Environmental

Towards a Circular Economy

Epson has established Environmental Vision 2050, aiming to achieve Carbon negative and Underground resource free by 2050, and has cited achieving sustainability in a circular economy as a materiality (priority issue) to realize a sustainable and enriched society. The continuous expansion of resource consumption and waste generation through mass production and mass disposal has severe impacts on the global environment and people's social lives. To balance economic activities with environmental activities and make society sustainable, efforts towards a circular economy are necessary. Epson is engaged in environmental activities from four perspectives: 1. Decarbonization, 2. Closed resource loop, 3. Customer environmental impact mitigation, and 4. Environmental technology development. In addition to closing the loop in our own business activities, we will review the state of the economy together with various stakeholders through collaboration and open innovation in the supply chain. Epson will promote manufacturing with an awareness of reducing environmental impact and accelerate its actions toward the realization of a circular economy.

Isamu Otsuka
Executive Officer
General Administrative Manager,
Technology Development Division/
Global Environmental Strategy Promotion Office
Chairman, Epson Atmix Corporation

Founded 80 years ago in Suwa, a city nestled in the rich natural environment of Nagano Prefecture, Epson has always maintained ambitious environmental goals.

1 Non-renewable resources such as oil and metals
2 Target for reducing greenhouse gas emissions aligned with the criteria under the Science Based Targets initiative (SBTi)

Environmental Vision 2050 is a statement of our commitment to the environment.
It was conceived not from a perspective of what we can or

cannot achieve but based on what we must achieve as a product creator and manufacturer. Global action is needed to achieve sustainability, as the contribution that any one company can make by reducing the environmental impact of its business activities is limited. Environmental Vision 2050 articulates actions for creating synergies with business partners based on our technologies, products, and services and for allowing us to play a part in creating a better world.
To achieve our goals in Environmental Vision 2050, we set Epson 25 Renewed (2025) and the SDGs (2030) as mid-term milestone targets and have been working steadily to bridge the gap needed to reach them.

Environmental Vision 2050

Environmental Message

"Engineering Precision. Innovating Sustainability." Preserving the natural environment is one of Epson's core corporate principles, and this message sums up Epson's unwavering commitment to helping create a sustainable world through our technologies.
We will use this message in different aspects of our corporate activities to express Epson's vision.

Environmental Message

Environment Contents

Vision & Policy

- Environmental Vision 2050
- Natural Capital
- Our Approach
- Roadmap
- Environmental Vision and Corporate Vision
- Solving Social Issues Through Inkjet Technology
- Issuance of Green Bonds

Environmental Management

- Environmental Management System
- Organizations for Implementing Environmental Strategies
- Product Lifecycle Environmental Impact Reduction
- Environmental Performance

Decarbonization

- Goal
- Response to TCFD Recommendations
- Operational Initiatives (Scopes 1 and 2)
- Value Chain Initiatives (Scope 3)
- Avoided Emissions
- Use of Renewable Energy
- Special - transition100

Closed Resource Loop

Goal
Reduce Total Resource Inputs
Eliminate Waste
Replace with Sustainable Resources
Contribution to Paper Circulation

Customer Environmental Impact Mitigation

Goal
Case Study

Environmental Technology Development

Goal
Dry Fiber Technology (DFT)
CO_2 Absorption Technology
Metal Powder Manufacturing Technology

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Addressing Water Related Risk
Case study - Water Resources Management

Pollution Prevention and Chemical Substance Management

Management of Chemical Substances in Products
Chemical Management (Performance)
Environmental Risk Management

Biodiversity Conservation

Approach
Response to TNFD Recommendations
Case Study

Eco Community

Eco Education
Eco Communication
Eco Technology

Environmental History

Environmental Message

ESG Data | Standards Comparison | Sustainability Report | Integrated Report

Vision

Environmental Vision 2050 | Natural Capital | Our Approach | Roadmap | Environmental Vision and Corporate Vision

Environmental Vision 2050

Epson aspires to achieve sustainability and enrich communities. Achieving this aspirational goal will require addressing societal issues and driving transformative change in the way things are done.
Environmental Vision 2050 was conceived not from a perspective of what we can or cannot achieve but from a mindset of what we must achieve as a product creator and manufacturer.

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

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

In 2008, Epson established Environmental Vision 2050, a statement of our environmental goals out to the year 2050. The world has since changed. Global efforts to achieve social sustainability are accelerating, with the United Nations adopting Sustainable Development Goals (SDGs)[3] and the Paris Agreement[4] charting a course toward decarbonization. In light of these changes, Epson revised the environmental vision in 2018 and specified three actions that the company should take.
In March 2021, Epson further revised the vision, setting specific goals that reflect Epson's strong commitment to addressing major societal issues such as decarbonization and resource recycling.

[3] International goals for social sustainability adopted at the U.N. Sustainable Development Summit in September 2015, aimed at addressing global issues such as climate change, poverty, and human rights.

There are 17 sustainable development goals with 169 targets.

[4] A legally binding international treaty on climate change. The aim of the agreement is to keep a rise in global average temperature to well below 2 degrees Celsius above pre-industrial levels.

TOPICS

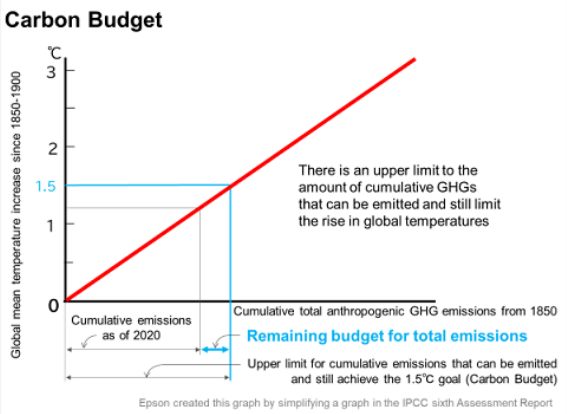
Carbon Budget

According to IPPC[5], the rise in global temperatures caused by climate change is directly proportional to the cumulative emissions of greenhouse gases (GHGs). To limit temperature increases to a certain level, there must be a cap on cumulative GHG emissions—this includes both past and future emissions. This cap is referred to as the carbon budget.

The latest IPCC Sixth Assessment Report – Synthesis Report (published in March 2023) states that, as of 2020, the remaining carbon budget to keep global warming within 1.5°C is approximately 500 billion tonnes, based on a 50% probability. At the emission rate at that time, this remaining budget was expected to be exhausted in about 10 years.

However, since 2020, global annual GHG emissions have continued to rise. As a result, limiting cumulative emissions to meet the 1.5°C target has become an increasingly difficult challenge.

[5] Intergovernmental Panel on the United Nations climate change



Related Information

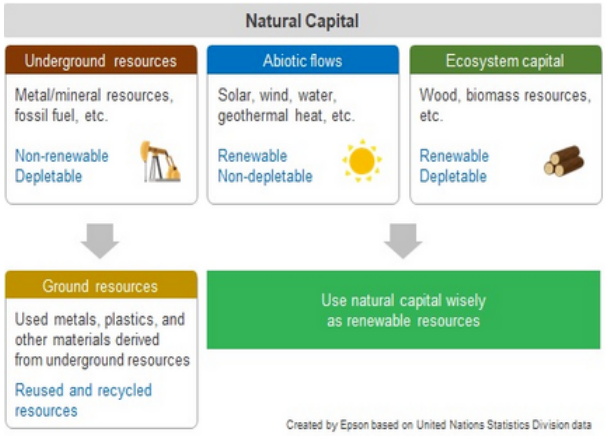
Value Creation Story

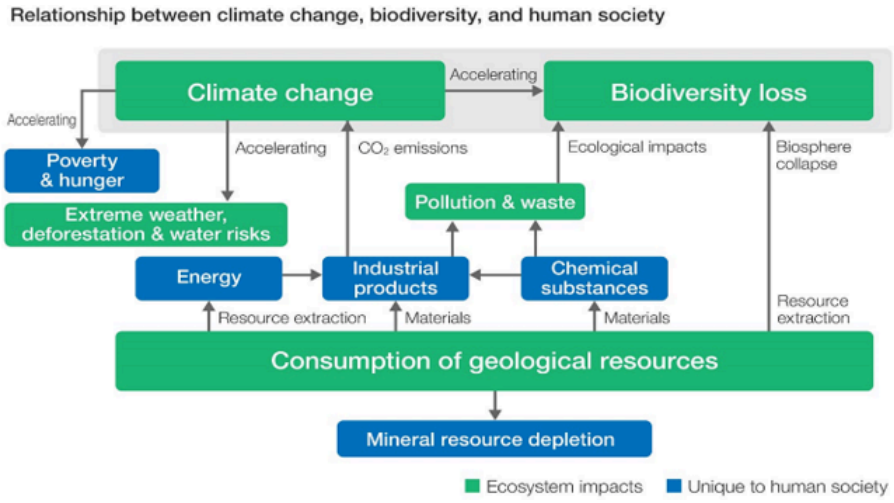
Epson Transitions to 100% Renewable Electricity at All Group Sites Worldwide

Natural Capital

Business Activities Based on Natural Capital

The resources we use are called "natural capital" and include underground resources, abiotic flows, and ecosystem capital.
The mining of underground resources causes destruction of the biosphere. In addition, when mined resources are used as industrial products, they consume a great deal of energy and emit CO_2.
Epson will dramatically change the way natural capital is used. We will reduce the consumption of new underground resources by utilizing previous mined minerals as above-ground resources and will use abiotic flows as energy sources. Ecosystem capital is renewable and non-depletable if used wisely.
In the natural world, solar energy is the only energy source used, and all matter circulates without producing waste. We look to learn from nature, avoid producing waste, and repeatedly reuse resources in our business activities.





Related Information

Biodiversity Conservation

Our Approach

Decarbonization Initiatives

The entry into force of the Paris Agreement in 2016 changed the situation in industrial, economic, and other markets, as the focus turned from a low-carbon to a decarbonization strategy.

Unlike the earlier Kyoto Protocol, the Paris Agreement, adopted under the UN Framework Convention on Climate Change, set a goal of keeping the average global temperature rise to well below 2°C above pre-industrial levels. To achieve this, emissions must reach net-zero in the second half of the 21st century. Later, in 2018, the IPCC presented the Special Report on Global Warming of 1.5°C, which shows that there are clear benefits to keeping warming to 1.5°C rather than 2°C in terms of the impacts of extreme events such as heat waves and floods. The report brought the world's attention to the need to reach the 1.5°C goal to overcome the climate crisis, prompting widespread global action.

The world needs to cooperate in transitioning societal systems toward net zero emissions by eliminating the consumption of fossil fuels and removing CO_2 from the atmosphere.

