II. Overview of Business

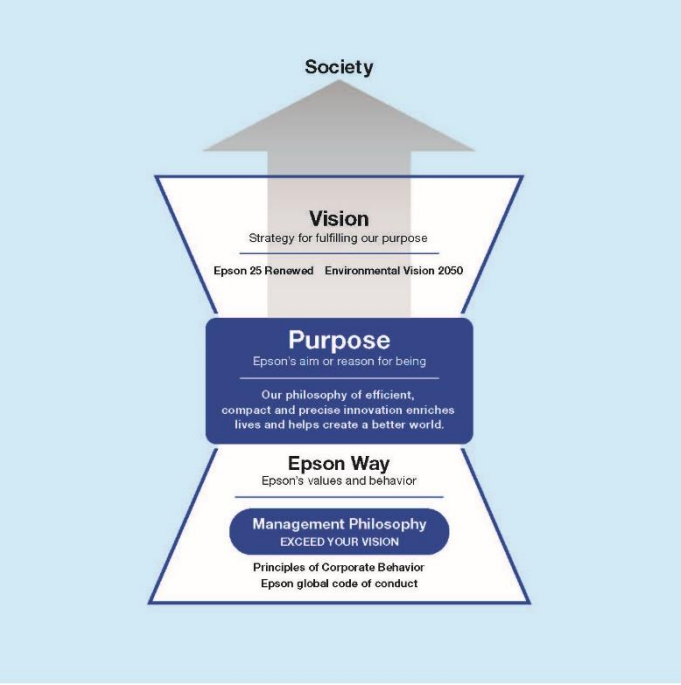
1. Management policy, business environment and issues to be addressed, etc.

All forward-looking statements hereunder were made at Epson's discretion based on the forecasts and certain assumptions at the end of the fiscal year. These statements may differ from actual results and are not guarantees of the achievement.

(1) Basic management policy

Corporate Purpose is at the heart of all Epson's corporate activities. This Corporate Purpose, "Our philosophy of efficient, compact and precise innovation enriches lives and helps create a better world," was established in September 2022 to define the kind of value that Epson provides to society and to demonstrate both inside and outside the Company its unique reason for being and aspirations. Epson will provide new value to society by realizing the Corporate Purpose through its vision, based on its management philosophy, which is the universal concept of the Epson Way that defines the Group's values and behavior. Through these efforts, we will strive to achieve sustainable growth and enhance corporate value over the medium to long term in the future.

Philosophy Structure



Epson Management Philosophy

Epson aspires to be an indispensable company,
trusted throughout the world for our commitment to openness,
customer satisfaction and sustainability.
We respect individuality while promoting teamwork,
and are committed to delivering unique value
through innovative and creative solutions.

Purpose

Our philosophy of efficient,
compact and precise innovation enriches
lives and helps create a better world.

(2) Concept of "Epson 25 Renewed" Corporate Vision

We have established "Epson 25 Renewed," with the goal of achieving sustainability and enriching communities, which we have set as our aspirational goal to pursue into the future. At present, humanity is facing a wide range of social issues, including climate change and the COVID-19 pandemic. We believe that we have entered an era in which people aspire to achieve a variety of enrichment, including not only material and economic wealth, but also spiritual and cultural enrichment. Sustainability is a fundamental requirement for achieving this. With this background, Epson develops its business by always focusing on social issues as a starting point, considering what we can do to solve them, and how we can use our technologies to solve problems and contribute to society.

① "Epson 25 Renewed" vision statement

We have established the vision statement for "Epson 25 Renewed," which is "Co-creating sustainability and enriching communities to connect people, things, and information by leveraging our efficient, compact, and precision technologies and digital technologies." We will provide solutions that connect people, things, and information in a smart manner to society as a whole, including people's personal lives, industries, and manufacturing sites, in order to achieve our aspirational goal. The three most important initiatives in doing so are the environment, DX, and co-creation.

Environmental initiatives
- Promote decarbonization and close the resource loop, develop environmental technologies, and provide products and services that reduce environmental impacts.

DX initiatives
- Contribute to customer success by building a robust digital platform, connecting people, things, and information, and co-creating solutions that continue to meet customer needs.

Co-creation initiatives
- Leveraging our technologies and product families, solve societal issues with partners by providing core devices and a place for co-creation and networking, as well as through collaboration and investment.

② "Epson 25 Renewed" policies

While uncertainties in society are expected to continue, we will aim to secure profitability and seek future growth by focusing on priorities. Furthermore, we will also continue to strengthen our efforts for the environment, DX, and co-creation across business domains.

Areas	Applicable businesses	Policies
Growth areas	Office printing, Commercial & industrial printing, Printhead sales, Production systems	See environmental changes as an opportunity and invest management resources
Mature areas	Home printing, Projection, Watches, Microdevices	Emphasize profitability through structural changes and efficiency improvements, etc.
New areas	Sensing, Environmental business	Develop new technologies and businesses

(3) Concept of Environmental Vision 2050

Epson has developed "Environmental Vision 2050," a vision for environmental initiatives that are a prerequisite for a sustainable society, as follows, and has set goals to be achieved by 2050 and initiatives to realize these goals.

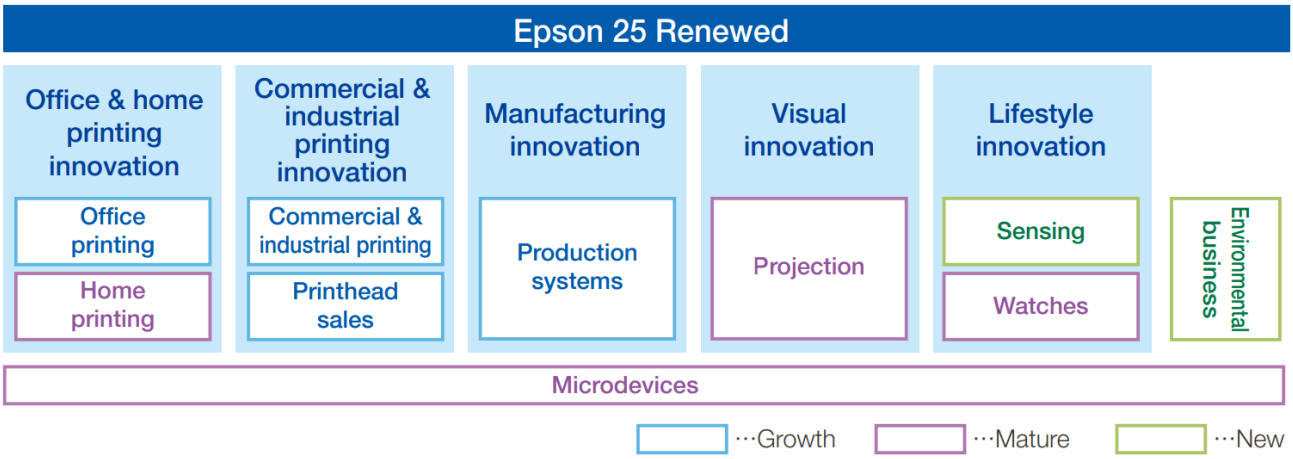
Items	Contents
Vision statement	Epson will become carbon negative and underground resource free by 2050 to achieve sustainability and enrich communities
Goals	2030: Reduce total emissions in line with the 1.5°C scenario[1] 2050: Carbon negative and underground resource free
Actions	● Reduce the environmental impacts of products and services and in supply chain ● Achieve sustainability in a circular economy and advance the frontiers of industry through creative, open innovation ● Contribute to international environmental initiatives

[1] Target for reducing greenhouse gas emissions aligned with the criteria under the Science Based Targets initiative (SBTi)

(4) Business and financial issues to be addressed with priority

① Policies and progress of innovation strategy and future initiatives

We have established innovation areas around customer value and societal issues in order to execute the strategy for realizing our goals. In the microdevices business that supports the following five innovation areas, we will contribute to the development of a smart communities with crystal semiconductor solutions enhanced with our efficient, compact, and precision technologies. Furthermore, in order to realize a sustainable society, we will also develop new environmental solutions that integrate materials technologies and contribute to decarbonization and closing the resource loop by giving top priority to our contribution to the environment.



Office & home printing innovation

In this area, we seek to lead the evolution toward distributed printing that reduce environmental impacts and increase work productivity through inkjet technology, paper recycling technology, and open solutions. In office printing, sales continued to grow steadily in FY2022 as the environmental performance and convenience of inkjet printers were well received by customers. In addition, we launched inkjet multi-function printers for offices in the medium speed zone, which is our volume zone, to complete our product lineup. Going forward, we will further expand sales and accelerate the replacement of lasers with inkjets. In home printing, sales grew as large-capacity ink tank models captured printing demand in developed countries including those of North America, in addition to emerging countries. Going forward, we will make a full-fledged effort to create and expand services that leverage our customer base, such as expanding the regions in which we offer printing subscriptions.

Commercial & industrial printing innovation

In this area, we seek to offer inkjet technology and solutions that lead the digitalization of printing and contribute to lower environmental impacts and higher productivity. In the finished products business, we were able to efficiently launch products in multiple sizes and genres by utilizing the platforming that we have been working on. We will continue to develop more compact and high-performance products to increase sales. In addition, the number of companies connected to Epson Cloud Solution PORT, which provides total support to printing sites, is steadily growing. In FY2023, we will enhance the information provided and improve usability. In the area of small printers, we expect to expand our business on the strength of our brand power and customer contacts, as investment is expected to resume and expand, especially in the food and beverage industry. In the printhead sales business, sales grew mainly in China. We will continue to expand our market share through new products.

Manufacturing innovation

In this area, we seek to innovate manufacturing by co-creating flexible high-throughput production systems that reduce environmental impacts. In FY2022, while we automated manufacturing sites with robots featuring high speed and high precision, the second half of the fiscal year was a difficult one as the market environment deteriorated, especially for consumer equipment assembly and transportation applications. In FY2023, we will pursue co-creation with SIers and peripheral equipment manufacturers to further expand robot applications.

Visual innovation

In this area, we seek to connect people, things, information and services with inspiring video experiences and quality visual communications to support learning, working and lifestyles. In FY2022, we achieved sales growth by capturing demand from the education sector in Europe and the U.S. and by quickly resolving parts supply issues through collaboration among divisions, manufacturing bases, and sales companies in various regions, and made further progress in improving our profit structure. We will continue to introduce high-brightness projector and smart projector products for home use, and strengthen our contacts with customers through the use of digital technology.

Lifestyle innovation

In this area, we seek to utilize craftsmanship and co-create solutions that utilize sensing technologies to enrich diverse lifestyles. In the watches business, we will continue to strengthen our business structure through business restructuring in FY2023, while at the same time working to enhance the high value-added products of our own brand

Orient Star and expand the regions where we operate direct sales sites for customers. In the sensing business, we will develop new businesses such as health data services through co-creation with an eye on the medium and long term.

② Strengthening business infrastructure

In order to realize each innovation mentioned above, we are strengthening the business infrastructure as follows.

Sales & marketing strategies

●Provide customer focused sales/support utilizing digital technology

We are strengthening CRM (customer relation management) in order to accelerate growth. We will make a transition from activities designed to maximize sales of products to activities with a strong focus on providing customer value (consulting, value added solutions and maintenance services, etc.) and adoption of subscription services.

●Develop measures by focusing on priorities according to region and business segment

In addition to expanding sales channels for IJP (inkjet printer) products for offices and commercial/industrial use, and expanding showrooms where customers can experience Epson's unique solutions, we are strengthening our sales and support functions for commercial/industrial IJP and robots to meet the trend of shifting production to near-consumer locations.

●Strategic value promotion activities for products

Unique customer and environmental values are evolving in many product genres, such as Epson's inkjet printers and PaperLab in-office dry papermaking system. We will strategically roll out these products in order to make them known to as many people as possible.

Production strategies

●Create an optimal production system

We will continue to support production at multiple locations, which has progressed due to the impact of the COVID-19 pandemic. In the production automation, we will achieve even more efficient production through the use of our own robotics technology and data.

Technology development strategies

●Advance technologies that support innovation

We will focus particularly on strengthening material, AI, and digital technologies. In material technologies, dry fiber technology[2] is being applied to other materials besides paper, and practical examples are expanding, such as upcycling from cotton scraps to packaging materials and from used clothing to new nonwoven fabrics. We will also promote development of metal recycling and CO_2 separation/absorption technologies, among other things, as well as solidify environmental business with co-creation partners. In AI and digital technologies, we will accelerate and strengthen development of algorithms to develop company-wide software platforms to create data utilization business.

[2] Epson's technology that converts materials into fibers with mechanical impact without using water (a moderate amount of humidity is required)

HR strategies

For details, please refer to "II. Overview of Business, 2. Concept and initiatives of sustainability, (3) Human capital and diversity, ② Strategy."

③ Financial targets

We will shift to profitability-focused management to realize "Epson 25 Renewed" and seek to secure profitability and future growth by focusing on priorities without pursuing excessive sales growth. In accordance with this policy, we have set ROIC, ROE and ROS as financial targets.

Consolidated financial targets	FY2020 (Result)	FY2021 (Result)	FY2022 (Result)	FY2023 (Forecast)	FY2025 (Target)
ROIC[3]	5.6%	7.3%	7.1%	7.3%	11% or more
ROE	5.9%	15.2%	10.8%	8.9%	13% or more
ROS	6.2%	7.9%	7.1%	7.4%	10% or more

[3] ROIC = Business profit after tax / (equity attributable to owners of the parent company + interest-bearing liabilities)

Epson has set ROIC as one of the financial targets to achieve better capital efficiency in management. We will introduce business portfolio management that clarifies the role of profitability and company growth to achieve efficient capital circulation, thereby enhancing management efficiency. By broadly dividing Epson's business areas into growth areas, mature areas, and new areas, as described above, we will set capital allocations and targets according to how the businesses are positioned and will determine the strategic direction of each business as we go through a regular review cycle.

2. Concept and initiatives of sustainability

The movement toward sustainability around the world is accelerating, with the expansion of ESG investment and the formulation of sustainability-related policies in various countries and regions. Against this backdrop, companies are increasingly being asked to take a stance on how to respond to the issues facing society through their business activities. Epson has been contributing to solving various social issues through the provision of its products and services. Going forward, under the banner of our Corporate Purpose, we will continue to work with our customers and partners from a long-term perspective with the goal of achieving sustainability and enriching communities by pursuing both business growth and solutions to social issues.

(1) Sustainability in general

① Governance

Epson has established the Sustainability Promotion Office as an organization under the direct control of the President, with a Director and Senior Managing Executive Officer appointed as its head and responsible for Group-wide sustainability activities (sustainable growth based on social needs).

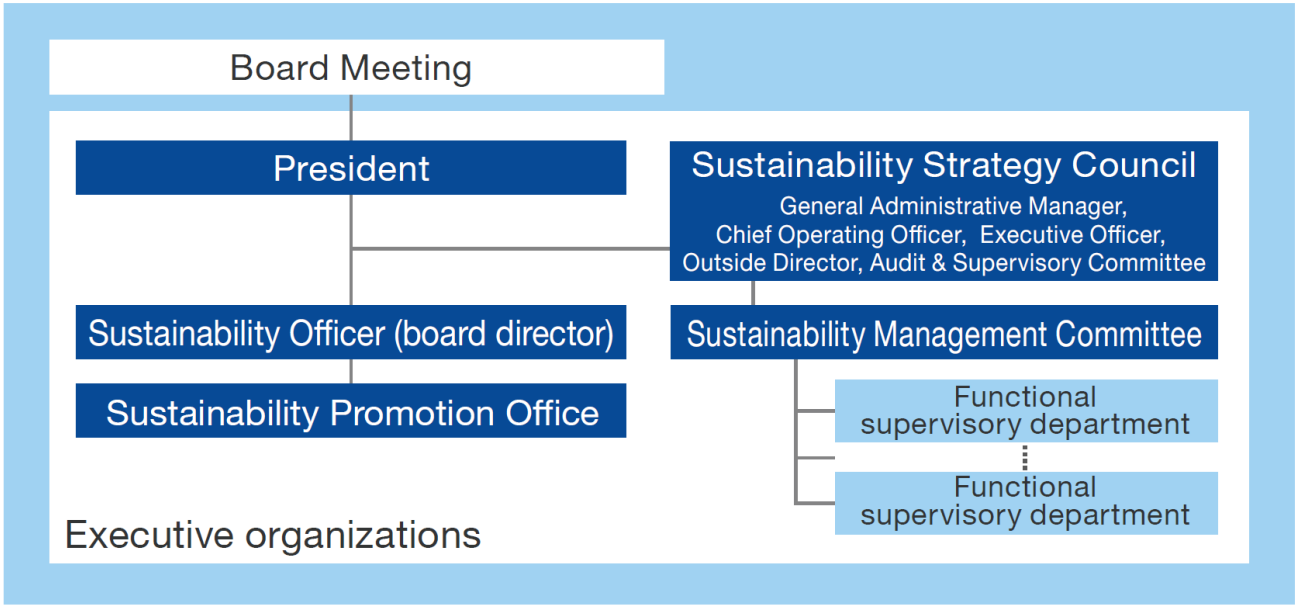
In addition, we have established the Sustainability Strategy Council as an advisory body to the President, which is composed of Outside Directors and Audit & Supervisory Committee Members, in addition to management-level personnel including the General Administrative Managers and Chief Operating Officers. The Sustainability Strategy Council formulates medium and long-term strategies for sustainability pertaining to the entire Group based on a review of social trends, reviews the status of implementation of activities, and deliberates on initiatives to address key issues.

