrum Package

In recent years, with the declining working population and work style reforms due to the declining birthrate and aging population, productivity improvement and regional revitalization using the latest digital technologies have become essential important social issues. However, small and medium-sized enterprises (SMEs) that account for more than 75% of Japan's GDP are not fully utilizing ICT due to lack of information and limited resources such as human resources and budgets. In addition, from 2020, in order to control the spread of the new coronavirus, each company is required to improve the environment by measures such as teleworking and telecommuting and to change the way of working.



Since October 2017, Ricoh Japan has been proposing scrum packages that combine edge devices, software, cloud services, etc. of its own and collaborative partners to digitize and streamline processes specific to each industry operation for small and medium-sized enterprises. Instead of proposing fragmented business improvement proposals using conventional individual products and services, we are characterized by proposals that capture the entire customer's business flow, and are supported by solutions using the necessary combinations of items rather than large-scale IT investments.

These solutions have helped reduce CO₂ emissions and reduce the spread of COVID-19 as productivity improves.

2 Development and sales of Dye-Sensitized Solar Cell

The dye-sensitized solar cell (DSSC) is capable of generating high power even under weak light. This technology is attracting widespread attention as an effective power source supporting the Internet of Things (IoT) era, where everything is becoming connected.

Ricoh has developed a completely solid-state DSSC containing a solidified electrolyte, made possible through applying its organic photoconductor technology developed for multifunction printers (MFPs).



RICOH EH DSSC Series

High power output in areas with low light

Safety with a solidified electrolyte

A wide range of operating temperatures

3-3 Risk management

As the environment surrounding the company becomes more complex and diversified, the Ricoh Group positions risk management as an essential initiative in appropriately controlling the various internal and external uncertainties that surround the Group's business and in implementing management strategies and achieving business objectives. And then all Group employees strive to improve risk management.

Risk Management System and Risk Management Committee

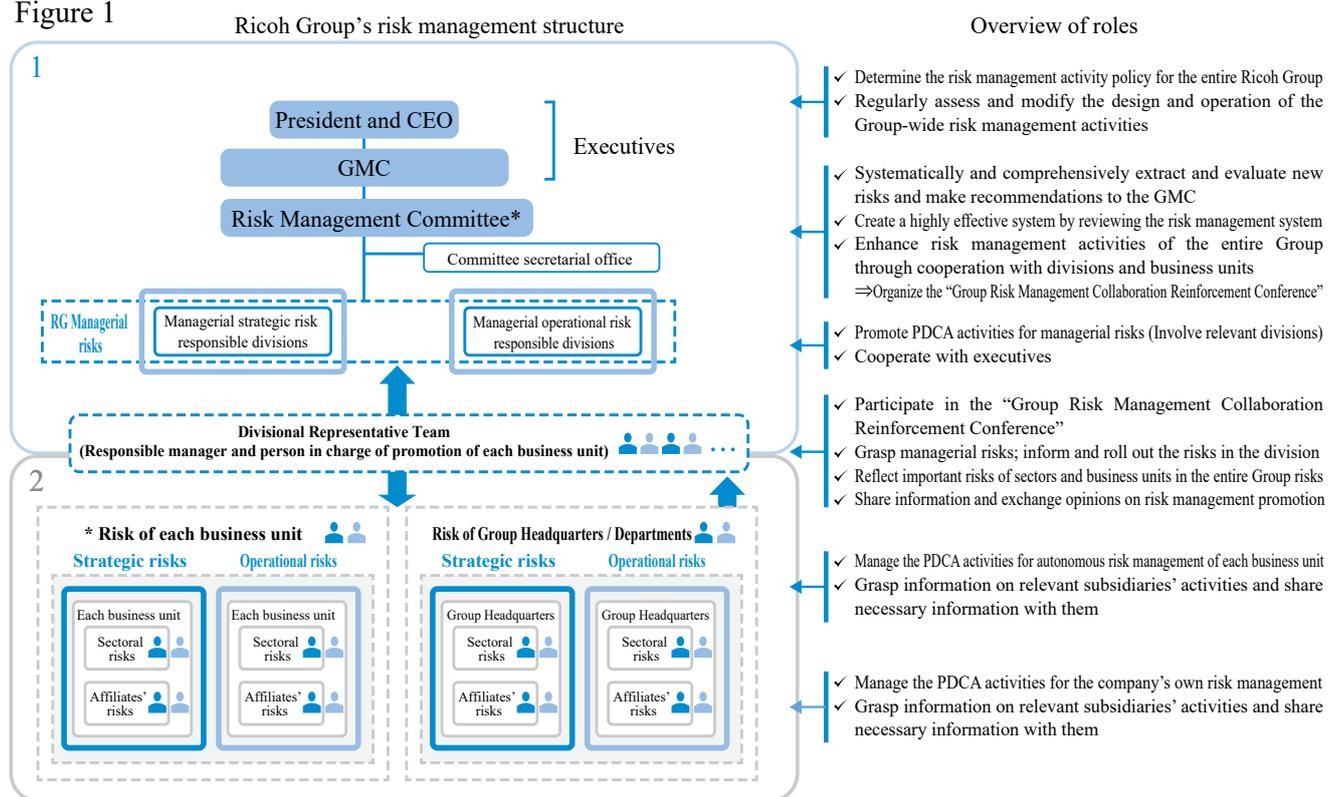
The Ricoh Group's risk management systems can be divided into two main levels, as shown in Figure 1 below.