Climate risks: 1.5°C vs 2°C global warming

	1.5°C	2°C

World population exposed to severe heatwaves (at least once every 5 years)	About 14%	About 37% (about 1.7 billion people increase)
World population at risk of flooding (relative to 1976-2005)	2 times	2.7 times
Global mean sea level rise (relative to 1986-2005)	26-77 cm	10 cm higher than 1.5°C Up to 10 million more people would be impacted
Species	6% of insects, 8% of plants and 4% of vertebrates will be affected	18% of insects, 16% of plants and 8% of vertebrates will be affected
Coral reefs	70 - 90% decline	99% decline
Ice-free summers in Arctic	At least once every 100 years	At least every ten years
Annual catch of marine fisheries	1.5 million tonnes decrease	3 million tonnes decrease

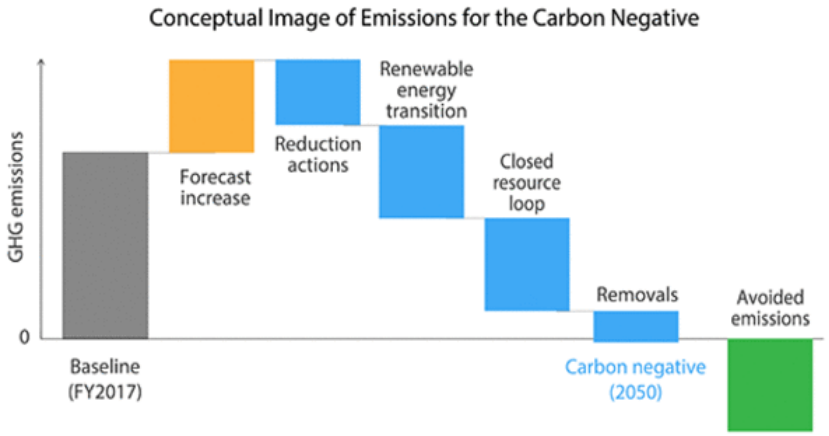
Source: WWF Japan documents based on IPCC SR1.5 SPM & Chapter 3

Decarbonization goal: carbon negative

Epson aims to become carbon negative, which is defined as limiting emissions of all greenhouse gases (GHG scopes 1, 2, 3) from our business activities, removing from the atmosphere an amount of CO_2 corresponding to the remaining GHGs to reach essentially zero GHG emissions, and then removing even more carbon.

First, we will minimize energy-use associated with production and products and switch to renewable energy sources. Closing the resource loop is also effective in reducing GHG emissions, so, along with our goal of becoming underground resource-free, we will move toward GHG-free manufacturing.

Epson is reducing its customers' GHG emissions by providing products that have a smaller environmental footprint during use. We represent the amount of reduction as a measure of our environmental contribution and are creating and manufacturing products that will increase the contribution.



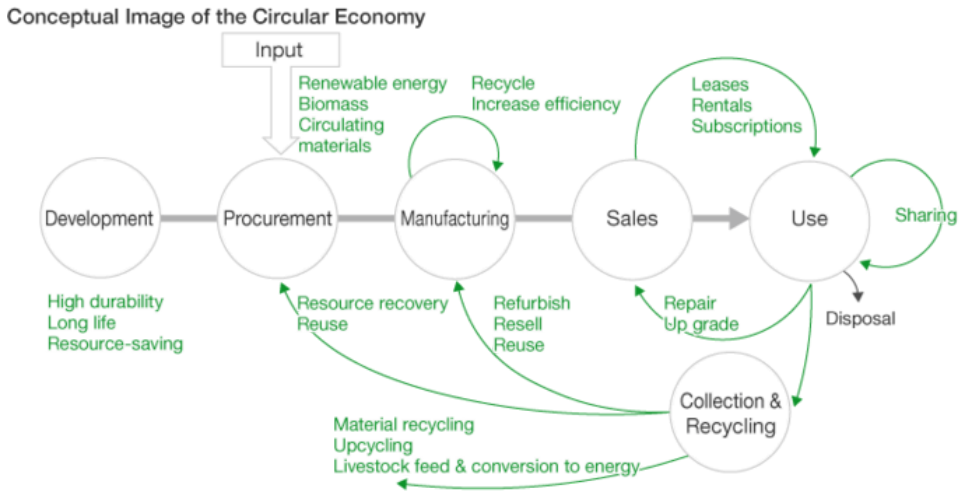
Closed resource loop initiatives

The idea of a circular economy is being advocated as a sustainable economic system to replace the current one-way linear economy of mass production, mass consumption, and mass disposal. In Europe, the European Commission has adopted the Circular Economy Package and has begun taking concrete steps toward transitioning to a circular economy that uses resources more sustainably.

According to an OECD[1] report[2], global resource consumption is predicted to increase to 167 gigatons in 2060, which is more than double the 79 gigatons consumed in 2011, due to population growth and GDP growth.

[1] Organisation for Economic Co-operation and Development. A European-led international organization to which 35 developed countries, including Japan and the United States, are members.

[2] Global Material Resources Outlook to 2060

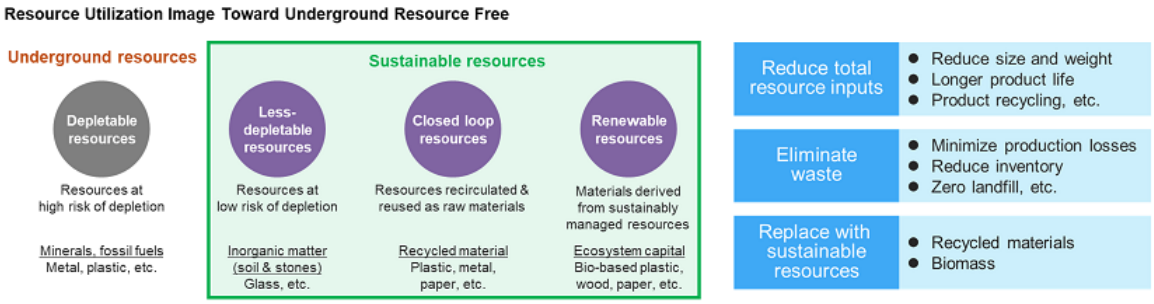


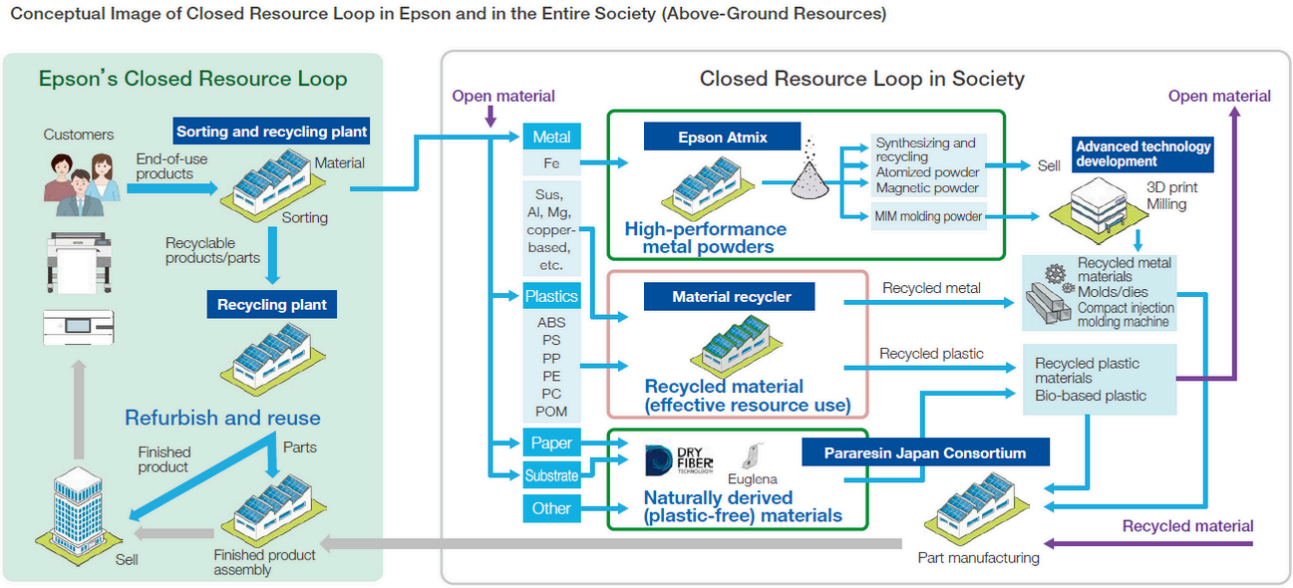
The closed resource loop goal: Becoming underground resource free

Epson will utilize previously mined underground resources as existing above-ground resources to reduce consumption of new underground resources and become underground resource free by 2050.

We will endeavor to reduce total resource inputs, eliminate waste/disposal, and reach a 100% sustainable resource rate[1] to achieve the goal of becoming underground resource free.

[1] Sustainable resource rate: The proportion of sustainable resources (renewable resources + closed loop resources + less-depletable resources) to raw materials





Related Information

Decarbonization

Closed Resource Loop

Issuance of Green Bonds

Global action is needed to achieve sustainability. The contribution that any one company can make by reducing the environmental impacts of its business activities is limited. Environmental Vision 2050 articulates actions for creating synergies with business partners based on our technologies, products, and services and for allowing us to play a part in creating a better world.

To achieve Environmental Vision 2050, we have been setting mid-term milestone targets, while steadily working to bridge the gap needed to reach them. We will use our efficient, compact and precision technologies in tandem with various initiatives to improve the environmental performance of our products and business activities and to reduce environmental impacts across the value chain. By offering products and services that enable new business processes, we aim to provide outstanding economic and environmental value to our customers.

In line with these policies, Seiko Epson issued green bonds[1] through a public offering in Japan to raise funds for projects that will contribute to the solution of environmental problems. A second-party opinion was obtained from an external ESG rating company. They found that Epson's green bonds satisfy the requirements of Green Bond Principles 2018 published by the International Capital Market Association (ICMA) and Green Bond Guidelines, 2017, issued by the Ministry of the Environment.

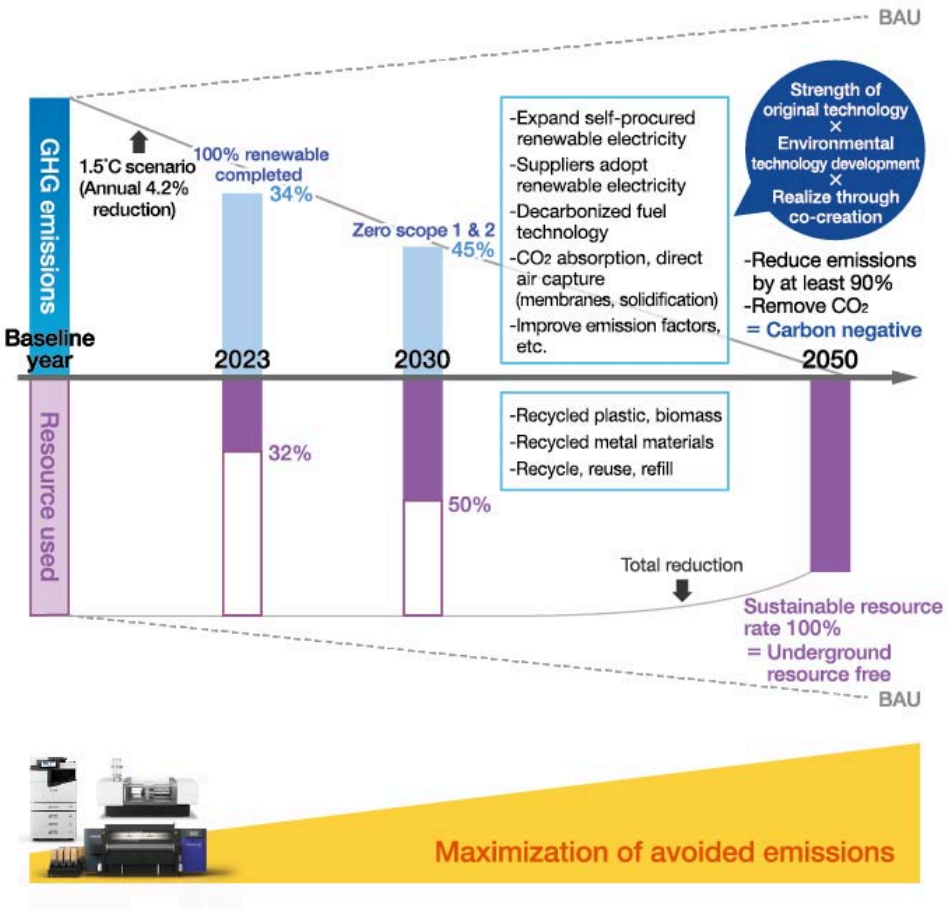
[1] Green bonds: Bonds issued to raise funds needed for projects that will contribute to the solution of environmental problems such as global warming.