Furthermore, the Sustainability Management Committee has been established as a subordinate body of the Sustainability Strategy Council to discuss and examine specialized matters related to sustainability activities. This committee is composed of the heads of relevant functional supervisory departments, and submits reports to the Sustainability Strategy Council.

The Sustainability Promotion Office serves as the secretariat for these two bodies and reports regularly to the Board of Directors to promote more effective sustainability activities.

With respect to officer compensation, four key sustainability topics tied to materiality (decarbonization, supply chain, human rights and diversity, and governance) are linked to restricted stock compensation, from the perspective of building a more effective sustainability governance structure.

■ Executive organization chart



② **Strategy**

Epson has analyzed social issues and megatrends defined by SDGs, ISO26000 and others, examined its own strengths that can lead to social impact, and identified four materialities (achieve sustainability in a circular economy, advance the frontiers of industry, improve the quality of life, and fulfill our social responsibility) that are highly important issues for Epson to address to solve challenges in society.

We aim to achieve sustainability and enrich communities through sustainability management that combines business growth and solutions to social issues, whereby we achieve business growth by solving social issues and solve more social issues by growing our business.

■ Epson's sustainability management

■ Opportunities and risks by materiality, and topics to be addressed

Based on the assessment of opportunities and risks for each materiality (key sustainability topic) as described below, we are working to achieve the goals of Epson 25 Renewed.

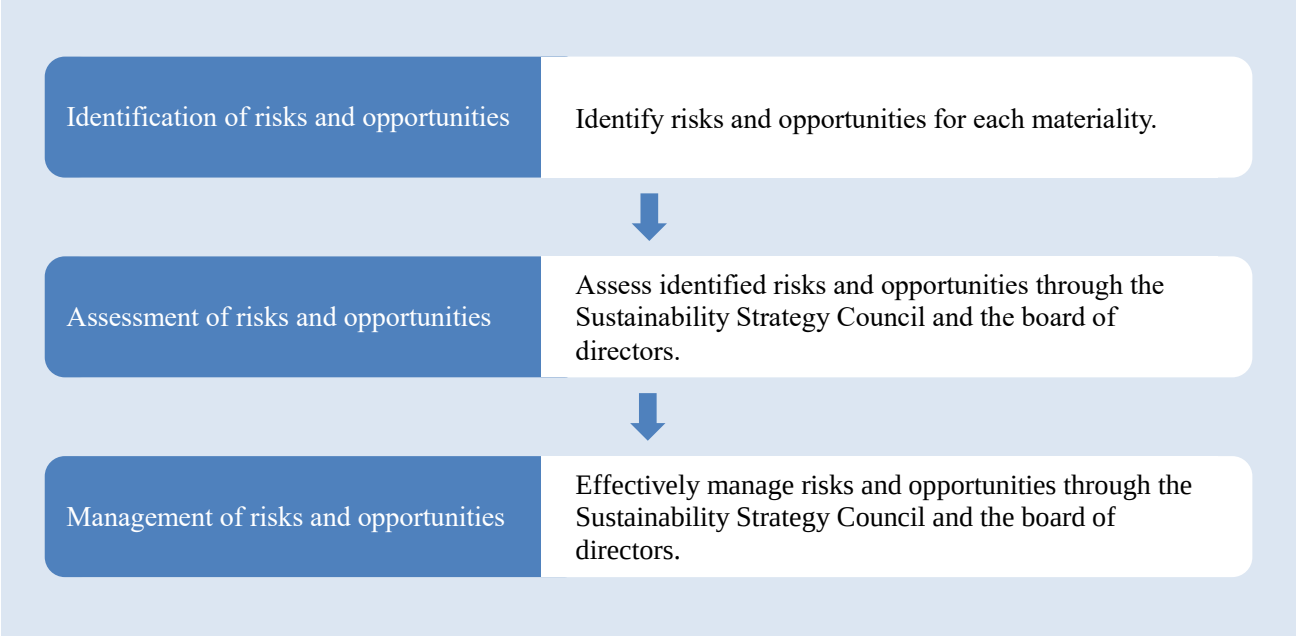
Key Sustainability Topics	Opportunity (○)	Risk (●)
Materiality: Achieve sustainability in a circular economy		
Decarbonization initiatives Closed resource loop initiatives Customer environmental impact mitigation Environmental technology development	○ Growing need for environmentally friendly products and services due to the introduction of a carbon tax, soaring electricity prices, rising waste disposal costs, and the need to produce the right amount of products and reduce resources ○ Market growth in the fields of global warming countermeasures and waste treatment and effective utilization of resources ○ Market growth in recycled plastics, bioplastics, and metal recycling due to the shift to a circular economy	● Growing momentum toward a paperless office from the perspective of forest protection awareness ● Increase in operating costs due to changes in policies and regulations ● Credit loss and damage to corporate value due to delayed response to decarbonization and resource recycling ● Damage to corporate value due to failure to achieve plans for or delays in the development of environmental technologies that will lead to a reduction in environmental impact
Materiality: Advance the frontiers of industry		
Improving productivity through digitization and automation	○ Transition to resource-saving and highly efficient production processes due to diversifying consumer needs and the growing importance of environmental considerations ○ Decentralization of production plants for the purpose of BCP response based on factors such as geopolitical risk	● Loss of business opportunities due to delays in launching products and services that meet market demands ● Delays in developing easy-to-use solutions and digital services
Improving working environment and educational environment	○ Decentralization of offices due to diversification of work styles and advancement of information technology ○ Need for automation using robots to compensate for global labor shortages against a backdrop of declining birthrates and aging populations ○ Growing need for innovation in production systems to improve the working environment and strengthen the resilience of manufacturing sites ○ Increasing need to resolve stress burdens and lowered work efficiency due to reduced physical communication in telecommuting and web conferencing ○ Growing momentum to achieve common global decarbonization goals (reduction of CO_2 emissions stemming from human mobility) ○ Increasing use of ICT to bridge the gap in learning places and opportunities in developing countries ○ Dissemination of digital educational materials and educational platforms ○ Expansion of the education market due to the increase in the number of people enrolled in school in emerging and developing countries ○ Resolving teacher and teaching support shortages through ICT ○ Expansion of at-home study support programs	● Loss of business opportunities due to delays in launching products and services that meet market demands ● Loss of trust and damage to corporate value in the event of an accident that causes life-threatening or serious physical harm to a user when the robot is used ● Lack of human resources capable of implementing automation ● Decreased need to connect the real and remote due to increased office attendance following the decline of the coronavirus ● Intensifying competition with large-screen display devices other than projectors and personal terminals, and relative decline in the presence of our solutions ● Decrease in the need for printing in the education market due to the increased use of tablets and other electronic devices ● Delays in sound budgeting for and investment in education due to delayed economic development and political instability in developing countries

Key Sustainability Topics	Opportunity (○)	Risk (●)
Materiality: Improve the quality of life		
Proposing diverse lifestyles	○ Growing need for data utilization to help improve performance in various sports due to diversifying lifestyles ○ Emergence of new data service businesses such as health support ○ National government policy initiatives to extend healthy life expectancy as a response to the declining working-age population and increasing social security costs in the developed countries	● Decline in presence due to evolution of competing data services ● Impact on the data service business due to declining interest in health consciousness
Realizing an abundant and colorful life	○ Demand for luxury goods that cater to diverse values, hobbies, and tastes	● Declining presence in the wearable device market due to changing values
Materiality: Fulfill our social responsibility		
Increasing stakeholder engagement	○ Growing stakeholder interest in sustainability	● Loss of trust from stakeholders and damage to corporate value due to inappropriate responses to issues
Realizing responsible supply chains	○ Growing worldwide interest in business and human rights	● Occurrence of human rights violations in the Company and its supply chain
Respecting human rights and promoting diversity	○ Improvement in corporate performance by fostering a free and open organizational climate ○ Growing worldwide interest in business and human rights ○ Transformation in awareness and understanding of DE&I and social minorities	● Decreased engagement and lack of innovation due to slow progress in improving organizational culture ● Damage to corporate value in the event of serious human rights violations, including those in the supply chain ● Decreased engagement due to slow progress in DE&I
Strengthening governance	○ Strengthening of the governance system leading to acceleration of strategy implementation and increased responsiveness to change ○ Competitiveness increase through appropriate risk-taking	● Delays in strategic progress and decreased organizational power due to governance failures ● Generation of losses and loss of public trust due to noncompliance

③ Risk management

As the environment in which we operate grows more complex and uncertain, effectively dealing with risks that could have a significant impact on corporate activities will be essential in order to carry out business strategies and business objectives. Epson sees sustainability-related risks as risks that could significantly impact management and manages them appropriately.

■ Risk management process



④ Metrics and targets

■ Materialities and key sustainability topics, KPI

In order to effectively implement initiatives for the four materialities, which are high-priority issues that we should address to solve societal issues, we have selected 12 key sustainability topics, set key performance indicators (KPIs) for initiatives, reflected them in our Mid-Range Business Plan, and steadily taken initiatives.

■ Key sustainability topics and achievements

Key Sustainability Topics	Initiative Topics	Key Performance Indicators (KPI)	FY2022 (Target)	FY2022 (Result)
Materiality: Achieve sustainability in a circular economy				
Decarbonization initiatives	Using energy-saving equipment and facilities, removing greenhouse gases, engaging suppliers, and pursuing carbon-free logistics to become carbon negative by 2050	- Scope 1 and 2 GHG emissions reduction ratio - Scope 3 GHG emissions (per unit of business profit) reduction ratio	- Reduce by 21% compared to FY2017 - Reduce by 30% compared to FY2017	- Reduced by 60% compared to FY2017 - Reduced by 45% compared to FY2017
	Using renewable electricity to achieve RE100	Renewable electricity adoption ratio	Maintain at 100% domestically	- Maintained at 100% domestically - Achieved 79% globally
Closed-resource-loop initiatives	Becoming underground resource[1] free by 2050: - Using resources efficiently by reducing size and weight, using recycled materials, etc. - Establishing closed-loop production systems that minimize production losses	Closed-loop materials usage ratio	≥ 20%	21%
		Final landfilled rate[2]	≤ 1%	0.79%
Customer environmental impact mitigation	Maximizing avoided emissions with products and services that have a lower environmental impacts[4]	Emissions avoided through products & services	≥ The previous year	[3]
Environmental technology development	Eliminating virgin plastics and closing resource loops by using Dry Fiber Technology to produce recycled materials and natural materials. - Packaging materials - Housing materials	Progress of development process	- Packaging: Verify practical use for Epson products - Housings: Begin technology verification for practical use	- Packaging: Achieved practical application to watches (cotton scraps) - Housings: Improved the impact resistance of cellulose composite biomass plastic
	Establishment of high-added-value recycling technology for used metal	Progress of development process	Develop technology for expanding the types of materials recycled	Higher performance of Epson Atmix's powder: Developed a high-voltage-resistant insulating film

Key Sustainability Topics	Initiative Topics	Key Performance Indicators (KPI)	FY2022 (Target)	FY2022 (Result)
Materiality: Advance the frontiers of industry				
Increasing productivity through digitization and automation	Leading the digitization of commercial and industrial printing with inkjet technology and diverse solutions, to create clean, space-efficient workplaces, reduce environmental impact, and improve productivity	Average sales growth rate of commercial and industrial inkjet printers compared to the previous year	—[5]	—[5]
Improving working environment and improving educational environment	Reducing environmental impact and improving productivity with inkjet technology and open solutions, to lead the evolution of home study and distributed office printing	Average sales growth rate of high-capacity inkjet printers for SOHO and home users compared to the previous year	—[5]	—[5]
	Eliminating labor shortages through automation using robots	Number of labor shortages eliminated[6]	—[5]	—[5]
	Providing a fair, natural, and comfortable communication environment without boundaries, combining the real and remote, with both a sense of presence and information content	Number of co-creation and collaboration projects, or number of partners	—[5]	—[5]
	Creating homogeneous learning opportunities through smart, portable displays that enable large-screen communication in a compact form, to mitigate learning disparities stemming from differences in regional and social conditions	Number of local demonstration programs through co-creation and collaboration	—[5]	—[5]

Key Sustainability Topics	Initiative Topics	Key Performance Indicators (KPI)	FY2022 (Target)	FY2022 (Result)
Materiality: Improve the quality of life				
Proposing diverse lifestyles	Enriching the diverse lifestyles of people through lifestyle-related disease prevention and helping people improve their sports performance by providing personalized value in an easy-to-understand visual manner using proprietary sensing technology and algorithms	Percentage of revenue that the data business in support services[7] accounts for	—[5]	—[5]
Realizing an abundant and colorful life	Providing attractive and high-quality products with our efficient, compact, and precision technologies and our artisanal skills, to enrich the diverse lifestyles of our customers	Sales growth rate of attractive, high-quality products compared to the previous year	—[5]	—[5]

Key Sustainability Topics	Initiative Topics	Key Performance Indicators (KPI)	FY2022 (Target)	FY2022 (Result)
Materiality: Fulfill our social responsibility				
Increasing stakeholder engagement	Responding to needs and social demands by strengthening dialogue with stakeholders	Social support activities, monetary value of support	≥ 0.1% of sales	0.1% of sales
		Number of dialogs with shareholders and investors and reflecting opinions on management	≥ 200 meetings with shareholders & investors	269 times
		Evaluation indices of external evaluation agencies	Acquire high recognition	Acquired high recognition[8]
Realizing responsible supply chains	Reinforcing supply chain BCM	Impact on customers due to disruption and stagnation in supply chain (Aiming to have no impact on sales in FY2024)	Impact on sales: Half that of FY2021	- Impact of supply chain disruption on sales was limited to certain businesses - Significantly cleared the target
	Realizing responsible supply chains	CSR risk levels of suppliers	CSR risk ranks of main suppliers (direct materials): - 0% high risk, ≤ 6% middle risk	- High risk: 0% - Middle risk: 9%
	Realization of responsible sourcing of minerals	- Conflict-free (CF) ratio of products - Survey response ratio[9]	- Release CF information for CF strategic products - 100% survey response ratio	- Smelter confirmation of CF strategic products - Survey response collection ratio: 99.6%

Key Sustainability Topics	Initiative Topics	Key Performance Indicators (KPI)	FY2022 (Target)	FY2022 (Result)
Respecting human rights and promoting diversity	Creating a free and open organizational culture	Organizational climate assessment score for "strength to work in teams"	Reset KPI due to change[10] in assessment method with introduction of the motivation cloud (employee engagement survey)	The targets for FY2025 were set as follows - Engagement rating: A (score of 58.0 or higher) - Number of workplaces with D rating: zero
		Number of high risk workplaces with "general health risk" in the mental health check	Reduce the number of high risk workplaces with "general health risk" from the previous year, heading toward zero[11]	Reduced the number of high-risk workplaces compared to FY2021
		Implementation of harassment prevention measures (education and training, case sharing, appointment process, etc.), ensuring to report cases to the head office	Plan & conduct new training course for managers & for general staff	Revised training content based on social trends, sanction cases, etc.
			Strengthen primary point of contact for harassment consultations & strengthen coordination with the post-report process	- Identified company-wide issues in response to common activities of the contact points - Confirmed standard response at each contact point
	Respect for human rights through dissemination of the new "Human Rights Policy" within the Group	Embedding and improving the commitment for respecting human rights, human rights due diligence (DD) & remediation mechanisms	Announce the Human Rights Policy and assess and improve the state of human rights DD & remediation mechanisms	Disseminated the Human Rights Policy by launching training and identified the current status and areas for improvement of human rights DD & remediation mechanisms
	Utilizing human resources in a way that respects diversity	- Female manager ratio (the Company) - 1 or more female executive officers by FY2025 (in Japan)	- Female manager ratio: 5% - Promote the participation of woman training	- Female manager ratio: 4.1% - Two managers participated in external training
Strengthening governance	Reinforcement of compliance management platform	Number of serious compliance violations[12]	No serious compliance violations	No serious compliance violations

Key Sustainability Topics	Initiative Topics	Key Performance Indicators (KPI)	FY2022 (Target)	FY2022 (Result)
	Enhancement of Group compliance level	Implementation ratio of compliance training (e-learning) to all Group employees[13]	Completion rate in Epson Group: 100%	In Japan: 99.0% Overseas: 98.5%
	Maintenance and strengthening of governance structure to realize transparent, fair, prompt and decisive decision-making	- Ratio of Outside Directors in the Board of Directors - Ratio of Outside Directors in Nomination & Compensation Committees	- Maintain the ratio of Outside Directors on the board at ≥1/3 - Maintain the ratio of Outside Directors on the Nomination & Compensation Committees at ≥80%	- Ratio of Outside Directors on the Board of Directors: Maintained 1/3 or more - Ratio of Outside Directors on the Nomination & Compensation Committees: Maintained 80% or more
	Strengthening information security	Number of serious information security incidents	0	2

1 Non-renewable resources such as oil and metals
2 Ratio of landfilled amount of production resources against the volume of resources input
3 Actual quantitative results for FY2022 will be disclosed on the Company website in late September 2023. https://corporate.epson/en/sustainability/initiatives/materiality.html
4 Quantified the contribution of products and services toward GHG emissions reductions
5 The key performance indicators and targets for the materialities “Advance the frontiers of industry” and “Improve the quality of life” will be applied from FY2023.
6 Calculated based on the effectiveness of Epson’s internal projects
7 Business model that provides value by converting data based on algorithms
8 Sustainalytics: Low; FTSE: 4 or higher; Top 50 or higher in “Toyo Keizai CSR ranking”
9 Ratio of suppliers submitting responses to suppliers we have sent survey requests
10 Changes designed to achieve greater work engagement
11 Target-value control is performed for workplaces with 10 or more respondents.
12 Cases of violation that correspond to timely disclosure matters
13 Target: The Company and domestic and overseas subsidiaries

(2) Climate change (TCFD)

Climate change is greatly impacting society and Epson sees it as a serious social problem. The goal of the Paris Agreement is to limit the increase in global average temperature to well below 2℃ compared to pre-industrial levels and to pursue efforts to limit it to 1.5℃. Epson has pledged to do its part by achieving its goal of reducing its total emissions in line with the 1.5℃ scenario by 2030. As stated in Environmental Vision 2050, which was announced along with the Epson 25 Renewed corporate vision, Epson seeks to become carbon negative and underground resource[14] free by 2050 by decarbonizing and closing the resource loop. We are also providing products and services that have a smaller carbon footprint and are developing environmental technologies.