- 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 Division 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 management of some risks may be transferred from one level to another, due to changes in the level of impact caused by environmental changes.

The role of each risk management body is shown on the right-hand side of Figure 1.

Figure 1



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

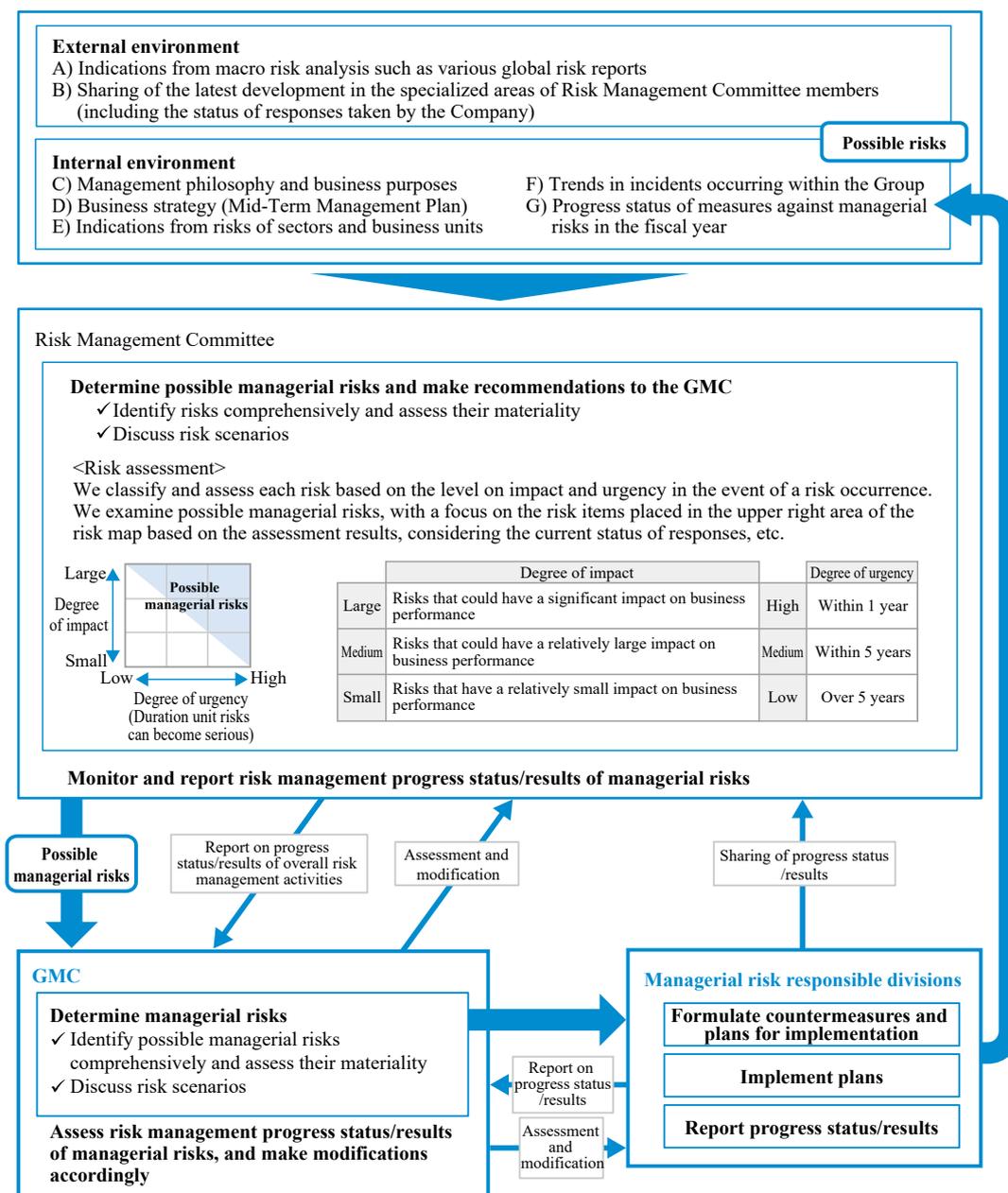
Process of determining managerial risks

The Risk Management Committee was established as an advisory body to the Group Management Committee (GMC), for the purpose of strengthening risk management processes across the entire Ricoh Group. The committee is chaired by the corporate officer in charge of risk management and has experts from each organization as members to ensure comprehensive coverage of risks and substantial discussions, and to propose to GMC specific risks requiring response or focus in terms of the management of the Ricoh Group.

The GMC and Risk Management Committee determine managerial risks based on a comprehensive recognition of risks that exert a significant impact on management, including impact on interested parties, in light of the Company's management philosophy and business purpose, and are actively involved in countering these risks. (Figure 2: Process of determining managerial risks)

Managerial risks are classified and managed as "strategic risks" and "operational risks" based on their characteristics. Strategic risks cover a wide range of risks that affect management, from risks related to the accomplishment of short-term business plans to emerging risks in the medium- to long-term.