Click here for details.

Roadmap

Efforts are being made to achieve not only carbon neutrality by 2050, but also carbon negativity, while aiming for underground resources free. By backcasting[1] from these long-term goals, specific scenarios outlining how progress will be made in the mid-term have been developed, which are presented in the "Mid-Range Environmental Action Plan." As business growth continues, GHG emissions and resource consumption throughout the supply chain are expected to increase. To address this, an "Environmental Value Creation Scenario" has been formulated that integrates both environmental and business strategies across all operations, laying out a roadmap to achieve the 2050 targets.

[1] A planning technique in which a desired outcome is first envisioned and then the scenario for achieving the outcome is devised.



Targets and main strategic actions by category in the Mid-Range Environmental Action Plan

Decarbonization	2030 Target ・Zero Scope 1&2 emissions[1] ・55% reduction in total Scope 1, 2, and 3 emissions (compared to FY2017 levels) Main strategic action ・Scope 1 (Fuels): Electrification & conversion to decarbonized fuels ・Scope 2 (Electricity): Switch to renewable electricity & expand local and in-house power generation
Closed Resource Loop	2030 Target ・50% sustainable resource rate Main strategic action ・Use sustainable resources for main materials (plastic & metal)
Multifaceted Actions	Main strategic action ・Reduce product size, weight & replacement parts ・Reduce product energy use ・Resell returned products, refurbish used products, refill ・Establish long service life business model ・Engage suppliers on renewable electricity & recycled materials ・Minimize production losses, reduce GHGs
Customer Environmental Impact Mitigation	Main strategic action ・Expand products & services that have a lower environmental impact

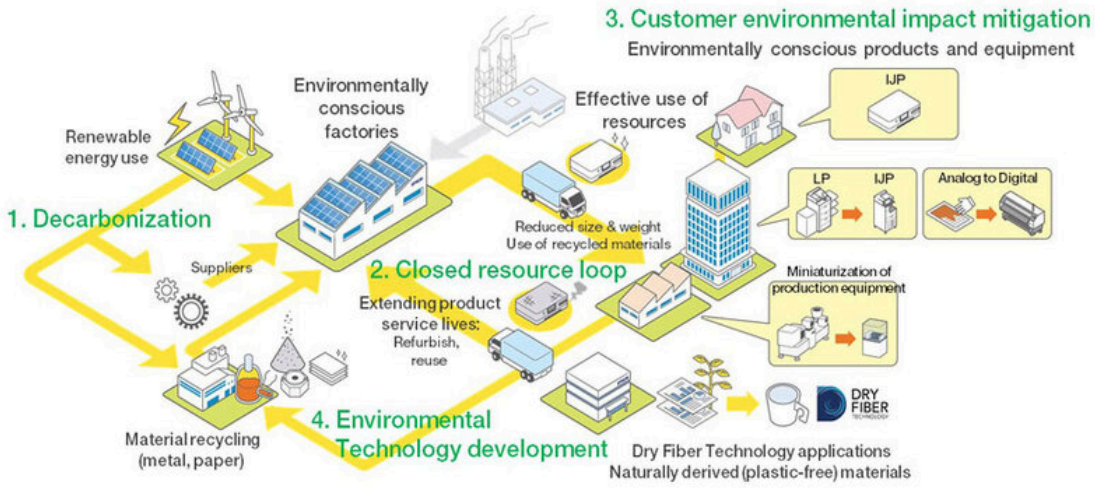
[1] Prioritize reducing absolute scopes 1 and 2 emissions by 90% compared to 2017. All residual emissions will then be neutralized.

Environmental Vision 2050 and Corporate Vision

Global action is needed to achieve social sustainability, as the contribution that any one company can make by reducing the environmental impacts of its business activities is limited. Environmental Vision 2050 articulates actions for creating synergies with business partners based on our technologies, products, and services and for allowing us to play a part in creating a better world.
In March 2021, Epson announced a revised corporate vision, Epson 25 Renewed. Epson 25 Renewed describes the company's aspirations for addressing societal issues and achieving sustainable and enriched communities by working with customers and partners.
The efficient, compact, and precision technologies that Epson has developed since its founding have yielded inkjet technology that reduces environmental impacts and increases productivity along with a host of other technologies that Epson believes can play a major role in solving societal issues and in achieving the Sustainable Development Goals. We will play to these strengths and work with partners as we seek to co-create high customer value that offers both environmental and economic benefits.

Epson 25 Renewed Corporate Vision: Environment

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



1. Decarbonization	· Renewable energy use · Energy-saving facilities · Greenhouse gas removal · Supplier engagement · Carbon-free logistics
2. Closed resource loop	· Effective use of resources: Reduce size and weight, use recycled materials · Minimize production losses · Extend product service lives: Refurbish and reuse
3. Customer environmental impact mitigation	· Lower power consumption · Longer product life · Fewer consumables and limited lifetime parts · Digitalization of printing · Miniaturization of production machines

4. Environmental technology development	· Dry fiber technology applications · Naturally derived (plastic-free) materials · Material recycling (metal, paper) · CO_2 absorption technology

Environmental Investment and Spending

- Spend 100 billion yen over the 10 years to 2030 (items 1, 2, 4)
  - Reduce GHG emissions[1] in the supply chain by more than 2 million tonnes
  - Use renewable energy to meet 100% of the electricity needs of the entire Epson Group by 2023[2]
- Concentrate management resources on the development of products and services that reduce environmental impacts (item 3)

[1] GHG Scope 1, 2, 3 emissions

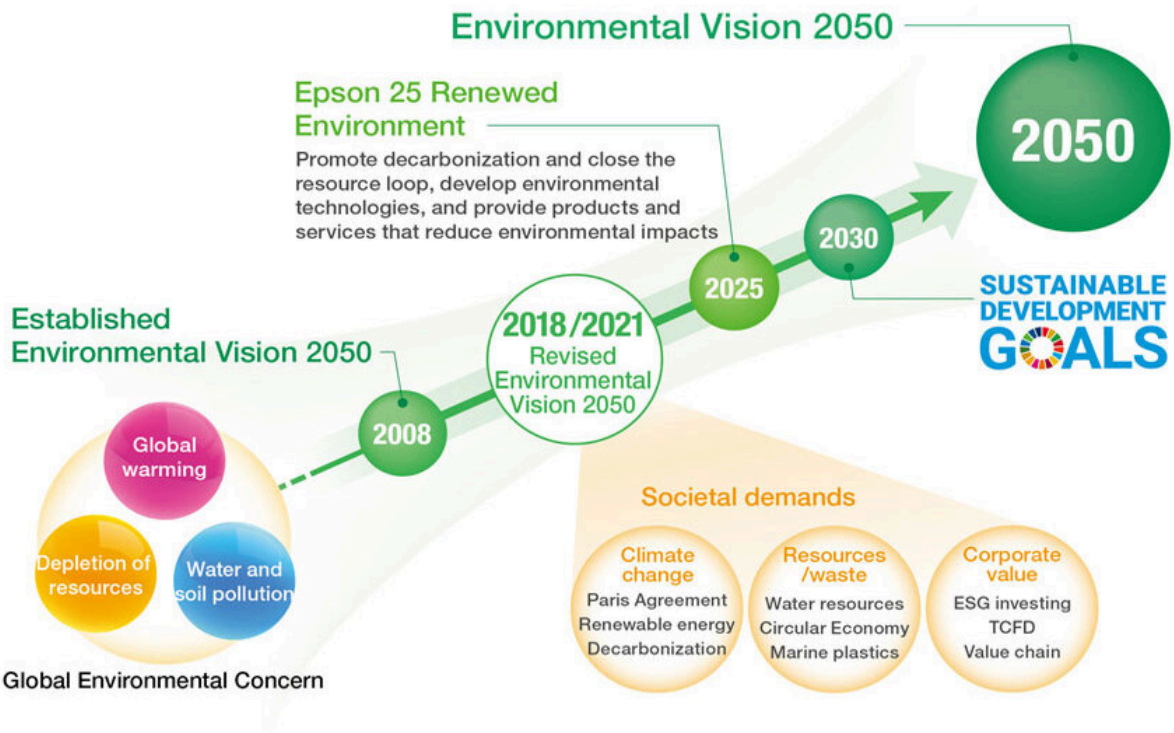
[2] Excludes leased properties for sales offices, etc. where the amount of electricity consumed cannot be determined

Related Information

Decarbonization
Closed Resource Loop
Customer Environmental Impact Mitigation
Environmental Technology Development
Epson 25 Renewed Corporate Vision

Striving to Sustainability

Epson is declaring its intent to contribute to the achievement of the SDGs through its environmental and other CSR initiatives.
The SDGs are the world's agenda for sustainable development. There are 17 goals, such as ending poverty and hunger, ensuring peace, justice, and gender equality, and environmental and resource sustainability for future generations. All UN member states have committed to achieving these goals by 2030.
Epson's Environmental Vision 2050 is aligned with the SDGs. We will continue to honestly address customer and societal challenges and will create unique environmental value through our business activities to help achieve the SDGs and a sustainable future.



Solving Social Issues Through Inkjet Technology

"We want to change the world with inkjet technology."

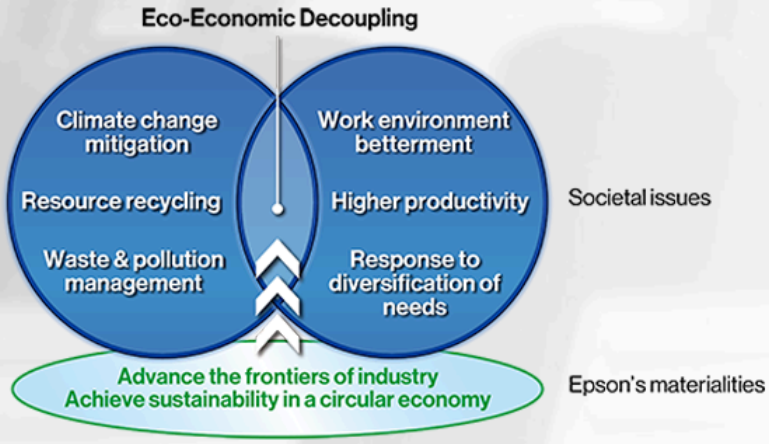
Propelled by this aspiration, we are advancing Inkjet innovation to help achieve a better and more sustainable future.

Solving Social Issues Through Inkjet Technology

Solving Social Issues Through Inkjet Technology

The SDGs, adopted around the globe, demand that we change the world to achieve a better and more sustainable future.

"We want to change the world with inkjet technology."
Propelled by this aspiration, we seek to transform methods and mentalities and to provide products, services, and production processes that have a far lower environmental impact on society, decoupling economic growth from environmental degradation.
This is Epson's mission.



Decoupling:
To separate economic growth from environmental impacts and the use of natural resources; and to increase resource and environmental
efficiency at every stage, from production to consumption to disposal, through technological innovation and social transformation.

Advantages of Inkjet Technology

Epson's inkjet systems mechanically eject droplets of ink without heating it.