Since indicating its support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) in October 2019, Epson has disclosed information (on governance, strategy, risk management, and metrics and targets) based on the TCFD framework so as to enable good communication with shareholders, investors, and a broad spectrum of other stakeholders. Epson decided to disclose the level of financial impact in 2021 in a quantitative manner for the first time. Furthermore, in 2022, Epson enhanced its disclosure of specific initiatives and achievements aimed at reducing GHG emissions in response to the update to the TCFD recommendations. In 2023, Epson enriched qualitative and quantitative information on the highlights and specific results of its initiatives to address climate-related risks and opportunities.

[14] Non-renewable resources such as oil and metals

■ Scenario analysis findings

We analyzed scenarios based on the TCFD framework to quantitatively assess the financial impact of climate-related risks and opportunities on Epson's strategy. In a 1.5℃ scenario in which there is rapid decarbonization of society, we found that there is transitional risk of an increase in operating costs due to market changes, policies, and legislation, but we expect to limit the financial impact by strengthening products and services based on inkjet technology and paper recycling technology.

Epson will spend approximately 100.0 billion yen (approximately 25.0 billion yen from 2021 to 2025 and approximately 75.0 billion yen from 2026 to 2030) over a period of 10 years ending in 2030 to accelerate decarbonization, close the resource loop, and develop environmental technology. The solution to climate-related risks aligns with the materialities we have set of achieving sustainability in a circular economy and advancing the frontiers of industry and will lead to opportunities for business expansion with Epson's low environmental impact products and services that save electricity and reduce waste. These products and services will help to mitigate customers' environmental impact and control climate change.

Based on the results of these analyses, Epson will continue to try to maximize its opportunities while addressing recognized risks in order to achieve decarbonization, which we believe is a rational goal both for society and for Epson.

On the other hand, even in a 4℃ scenario in which global warming has advanced because the world failed to take additional measures, we found that the impact of physical risks on our domestic and overseas sites due to the damages arising from weather extremes would be small.

① Governance

Important matters related to climate change are supervised by the board of directors, which receives reports at least once a year from the Sustainability Strategy Council, an advisory body to the president that plans and reviews strategic sustainability activities for the Epson Group, including matters related to climate change.

In addition, Seiko Epson's president and representative director, who has ultimate responsibility and authority for climate-related issues, delegates responsibility for climate-related issues to the sustainability director, a Director and Senior Managing Executive Officer. The sustainability director heads the Sustainability Promotion Office and oversees the execution of climate change initiatives, including TCFD.

The executive organization is identical to that shown in "(1) Sustainability in general ① Governance."

② **Strategy**

Epson has determined that achieving sustainability in a circular economy and advancing the frontiers of industry are material matters. To achieve these, we are reducing greenhouse gas (GHG) emissions by leveraging our efficient, compact, and precision technologies to drive innovation. Furthermore, to increase resilience against climate change, we have been implementing activities at regular meetings of the Environmental Strategy Council and its subcommittees to realize our Environmental Vision 2050. In FY2022, we reviewed the status of implementation of activities and submitted deliberations and reports to various management meetings, focusing on the following initiatives.

Increasing resilience	FY2022 initiatives & results	
Environmental Strategy Council	Decarbonization	- Examined plans for Scope 1 and 2 zero emission targets and upgrades of facilities and equipment, and reduction scenarios. - Examined policy for sustainable and stable procurement of renewable energy as a maintenance activity in Japan. - Supplier engagement (suppliers' switching to renewable energy, recycled material surveys, etc.)
	Closed resource loop	- Examined introducing resource loop indicators and targets to become underground resource free.
	Customer environmental impact mitigation	- Examined calculation logic for objective and fair avoided emission for each product genre that contributes to reducing the environmental impact of society.
	Environmental technology development	- Materialized the topic of dry fiber technology application (developed packaging materials and biomass plastic materials). - Developed high-value-added recycling technology for scrap metal.

■ Scenario analysis of climate-related risks and opportunities

Epson identified and evaluated scenarios in the categories of transition risk, physical risk, and opportunity to evaluate the importance of climate-related risks and opportunities. Seven risks and opportunities were singled out for evaluation. We evaluated the business impact and financial impact of each on the basis of the scenarios corresponding to a temperature increase of 1.5℃ presented by the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA) as well as on the basis of internal and external information.

■ Climate-related risks and opportunities in a 1.5℃ scenario

The results of evaluating climate-related risks and opportunities based on scenario analysis are as follows.

Category		Evaluated risks & opportunities	Actualization	Business impacts	Financial impact
Transition risks	Market changes Policy & laws and regulations	Paper demand	Short-term	**Impact** - We were unable to detect a strong relationship between climate change and the change in paper demand, but demand for printing and communication paper is assumed to be on a declining trend. Even if the shift to paperless advances further due to changes brought about by COVID-19 (such as the contraction of office printing because of decentralization), we expect only a limited financial impact from the strengthening of products and services based on inkjet technology and paper recycling technology (reduction of printing costs, reduction of environmental impacts, increase of ease of printing, appeal using usefulness of paper information).	Small
		(Initiatives in Environmental Vision 2050) - Decarbonization - Closed resource loop - Environmental technology development	Short-term	**Impact** - Decarbonization of products, services, and supply chains as well as advanced initiatives in resource recycling are needed to respond to the shared global societal issues of climate change and resource depletion. - Scientific and specific solutions are necessary to develop environmental technologies linked with the rapid decrease of environmental impacts. **Response to risks** - Decarbonization ・ Renewable energy use ・ Energy-saving facilities & equipment ・ Greenhouse gas removal ・ Supplier engagement ・ Carbon-free logistics - Closed resource loop ・ Use resources effectively ・ Minimize production losses ・ Extend product service lives - Environmental technology development ・ Dry fiber technology applications ・ Naturally derived (plastic-free) materials ・ Material recycling (metal, paper) ・ CO_2 absorption technology	Invest a total of approximately ¥100.0 billion by 2030
Physical risks	Acute	Damage to business sites due to floods	Long-term (End of 21st century)	**Impact** - Based on the results of the latest FY2022 risk assessment for 36 sites (17 sites in Japan and 19 sites overseas), the changes in future operational risks due to flooding (rivers overflowing), high tides and drought are limited. - Short-term climate change risks to the supply chain will be addressed in line with our business continuity plans.	Small
	Chronic	Damage to business sites due to rising sea levels			
		Impact on operations due to drought			

Category		Evaluated risks & opportunities	Actualization	Business impacts	Financial impact
Opportunities	Products and services	(Initiatives in "Environment Vision 2050") - Customer environmental impact mitigation	Short-term	**Assumed scenarios** - The need for environmentally considerate products and services will increase due to the introduction of a carbon tax, soaring electricity prices, rising waste disposal costs, sustainable production volume, and reduced resource use. **Business opportunities** - In the growth areas defined in Epson 25 Renewed, we expect to grow revenue at a CAGR (compound annual growth rate) of 15% by providing 1) inkjet office printing, commercial & industrial inkjet printing and printheads that reduce environmental impacts, increase work productivity, and reduce printing costs; and 2) production systems with expanded use of new production devices to reduce environmental impacts.	Large CAGR of 15% is expected in growth areas by FY2025
		Environmental business	Short-term	**Assumed scenarios** - Market growth is expected in the areas of global warming prevention, waste treatment, and effective utilization of resources. - The shift to a circular economy is expected to drive market growth for recycled plastics, high-performance biomaterials, bioplastics and metal recycling. **Business opportunities** - Generate revenue by upcycling (enhancing functionality), eliminating plastics (packing and molding materials), creating new high-value-added materials and carrying out other measures through the establishment of technologies, such as applications of dry fiber technology, including paper recycling, development of naturally derived materials (elimination of plastics) and recycling of raw materials (metal and paper recycling) as effective solutions for combatting global warming and shifting to a circular economy.	Medium

Actualization Short term: ≤ 10 years Medium term: 10-50 years Long term: > 50 years
Financial impact Small: ≤ 1 billion yen Medium: 1-10 billion yen Large: > 10 billion yen

Epson implemented the following initiatives in FY2022 to promote decarbonization, close the resource loop, develop environmental technology, and mitigate environmental impacts on the customer's end.

<table>
<tr><th colspan="2">Category</th><th>Evaluated risks & opportunities</th><th>Initiatives implemented in FY2022</th><th>FY2022 quantitative results</th></tr>
<tr><td rowspan="4">Transition risks</td><td rowspan="4">Market changes Policy & laws and regulations</td><td>Paper demand</td><td>- In Office & Home Printing, sales of printers increased in terms of both units and revenue. Although sales of ink cartridges decreased due to the normalization of at-home print demand, sales of high-capacity ink bottles and ink for office shared printers increased in conjunction with the increased number of machines in the field. The financial impact of fluctuations in demand for paper in the market targeted by Epson was limited.</td><td>Small[15]</td></tr>
<tr><td>Decarbonization</td><td>- Promoted maintenance activities in Japan and expansion of switchover overseas, toward 100% renewable energy at all sites by 2023.
(Ratio of renewable energy utilization in FY2022: 79% on an electric power basis)
- Developed a procurement policy for long-term stable procurement of renewable energy.</td><td rowspan="3">¥4.53 billion
(breakdown)
·Investment:
¥2.02 billion
·Expenses:
¥1.10 billion
·Personnel expenses:
¥1.41 billion

Cumulative input costs and investments for Environmental Vision 2050:
¥7.85 billion in total</td></tr>
<tr><td>Closed resource loop</td><td>- Expanded the use of recycled plastic products, and increased the long-term use of products through refurbishing/reuse.
- Acquired a site for a new plant to recycle metal waste as materials for metal powder products, and completed the basic design of the recycling plant (construction to begin in July 2023, operation in June 2025) (Epson Atmix).</td></tr>
<tr><td>Environmental technology development</td><td>- Implemented the practical application of packaging materials made from cotton scraps by applying dry fiber technology, and promoted the development of cellulose composite bioplastics. Selected CO_2 absorption technologies and made investment in environment-related technologies and material development.</td></tr>
<tr><td rowspan="3">Physical risks</td><td>Acute</td><td>Damage to business sites due to floods</td><td rowspan="3">- Assessed the latest risks based on the IPCC Sixth Assessment Report for 36 sites (17 in Japan, 19 in overseas).
- Confirmed that the volatility in Epson's future operation risk caused by floods (river flooding), high tide and drought is limited. Implemented BCP measures against the risk of inundation of facilities on lower floors of Toyoshina Office[16].</td><td rowspan="3">–</td></tr>
<tr><td rowspan="2">Chronic</td><td>Damage to business sites due to rising sea levels</td></tr>
<tr><td>Impact on operations due to drought</td></tr>
<tr><td rowspan="2">Opportunities</td><td rowspan="2">Products and services</td><td>Customer environmental impact mitigation</td><td>- Promoted initiatives in the growth areas (office printing, commercial & industrial printing, printhead sales, production systems) under "Epson 25 Renewed."</td><td>FY2020 →FY2022 Revenue CAGR +16%[17]</td></tr>
<tr><td>Environmental business</td><td>- Examined business plan for the creation of environmental solution business through business and technology development activities with dry fiber technology as the core technology</td><td>–</td></tr>
</table>

15 Small financial impact: ¥1 billion or less

16 A major domestic site with a long-term flooding risk (end of 21st century).

17 Comparison of actual results for FY2022 to FY2020 forecasts at the time of announcement of Epson 25 Renewed

③ Risk management

As the environment in which we operate grows more complex and uncertain, effectively dealing with risks that could have a significant impact on corporate activities will be essential in order to carry out business strategies and business objectives. Epson sees climate-related issues as risks that could significantly impact management and manages them appropriately.

■ Climate-related risk identification, assessment and management process

1. Study	2. Identify & assess	3. Manage
- Considering the changes in the IPCC Sixth Assessment Report, conduct surveys on natural disaster risks caused by climate change at major sites in Japan and overseas. - Research social trends.	- Identify risks and opportunities from the policies and actions in Epson 25 Renewed and Environmental Vision 2050. - Evaluate scenario analysis through the Sustainability Strategy Council and board of directors.	- Effectively manage risks through the Sustainability Strategy Council and the board of directors.

④ Metrics and targets

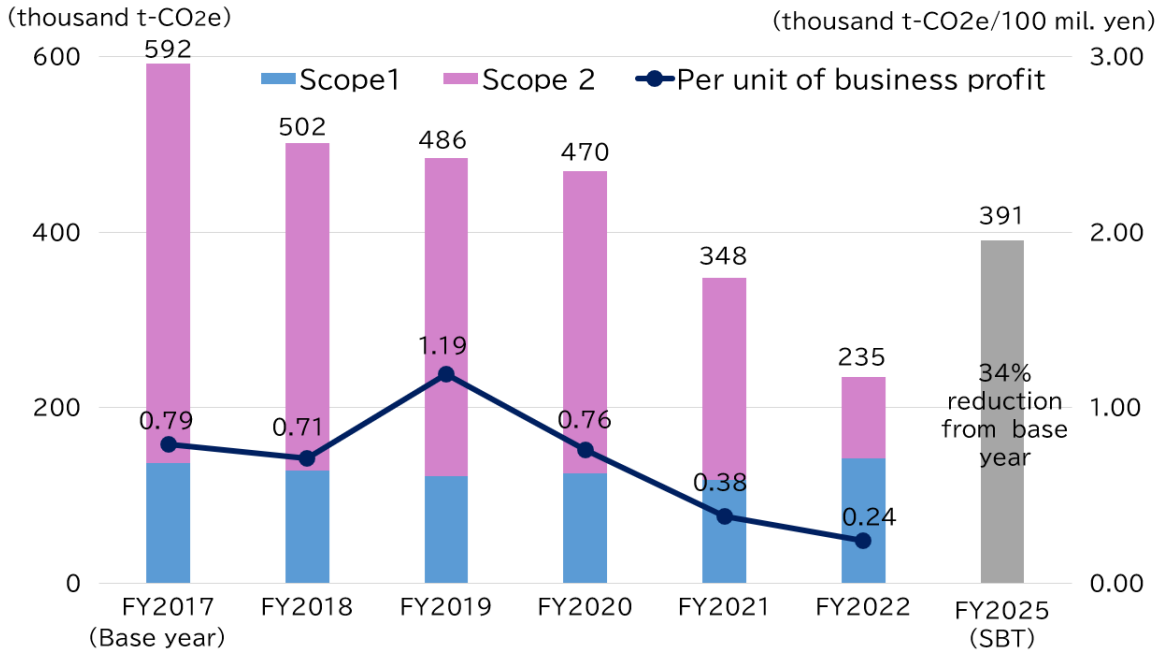
Epson aims to achieve the medium- and long-term greenhouse gas (GHG) emission reduction targets to realize Environmental Vision 2050. For this reason, we are working to reduce environmental impacts throughout the value chain by improving the environmental performance of our products, utilizing renewable energy, enhancing our business activities and taking other steps, based on our efficient, compact, and precision technologies.