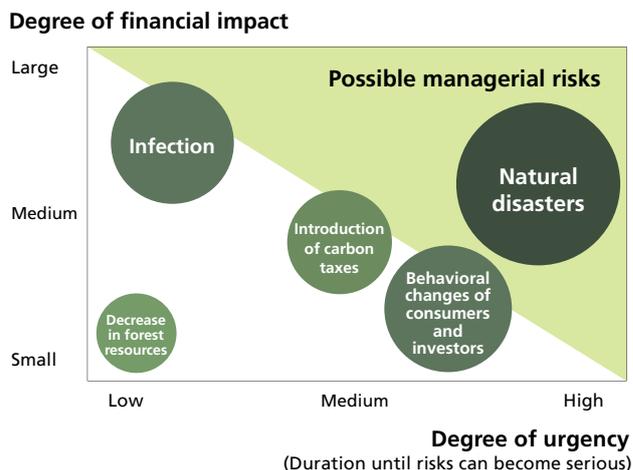
Figure 2: Process of determining managerial risks



Climate Change Risks in Management Risks

The result of evaluating the risks extracted by scenario analysis on climate change on two axes of financial impact and urgency is shown on the right.

Natural disaster risk is recognized as one of the company-wide management risks because of its high degree of urgency and moderate financial impact.



3-4 Metrics and Targets

Environmental Goals (Decarbonization area)

The Ricoh Group aims to reduce GHG (greenhouse gas) emissions across the entire value chain to virtually zero by 2050, and is promoting thorough energy saving activities and active use of renewable energy.

Goals for 2050

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

Goals for 2030 (SBT 1.5°C Certified)

- GHG Scope 1, 2: 63% reduction (compared to the FY2015 level)
- GHG Scope 3 *1: 40% reduction (compared to the FY2015 level)
- Renewable energy usage rate: 50%

*1: procurement, use and logistics categories

Performance in FY2020

FY2020 results and year-over-year trends are as follows

In-house emissions (GHG Scope 1) + Indirect emissions (GHG Scope2)	280kt (17.4% YoY reduction, 36.5% reduction compared to FY2015)
Supply Chain emissions (GHG Scope 3)	1,222kt (16.5% YoY reduction, 31.7% reduction compared to FY2015)
Renewable energy useage rate (electricity used)	17.6% (4.8 points increase YoY)

GHG Scope 1 and 2

	FY2015 (Base year)	FY2018	FY2019	FY2020
Emission (1,000 tons)	441	375	339	280
Reduction rate (Compared to the 2015 level)	—	15.0%	23.1%	36.5%