Since a non-contact method is used to deposit ink, Epson's inkjets can print on a wide range of media. And, because heat is not used, a variety of inks (substances) can be used.

Characteristics of Epson inkjet systems

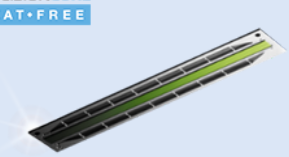
Heat-free

- **Ink compatibility** — Wide range of ink options for disparate applications in the home, office, commercial, and industrial sectors
- **Superb durability** — Ideal for office, commercial and industrial applications

High precision

- **High image quality** — Amazing gradations achieved with powerful Epson technologies like Multi-Size Dot Technology (MSDT)
- **Compact & fast** — Each nozzle ejects up to 50,000 ink droplets per second (latest heads)

PRECISIONCORE HEAT•FREE



PrecisionCore Micro TFP Printed Chip

Epson is deploying its state-of-the-art piezo-electric PrecisionCore printheads in printers across a wide range of categories. We want to use this technology, which can deliver value by boosting productivity while mitigating environmental impacts, to replace analog printing in every possible application. We are selling more printheads to external customers in response to the expansion of the digital printing market in the commercial and industrial sectors.

Future Outlook (Expansion in Production & Creative Areas)

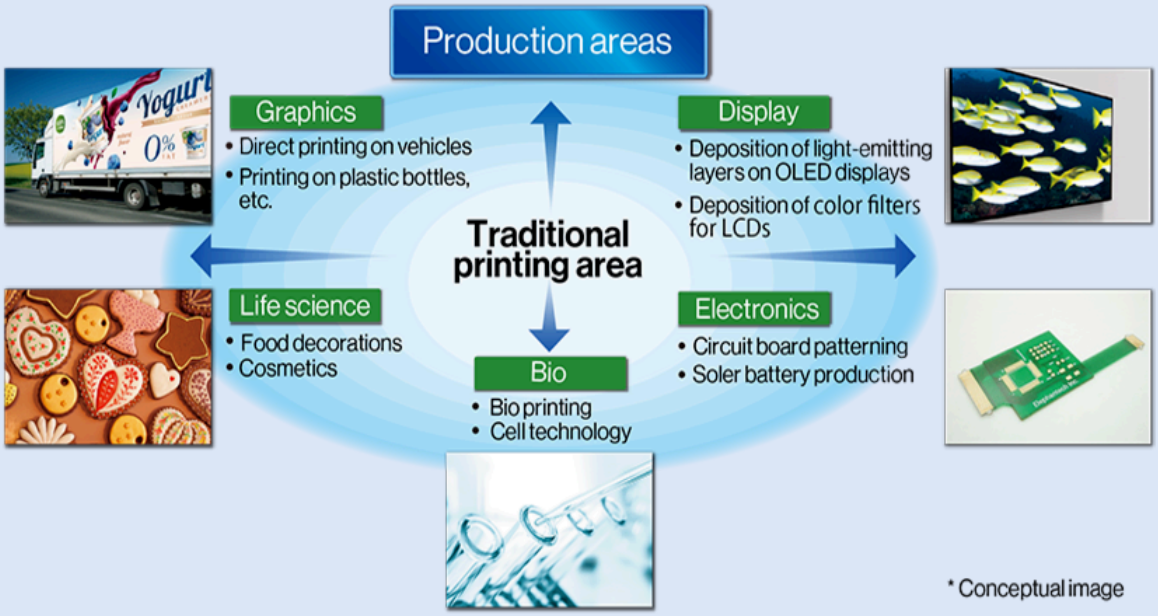
Inkjet-based manufacturing innovations

Advancing the frontiers of industry through open innovation

We believe that a sustainable world is one where all people are happy and content and where the environmental impacts that society inflicts are dramatically lowered.
The time has come to promote the decoupling of economic growth from environmental impacts by innovating countless production processes with countless technological innovations. In other words, we must advance the frontiers of industry.

Epson's inkjet technology has the potential to satisfy the conditions for a sustainable world.
The number of potential applications for inkjet technology is growing.
To expand the use of this technology in new areas and to maximize its full capabilities, Epson needs to collaborate with outside partners who share our aspirations and who have new ideas and new technologies.
By combining our strengths with those of partners who have strengths in other fields, we can produce synergies and advance the frontiers of industry at a high level.

Further expanding inkjet applications through open innovation



TOPICS: Investment in Gosan Tech, a startup developing manufacturing equipment for perovskite solar cells using inkjet technology

Epson has invested in Gosan Tech Co., Ltd. (Gosan Tech), a South Korean startup with inkjet technology that can be used in a variety of industrial fields, including perovskite solar cells.

Perovskite solar cells are attracting attention as a next-generation renewable energy source and candidate to replace today's silicon-based solar cells. They are lightweight, thin, and flexible, and the cost of fabricating them can potentially be reduced by utilizing

production technologies such as inkjet printing. Moreover, significant improvements in power generation efficiency have been made in recent years thanks to active research and development.

As a partner, Epson will supply Gosan Tech with reliable and precise printheads suitable for industrial applications and will support Gosan Tech's business growth in cooperation with its sales and service site, Epson Korea Co. Ltd.

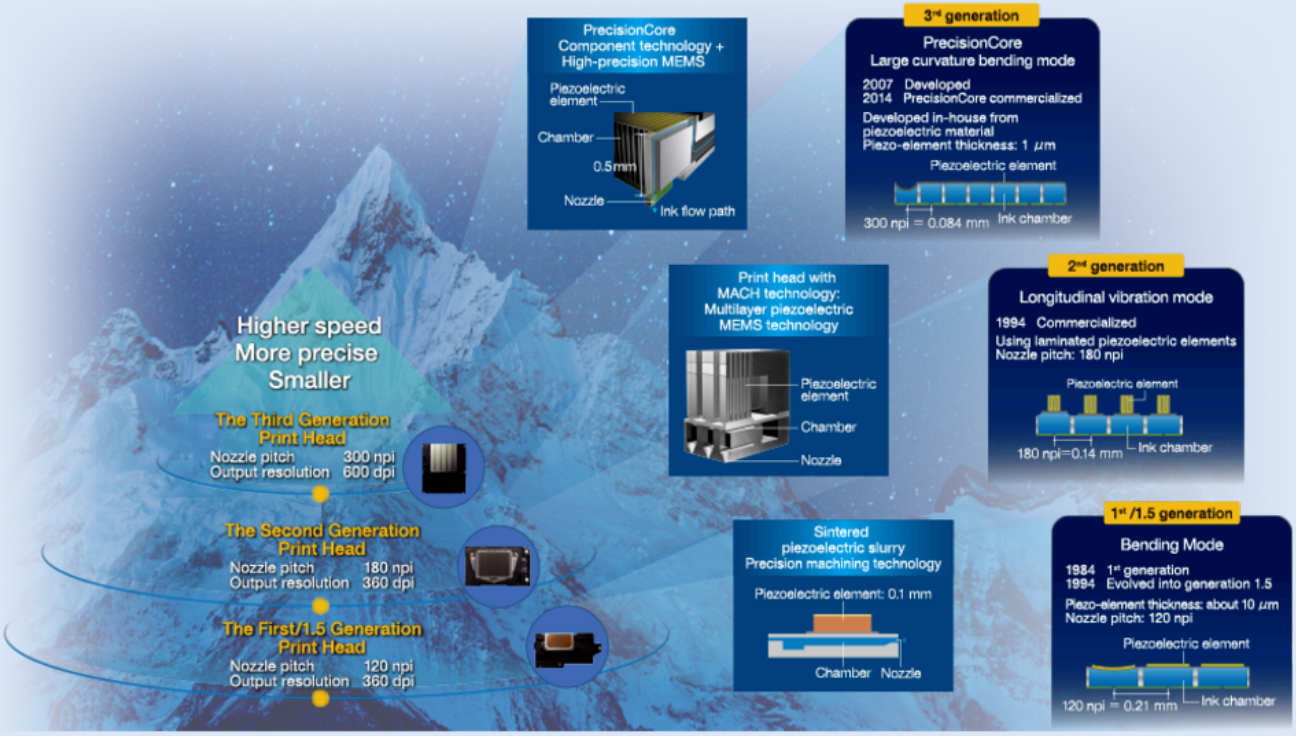
Epson will further promote the social implementation of inkjet technology through such initiatives.

Link to News Release

State-of-the-Art Printheads

The evolution of Epson inkjet printheads.

Epson's inkjet heads have evolved over three broad generations.



PrecisionCore head nozzles are 0.02 mm (20 µm) in diameter

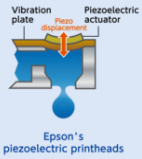
That is about 1/5th the diameter of a typical human hair.

A nozzle with rough rim edges cannot jet ink straight.

Epson uses microfabrication technology to form perfectly round nozzles that jet ink straight.

Piezo-electric inkjet heads consume little electricity and, since they are heat-free, are compatible with all manner of inks. Since 1984 Epson's inkjet heads have evolved across three generations to become faster, more precise, and more compact.

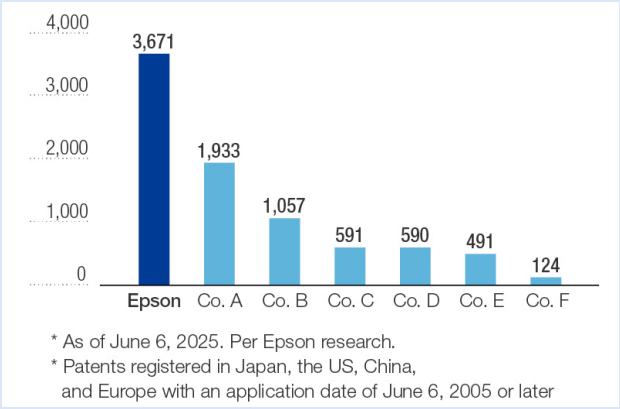
PrecisionCore heads are the 3rd and newest generation. They were achieved by using the latest high-precision MEMS technology for everything from the ultra-thin film piezo-actuators to the nozzles. Epson was able to obtain a larger displacement by fabricating thin-film piezo-actuators a mere 1 micrometer (1/1,000 mm) in thickness.



Key intellectual property

Epson owns a formidable number of piezo head patents around the world, and those technologies are incorporated into our heads.

Number of Piezo Printhead-Related Patents Owned



* As of June 6, 2025. Per Epson research.
* Patents registered in Japan, the US, China, and Europe with an application date of June 6, 2005 or later

Business Growth and Low Environmental Impact

Operations launched in Building 9 at the Hirooka Office in 2018

Epson has laid a foundation for advancing the frontiers of industry by putting itself on a path toward tripling print chip production capacity and by acclerating external head sales.

Building 9 environmental considerations

- LED lighting throughout the building
  The latest LEDs are also used for yellow lights for semiconductor fabrication.
- High-efficiency air-conditioning system
  Reduced the amount of construction materials and increased the efficiency of space use by using task and ambient air conditioning.
- Low-carbon electricity used for production
  All of the electricity needs of Hirooka office including Building 9 can be met with renewable energy.

Related Links

Environmental Vision 2050

Products and Services

Micro Piezo Technology

Open Innovation

Green Bonds

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[1] Green bonds: Bonds issued to raise funds needed for projects that will contribute to the solution of environmental problems such as global warming.