■ GHG reduction targets (general indication of aggressive total emissions reduction targets in line with the 1.5℃ scenario)

Scopes 1, 2, 3[18]	Reduce GHG emissions by 55% compared to FY2017 by FY2030.

[18] Scope 1: Direct emissions from the use of fuel, etc., by the reporting company
Scope 2: Indirect emissions from purchased energy
Scope 3: Emissions from the reporting company's value chain

■ GHG reduction results (Scopes 1, 2)



	FY2017 (Base year)	FY2018	FY2019	FY2020	FY2021	FY2022	FY2025 (SBT)
Scope 1 (Thousand tons of CO2e)	137	128	122	125	118	142	
Scope 2 (Thousand tons of CO2e)	455	374	363	345	230	93	391
Total for Scopes 1 and 2 (Thousand tons of CO2e)	592	502	486	470	348	235	
Per unit of business profit (Thousand tons of CO2e/100 million yen)	0.79	0.71	1.19	0.76	0.38	0.24	–

(Note) Totals do not add up in some cases due to rounding off of fractions.

(3) Human capital and diversity

■ Concept and initiatives of human capital

Epson is committed to contributing to the resolution of social issues through its business based on the Corporate Purpose, with the aim of enhancing corporate value and sustainable growth over the medium to long term. To achieve this, it is necessary to expand and create businesses through environmental, co-creation, and DX initiatives, in line with the positioning, strategies, and policies for each business domain defined in the long-term vision, Epson 25 Renewed. These activities are supported by efforts to strengthen the management base through human resource strategies. Epson is promoting the pillars of its human resource strategy, which are "allocate human resources to priority areas," "strengthen human resource development" and "organizational activation," in order to develop human resources who are capable of thinking autonomously about what services are required in a society undergoing change and how to provide solutions to social issues, and are capable of producing services and solutions, as well as to create an environment in which they can demonstrate their abilities.

■ Basic approach to human resource strategy

Epson is a company born and raised in Shinshu. Today, while maintaining its core functions and bases of operations in Shinshu, Epson has established 107 R&D, production, and sales bases in countries and regions outside Japan, which account for approximately 80% of the revenue and 75% of the employees, and continues to develop its business globally. Therefore, at Epson, the key to our human resource strategy is to build a human resource base that will enable us to survive severe global competition and achieve our management objectives and business growth by proactively acquiring external human resources and achieving diversity, while turning local job security and the relatively long-term employment that comes with it into our strength. For this reason, the following are key points for Epson's human resource strategy.

- We will accurately grasp various customer needs and promote business reform and innovation to respond quickly and flexibly. To this end, we will actively acquire specialists from outside the Company in new and highly specialized fields, as well as management personnel who can work from a managerial perspective. In addition, we will focus on areas to be strengthened and build optimal formations from a global perspective.
- Epson, as a "company where people continue to grow and develop their careers autonomously" over a long-term time horizon, provides various training programs, reskilling, rotation, internal recruitment systems, and other opportunities for challenge to enhance each employee's ability to respond to changes in the internal and external environment. In addition, to build an optimal formation from a global perspective, we will develop and deploy human resources who can work globally, including overseas personnel.
- To enhance creativity to realize innovation, we will secure a diverse workforce, including women, non-Japanese, mid-career hires, people with disabilities, and older workers, as well as create a comfortable work environment that leverages our advantages as a regional company, such as our commitment to organizational culture, the natural environment of Shinshu, and proximity to work and home, to increase employee engagement and maximize the overall strength of the organization by taking advantage of our diverse human resources.

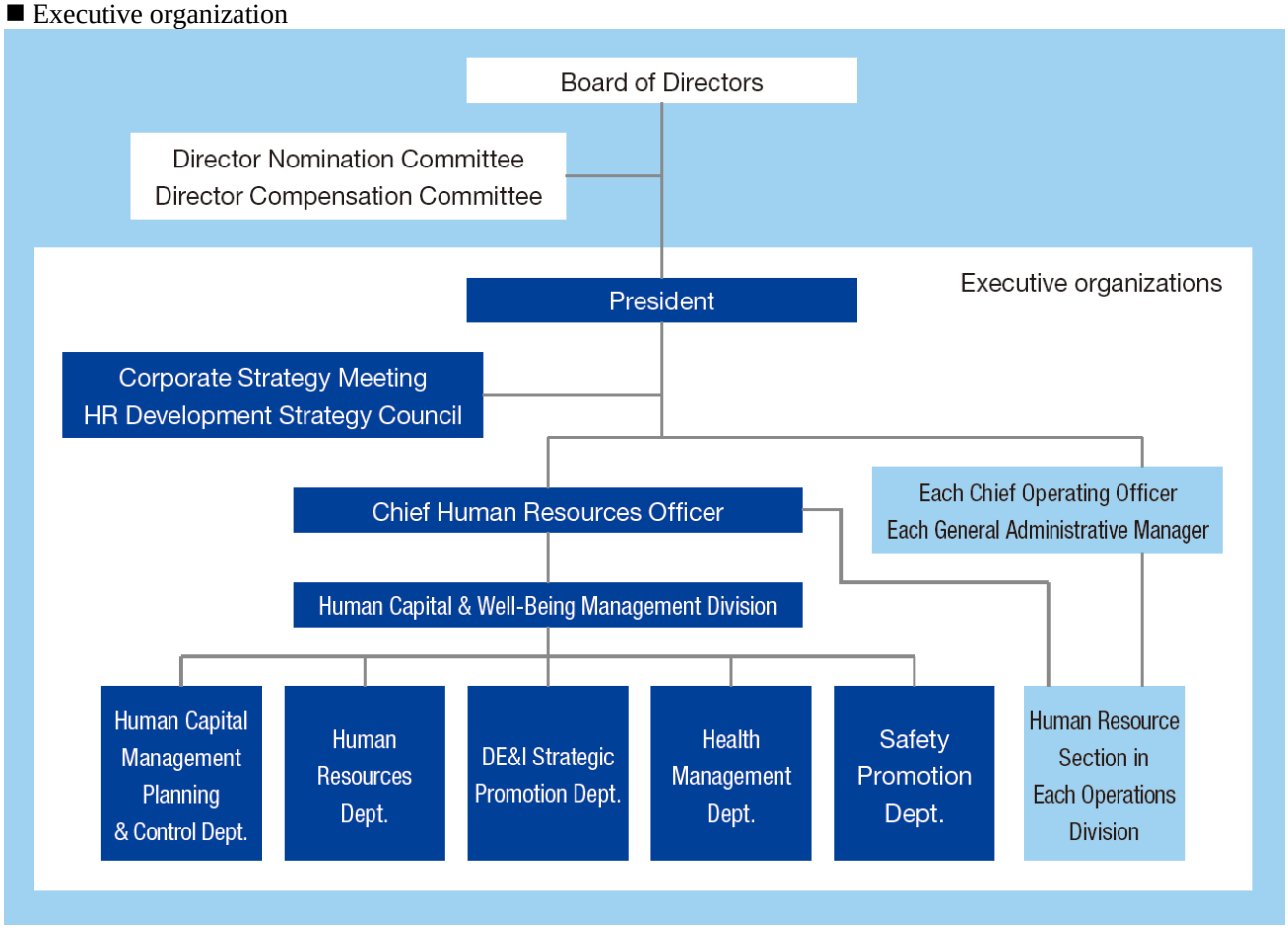
① Governance

The President appoints the Chief Human Resources Officer (CHRO) to be responsible for important matters related to human resource strategy, and the CHRO is responsible for company-wide planning, management, and implementation of such matters. The CHRO also has a certain amount of authority over the personnel functions under the supervision of each business and General Administrative Manager, thus creating a system that achieves overall optimization and implements human resource strategies companywide.

The CHRO formulates mid-term personnel strategies based on the medium-term management strategy, and reports them to the Board of Directors as part of the mid-range business plan after discussion and deliberation at medium-term strategy deliberations, etc. The main items set forth in the mid-term personnel strategies which are relevant to "allocate human resources to priority areas," "strengthen human resource development" and "organizational activation" are discussed and reported at the Corporate Strategy Meeting and the HR Development Strategy Council as required. Among these items, matters of particular importance to management, such as succession planning and training of senior management, matters related to diversity, and harassment, are regularly brought up for discussion

or reported to the Board of Directors at least once a year, thereby ensuring appropriate supervision by the Board of Directors.
With regard to the selection and compensation of officers, the Director Nomination Committee and the Director Compensation Committee, each chaired by an Outside Director and composed of a majority of Outside Directors, formulate succession plans, review the nomination process for officers, confirm the roadmap, select candidates, formulate and implement development plans, evaluate, narrow down and replace candidates, and confirm the officer compensation system, individual base compensation and bonus payments.

■ Executive organization



② **Strategy**

■ Image of human resources we seek

In order to realize its management strategy and execute its business, Epson needs people who can respond quickly to change with a broad perspective and a high level of expertise, and create customer value independently and autonomously from the customer's perspective, based on the penetration of Corporate Purpose and the Epson Way, and a shared understanding of the business approach set forth in the long-term vision.
In anticipation of further declining birthrates, an aging society, and a shrinking workforce in Japan, we have begun to formulate a human resource portfolio on a global basis in order to define the human resource requirements needed to formulate and execute management strategies and establish new business models, and to identify gaps from the current situation. With this as a starting point, we will identify the human resource issues needed to realize our medium- to long-term strategies and implement appropriate measures to realize an optimal personnel structure company-wide.

■ Human resource strategies, opportunities, and risks

Epson has human resource strategies that focus on developing the people we envision in line with the image of human resources we seek, and on creating an organizational climate in which our human resources can fully flourish. Based on the following assessment of risks and opportunities, we are working on three human resource strategies: allocate human resources to priority areas, strengthen human resource development, and organizational activation.

Human resource strategies	Opportunity (○)	Risk (●)
Allocate human resources to priority areas	○ Acceleration of business growth through intensive allocation and optimal allocation of human resources to priority areas (growth areas, new areas, etc.) ○ Increased employee motivation, engagement, and productivity by responding to their motivation and providing rewarding and growth opportunities	● Failure to secure the necessary quality and quantity of personnel, resulting in obstacles to business execution ● Lost growth opportunities and financial losses as a result of the above
Strengthen human resource development	○ Increased employee motivation, engagement, and productivity as a result of employees feeling and experiencing growth in response to the provision of rewarding and growth opportunities	● Failure to secure the necessary quality and quantity of personnel, resulting in obstacles to business execution ● Lost growth opportunities and financial losses as a result of the above ● Decreased employee motivation and increased employee turnover due to failure to meet expectations for learning and growth ● Failure to develop human resources who can acquire the necessary abilities and skills and respond to change, resulting in obstacles to business execution and financial losses
Organizational activation	○ Fostering of an environment conducive to innovation through the diverse ideas and creativity of a diverse workforce ○ Reduced recruiting costs and improved competitiveness by securing and retaining excellent human resources ○ Increased motivation, engagement, and productivity by creating a comfortable work environment for a diverse workforce	● Deterioration in operational efficiency due to a decline in employee morale and motivation, occurrence of compliance violations, and loss of trust due to a lack of ethical standards ● Harassment, loss of motivation and strength to work in teams due to adverse effects on physical and mental health, and other various human rights violation risks in the workplace ● Additional costs due to accidents

■ Human resource development policy

Human resource strategy (1) Allocate human resources to priority areas

As the foundation of its business operations, Epson formulates workforce plans based on forecasts of future changes in its workforce structure and the workforce needs to realize its business strategies. In FY2020 and FY2021, we made certain restraints due to the COVID-19 pandemic. However, as a policy, we will hire more than 350 new graduates and mid-career workers combined each year in a planned and stable manner over the future medium term.

In addition to intensively allocating hired personnel to the growth areas of printing (office, commercial and industrial) and production systems (robotics), and to the new areas of environmental business, environmental technology, and sensing, we will provide internal human resources with specialized training, conversion training, etc., to deploy them in the priority areas. We will also acquire management-level human resource and specialists from outside the company and allocate them to the priority areas after clarifying human resource requirements.

Human resources strategy (2) Strengthen human resources development

Human resources development

Once a year, Epson conducts an overview of the workforce situation in each organization, defines the roles and requirements of key positions such as management positions, and formulates succession plans based on these definitions. In addition, we list candidates for future executive management and middle management positions and global human resources, and formulate training plans.

Our human resource development is based on on-the-job training (OJT). In addition, we have established an education system to provide education by job level and various types of specialized education as off-the-job training, and we are actively engaged in rotation to broaden the abilities, experience, and knowledge of each employee in order to strengthen their ability to respond to changes and contribute to the effective and efficient operation of the value chain.

We have in place screened, rank-based education programs for the development of leadership human resources.

Training of global human resources

In order to deliver valuable products to customers, the entire global value chain must operate effectively and efficiently, requiring global human resources who have extensive knowledge and experience in each function and are

capable of negotiating and reaching mutually acceptable compromise. In various regions of the world, we hold seminars every year to foster management leaders at overseas subsidiaries and promote personnel exchanges across regions in order to develop leaders who share common values and are capable of making accurate and prompt decisions in the field. As in Japan, we also work with local top management and human resource departments to define roles and requirements for overseas human resources, and formulate succession and training plans for key positions and key human resources. Based on these activities, we continue to hold internal discussions on optimal functional allocation, and are working to build an optimal formation from a global perspective.

■ Internal environment improvement policy

Human resource strategy (3) Organizational activation

DE&I

In order to understand our diverse customers and create new value that surprises and inspires them in this era of rapid change, we aim to create an environment where a diverse range of people gather at Epson around the world, where all employees respect each other's individuality as a matter of course, in a fair environment, without any prejudice, where all employees enjoy working and take responsibility as members of society, and where they continue to innovate by growing and challenging themselves together with Epson. Epson recognizes that gender equality is one of the greatest challenges facing the Company, particularly in Japan, and is working to achieve a state in which the percentage of women in middle management and executive management positions equals the percentage of women employees to all employees as soon as possible. In addition, to encourage employees to change their mindsets, we send out messages from top management, conduct various training programs, create a comfortable workplace for women, provide support through consultation points, and encourage men to take childcare leave.
Furthermore, to support the career development of diverse human resources and promote their success, we are developing various career support programs and an education system that provides opportunities for voluntary relearning.

Employee engagement

Epson aims to improve the quality of relationships through a free and open communication environment and to create an organizational culture in which employees and the company continue to grow together.
Epson has conducted an annual organizational climate survey since 2005 to gain an understanding on the current state of organizational culture. Since FY2020, we have made company-wide efforts to improve the "strength to work in teams," which is a particularly important element for improving the quality of relationships but which scored low overall.
In FY2022, in addition to improving the quality of relationships, we introduced an "engagement survey" that enables comparisons with external organizations, with the aim of creating an environment where each employee has more motivation and initiative than before, and where diverse human resources can work autonomously and with vitality, to continue our efforts to reform the organizational culture and increase productivity through the reform.

Creation of comfortable working environment

Epson aims to create an environment where employees have motivation and can work with vitality and in a physically and mentally healthy and safe manner while adapting to various changes in the environment. In particular, we are promoting flexible working hours and workplaces, with a focus on telework, which has advanced in response to the COVID-19 pandemic, and the creation of an environment that enables a work-life balance in life-stage events such as childcare, medical treatment, nursing care, and infertility treatment, as well as measures to prevent harassment in the workplace.
Epson, whose main sites are concentrated in the Shinshu area in particular, believes that it is even more important to develop flexible working styles that allow employees to work at any time and any place, and working styles that enable diverse employees to develop their individual careers, in order to attract managerial human resources and specialists and to promote diversity in the future.

Health management

We believe that the health of our employees is of paramount importance to the company, and based on our Management Philosophy, the Epson Group Basic Occupational Health and Safety Policy, and the Epson Group Health Management Declaration, we aim to improve the health of our employees and help them feel fulfilled in their work and work with vitality. In April 2022, we established our mid-range health plan, Health Action 2025, which focuses on two key areas: "mental and physical health" to foster autonomy and harmonize work and health, and "workplace health" to ensure attentiveness to safety and foster an organizational culture of teamwork and vitality.
In March 2023, the Company was recognized for its past activities under the Health & Productivity Stock Selection Program for the second consecutive year.

Occupational safety and health
In FY2000, Epson formulated a policy and program based on the Occupational Safety and Health Management System (OSHMS), which conforms to the guidelines of the International Labor Organization (ILO), and has been implementing initiatives in four main areas: safety, health, fire prevention and disaster management, and facilities. This has been further evolved into activities based on the international standard ISO45001, and we are working to further improve the health and safety environment in the workplace so that all employees in the Group can work with a peace of mind and vitality.

③ Risk management

As the environment surrounding companies becomes increasingly complex and uncertain, it is essential to accurately address risks that could have a significant impact on corporate activities in order to execute management strategies and business objectives. Epson positions issues related to human capital and diversity as risks with significant management impact and manages them appropriately.