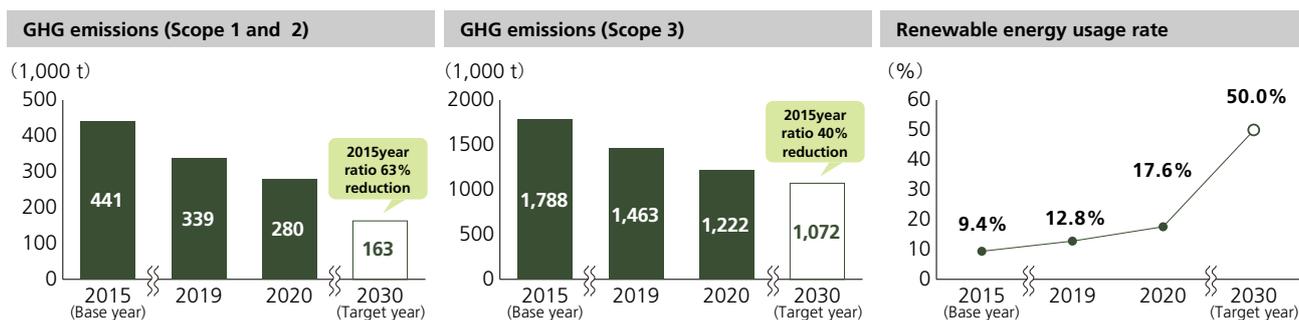
GHG Scope 3

	FY2015 (Base year)	FY2018	FY2019	FY2020
Emissions(1,000 tons)	1,788	1,624	1,463	1,222
Reduction rate (Compared to the 2015 level)	—	9.2%	18.2%	31.7%

Electric power

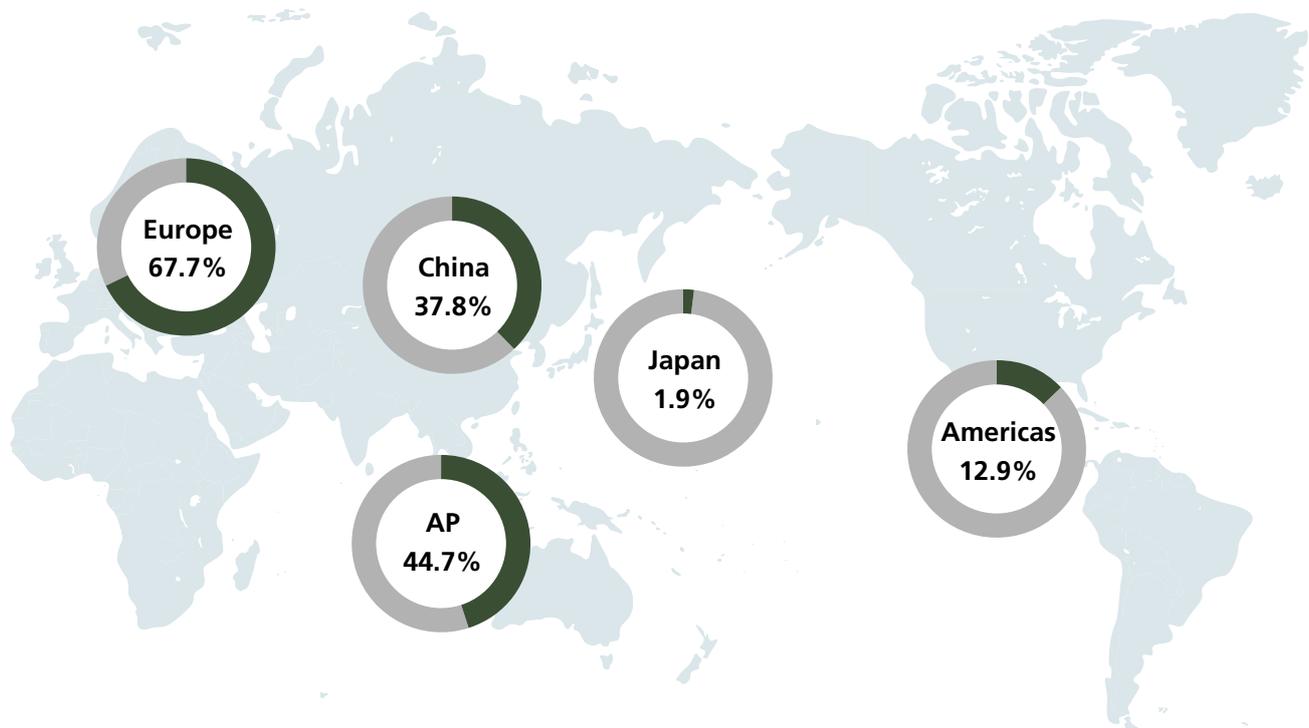
	FY2016	FY2017	FY2018	FY2019	FY2020
Renewable energy usage rate	2.9%	2.4%	9.4%	12.8%	17.6%

In FY2020, GHG emissions were reduced by approximately 17% compared to FY2019 due to a decrease in the volume of business activities caused by the COVID-19, in addition to promoting the implement of renewable energy and active energy-saving activities. Compared to the base year of the SBT in FY2015, the GHG emission has been decreased by approximately 37%. However, since more than half of the GHG reductions in FY2020 are estimated to be due to a decrease in the volume of business activities due to the COVID-19, it would be expected that GHG emissions will increase as the volume of business activities increases in the future, so we will further accelerate the implementation of renewable energy.