1. Summary of Issue

Instrument name	**Seiko Epson Corporation unsecured straight bonds (with inter-bond pari passu clause) (Green Bonds)**		
Series	20th	21st	22nd
Term to maturity	3 years	5 years	10 years
Total amount of issue	10 billion yen	40 billion yen	20 billion yen
Denomination	100 million yen		
issue price	100 yen per face value of 100 yen		
Interest rate	0.020% per annum	0.230% per annum	0.450% per annum
Pricing date	2020/7/10		
Payment date (issue date)	2020/7/16		
Redemption date	2023/7/14(Redeemed)	2025/7/16	2030/7/16
Use of proceeds	Seiko Epson has allocated all bond proceeds to cash reserves, which decreased due to payments for the green bond eligible assets listed in (1) through (3) below, as well as to the green bond eligible projects listed below in (4) through (8). (1) Construction costs for a new building (Building 9) at the Hirooka Office		

	(2) Construction costs for a new building (Building B of the Innovation Center) at the Hirooka Office (3) Construction costs for factory expansion at a manufacturing subsidiary in the Philippines (4) Costs of R&D and production facilities for high-speed linehead inkjet multifunction printers for offices (5) Costs of R&D and production facilities for commercial and industrial printers (6) Costs of R&D and production facilities for inkjet printers and the application of inkjet heads (7) Costs of R&D and production facilities for PaperLab and the application of Dry Fiber Technology (8) Costs of purchasing renewable energy
Bond rating	A (R&I)
Conformity assessment	Seiko Epson established a green bond framework that is aligned with the Green Bond Principles of the International Capital Market Association and obtained a second-party opinion from rating company Sustainalytics to verify that requirements are met. In addition, Rating and Investment Information, Inc. (R&I) gave Seiko Epson's green bonds a GA1 rating, its highest rating, in an R&I Green Bond Assessment. The external review of these green bonds is eligible for a subsidy from the Ministry of the Environment's FY2019 Financial Support Programme for Green Bond Issuance.

Independent assessment of conformity

Seiko Epson Corporate Green Bond Framework Second Party Opinion by Sustainalytics (PDF,385KB)

3. List of Interested Investors (as of 13 July 2020)

The following is a list of investors who have declared an interest in investing in Epson's green bonds.

The IO Shinkin Bank
The Aichi Bank,Ltd.
The Ashikaga Bank, Ltd.
Asset Management One Co., Ltd.
Iizuka Shinkin Bank
Ibaraki Prefecture Credit Federation of Agricultural Cooperatives
The Oita Bank, Ltd.
Osaka Shinkin Bank
Otec Corporation
Kanagawa Prefectural Credit Federation of Agricultural Co-Operatives
Kanonji Shinkin Bank
Gifu Prefectural Credit Federation of Agricultural Cooperatives
The Gifu Sinkin Bank
The Kyoto Chuo Shinkin Bank
Kiryu Shinkin Bank
Kuwanamie Shinkin Bank
The Kobe Shinkin Bank
The Shiga Bank, Ltd.

Shikoku Labour Bank
Shinonome Shinkin Bank
Shiba Shinkin Bank
Showa Shinkin Bank
Shinkin Central Bank
Sugamo Shinkin Bank
Suwa Shinkin Bank
Sekishinkin-Bank
Saison Automobile and Fire Insurance Company, Limited
Daitokyo Shinkumi Credit Cooperative
Taiyo Life Insurance Company
Takaoka Shinkin Bank
Takanabe Shinkin Bank
Takamatsu Shinkin Bank
Date Shinkin Bank
Choshi Shoko Shinkumi Bank
Tokio Marine Asset Management Co., Ltd.
Tokio Marine & Nichido Fire Insurance Co., Ltd.
Tokyo City Shinkin Bank
Tono Shinkin Bank
The Towa Bank, Ltd.
Tokushima-Ken Shinyo Nogyo Kyodo Kumiai Rengokai
Dokkyo University
Naganoken Labour Bank
Nagano Shinkin Bank
Niigata Shinkin Bank
The Nishio Shinkin Bank
Nishi Chugoku Shinkin Bank
Nishihyogo Shinkin Bank
Nippon Life Insurance Company
Hagiyamaguchi Shinkin Bank
Hamamatsu Iwata Shinkin Bank
Banshu Shinkin Bank
The Higashi-Nippon Bank, Limited
The Hyogokenkeisatsu Credit Cooperative
Hyogo Shinkin Bank
JA Fukuoka Shinren
The Fuji Shinkin Bank
North Pacific Bank,LTD
Hokuriku Labour Bank
Hokkaido Shinkin Bank.
Matsumoto Shinkin Bank
Mie Prefecture credit federation of agricultural cooperatives
The Mishima Shinkin Bank
Sumitomo Mitsui DS Asset Management Company, Limited
Sumitomo Mitsui Trust Asset Management Co., Ltd.
Mitsubishi UFJ Kokusai Asset Management Co., Ltd.
Mitsubishi UFJ Trust and Banking Corporation
Midori Life Insurance Co.,Ltd.
Miyazaki Daiichi Shinkin Bank
The Miyazaki Taiyo Bank, Ltd.
Meiji Yasuda Asset Management Company Ltd.
Meiji Yasuda Life Insurance Company

The Yamagata Bank,Ltd
Yuki Shinkin Bank
Yokohama Agricultural Cooperative
The Rokinren Bank

4. Allocation

All of the 70 billion yen raised by this green bond was used for capital investment and R & D funds and more under the above framework.

Environmental Management

As stated in its Management Philosophy , Epson is committed to respecting the global environment and anchors its business activities on this principle. Additionally, addressing the growing social and customer interest in low environmental impact, Epson aims to deliver customer value with its unique and innovative technologies that surprise and delight. Furthermore, to carry out environmental programs under uniform standards and goals in every country and region of the world, the basic environmental stance is set forth in Epson Principles of Corporate Behavior and in the Environmental Vision 2050 .

Environmental Management System

Organizations for Implementing Environmental Strategies

Product Lifecycle Environmental Impact Reduction

Environmental Performance

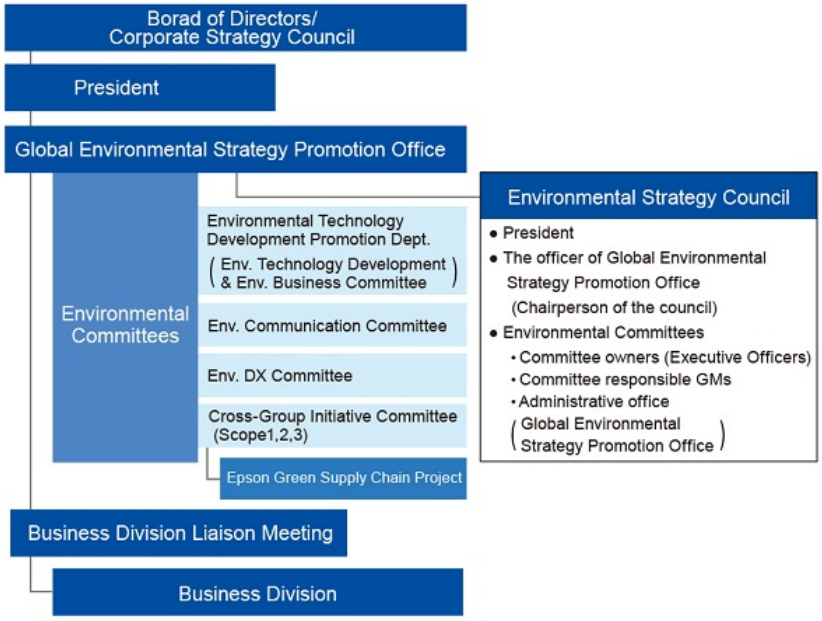
Environmental Management System

Business units within the Epson Group establish their own environmental action plans based on the Epson 25 Renewed Corporate Vision, and carry out the activities using an Environmental Management System (EMS). We conduct internal audits to check performance against the plans and take corrective action against nonconformances.
We operate our EMS in compliance with the international ISO 14001 international standard, and we implement a planning and control cycle to effect continuous improvement. Epson's main global manufacturing, sales, and service sites are pursuing integrated business process and environmental management initiatives as required by ISO 14001 (2015), and are renewing their certifications.

Our environmental activities cover our consolidated subsidiaries. For FY2024, we collected data from 64 Group companies (covering 99% of consolidated revenue).

Organizations for Implementing Environmental Strategies

To make achieving the environmental vision more feasible and enhance the resilience of our climate strategies, we created a Global Environmental Strategy Promotion Office to draft and carry out environmental strategy and subcommittees to address the various environmental issues.



Related Information

ISO 14001 Certification List

Environmental Risk Management

Eco Education

Product Lifecycle Environmental Impact Reduction

Epson is a manufacturing company, and the environmental impact generated during the manufacture and provision of its products is inevitable. in order to reduce environmental impact of products, it is essential to take a viewpoint that considers the entire product lifecycle.

Based on this thinking, we have incorporated the concept of life-cycle thinking into our environmental management, which considers environmental impact across the entire product life cycle , from product design (Think), procurement of raw materials (Choose), manufacturing (Create), transportation (Deliver), customer usage (Use), to disposal and recycling (Recycle & Reuse). Together with our customers and business partners, we will work to reduce environmental impact our products and services.

Think

Design products thinking of the entire life cycle

Design for Environment

Choose

Use environmentally conscious materials

Management of Chemical Substances in Products

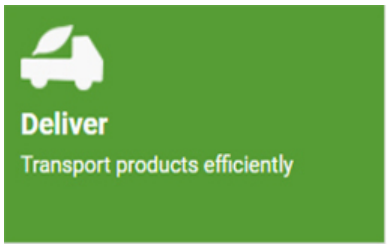
Related link: Turning to Sustainable Resource

Create

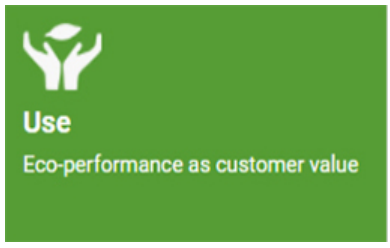
Produce with a minimum of materials and energy, prevent unnecessary emissions