■ Human capital- and diversity-related risk identification, assessment and management process

1. Study	2. Identify & assess	3. Manage
- With the Human Capital & Well-Being Management Division playing a pivotal role, survey risks and opportunities arising from human capital and diversity at major sites in Japan and overseas.	- Identify risks and opportunities from the policies and strategies in Epson 25 Renewed. - Identify gaps between the current situation and the ideal situation in the development of the human resource portfolio.	- Effectively manage risks through the Corporate Strategy Meeting and the Board of Directors.

④ Metrics and targets

Epson has established KPIs for each of the three pillars of its human resource strategy, “allocate human resources to priority areas,” “strengthen human resource development” and “organizational activation,” and clarifies targets for key measures and manages progress toward these targets.

Strategies	Metrics	Results			Targets
		FY2020	FY2021	FY2022	
Human resource strategy (1) Allocate human resources to priority areas	Number of hires	New graduates: 344 Mid-career: 30	New graduates: 200 Mid-career: 48	New graduates: 250 Mid-career: 241	Continue to hire over 350 people each fiscal year[19]
Human resource strategy (2) Strengthen human resource development	Rotation rate	7.3%	9.0%	10.0%	15% or more each fiscal year
Human resource strategy (3) DE&I	Female management position ratio	3.2%	3.7%	4.1%	FY2025: 8%
	Female supervisory position ratio	6.5%	6.9%	7.1%	FY2025: 10%
	Number of female Executive Officers (Status of initiatives is indicated in parentheses)	(Number of female participants in in-house screened training: 7)	(Number of female participants in in-house screened training: 12)	(Number of female employees dispatched to external management strategy training: 2)	At least one by FY2025
	Disabled person employment ratio[20]	2.66%	2.69%	2.70%	FY2030: 3.0%

Human resource strategy (3) DE&I	Wage difference between male and female workers[21]	–	All workers: 74.9% Regular: 75.7% Non-regular: 74.6%	All workers: 76.5% Regular: 76.7% Non-regular: 77.8%	Reduce differences through initiatives such as increasing the number of females in management positions (because the primary reason for the differences is the low percentage of upper level positions and grades occupied by women although there are no differences in our wage system between wages for males and females of the same grade.)
		–	(Reference) Management positions: 97.8%	(Reference) Management positions: 97.1%	
Employee engagement	Strength to work in teams	3.62	3.68	–	–
	Overall Employee Engagement Rating	–	–	Rating B (Score: 51.8)	By FY2025: (1) Rating A (58 or higher) for all workplaces (2) Rating D for zero workplaces
Creation of comfortable working environment	Percentage of male employees taking childcare leave	–	50.8%	97.2%	FY2025: 100%
	Harassment prevention e-learning participation rate	94.3%	92.4%	96.8%	100% participation rate each fiscal year
	Thorough reporting of serious harassment cases to the head office	0 cases of failure to report	0 cases of failure to report	0 cases of failure to report	Continue to strengthen cooperation with organizations and affiliate contacts
	Annual total actual working hours	1,848 hours	1,854 hours	1,845 hours	FY2023: 1,845 hours
Health management	Number of high risk workplaces with “general health risk” in the mental health check	6.1% (Counted in workplaces of 3 or more people)	2.7% (Counted in workplaces of 3 or more people)	1.0% (Counted in workplaces of 10 or more people)	FY2025: Zero
Occupational safety and health	Number of serious occupational accidents or injuries[22]	0 cases	1 case	0 cases	Zero in each fiscal year

19 Total number of new graduates who joined the Company on April 1 of each fiscal year and the number of mid-career hires in each fiscal year

20 As of June 1 of each fiscal year

21 The wage difference between male and female workers is the ratio of women’s wages to men’s wages.

22 All Group companies including overseas companies. Other metrics are for Seiko Epson Corporation on a non-consolidated basis

(4) Intellectual property

The mission of the Intellectual Property Division, which is responsible for the intellectual property at Epson, is to "Convert intellectual property (IP) in the broad sense (as well as IP rights, this includes assets like brands and data) into assets that drive sustainable growth of Epson's value."

To achieve "sustainability and enrich communities," which is the aim of our corporate vision based on our corporate purpose, the Intellectual Property Division works closely with management, operations divisions, and development and strategy departments, converts IP into corporate value by proactively exploiting all IP to support business growth, and supports the realization of sustainable growth in Epson's value by tirelessly engaging in such activities.

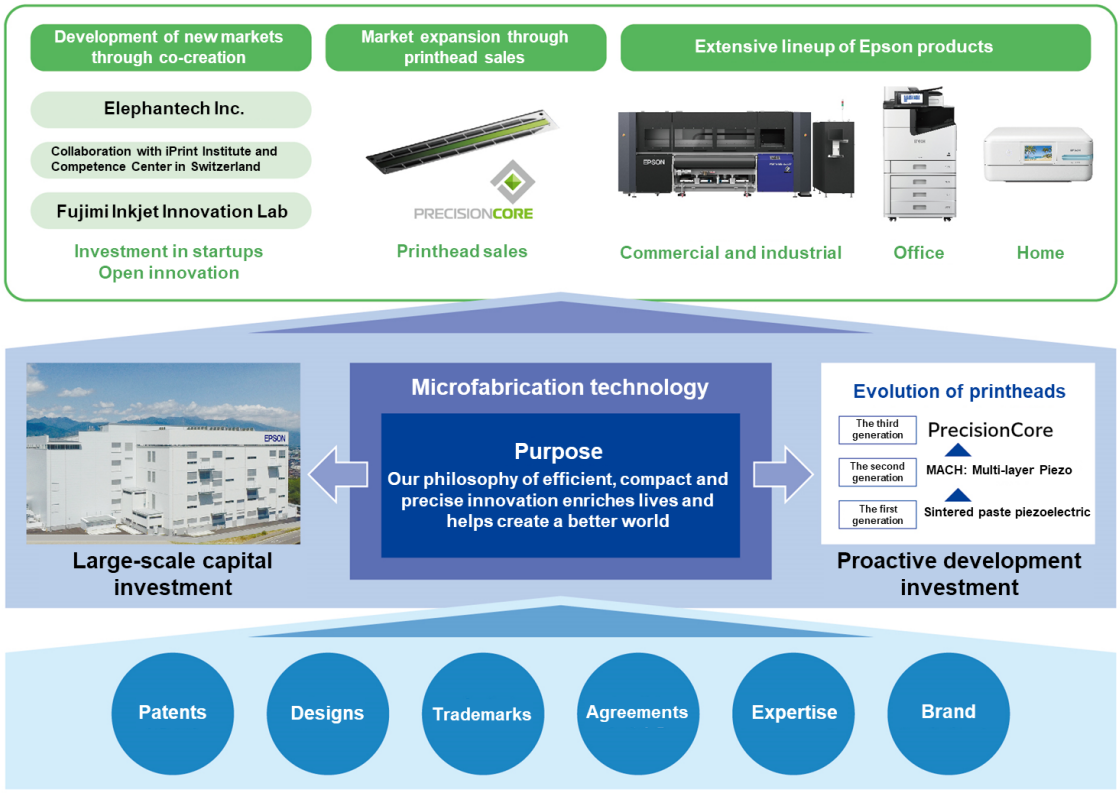
For example, one source of Epson's competitive advantage is our microfabrication technology that has been nurtured since our founding. Not only are our original Micro Piezo printheads being refined using this microfabrication technology, they are also protected by our strong IP. As a result, Epson's extensive printer lineup comes equipped with these printheads, and furthermore, we were able to mass-produce the printheads through proactive, large-scale capital investment, thereby contributing to business growth through an expanded lineup. Moreover, the printheads are available for sale outside the Company. This use of our printheads by various customers in the commercial and industrial sectors has even led to expansion of the digital printing market.

In addition, by pursuing co-creation with third parties through investment in startups and open innovation, we have also developed new markets with high potential, and the support received from the perspective of IP is accelerating such efforts.

In this way, IP serves as a foundation for realizing a virtuous cycle in business, enabling even greater investment in research and development and dramatic evolution of our printheads so that we can continuously boost their competitive advantage.

In other words, it is the IP we create that supports this growth strategy scenario.

■Growth strategy scenario based on intellectual property

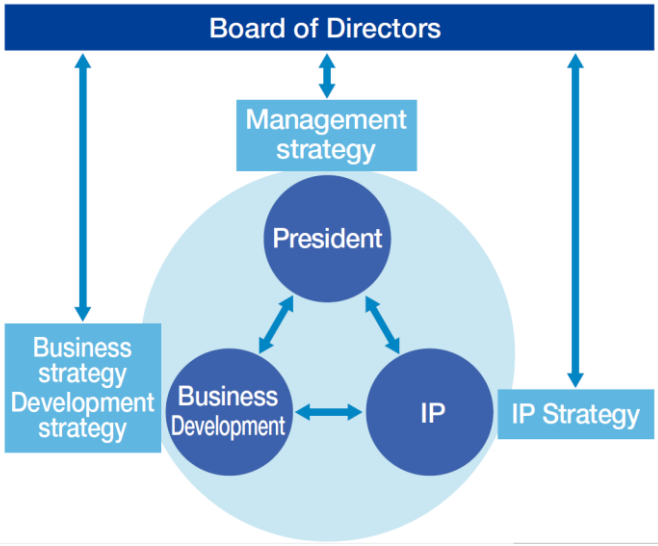


① **Governance**

At Epson, in order to develop IP strategy in lockstep with development strategy and business strategy, which is essential for safeguarding Epson's core technology, the Intellectual Property Division General Administrative Manager liaises one-on-one with Chief Operating Officers and the Technology Development Division General Administrative Manager. If necessary, the President attends for a three-way meeting.

In addition, IP strategy is regularly reported and discussed at meetings of the Board of Directors, and the strategy is amended based on feedback from the Board of Directors. At recent meetings of the Board of Directors, the direction of future activities for achieving Epson 25 Renewed was confirmed, taking into account the track record of initiatives thus far for supporting the creation of new businesses.

■ Intellectual property strategy management organization



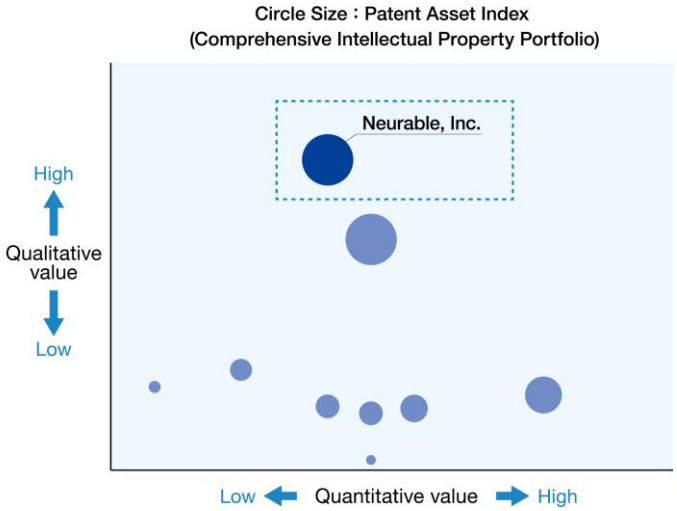
② **Strategy**

Epson creates a virtuous cycle of new business with IP serving as the foundation, converts IP into corporate value, and in order to achieve sustainable growth in Epson's value, engages in activities for supporting innovation, co-creation and DX, and branding based on IP.

<u>Supporting innovation: IP landscaping that guides business and development strategies</u>

Epson's IP activities utilize our own IP, and in addition to carrying out activities for ensuring our sustainable competitive advantage, we have started initiatives that will lead to the creation of new business based on a strategy of combining our IP with that of other companies. In addition, we identify the areas in which Epson should be active and the direction of technological development through IP landscaping that broadly analyzes various factors, including the trends in technological development in society, the status of initiatives by other companies for such development, as well as Epson's strengths and weaknesses related to that technological development.

As part of these activities, the Intellectual Property Division assesses the value of IP held by startup companies to assist Epson X Investment Corporation, a corporate venture capital (CVC) subsidiary established by Epson, in deciding whether to invest in the startups. As an example, the following chart shows that the patent portfolio of Neurable, Inc., a startup that is developing brain-computer interface (BCI) technology that uses brain waves, has a higher value compared to the portfolios of its competitors. This IP assessment was considered when making investment decisions, and Epson X Investment Corporation decided to invest in Neurable, Inc. in April 2023.



(Note) Created by the Company using LexisNexis PatentSight.
The Patent Asset Index is the total value of the patents.

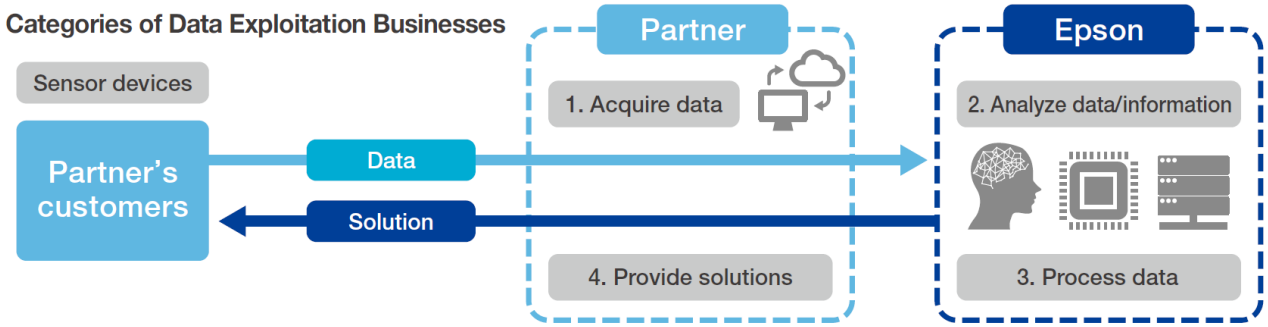
Supporting co-creation and DX: Contractual support for building a co-creation scheme with partners

Under Epson 25 Renewed, we are emphasizing co-creation as a way to rapidly generate new value with partners who share our vision.

To expedite co-creation, we need to build a business framework that is desirable for both Epson and partners. However, the handling of the IP generated from co-creation can easily become a source of conflict when the partner is a startup company, and could become a factor that hinders the creation of innovation through co-creation.

To that end, we have put in place organizational support and formed a dedicated team within the Intellectual Property Division to support the process of drafting technology license agreements concerning co-creation. From the moment we start exploring potential co-creation schemes, the team is on hand to provide one-stop support.

Epson is increasingly interested in founding business that will utilize data that constitutes valuable IP and business that will utilize rapidly evolving AI. Accordingly, we have delineated categories of data utilization businesses, AI utilization businesses and types of related agreements so that we can quickly form agreements with potential partners according to category.



Supporting branding: Using an IP mix in brand promotion (sales support)

Epson's branding strategy has two key components: 1) differentiating the brand from the competition, and 2) creating a coherent brand identity and communicating it to the target customers in a consistent and sustained manner.

For the first component, when promoting our original technology and designs for products, we highlight the fact that they are protected by IP rights. This helps convey their uniqueness. For the second component, we acquire trademark rights in our original technology and designs. This helps create a brand identity for our technology and designs and to communicate it to our customers in a consistent and sustained manner.

As an example, we carry out sales support activities that make use of design rights, for the layout of large-format printers, we acquired following revisions to Japan's Design Act in FY2019. These sales support activities that leverage Epson's IP rights are highly regarded both inside and outside the Company, and Epson was awarded the "Intellectual Property Achievement Award" in FY2023.

3. Risks related to Epson's business operations

At present, we have identified the following significant risks that could have a materially adverse effect on our future business, financial condition or operating results and that should thus be taken into account by investors. For these risks, although matters that may possibly become risk factors are described, they do not cover all risks, and risks that were not assumed as of the filing date of the Annual Securities Report and risks that are of low significance may also have an effect on our financial position, operating results and cash flows in the future.
Furthermore, while as our policy, we strive to recognize, prevent, and control potential risks and to address risks that materialize, there is no assurance we will succeed in these efforts, and if we are unable to effectively counteract the risks, our financial position, operating results and cash flows could be adversely affected.
All forward-looking statements hereunder were made at Epson's discretion as of the date we submitted our Annual Securities Report.

(1) Risk management system

Overall responsibility for risk management in the Epson Group, including subsidiaries, belongs to the president of Seiko Epson. Group-wide risk management is carried out by Head Office supervisory departments with the cooperation of the operations divisions and subsidiaries. Risks unique to an individual business are managed by the Chief Operating Officer of that business, including at subsidiaries consolidated under them. The Company has also set up the risk management department, monitors overall risk management Group-wide, makes corrections and adjustments thereto, and ensures the effectiveness of risk management programs. The risk management organization is defined in the Epson Group Risk Management Basic Regulations.
Epson identifies serious risks that could materially impact the company. Risks that could have serious adverse effects on Epson Group management are considered "serious Group-wide risks." Risks that could have serious adverse effects on business operations are considered "serious business risks." And risks that could have serious adverse effects on subsidiaries' management are considered "serious Group company risks." Epson drafts and executes plans to control these serious risks and periodically monitors their progress. The company also strives to ensure control plan effectiveness by evaluating "serious Group-wide risks" every quarter, evaluating "serious business risks" and "serious Group company risks" every six months, and revising the plans as needed. The president of Seiko Epson reports important risk management affairs to the Board of Directors quarterly.