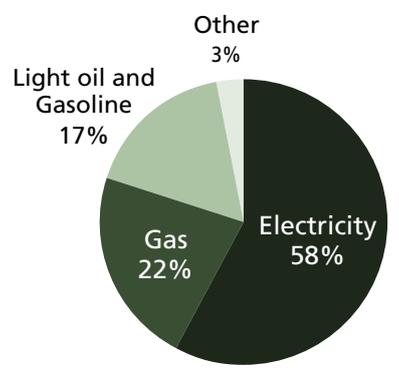


In FY2020, the Ricoh group's overall renewable energy usage rate was 17.6%, an increase of nearly 5 points from last year. Due to initiatives such as installing solar panels, switching to green power, and purchasing renewable energy certificates, mainly at global production sites, renewable energy utilization has increased to about 70% of the amount of electricity used in Europe and about 40% in China and Asia. In the Americas, the renewable energy utilization rate, which was around 2% last year, has increased to 13% in FY2020. In Japan, the procurement environment for renewable electricity has not improved, and it was flat at about 2% in FY2020. Since the Japanese government's carbon neutral declaration in FY2020, the number of companies promoting the use of renewable energy has increased rapidly in Japan, but the speed of changes in the renewable energy policy and supply side has not caught up with the change in demand-side needs. We will work together with RE100 member companies to encourage the government to reduce the cost of renewable electricity, accelerate the diversification of procurement methods, and support companies, so that we can realize an advanced renewable energy-based society.

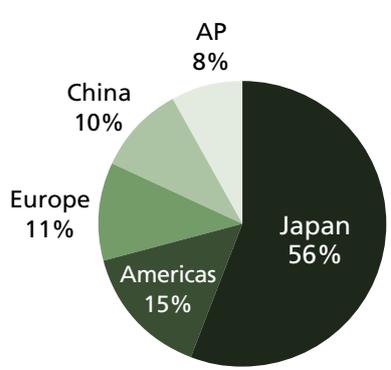
Renewable energy rate by region in FY2020



CO₂ emissions by energy



Power consumption by region



4. Concluding remarks

“Climate change” is one of the most important social issues facing the global community. The world is becoming more and more aware of the “Climate Crisis”. The Paris Agreement, an international agreement to combat climate change, aims to “pursue efforts to keep the global average temperature increase well below 2 degrees Celsius above pre-industrial levels and to limit it to 1.5 degrees Celsius,” which requires achieving a balance between anthropogenic greenhouse gas emissions and absorption in the second half of this century.

In addition, in August 2021, the IPCC (United Nations Intergovernmental Panel on Climate Change) announced its prediction that the global average temperature rise will reach 1.5 degrees Celsius above pre-industrial levels between 2021 and 2040. Countries and companies around the world will need to further strengthen their efforts to tackle climate change.

The Ricoh Group has been working on environmental sustainability management for many years, but we are already experiencing more frequent and severe abnormal weather events on a global scale than expected, and we are strengthening our efforts to achieve a decarbonized society. Therefore, we have conducted detailed impact assessments of our global production sites, and we have established a response plan that anticipates future risks at the end of FY2020, and have begun implementing countermeasures. In addition, the introduction of a carbon tax with the early transition to a decarbonized society and rapid changes in the behavior of consumers and investors have increased the urgency of our response. In response to this, we have revised our environmental targets for 2030 and raised our target for the ratio of renewable energy to electricity used in our business from 30% to 50%.

On the other hand, proactive responses to climate change mitigation and adaptation will provide opportunities for our business to offer products and solutions that support customers' decarbonization by utilizing energy and resource saving technologies and services. In addition, solutions to combat infectious diseases will provide new value for the new normal way of working, and business expansion and the creation of new businesses in the environmental and energy fields have been reconfirmed as having great potential to generate future financial benefits.

The Ricoh Group conducts an annual review of the business impact of climate change in line with the TCFD framework, and regularly reviews the results to identify the latest climate change risks and opportunities, and to promote decarbonization activities. Through the publication of the TCFD report, we will continue to deepen the exchange of opinions with our stakeholders and improve our initiatives and disclosure on climate change.

For comments and inquiries concerning this report,
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