Decarbonization

Related Link: Closed resource loop



Value Chain Initiatives



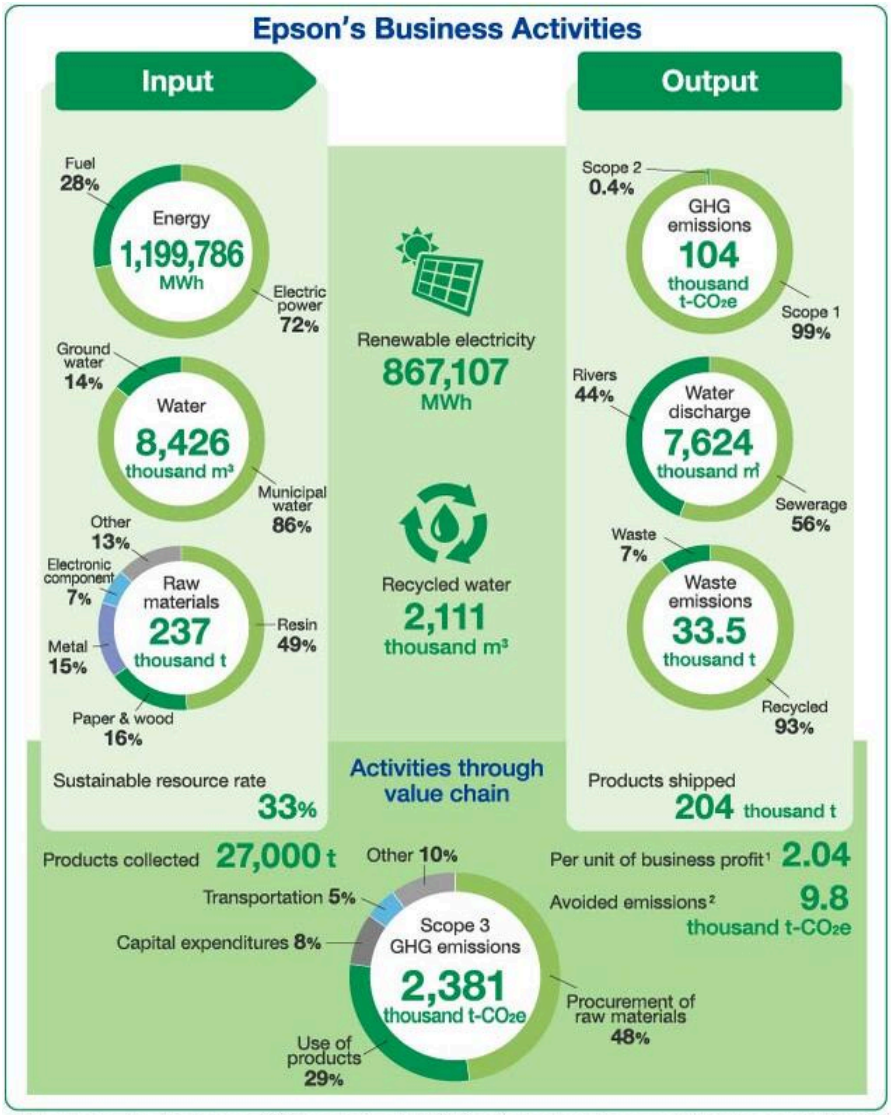
Customer Environmental Impact Mitigation

Product Recycling

Environmental Performance

Epson consumes resources and, in the process of conducting business activities across the life cycles of its products and services, emits GHGs and other emissions to the air, land, and water.
We are working to assess the environmental impacts of our business activities across the value chain in an effort to reduce our impacts.

Material Balance (FY2024)



Achievements

Scopes 1 & 2 GHG emissions

-81% — Target: -80% by FY2024

104 thousand t-CO_2e — Target value: 113 thousand t-CO_2e

Scope 3 GHG emissions (Per unit of business profit)

-39% — Target: -35% by FY2024

2.04 thousand t-CO_2e per billion yen — Target value: 2.17

Energy efficiency

-1.4% — Reduce energy consumption per raw material usage by 1% from the previous year³

5.68 MWh/t — Target value: 5.70

Water use efficiency (water intake by revenue)

-16% — Target: Improve water use efficiency (water intake by revenue) by 1% from the reference value

6.2 thousand m³ per billion yen — Target value: 7.3 thousand m³ per billion yen

¹ Calculated as the ratio of scope 3 (Categories 1 and 11) GHG emissions to business profit (Unit: thousand t-CO_2e/100 million yen)

² Based on the calculation method confirmed by Mizuho Research & Technologies, Ltd., the value is obtained by multiplying the difference between the weighted average of the publicly available lifetime CO_2 emissions of major laser printers in the global market and the lifetime CO_2 emissions of Epson's A3 color inkjet printer by the number of Epson A3 color inkjet printers sold in a given fiscal year. The assumptions differ from those used in the FY2023 results disclosure due to a review of the calculation conditions.

³ Energy use per unit of raw material consumption, based on 3-year totals. (excluding on-site power generation) (Unit: MWh/t)

Key Sustainability Topics, KPI, and Results here.

Design for Environment

The environmental impacts of a product across its life cycle, from cradle to grave, are largely determined at the planning and design-engineering stages. Epson takes a life cycle thinking approach in efforts to minimize customers' environmental impacts by (1) providing products that change the way they work and live, and (2) providing products that offer environmental performance as a basic feature. We set concrete targets for environmental specifications that should be achieved at the product planning stage. And, we have introduced a design-for-environment (DfE) process in which we evaluate how well we did in and after the design stage.

Think

Primary Environmental Performance Features

Below are some of the representative environmental performance features that we evaluate as part of our DfE process.

We explore various hardware and software approaches to save energy. These can include anything from developing energy-efficient technologies to implementing low-power product control systems. We strive to realize low-power products by setting and attaining concrete numeric targets several years out for each model.

Epson sets concrete size and weight targets for products, since reducing these helps to significantly mitigate environmental impacts, not only because fewer materials are consumed but also because products can be transported and warehoused more efficiently. We also make every effort to design products so as to minimize wastes on the customer's end. We do this by, for example, minimizing the amount of packaging used for products and consumables or by providing new printing functions that eliminate unnecessary prints.

We design our products to be easy to recycle after use. Specifically, we try to achieve a recyclable rate[1] of 75% or better as estimated from product engineering drawings.

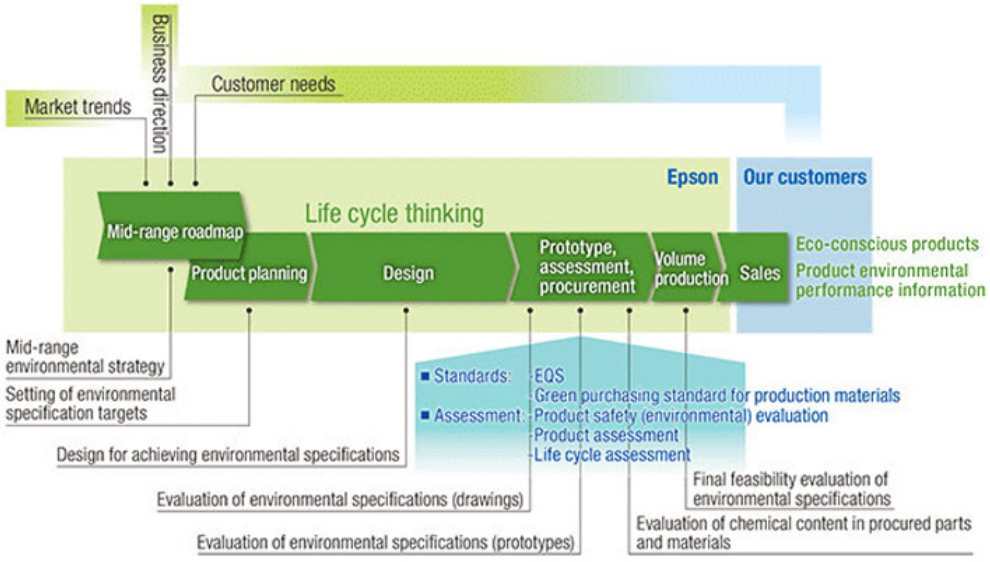
[1] Recyclable rate: Recyclable materials as a percentage of total product weight, excluding materials used as reducing agents in blast furnaces or as fuel sources.

Epson standards specify substances that are prohibited from inclusion in products and substances whose inclusion must be controlled. Information on these substances is gathered in a database to help ensure safety in all processes, from design and procurement to volume production.

Design-for-Environment Framework

Epson prepares internal specifications, provides evaluation tools, and develops and commercializes products in line with work standards that set forth rules and procedures. The materialization of the environmental specifications is reviewed at each step of the product's commercialization before it is finally sold.

Eco-conscious Product Commercialization Flow (Example for the Printer Business)



Standards

・EQS (Epson Quality Standard)
Includes internal standards for safety and environmental requirements that all Epson Group products and parts must meet in their design, production and procurement
・Green purchasing standard for production materials
Basic opinion on "Product Chemical Content Guarantees," and written standards covering specific criteria and application, for use when purchasing production materials

Evaluation

・Product safety (environmental) evaluation
Compliance check
・Product assessment
Checklists and evaluation sheets for evaluating the feasibility of individual environmental specifications during the drawing stage and experimental manufacturing stage
・Life cycle assessment (LCA)
Tools for quantifying environmental impacts (global warming impacts) in a product's life cycle and for efficiently and accurately exposing areas whose design should be improved

Decarbonization

Epson is combating climate change by reducing greenhouse gas emissions in operation (scopes 1 and 2) and across its value chain (scope 3) to help drive a transformation toward a decarbonized future, as envisioned by the Paris Agreement. Epson also contributes to society by developing energy saving products and further developing inkjet technology.

Goal
Response to TCFD Recommendations
Operational Initiatives (Scopes 1 and 2)
Value Chain Initiatives (Scope 3)
Avoided Emissions
Use of Renewable Energy

Goal

GHG Emissions Reductions

In Paris Agreement in 2015, a global long-term goal (1.5°C target) was set to pursue efforts to limit global average temperatures to within 1.5°C of pre-industrial levels. We recognize that achieving this goal will mitigate the impacts of climate change and is essential to achieving sustainability and enriching communities. Based on this recognition, Epson has developed GHG emission reduction targets for its value chain, consistent with the global 1.5°C target, toward net-zero in 2050.
In addition to achieving these targets, Epson is taking further steps to absorb and remove carbon to contribute to the realization of a decarbonized society, aiming to achieve net-zero Scope 1+2 emissions in 2030 and carbon negative by 2050.

GHG Emission Reduction Targets and Vision

Targets approved for SBTi[1] (1.5°C target level. All reductions are compared to the baseline year of fiscal 2017) SCIENCE BASED TARGETS DRIVING AMBITIOUS CORPORATE CLIMATE ACTION THE NET ZERO STANDARD APPROVED NET-ZERO TARGETS	Near-term targets: Reduce total scope 1+2+3 emissions by 55% by 2030 Reduce total scope 1+2 emissions by 90% by 2030 Long-term targets: Reduce total scope 1+2+3 emissions by 90% by 2050 Achieve net-zero by 2050

Goals[2]	Achieve net-zero Scope 1+2 emissions by 2030 Achieve carbon negative by 2050

Scope 1: Direct emissions from the use of fuels by business parties
Scope 2: Indirect emissions from energy sources such as electricity
Scope 3: Indirect emissions from the company's entire value chain

[1] The Science Based Targets Initiative (SBTi) is a corporate climate action organization that helps companies and financial institutions contribute to addressing the climate crisis. The Initiative is developing standards, tools, and guidance to help companies set GHG emission reduction targets consistent with the levels needed to keep global warming below catastrophic levels and achieve net zero by 2050 at the latest.

[2] A target approved by SBTi to reduce total emissions by 90% and neutralize remaining emissions through absorption, credits, etc. to achieve net-zero emissions or further decarbonization.

Response to TCFD Recommendations

The Task Force on Climate-related Financial Disclosures (TCFD) released its final report in June 2017. The TCFD encourages businesses to publicly disclose their medium- to long-term risks and opportunities related to climate change as financial information. Epson takes this as a call to develop resilient management and corporate health, able to adapt to all sorts of transitions in the face of climate change with impacts of a scope and scale we cannot predict.

Click here for more information about Responding to TCFD

Operational Initiatives (Scopes 1 and 2)

Under a company-wide cross-functional organization, each site is increasing the feasibility of decarbonization by implementing reduction measures such as production innovation, equipment and facilities renewal and investment, and the use of renewable electricity.

Main actions to reduce Scopes 1 and 2 emissions

- Production innovations
- Investment in updated facilities and equipment such as plant infrastructure, scrubbers, and solar power systems
- Use of renewable electricity: Procurement of renewable electricity that uses local natural resources, etc.
- Other reductions to be achieved by power utilities reducing their GHG emissions factors

See here for more information about Epson’s initiatives in using renewable electricity.