(2) Risks related to Epson's business operations

① Our operating results, etc. could be adversely affected by fluctuations in printer sales.

The ¥902.3 billion in revenue in the printing solutions segment in the year ended March 31, 2023 accounted for about 70% of Epson's ¥1,330.3 billion in consolidated revenue. Inkjet printers (including printer consumables) for the office and home and for commercial and industrial applications accounted for a large majority of our revenue and profit. Consequently, a decrease in revenue from printers and printer consumables could have a materially adverse effect on our operating results, etc.

② Our financial performance could be adversely affected by competition.

Adverse effects of competition on sales

All of our products, including our core printer and projector products, are subject to the effects of vigorous competition, which could cause, among other things, prices to fall, demand to shift toward lower-priced products, and unit shipments to decline.
We are taking strategic action to address the risk of declines in prices, a shift of demand toward lower-priced products, and declines in unit shipments. On one hand, we must provide products tailored to customer needs in each market along with high-value products and services. On the other hand, we must reduce manufacturing costs by increasing design and development efficiency and by reducing fixed costs.
However, there is no assurance we will succeed in these efforts, and if we are unable to effectively counteract downward pressure on prices, our operating results, etc. could be adversely affected.

Adverse effects of competition on technology

Some of the products that we sell contain technology that places Epson in competition against other companies. For example:

- The Micro Piezo technology[1] that we use in our inkjet printers competes with the thermal inkjet technologies[2] of other companies;

- The 3LCD technology[3] that we use in our projectors competes with other companies' DLP technologies[4], and Epson's projectors also compete against flat panel displays (FPDs)[5] of other companies.

We believe that the technologies we use in these products have competitive advantage over the alternative technologies of other companies. However, if consumer opinion with respect to our technologies changes, or if other revolutionary technologies appear on the market and compete with our technologies, we could lose our competitive advantage in technology and our operating results could be adversely affected.

[1] Micro Piezo technology is an inkjet technology created by Epson that manipulates piezoelectric elements to fire small droplets of ink from nozzles.

[2] Thermal inkjet technology (also known as bubble-jet technology) is a printer technology in which the ink is heated to create bubbles and the pressure from the bubbles is used to fire the ink.

[3] 3LCD technology uses high-temperature polysilicon TFT liquid-crystal panels as light valves. The light from the light source is divided into the three primary colors (red, green and blue) using special mirrors, the picture is created on separate LCDs for each color, and then the picture is recombined without loss and projected on the screen.

[4] DLP technology uses a digital micro-mirror device (DMD) as a display device. A DMD is a semiconductor on which a large number of micro mirrors are arranged, each mirror directing light onto its own individual pixel. An image is formed by the light from the light source being reflected from the mirrors onto the screen. DLP and DMD are registered trademarks of Texas Instruments Incorporated.

[5] FPD encompasses a variety of thin electronic display technologies.

The emergence of new competitors

We presently face competition from powerful companies that have advanced technological capabilities, abundant financial resources, or strong financial compositions. We also face competition from companies around the world that have market recognition, strong supply capacities, or the ability to compete on price. There is, therefore, a possibility that other companies could use their brand power, technological strength, ability to procure funds, marketing power, sales skills, low-cost production ability, or other advantages to enter business areas where we are active.

③ Sudden changes, etc. in the business environment could affect Epson.

Epson seeks to drive office & home printing innovation, commercial & industrial printing innovation, manufacturing innovation, visual innovation, and lifestyle innovation. We are looking to create value truly sought by customers and achieve our vision for each business by making each innovation happen. Epson is executing plans and strategies based on a long-range corporate vision Epson 25 Renewed and each business strategy that we believe will enable us to establish a competitive advantage in technology, which we believe will be crucial for increasing our competitiveness. We are evolving product technologies, including digital technologies and our original core technologies, such as Micro Piezo inkjet technology, microdisplays, sensing, and robotics, all of which arose from Epson's rich legacy of efficient, compact, and precision technologies, as well as the core technologies that underpin these. In this way, we are developing, manufacturing, and selling products and providing services that match customer needs.

However, in the product markets and businesses where Epson is concentrating its management resources the pace of technological innovation is typically rapid, and product life cycles are short. In addition, demand and investment trends in Epson's major markets could change along with global economic conditions and progress of digitalization, and could affect sales of Epson products. Moreover, there is no guarantee that Epson's current long-range corporate vision, business strategies, and actions specified therein will succeed or be realized.

Under these business circumstances, Epson will also continue to strive to make rapid and smooth transition from existing products to new products by understanding market and customer needs, investing and conducting research and development from a medium- and long-range view based on product market forecasts, and creating development and design platforms.

However, if Epson cannot suitably respond to technological innovations in its main markets, or if competition with other companies intensifies, or if economic downturns or other factors prevent a recovery in demand, or if Epson is unable to adequately meet sudden fluctuations in demand in a major market, its operating results, etc. could be adversely affected.

④ Our revenue and earnings could be adversely impacted by sales of third-party inkjet printer consumables.

Ink cartridges etc., which comprise the bulk of consumables sold for inkjet printers, are an important source of revenue and profit for Epson. However, third parties also supply ink cartridges and other inkjet printer consumables

that can be used in Epson printers. These alternative products are typically sold for less than genuine Epson brand consumables and are more prevalent in emerging markets compared to the markets of developed countries.
To counter sales of third-party consumables for inkjet printers, we must emphasize the quality of genuine Epson products and must look to continuously realize customer value by further enhancing customer convenience with inkjet printers tailored to the needs of customers in each market. Printer models equipped with high-capacity ink tanks are an example of such products. We also take legal measures if any of the patent rights or trademark rights we hold over our ink cartridges are infringed upon.
However, there is no assurance that any of these efforts will be effective, and if we experience revenue and profit declines in businesses such as our ink cartridge business as a result of shrinking unit shipments in response to an expansion of sales of third-party alternative products and drop of the market share of genuine Epson products, or if we must lower the prices of Epson brand products to stay competitive, our operating results, etc. could be adversely affected.

⑤ Expanding businesses overseas entails risks for Epson.

We continue to expand our businesses overseas, and overseas revenue accounted for 80% or more of our consolidated revenue for the year ended March 31, 2023. We have production sites all over Asia, including China, Indonesia, Singapore, Malaysia and the Philippines, as well as in the United States, the United Kingdom, and other countries. We have also established many sales companies all over the world. As of the end of March 2023, our overseas employees accounted for 70% or more of our total workforce.
We believe that our global presence provides many advantages. For example, it enables us to undertake marketing activities aligned with the market needs of individual regions. It also makes us cost-competitive by reducing manufacturing costs and lead times. There are, however, unavoidable risks associated with overseas manufacturing and sales operations. These include but are not limited to changes in national laws, ordinances, or regulations related to manufacturing and sales; social, political or economic changes; transport delays; damage to infrastructure such as electrical power and communications; currency exchange restrictions; insufficient skilled labor; changes in regional labor environments; changes in tax systems overseas and uncertainty with regard to tax administration by tax authorities; protectionist trade regulations; geopolitical risks; and laws, ordinances, regulations or the like that could affect the import and export of Epson products.

⑥ Procuring parts from certain suppliers entail risks for Epson.

We procure some parts and materials from third parties, but we generally conduct ongoing transactions without entering into long-term purchase agreements. We try to have multi-source relating to parts and materials. However, certain parts and materials are procured from a single source because procuring them from an alternative supplier is not possible. We must have procurement operations that are stable and efficient, so we work with our suppliers to maintain product quality, improve products, and reduce costs. However, if our manufacturing and sales activities were to be disrupted due to things such as supplier's parts shortages or quality problems of supplier's parts, our operating results, etc. could adversely be affected.

⑦ Problems could arise relating to quality issues.

The existence of quality guarantees on Epson products and the details of those guarantees differ from one customer account to another, depending on the agreement we have entered into with them. If an Epson product is defective or does not conform to the required standard, it may have to be replaced or repaired or otherwise reworked at Epson's expense. Or, if the product causes personal injury or property damage, we could bear product liability or hold other liability.
We could also be liable to a customer and could incur expenses for repairs or corrections on the grounds that we did not adequately display or explain an Epson product's features or performance. Furthermore, product quality problems could cause loss of trust in Epson products, and we could lose major accounts or see a drop in demand for our products, any of which might adversely affect our operating results, etc.

⑧ Epson's intellectual property rights activities expose Epson to certain risks.

Patent rights and other intellectual property rights are extremely important for maintaining our competitiveness. We have independently developed many of the technologies we need, and we acquire patent rights, trademark rights, and other forms of intellectual property rights for them both in Japan and overseas. We also license the intellectual property rights for products and technologies by entering into agreements with other companies. We have strengthened our intellectual property portfolio by placing personnel in key positions to manage our intellectual property.

If any of the situations envisioned below relating to intellectual property were to occur, our operating results, etc. could adversely be affected.

- An objection might be raised to, or an application to invalidate might be filed with respect to, an intellectual property right of Epson, and as a result, that right might be recognized as invalid.
- A third party to whom we originally had not granted a license could come to possess a license as a result of a merger with or acquisition by another party, potentially causing us to lose the competitive advantage conferred by that intellectual property.
- New restrictions could be imposed on an Epson business as a result of a buyout or a merger with a third party, and we could be forced to spend money to find a solution to those restrictions.
- Intellectual property rights that we hold might not give us a competitive advantage, or we might not be able to use them effectively.
- We or any of our customers could be accused by a third party of infringing on intellectual property rights, which could force us to spend a large amount of time and money to resolve this and associated issues, or which could interfere with our efforts to focus our management resources.
- If a third-party's claim of intellectual property right infringement were to be upheld, we could incur material damage if required to pay large amounts in compensation or royalties or if forced to stop using the applicable technology.
- A suit could be brought against Epson by an employee or other person seeking remuneration for an invention or the like, potentially forcing us to spend significant time and money to resolve the issue and, depending on the outcome, potentially requiring us to pay a large sum as remuneration.

⑨ Epson is vulnerable to environmental risks.

Epson is subject, both in Japan and overseas, to various environmental regulations concerning industrial waste and emissions into the atmosphere that arise from manufacturing processes. In addition, with heightened concern about the response to global climate change accompanying the Paris Agreement, which was adopted at the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change, companies increasingly need to set more ambitious goals for emissions reductions and strive to accomplish these goals.

Given this situation, Epson is proactively engaged in environmental conservation efforts on multiple fronts in line with "Environmental Vision 2050," through which we aim to become carbon negative and underground resource[6] free by 2050. For example, we have programs to develop and manufacture products that have a small environmental footprint and programs to develop environmental technologies. We also have programs to reduce energy use, promote the recovery, recycling and reusing of end-of-life products, ensure compliance with international substance regulations (primarily the RoHS Directive and REACH regulations in the EU), and improve environmental management systems. For our goals for GHG emissions reduction, we obtained approval from the Science Based Targets initiative (SBTi), and we are working on activities to reduce GHG emissions over the medium to long term, including activities to drive the use of renewable energy, with the aim of achieving the global transition to renewable energy in 2023.

As a result of these efforts, Epson's GHG emissions have steadily declined. For detailed figures, please refer to "II. Overview of Business, 2. Concept and initiatives of sustainability, (2) Climate change (TCFD) ④ Metrics and targets." In addition to maintaining the transition to renewable energy at our sites in Japan, which was completed in November 2021, we are promoting the transition at our overseas sites to increase our renewable energy ratio to 79% globally (on an electric power basis).

We have not had any serious environmental issues to date. In the future, however, it is possible that an environmental problem could arise that would require us to pay damages and/or fines, bear costs for cleanup, or force a halt of production. Moreover, new regulations could be enacted that would require major expenditures, and, if such a situation should occur, Epson's operating results, etc. could be adversely affected.

On the other hand, Epson is advancing initiatives that take addressing the environment as an opportunity. In particular, we have confirmed that there is an opportunity to expand business through products and services that can contribute to customer environmental impact mitigation, and will continue management that takes maximum advantage of opportunities. Specifically, we expect revenue growth through printing, commercial & industrial printing and printhead sales using inkjet technology that realizes the reduction of environmental impacts, higher productivity and the reduction of printing costs as well as the promotion of production systems through the expansion of new production devices that realize the reduction of environmental impacts. In addition, we expect to develop environmental businesses through the application of dry fiber technology, establishment of raw material recycling, etc. as effective solutions for global warming countermeasures and the shift to a circular economy.

[6] Non-renewable resources such as oil and metals

⑩ Epson faces risks concerning the hiring and retention of personnel.

We must hire and retain talented personnel both in Japan and overseas to develop advanced new technologies and manufacture advanced new products, but the competition for such personnel is becoming increasingly intense. We must foster a corporate culture that enables diverse personnel to demonstrate their abilities, create comfortable working environments, and hire and retain talented personnel by, for example, introducing compensation and benefit packages that are commensurate with roles, nurturing talent, implementing diversity initiatives, promoting work-style reform and health management, and proactively promoting people with the right skills overseas. If we are unable to continue to hire and keep enough of such employees, or if we are unable to pass along technologies and skills, our business plans, etc. could be adversely affected.

⑪ Fluctuations in foreign currency exchanges create risks for Epson.

A significant portion of our revenue is denominated in U.S. dollars or the euro. We expanded our overseas procurement and moved our production sites overseas, so our dollar-denominated expenses currently exceed our dollar-denominated revenue. On the other hand, our euro-denominated revenue is still significantly greater than our euro-denominated expenses. On the whole, our revenues in other foreign currencies also significantly exceed our expenses in those currencies. Also, although we use currency forwards and other means to hedge against the risks inherent in foreign currency exchanges, unfavorable movements in the exchange rates of foreign currencies such as the U.S. dollar, euro, or other foreign currencies against the yen could adversely affect our financial position and operating results, etc.

⑫ There are risks inherent in pension systems.

We have a defined-benefit pension plan and a lump-sum retirement payment plan as defined-benefit plans.
We revised the defined-benefit retirement pension plan in April 2014 in response to a drop in the rate of return on pension assets and an increase in the number of beneficiaries. The revisions are designed to enable us to adapt to future market changes and maintain stable operations into the future. However, if there is a change in the operating results of the pension assets or in the ratio used as the basis for calculating retirement allowance liabilities, our financial position and operating results, etc. could be adversely affected.

⑬ Concerning regulatory investigations and investigations conducted by relevant authorities, etc.

Epson develops its business globally, and it could become the subject of various regulatory investigations or investigations conducted by relevant authorities, etc. in any of its businesses in any country or region. For example, in addition to Epson currently being subject in Japan and overseas to proceedings relating to antitrust laws and regulations, such as those prohibiting private monopolies and those protecting fair trade, Epson will in the future be required even more to respond to various laws and regulations and compliance relating to activities pertaining to its efforts to strengthen its sales activities directed at new customers, which will include public organizations, etc.
Under these circumstances, in Epson, we consider compliance to be one of the most important management policies, and for a long time, we have been conducting appropriate, preventive and controlled activities, including worker protection activities as a member of the RBA (Responsible Business Alliance) and further promotion of environmental conservation efforts. Going forward, overseas agencies related to competition law have been conducting investigations or information gathering that have been targeting specific industries, etc., and as part of such investigation, Epson also is being investigated in relation to the market situation and marketing methods in general. Furthermore, sometimes inconsistencies or potential inconsistencies arise in relation to not only anti-bribery regulations, advertising and labeling regulations, personal information protection and privacy regulations but also security trade control, and stricter laws and regulations may get introduced or a strengthening of the operation of laws and regulations may be carried out by the relevant authorities.
Should violations occur in regard to these related laws and regulations, or should investigations or proceedings be carried out by the relevant authorities, such events could interfere with Epson's sales activities. They could also potentially damage Epson's credibility, result in a large civil fine, or result in constraints being placed on Epson's sales activities. Any of these, as well as the added costs to comply with the relevant regulations could adversely affect Epson's operating results and its future business expansion, etc.
As of the date we submitted our Annual Securities Report, investigations into laws and regulations, etc. targeting Epson are provided below.
Regarding the inkjet printer products sold in France, authorities have initiated investigations following an allegation made by a consumer organization in the country in 2017, pursuant to consumer protection law. The consumer

organization alleges that Epson shortens the life of its products, which was never Epson's intention. Giving the highest priority to quality and environment, Epson will continue to offer designs that meet customer needs.
Progress, result and resolution timing of the investigations, and their impact on Epson's operating results and its future business development, etc. are not predictable at this time.