Initiatives for carbon pricing

Carbon pricing, an instrument that captures the costs of GHG emissions across society, is seen as a way to spur action and innovation in support of lower carbon emissions. Epson prepared payback period criteria and guidelines that incorporate carbon pricing principles to evaluate (study the feasibility of) potential investments for reducing GHG emissions. They were introduced on a trial basis in FY2018 and were formally adopted in 2020.

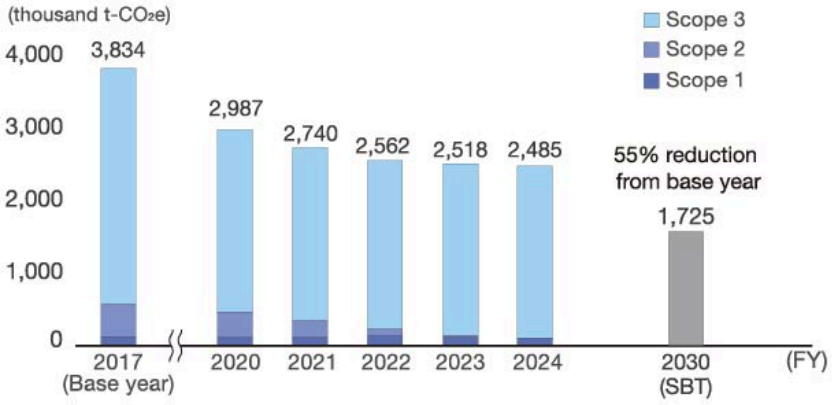
In addition to promoting energy-saving activities at each of its sites, Epson has been promoting the use of renewable energy sources; in fiscal 2024, the ratio of renewable energy sources, which previously accounted for less than 1%, was increased to approximately 72% (100% on an electricity basis). Although energy use is expected to increase in order to realize the Medium-Term Management Plan, Epson will continue to focus on reduction measures, including production innovation, renewable electricity together with the use of electricity, to achieve its goals.

81% Reduction

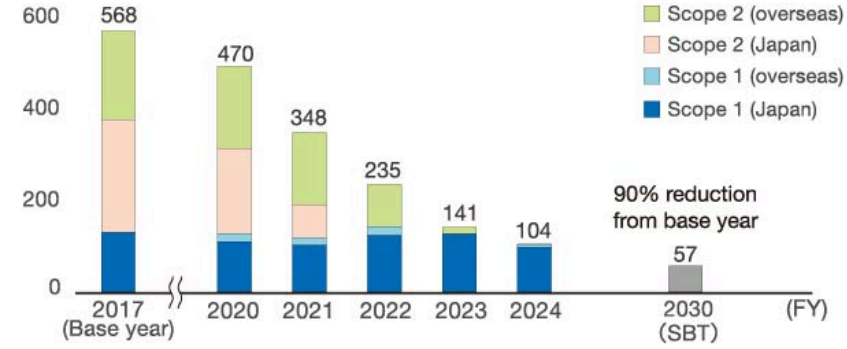
Scopes 1, 2 emissions (compared to FY2017)

Case study

Greenhouse Gas Emissions (Scopes 1+2+3)

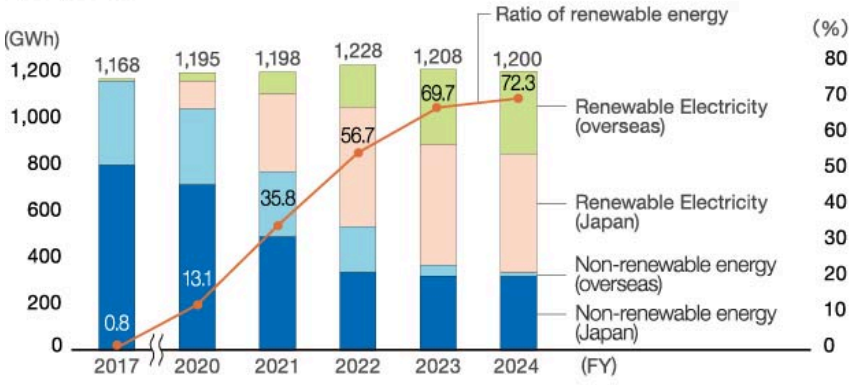


Greenhouse Gas Emissions (Scopes 1+2)



* Calculations for FY2017, 2023, and 2024 are based on the latest SBT standards.
* Scope 2 emissions in FY2024 are associated with steam.
* Fiery, which became a wholly owned subsidiary in December 2024, is not included.
* CO_2 conversion factor of greenhouse gas emissions
  - Electric power: Disclose market-based emissions. In Japan, we use the adjusted emissions factors for the load serving entities (i.e., utilities) from which our sites purchase electricity, pursuant to Load Serving Entity Emission Factors announced by the Ministry of Environment and the Ministry of Economy, Trade and Industry. Overseas, we use the country emission factors listed in IEA (International Energy Agency) or from the load serving entities from which our sites purchase electricity.
  - Fuel: The factors announced by the IPCC in 2019 were used for both domestic and overseas data.
  - GHGs other than CO_2: Equivalents were calculated based on 100-year GWP values in the Fifth Assessment Report of the IPCC.

Energy Usage



* Percentage of energy from renewable source
* Fiery, LLC, which became a wholly owned subsidiary in December 2024, is not included.

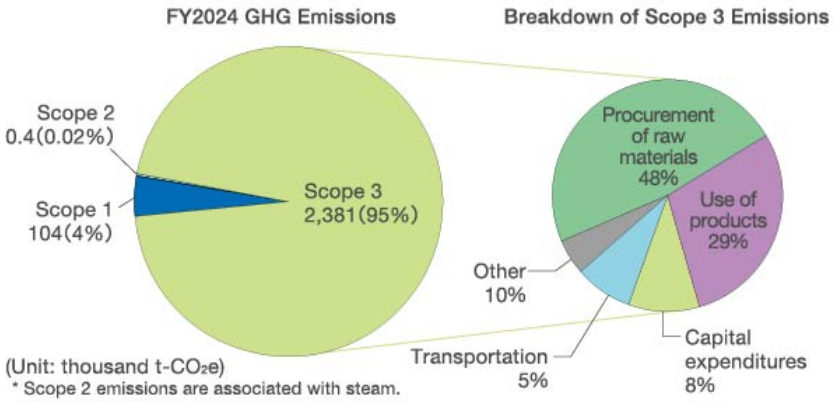
Related Information

Global Environmental Data

Value Chain Initiatives (Scope 3)

Epson is actively working to reduce emissions from business activities (Scopes 1 and 2), but when viewed in the value chain, other indirect emissions (Scope 3) account for more than the direct and indirect emissions from Epson's production site and other sources. Of these, the largest impacts are from the procurement of raw materials (Category 1: purchased goods and services) and the use phase of products (Category 11: use of products sold).
In light of this situation, Epson is promoting emission reduction measures throughout the entire value chain, including logistics, in addition to environmentally friendly raw materials procurement and improvement of energy-saving performance of its products.

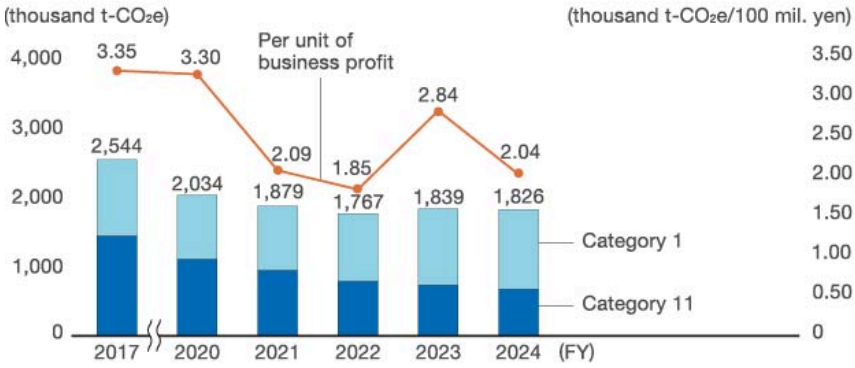
Greenhouse Gas Emissions from Value Chain



39% Reduction

Scope 3 emissions per unit of business profit
(compared to FY2017)

Greenhouse Gas Emission (Scope 3: Categories 1 & 11)

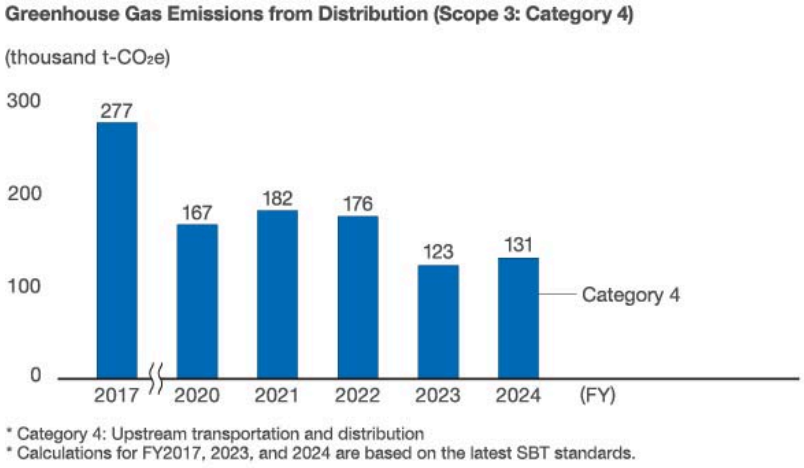


* Category 1: Purchased goods and services, Category 11: Use of sold products
* Calculations for FY2017, 2023, and 2024 are based on the latest SBT standards.
* Category 1: Emission factors of National Institute of Advanced Industrial Science and Technology are used after FY2022 (latest IDEA Ver. 3.4)
* Fiery, which became a wholly owned subsidiary in December 2024, is not included.

Logistics Initiatives

Epson is reducing GHG emissions by increasing the efficiency of product, part, and waste transportation. We are making products smaller (which increases shipping efficiency), rethinking our logistics centers, innovating the loading and packing processes (to boost loading efficiency), and reconsidering shipment departure and arrival frequencies and number of trips.

Case study



Cooperation with Suppliers

Epson and its suppliers can help address societal challenges and achieve sustainability by aligning their approach to supply chain CSR.

Supply Chain Environmental Initiatives

Related Information

Global Environmental Data (Scope 3)

Avoided Emissions

In addition to reducing its own GHG emissions and using resources appropriately, Epson aims to mitigate customers' environmental impact through its products and services. By providing and promoting products and services that are environmental impact lower than the conventional products commonly used in the world, Epson will contribute to the reduction of environmental impact in society as a whole. One indicator of such contribution is avoided emissions.
Based on the guidance published by the World Business Council for Sustainable Development (WBCSD) and confirmed by a third-party organization, Epson calculated that the emissions avoided through the replacement of laser printers with Epson's inkjet printers in FY2024 amount to 9,800 t-CO_2e[1].

[1] Based on the calculation method confirmed by Mizuho Research & Technologies, Ltd., the value is obtained by multiplying the difference between the weighted average of the publicly available lifetime CO_2 emissions of major laser printers in the global market and the lifetime CO_2 emissions of Epson's A3 color inkjet printer by the number of Epson A3 color inkjet printers sold in a given fiscal year. The assumptions differ from those used in the FY2023 results disclosure due to a review of the calculation conditions.