⑭ Epson is at risk of material legal actions being brought against it.

Epson conducts businesses internationally. We are engaged primarily in the development, manufacture and sales of products related to printing solutions, visual communications, and manufacturing-related & wearables, as well as the provision of services related thereto. Given the nature of these businesses, there is a possibility that an action could be brought or legal proceedings could be started against Epson regarding, for example, intellectual property rights, product liability, antitrust laws or environmental regulations.
As of the date we submitted our Annual Securities Report, Epson was contending with the following material actions.
In 2010, Epson Europe B.V. ("EEB"), a consolidated subsidiary of the Company, brought a civil suit against La SCRL Reprobel ("Reprobel"), a Belgium-based group that collects copyright royalties, seeking restitution for copyright royalties for multifunction printers. With Reprobel subsequently filing a suit against EEB, the two lawsuits were adjoined. EEB's claims were rejected at the first trial, but EEB, dissatisfied with the decision, intends to appeal.
It is difficult at this time to predict the outcome of these civil actions and when they may be settled, but our operating results and future business development, etc. could be affected, depending on the outcomes of suits and legal proceedings.

⑮ Epson is vulnerable to certain risks in internal control related to financial reporting.

We are building and using internal controls to ensure the reliability of financial reporting. With the establishment and operation of internal controls for financial reporting high on our list of important management issues, we have been pursuing a Group-wide effort to audit and improve corporate oversight of our Group companies. However, since there is no assurance that we will be able to establish and operate an effective internal control system on a continuous basis, and since there are inherent limitations to internal control systems, if the internal controls that Epson implements fail to function effectively, or if there are deficiencies in internal control related to financial reporting or material weaknesses to be disclosed in the internal controls, it might adversely affect the reliability of our financial reporting.

⑯ Epson is vulnerable to risks inherent in its tie-ups with other companies.

One of our business strategy options is to enter into business tie-ups with other companies. However, the parties may review the arrangements of tie-ups, and there is a possibility that tie-ups could be dissolved or be subject to changes. There is also no assurance that the business strategy of tie-ups will succeed or contribute to our operating results, etc. exactly as expected.

⑰ Epson could be severely affected in the event of a natural disaster or an infectious disease, etc.

We have research and development, procurement, manufacturing, logistics, sales and service sites around the globe, and our operating results and future business development, etc. could be adversely affected by any number of unpredictable events, including but not limited to natural disasters, pandemics involving new infectious diseases such as COVID-19 infection, supply chain disruptions mainly caused by natural disasters on suppliers, and acts of terrorism or war.
The central region of Nagano Prefecture, home to some of our key plants and offices, is an area that is at comparatively high risk of earthquakes due to the presence of an active fault zone along the Itoigawa-Shizuoka geotectonic line. Accordingly, in addition to earthquake-proofing its equipment and facilities, Epson conducts disaster drills, has prepared earthquake disaster management and response plans, and has established business continuity plans to mitigate the effects of disasters to the extent possible.
However, if a major earthquake occurs in the central region of Nagano Prefecture, it is possible that, despite these countermeasures, the effect on Epson could be extreme. Although Epson is insured against losses arising from earthquakes, the scope of indemnification is limited.
COVID-19, which has been a pandemic since 2020, reached a milestone on May 8, 2023, when its status under the Act on the Prevention of Infectious Diseases and Medical Care for Patients with Infectious Diseases was changed from Novel Influenza Infection, etc. (equivalent to Class II Infectious Disease) to Class V Infectious Disease. However, there is still a possibility of an outbreak of a mutant strain with high infectivity and risk of serious illness, or a new infectious disease that replaces COVID-19. To prepare for such a situation, Epson has a BCP (business continuity plan) for emerging infectious diseases based on its response to COVID-19, and has established action

plans for normal times, the early stages of an epidemic, and the epidemic phase to minimize risk in order to prevent the spread of infection, continue business, and recover promptly.

⑱ Epson faces risks concerning the information security

The scope of what Epson's network of information systems are used for and frequency of use continue to grow, and this network is becoming increasingly important. Also, in our global business activities, we handle the personal information of customers and confidential data of business partners. Security threats are increasing year on year and our operating results and future business development, etc. could be adversely affected by occurrences such as computer virus infections, leaks of customer data, failures of key internal systems, cyber-attacks, and reputational damage through social media.

We are responding to this by carrying out information security training for all employees, as well as establishing a grand design that specifies policies concerning cyber security measures, and we are implementing various measures under this. We also plan to engage in initiatives such as establishing a global security incident response structure, planning and implementing cyber security response measures, and strengthening product security.

4. Management analysis of financial position, operating results and cash flows

(1) Operating results overview

① Operating results

The global economy in the year under review showed stronger signs of a slowdown in China, Europe, and North America primarily due to the protracted Russia-Ukraine conflict, global inflation, and tightening of monetary policy. On the other hand, longstanding supply chain issues have nearly come to an end. Availability of semiconductors and most other parts has dramatically improved. The long distribution leadtimes caused by logistics disruptions have also improved. The future is clouded by uncertainty. There is concern that high inflation and recent turmoil in financial markets could result in serious downside risk due to a decline in consumer confidence and a cooling of household spending and investment. Therefore, we will continue to closely monitor the situation.

The average exchange rates of the yen against the U.S. dollar and of the yen against the euro during the year were ¥135.44 and ¥140.90, respectively. This represents a 21% depreciation of the yen against the dollar and an 8% depreciation of the yen against the euro compared to the prior period. The yen also weakened against the currencies of some emerging countries, in places such as China and Latin America.

In this business environment, operating results in the fiscal year under review are as follows.

(Billions of yen)

	Year ended March 31, 2022	Year ended March 31, 2023	Change	Percentage of change	Main reason(s) for change
Revenue	1,128.9	1,330.3	201.4	17.8%	[Revenue] Printing Solutions Segment 122.4 Visual Communications Segment 57.8 Manufacturing-related and wearables 23.5 [Business profit] Printing Solutions Segment (17.1) Visual Communications Segment 19.5 Manufacturing-related and wearables 5.2
Cost of sales	(710.4)	(863.6)	(153.2)	–	
Gross profit	418.4	466.6	48.1	11.5%	
Selling, general and administrative expenses	(328.8)	(371.5)	(42.7)	–	
Business profit *	89.6	95.1	5.4	6.1%	
Other operating income and Other operating expense	4.8	1.9	(2.9)	–	Recording of impairment loss in the manufacturing solutions business and decreases in foreign exchange gains, etc.
Profit from operating activities	94.4	97.0	2.5	2.7%	
Finance income and Finance costs	2.5	6.6	4.0	–	Increases in foreign exchange gains, etc.
Profit before tax	97.1	103.7	6.5	6.8%	
Income taxes	(4.8)	(28.7)	(23.8)	–	Increase due to the absence of a significant increase or decrease in deferred tax assets, etc. in the year under review, compared to the prior period's decrease due to the accumulation of deferred tax assets
Profit for the period	92.3	75.0	(17.2)	(18.7%)	
Profit for the period attributable to owners of the parent company	92.2	75.0	(17.2)	(18.7%)	

* Business profit is calculated after deducting cost of sales and selling, general and administrative expenses from revenue.

A breakdown of operating results in each reporting segment is provided below.

Printing Solutions Segment

Revenue in the office and home printing business sharply increased. Ink cartridge printer unit sales decreased, but unit sales of high-capacity ink tank printers and office shared printers increased. Inkjet printer revenue sharply increased mainly due to continued high selling prices and positive foreign exchange effects. Consumables revenue slightly increased even though ink cartridge sales decreased in conjunction with a decrease in sales of ink cartridge printers and the normalization of at-home print demand. The increase in consumables revenue was largely the result of an increase in sales of ink bottles for high-capacity ink tank printers and positive foreign exchange effects.

Revenue in the commercial and industrial printing business sharply increased. Commercial and industrial inkjet printer sales in China have been slowing due to the economic slowdown, but revenue grew owing to price hikes that kept selling prices high and positive foreign exchange effects. Consumables revenue increased due to the positive impact of foreign exchange rates, which more than offset a decrease in sales compared to last fiscal year, when there was robust demand in North America. Small printer revenue sharply increased due to price hikes in Europe and North America, unit sales growth as product shortages eased, and positive foreign exchange effects.

Revenue in the printhead sales business increased. After being hit hard in the first quarter by lockdowns in China, sales in China in particular steadily recovered from the second quarter onward.

Segment profit in the printing solutions business sharply decreased. Sales were heavily impacted by a decrease in sales of consumables for ink cartridge printers in the office and home printing business and the rise in manufacturing costs associated particularly with soaring prices for parts, materials, transport, and utilities.

As a result of the foregoing factors, revenue in the printing solutions segment was ¥902.3 billion, up 15.7% compared to the prior period. Segment profit was ¥89.3 billion, down 16.1% compared to the prior period.

Visual Communications Segment

Revenue in the visual communications segment sharply increased primarily due to a combination of revenue growth in the firm European and North American education and home markets, an easing of product shortages, which has helped to resolve an order backlog, and positive foreign exchange effects.

Segment profit in the visual communications business sharply increased primarily due to higher revenue and continued cost containment.

As a result of the foregoing factors, revenue in the visual communications segment was ¥216.8 billion, up 36.4% compared to the prior period. Segment profit was ¥34.8 billion, up 127.2% compared to the prior period.

Manufacturing-Related & Wearables Segment

Revenue in the manufacturing solutions business was in line with the previous year mainly because positive foreign exchange effects offset a slowdown in sales in China.

Revenue in the wearable products business increased despite a decrease in sales of products such as movements. The increase was primarily due to a combination of growing demand from visitors to Japan, strong domestic sales, and positive foreign exchange effects.

In the microdevices business, crystal device revenue increased as a result of growth in sales of products for base stations, higher selling prices, and positive foreign exchange effects, which more than offset decreased demand in the consumer sector. Meanwhile, continued firm demand for semiconductors fueled sharp sales growth. As a result, the entire microdevices business recorded sharply higher revenue.

Segment profit in the manufacturing-related and wearables segment sharply increased primarily due to revenue growth in the microdevices business but also because of positive foreign exchange effects.

As a result of the foregoing factors, revenue in the manufacturing-related and wearables segment was ¥215.4 billion, up 12.2% compared to the prior period. Segment profit was ¥28.3 billion, up 22.9% compared to the prior period.

In addition to the above, Epson recognized an impairment loss of ¥1.8 billion in the manufacturing solutions business because it no longer expects to recover some of the investments considering the changes in the market environment and other factors.

Adjustments

Adjustments to the total profit of reporting segments amounted to negative ¥57.3 billion. (Adjustments in the previous fiscal year were negative ¥55.2 billion.) The main components of the adjustment were basic technology research and development expenses that do not correspond to the reporting segments and earnings and expenses associated with things such as new businesses and corporate functions.

② Cash flow performance

Net cash from operating activities during the year totaled ¥61.3 billion. The total for the previous year was ¥110.8 billion. Whereas Epson recorded ¥75.0 billion in profit for the period, net cash from operating activities decreased primarily because of negative factors such as a ¥60.2 billion increase in inventories and a ¥22.1 billion increase in trade receivables, which more than offset positive factors such as the declaration of ¥68.6 billion in depreciation and amortization.

Net cash used in investing activities totaled ¥61.6 billion (compared to ¥44.0 billion in the previous year), mainly because Epson used ¥59.0 billion in the acquisition of property, plant, equipment and purchase of intangible assets.

Net cash used in financing activities totaled ¥79.3 billion (compared to ¥51.7 billion in the previous year), chiefly due to ¥21.3 billion in dividends paid, a ¥30.0 billion purchase of treasury shares, and ¥18.0 billion used in the repayment of long-term loans payable.

As a result, cash and cash equivalents at the end of the fiscal year, combined with the effects of exchange rate volatility, totaled ¥267.3 billion, down ¥67.8 billion from the end of the previous fiscal year.

③ Manufacturing, orders received and sales

a. Actual manufacturing

Actual manufacturing information is omitted as Epson's actual manufacturing approximates actual sales.

b. Orders received

Epson's policy is to manufacture products based on sales forecasts. Accordingly, this section does not apply.

c. Actual sales

The following table shows actual sales information by segment in the fiscal year under review.

Business segment	Year ended March 31, 2023 (From April 1, 2022, to March 31, 2023) (Millions of yen)	Change compared to previous fiscal year (%)
Printing solutions	902,345	115.7
Visual communications	216,868	136.4
Manufacturing-related and wearables	205,415	112.5
Total for the reportable segments	1,324,630	118.1
Other	5,701	77.3
Total	1,330,331	117.8

(Notes) 1. Intersegment transactions are offset and therefore eliminated.
2. No customer accounts for more than 10% of the actual total sales.

(2) Management analysis and discussion on operating results, etc.

Recognition and details of analysis/discussions on Epson's operating results, etc. from the management's perspective are as follows:

All forward-looking statements hereunder were made at Epson's discretion based on the forecasts and certain assumptions at the end of the fiscal year. These statements may differ from actual results and are not guarantees of the achievement.

① Operating results, etc.

Financial position

Total assets at the end of the fiscal year were ¥1,341.5 billion, an increase of ¥75.1 billion from the previous fiscal year end. While cash and cash equivalents decreased by ¥67.8 billion, this increase was mainly due to an ¥81.0 billion increase in inventories, a ¥33.5 billion increase in trade and other receivables, and a ¥17.6 billion increase in property, plant and equipment.

Total liabilities were ¥614.0 billion, an increase of ¥13.4 billion compared to the end of the last fiscal year. Although there was an ¥11.0 billion decrease in net defined benefit liabilities and a ¥9.8 billion decrease in bonds issued, borrowings and lease liabilities, total liabilities increased mainly because of a ¥13.4 billion increase in trade and other payables and a ¥21.0 billion increase in other current liabilities.

The equity attributable to owners of the parent company totaled ¥727.3 billion, a ¥61.7 billion increase compared to the previous fiscal year end. The main reasons for the increase were that, while there were ¥21.3 billion in dividend payments and a ¥30.0 billion purchase of treasury shares, Epson recorded ¥75.0 billion in profit for the period attributable to owners of the parent company and recorded ¥37.8 billion in other comprehensive income, the primary component of which was exchange differences on translation of foreign operations.

Working capital, defined as current assets less current liabilities, was ¥520.8 billion, an increase of ¥18.4 billion compared to the end of the previous fiscal year.

Operating results

The operating results are provided in "(1) Operating results overview ① Operating results."

Cash flow performance

The cash flow performance is provided in "(1) Operating results overview ② Cash flow performance."

② Capital resources and liquidity

Epson plans to allocate ¥74.0 billion to capital expenditures for the fiscal year ending March 31, 2024, and the required funds will be covered by internal funds.

The amount of planned capital expenditures for each segment is as described in "III. Information About Facilities 3. Plans for new additions or disposals." The above amount of planned capital expenditures includes capital expenditures through leases.

In order to stably secure funds necessary for business activities such as capital expenditures, Epson raises funds through utilization of internal funds as well as borrowings from financial institutions and issuance of bonds.

The balance of interest-bearing debt at the end of the fiscal year under review was ¥233.2 billion, down ¥9.8 billion compared to the previous fiscal year end, due to repayment of bank loans. The balance of cash and cash equivalents at the end of the fiscal year under review totaled ¥267.3 billion, down ¥67.8 billion compared to the end of the last fiscal year, giving Epson sufficient liquidity.

In addition, amid an uncertain outlook due to the COVID-19 pandemic, the Company entered into a commitment line contract for an environmentally conscious financing product with a main partner bank in May 2020, as part of its efforts to strengthen the financial foundation in preparation for emergencies. There is no outstanding balance of executed borrowings based on the said commitment line contract as of March 31, 2023.

Epson has earned a credit rating from Rating and Investment Information, Inc. The rating was A (single A) as at the end of the fiscal year under review.

③ Management policy, corporate strategy, objective indices to assess the status of achievement of management goals, etc.

As stated in "II. Overview of Business 1. Management policy, business environment and issues to be addressed, etc.," Epson boldly undertakes challenges and strives to make innovations beyond its own conventions and vision in order to solve social issues, based on the Company's unique strengths of efficient, compact, and precision technologies since the time of its founding. We are making efforts to have all employees share values and act autonomously while

demonstrating their comprehensive strengths. By doing so, we will continuously create and provide game-changing customer value in a timely fashion, play a central role as an indispensable company in building a better society, and achieve sustainable growth and improvement of our corporate value over the medium to long term.
In March 2021, we revised our Corporate Vision and established "Epson 25 Renewed," with the goal of achieving sustainability and enriching communities, which we have set as our aspirational goal to pursue into the future. In response to environmental issues that Epson views as very important, we have revised Environmental Vision 2050 with the aims of becoming carbon negative and underground resource* free by 2050.
* Non-renewable resources such as oil and metals
Additionally, the status of progress on financial targets set with the aim of realizing our Corporate Vision is provided in "II. Overview of Business 1. Management policy, business environment and issues to be addressed, etc."

④ Significant accounting estimates and assumptions used for those estimates

The consolidated financial statements of Epson are prepared in conformity with IFRS in accordance with the provision of Article 93 of "Ordinance on Terminology, Forms and Preparation Methods of Consolidated Financial Statements." Estimates that are deemed necessary have been made based on reasonable criteria.
Significant accounting policies applied in the consolidated financial statements of Epson, accounting estimates, and assumptions used for those estimates are provided in "V. Financial Information, Consolidated Financial Statements etc., Notes to Consolidated Financial Statements, 3. Significant Accounting Policies and 4. Significant Accounting Estimates and Judgments."

5. Major management contracts

Reciprocal technical assistance agreements

Name of contracting company	Name of other party	Country	Type of contract	Contract period
Seiko Epson Corporation	HP Inc.	U.S.A.	License to use patents relating to information-related equipment	March 28, 2018 until the expiry of the patents
Seiko Epson Corporation	International Business Machines Corporation	U.S.A.	License to use patents relating to information-related equipment	April 1, 2006 until the expiry of the patents
Seiko Epson Corporation	Microsoft Corporation	U.S.A.	License to use patents relating to information-related equipment and software used by such equipment	September 29, 2006 until the expiry of the patents
Seiko Epson Corporation	Eastman Kodak Company	U.S.A.	License to use patents relating to information-related equipment	October 1, 2006 until the expiry of the patents
Seiko Epson Corporation	Xerox Corporation	U.S.A.	License to use patents relating to electrophotography and inkjet printers	March 31, 2008 until the expiry of the patents
Seiko Epson Corporation	Canon Incorporated	Japan	License to use patents relating to information-related equipment	August 22, 2008 until the expiry of the patents
Seiko Epson Corporation	BROTHER INDUSTRIES, LTD.	Japan	License to use patents relating to information-related equipment	June 28, 2018 until the expiry of the patents

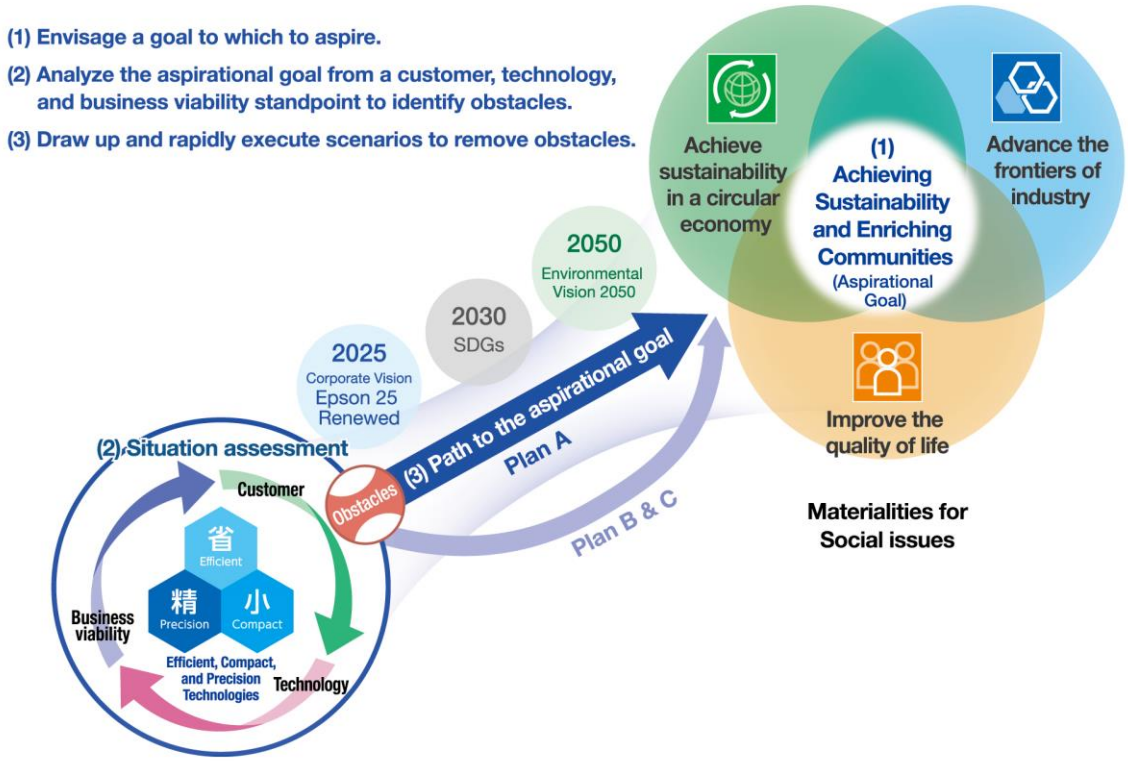
6. Research and development activities

(1) Research and development approach and systems

Since its founding, Epson has possessed excellent technologies, as represented by its efficient, compact and precision technologies, and provided value by leveraging these technologies for the benefit of society. Under its long-term vision, Epson 25 Renewed, Epson focuses on social issues as a starting point and has shifted to technology development that looks at which technologies are needed for solving problems.

In creating the best development scenarios in our technology development, we objectively evaluate our capabilities, reflecting elements such as customer value and business feasibility, and analyze any gaps between our findings and our aspirational goals. Through the course of this situation assessment, we identify "issues that must be resolved for our plans to come to fruition" as obstacles, and while thinking about how to address these issues, prepare multiple scenarios for achieving our goals. In our approach using multiple scenarios, we determine which technology development we should make our highest priority as its success would produce the greatest results, and designate it as our Plan A. We also preliminarily consider Plans B, C, which could produce lower Q, C, or D achievement levels but which would face fewer impediments and allow us to accomplish our primarily purpose, and assume them as expedient paths for productization and commercialization at the same time as Plan A. We are deliberating specific measures for resolving the obstacles, including collaboration and co-creation with outside partners.

Epson considers co-creation is an important factor in technology development. We are pursuing "front-loading of development," with knowledgeable people from all functions participating from the start of development (the trial-and-error stage) and verifying quality at each subsequent stage. By front-loading development to speed up the problem-solving cycle and increase the quality of development, we will speed up productization and commercialization.



Epson places research and development as a part of initiatives to strengthen the business infrastructure, and promotes the evolution of foundational technologies, core technologies and product technologies to realize innovation. Going forward, in addition to our manufacturing capabilities, we will strengthen materials, AI and digital technologies in particular, to lay a technological foundation for strengthening existing businesses and creating new businesses. Epson's research and development divisions coordinate with each other as they perform

their own clearly delineated roles. The R&D units of the operations divisions are primarily responsible for improving the competitiveness of products in their own business segments, while the corporate R&D division develops platform technologies used by multiple segments, new technologies which require long-term development efforts, and technologies for new areas.
Epson seeks to solve the issues faced by society through its technology development, boldly taking on the challenges of coming up with new ideas and approaches.

(2) R&D spending
Total R&D spending during the fiscal year was ¥44.3 billion, equivalent to 3.3% of revenue. The printing solutions segment accounted for ¥16.1 billion, the visual communications segment for ¥5.7 billion, and the manufacturing-related and wearables segment for ¥7.0 billion. The "other" segment and corporate segment accounted for the remaining ¥15.4 billion. R&D spending by the "other" segment and corporate segment includes research and development essential to lay a technological foundation for strengthening existing businesses and creating new businesses.

■ R&D spending by segment

Segment name	R&D spending (Billions of yen)
Printing solutions	16.1
Visual communications	5.7
Manufacturing-related & Wearables	7.0
Other and overall	15.4
Total	44.3

(3) Objectives and results of research and development by each segment

① Printing solutions segment
Office & home printing innovation
In this area, we seek to lead the evolution toward distributed printing that reduce environmental impacts and increase work productivity through inkjet technology, paper recycling technology, and open solutions. To this end, we are expanding our lineup of products that use Heat-Free Technology, a proprietary Epson inkjet technology, providing solutions, and working to drive a technological shift from laser printers to inkjet printers by emphasizing their environmental qualities.
We have launched a new series of products, the <LM> series, with the aim of realizing printing innovation in offices and homes. The <LM> series is a series of medium speed A3 color inkjet multifunction printers (medium speed printers are printers capable of printing 40 to 60 pages per minute[1]). Their compact design allows them to be installed in all kinds of locations, and they offer the printing speed and quality necessary for business applications. They consume less power than laser printers used in typical offices, and they consume fewer resources, so they help contribute to reductions in environmental impact during their use. They also increase operational productivity and support distributed printing in a company in line with the tremendous changes in people's workstyles.
In our paper recycling technologies, we have announced a new concept model (currently in development) of our PaperLab in-office dry papermaking system. With our unique dry fiber technology, which converts various materials into fibers and then binds and forms them, all without the use of water[2], we are driving efforts to provide new forms of paper recycling. The bonding material used in the paper recycling process to bond the defibrated waste paper has been replaced with naturally-derived material. This enables the paper to be repeatedly recycled, further contributing to environmental impact reduction.

1 A4 paper, single-side printing. See Epson's website for details regarding how printing speeds are calculated.
2 A small amount of water is used to maintain a certain level of humidity inside the system.

Commercial & industrial printing innovation

In this area, we seek to offer inkjet technology and solutions that lead the digitalization of printing and contribute to lower environmental impacts and higher productivity. To achieve this, we are bringing out the full potential of inkjet technology for printing on diverse media and materials, promoting the digitalization of commercial and industrial printing, and helping improve printing operation productivity through Epson Cloud Solution PORT, our cloud service that supports distributed printing.

We are contributing to this commercial and industrial printing innovation through our SureColor series of large inkjet printers, in which we released the SC-T7750DL, which uses red ink for POP posters requiring eye-catching reds, and the SC-P8550DL, which uses gray ink well-suited to photo graphics that place an emphasis on gradations, such as those in people's skin. Both printers newly have large-capacity ink servers, reducing the ink replacement workload placed on operators and assisting with operations in short-staffed worksites and worksites with limited man-hours. They also cut the volume of waste to just roughly 1/10 of that produced by printers using conventional ink cartridges, simplifying disposal handling procedures and reducing the amount of plastic waste.

Epson also launched the new ML-32000 model in the Monna Lisa series of inkjet digital textile printers. The ML-32000 model is equipped with 32 of the PrecisionCore print heads and realizes high productivity with a printing speed of 423 m^2 per hour while using the standard mode. Epson's Dynamic Alignment Stabilizer (DAS) technology produces high-quality, beautiful printing by controlling waveforms on each individual print head chip for everything from gradations to precise, complex geometric patterns. Through these products, and our activities with various partners working to realize manufacturing innovation at Inkjet Innovation Lab Fujimi (Fujimi Plant), our co-creation center, we are working to expand our inkjet digital textile printing.

We have begun providing paid monthly plans in our Epson Cloud Solution PORT cloud service platform for using large printers. In addition to the printer operation status visualization function and the remote service that issues alerts when errors occur, customers subscribing these plans can use new solutions: the workflow solution for managing print jobs on printers and the color management solution that improves the efficiency of color matching operations. This enables distributed printing that can be accessed from any worksite.

② Visual communications segment

Visual innovation

In this area, we seek to connect people, things, information and services with inspiring video experiences and quality visual communications to support learning, working and lifestyles. To do so, we are developing high brightness projectors that use laser light sources for high-resolution, large projection sizes, and home projectors with smart designs that allow them to be placed in even more locations, so they can be used in more environments, for a wider range of purposes and applications.

Based on this approach, we launched the new EB-PU2220B and EB-PU2120W high-brightness business projectors, which are the world's smallest[3] 120,000 lm (lumen) projectors and which are capable of bright, vivid color reproduction. Both projectors use laser light sources and can produce high-resolution, high-quality images equivalent to 4K images. They are also roughly 64% smaller[4] than our existing EB-L20000U model, and weigh roughly 50% less[4], so they help reduce various costs such as storage and shipping costs.

We also launched the EH-LS800B/W and EH-TW6250 home projectors. Watching videos, such as movies, TV series and live performances, on large projections is becoming a part of people's everyday lives, so projectors are being increasingly used instead of televisions and in situations other than household viewing, such as in hotels and glamping. These new home projector models are perfect for people who want to easily enjoy full-fledge home theaters and people buying their first high resolution projectors.

[3] According to studies performed by Epson of the sizes of the bodies of commercially available 20,000 lm 3LCD projector products (not including projecting elements or lenses) (as of May 17, 2022)

[4] Compared to the EB-L20000U and the EB-PU2220B (including projecting elements, not including lenses)
EB-PU2220B: Body dimensions (WxDxH): 586 mm x 492 mm x 218 mm (including projecting elements)
Body weight: Approx. 24.4 kg (not including lens)
EB-L20000U: Body dimensions (WxDxH): 620 mm x 790 mm x 358.5 mm (including projecting elements)
Body weight: Approx. 49.6 kg (not including lens)

③ Manufacturing-related and wearables segment

Manufacturing innovation

In this area, we seek to innovate manufacturing by co-creating flexible high-throughput production systems that reduce environmental impacts. To strengthen our production foundation with an eye toward future business growth, we moved our domestic robot plant to the Fujimi Plant and expanded it, and automated factory operations using robots. We will use this robot plant as a technology verification site and evolve the usage value provided by Epson's robot products.

Lifestyle innovation

In this area, we seek to utilize craftsmanship and co-create solutions that utilize sensing technologies to enrich diverse lifestyles. In the watch business, we are providing products with designs and high levels of quality that appeal to customers' sensibilities, at prices that communicate their value. In the sensing business, we are co-creating new solutions that leverage our sensing technologies and analysis algorithms.

Also in the sensing business, at SUWAKO 8PEAKS MIDDLE TRIATHLON 2022, which was held on June 25, 2022, we provided a GPS tracking system using state-of-the-art positioning technology. This was the first time a system like this was used at any official triathlon in Japan[5]. The system uses M-Tracer technology, which combines Epson's unique high-precision, low-power-consumption sensing devices and low-power-consumption wireless communication. With this technology, location and movement information can be measured and visualized in real time even for long duration events such as triathlons. In the future, we aim to provide solutions that assist with the safe and secure operation of events and that make events even more enjoyable by using movement and location information provided to participants and spectators.

[5] According to an investigation by the editorial board of triathlon magazine Triathlon LUMINA

Microdevices

In this area, we work to develop products that contribute to the realization of smarter societies, such as rapidly-growing high-speed, high-capacity communications infrastructure, IoT society, and mobility society, with our timing devices, semiconductors, and sensors by leveraging the strengths produced by combining the efficient, compact, and precision technologies of quartz crystals and semiconductors.

In our timing device products, we developed the SG2016 series of crystal oscillators (SPXO) for use in next-generation 800G optical communication modules, which have high compactness requirements. These oscillators are 54% more compact in volume than our conventional products[6]. These products use HFF quartz crystal units[7] and compact oscillator ICs developed by Epson, to provide the same high frequency, high precision, and low-phase jitter[8] as our conventional oscillators. As a leading timing device company, Epson will continue to provide device solutions that meet diverse electronic device and social infrastructure needs with the aim of realizing a smart society through the use of device technologies.

[6] SG2520EGN, SG2520EHN, SG2520VGN, and SG2520VHN

[7] Photolithographic processing is performed to produce an ultrathin structure for the exciter alone, measuring just a few microns (inverted mesa structure). This produces a quartz crystal unit that is as strong as conventional units but are capable of high-frequency fundamental wave oscillation. They suppress nearby harmonic components, thereby contributing to greater stability in high-speed, high-capacity communications.

[8] Jitter refers to deviations in clock cycles, and can result in image quality issues, bit errors during data transmission, and other problems.

④ Other and overall

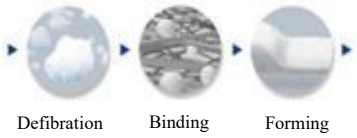
In this area, we work to develop technologies in the field of production technology, which extends across all of our business segments, develop technologies for reinforcing our DX platforms, conduct fundamental research that will form the technical foundation of our business reinforcement efforts, and carry out research and development related to new areas.

Our company-wide efforts include the development of environmental technologies for achieving Environmental Vision 2050. One of those development activities consists of applying our unique dry fiber technology to materials other than paper. In the textile and apparel industry, garment manufacturing produces a tremendous amount of cloth scrap, and the utilization of this scrap has become a pressing issue. Epson commercialized new packaging material made by upcycling cotton scraps. Since 2022, this packaging material has been used for some of the watch products sold by Epson.

Epson uses dry fiber technology, as one of the environmental technologies that contribute to decarbonization and

resource circulation, to recycle paper and provide it with greater functionality, and it will extend this technology even further, to structural materials and formed materials such as packaging materials and construction materials, in order to eliminate the use of virgin plastics. By doing this, we will help maximize utilization of terrestrial resources and contribute to the creation of a circulation economy that is not reliant on underground resources.

Scraps produced during cotton garment production



Upcycling using dry fiber technology

Use in packaging material for watch products