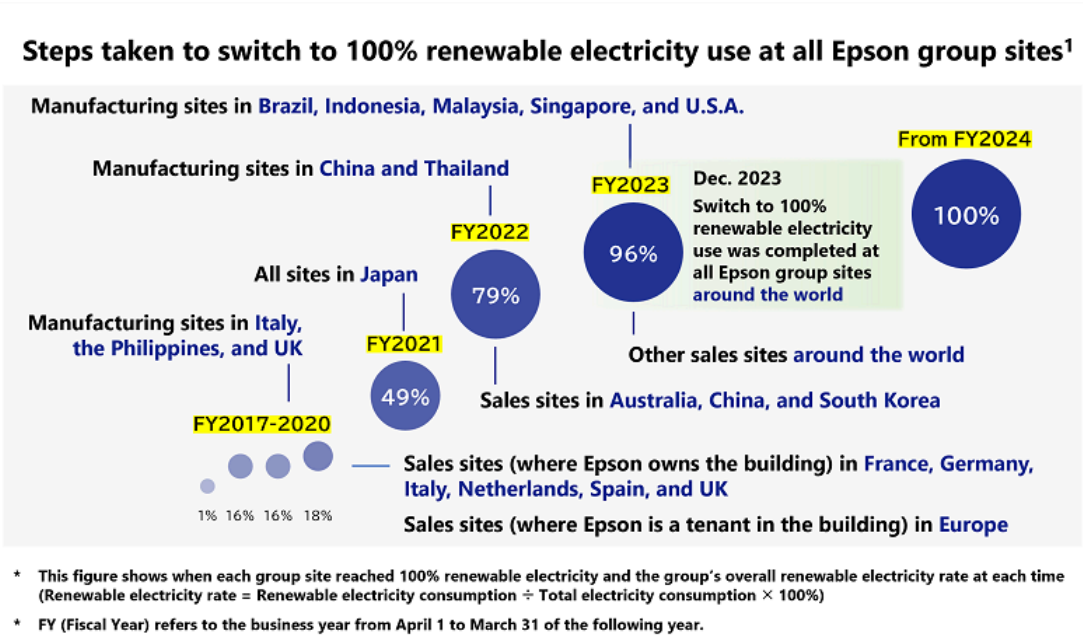
Related Information

Customer Environmental Impact Mitigation

Use of Renewable Electricity

The use of renewable electricity is a key means by which Epson seeks to reach its goal of achieving decarbonization. In line with this, Epson declared, in March 2021, that it would switch to 100% renewable electricity to meet the electricity needs at all Epson Group sites[1] around the world by 2023. In November 2021, the switch was completed in Japan. The global switch to renewable

electricity was completed on schedule in December 2023. The Epson Group consumes approximately 867 GWh[2] of electricity per year. By sourcing renewables to cover this demand, Epson expects to reduce its annual CO_2 emissions by approximately 400,000 tonnes.



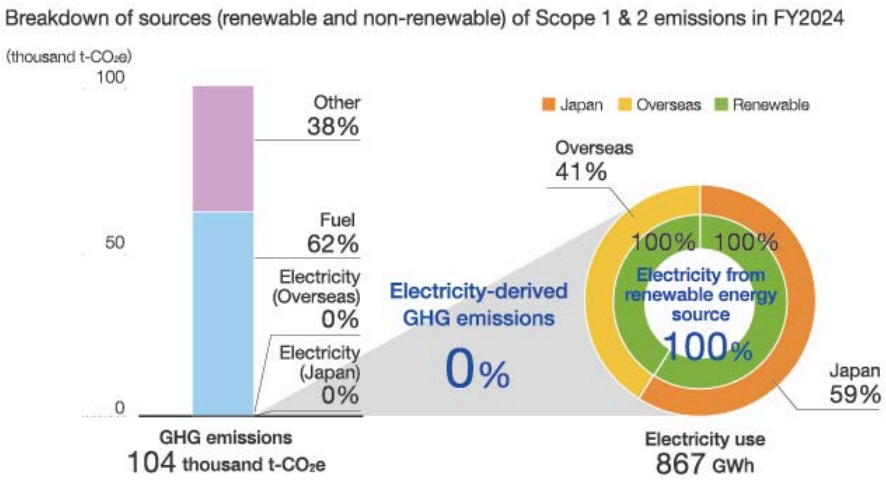
[1] Excludes some sales sites and leased properties where the amount of electricity consumed cannot be determined.

[2] For the fiscal year 2024, the results include cogeneration systems (CGS) electricity and self-generated electricity using non-renewable fuels. Since it is difficult to procure renewable energy fuels or green gas certificates that meets the RE100 technical criteria, we have achieved 100% renewable electricity by voluntarily applying renewable energy certificates equivalent to the amount of electricity used.

Epson Transitions to 100% Renewable Electricity at All Group Sites Worldwide
How manufacturers can transition to 100% renewable electricity

Scope1 & 2 emissions and electricity consumption in FY2024

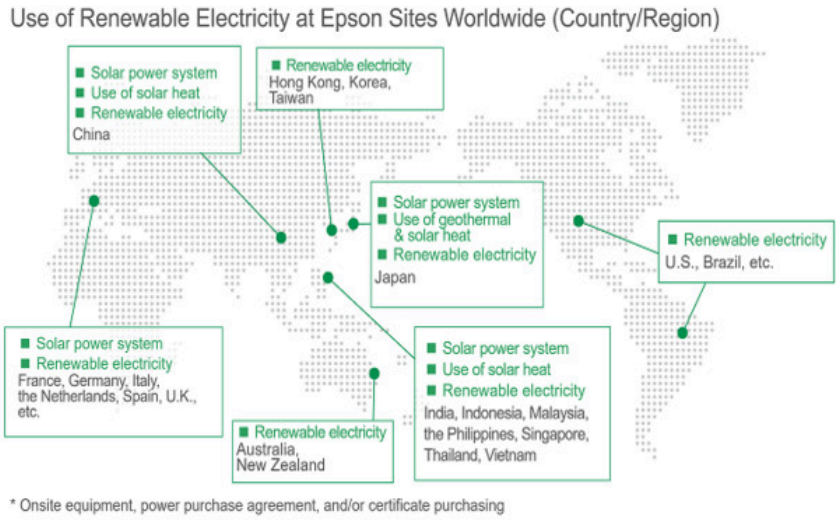
More than 70% of Epson's GHG emissions came from electricity use in 2017. As a result of our efforts to switch to renewable electricity to achieve decarbonization, GHG emissions from electricity will be zero in FY2024, significantly contributing to the reduction of Scope 2 emissions. Both domestically and internationally, we are increasing the proportion of renewable energy to 100% of our electricity usage by selecting the optimal renewable electricity in each region, such as hydro and wind power, and by actively investing in on-site electricity generation.



Transitioning to Renewable Energy at Epson's Global Sites

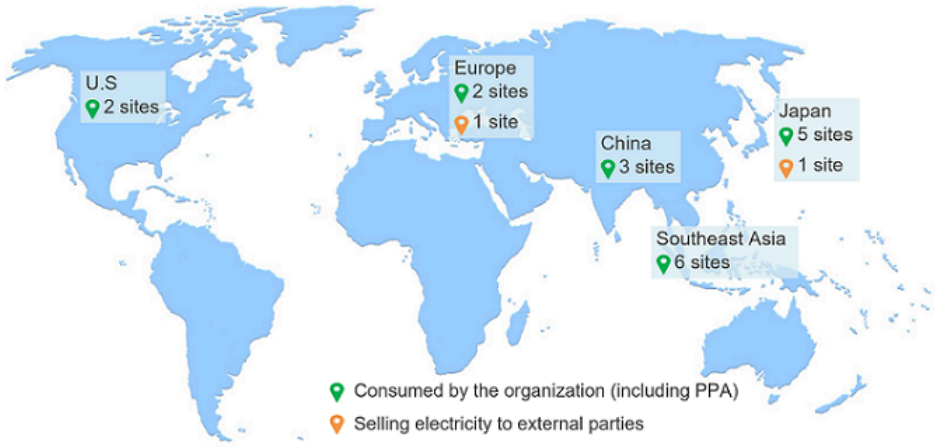
In Japan, Epson purchases Shinshu Green Electricity, CO_2-free value-added electric power produced locally with abundant water sources in Nagano Prefecture using Nagano Prefectural hydroelectric power. This is both reducing Epson's GHG emissions and increasing local consumption of locally produced energy. In the Tohoku area, where Epson has a semiconductor fabrication plant and which accounts for about half of Epson's domestic electricity consumption, Epson uses another CO_2-free value-added electric power to reduce GHG emission from electricity usage. In November 2021, Epson completed the transition to 100% renewable electricity for all its domestic sites in Japan.

Our overseas production and sales sites have also completed the transition to using 100% renewable electricity in December 2023. In addition to generating electricity with a rooftop mega-solar power plant, our production site in the Philippines switched to a mix of geothermal and hydroelectric power in January 2021. In addition, our production site in Bekasi, Indonesia, began using biomass power generation in July 2022. The procurement of geothermal power, which is being actively developed by taking advantage of the resources of volcanic islands, and sustainable biomass power using Palm Kernel Shells (PKS; a byproduct of the palm oil production process) and wood chips as fuel, are examples of energy use that aligns with regional characteristics.



Installation of on-site power generation systems (solar power generation systems)

We are executing a plan to maximize the amount of self-generated electricity in order to stably and sustainably procure renewable energy. We are selecting the best option depending on the circumstances at each site. At some sites we have invested in rooftop and other solar panels. At others we have opted for power purchase agreements (PPAs).



Total power generation for FY2024: Approximately 18,000 MWh

Case of onsite solar power generation

Philippines (Epson Precision (Philippines), Inc.)

Thailand (Epson Precision (Thailand) Ltd.)

China (Epson Engineering (Shenzhen) Ltd.)

U.S. (Epson Portland Inc.)

China (Epson Wuxi Co., Ltd.): PPA[1]

Japan (Fujimi Plant): PPA[1]

[1] Power Purchase Agreement: Onsite Solar Power Generation Service

Support for Recommendations to Expand the Use of Renewable Energy

The use of renewable energy (energy from natural sources) is one of the most effective ways to reduce GHG emissions. Accordingly, Epson is implementing plans to expand its use of renewable energy long-term. However, there are obstacles to expanding renewable energy use, including costs and supply limitations in some regions. Recognizing that there is nothing one company alone can do about these obstacles, Epson decided to declare its support for the important policy recommendations below as one solution. The realization of these recommendations will make it easier to take actions that minimize the impact on future climate change. Coordinated global action is essential to combat climate change. We at Epson will therefore continue our efforts toward decarbonization, including by supporting future such recommendations. When deciding whether to join or continue our association with industry groups, we check whether the group's climate change initiatives are aligned with Epson's own policies.

Month/Year	Recommendations	Secretariats
Jul. 2024	Call for an ambitious 2035 target that is consistent with the 1.5°C goal Click here for details	Japan Climate Initiative (JCI)
Jun. 2023	Issues and Recommendations on Renewable Electricity Procurement Click here for details	Renewable Energy Institute
Apr. 2023	Call for accelerating the deployment of renewable energy and introducing effective carbon pricing Click here for details	Japan Climate Initiative (JCI)
Jun. 2022	Call for accelerating renewable energy deployment Click here for details	Japan Climate Initiative (JCI)
Apr. 2021	Calling for an Ambitious 2030 Target for Japan to Realize the Paris Agreement Goal Click here for details	Japan Climate Initiative (JCI)
Jan. 2021	Calling on the Japanese government to raise its 2030 renewable energy target to 40-50%	Japan Climate Initiative (JCI)

	Click here for details	
Aug. 2020	Making Japan a Nation where Renewable Electricity is Easily Accessed: Three Strategies and Nine Policies Sought by Corporations Engaged in Climate Action Click here for details	Renewable Energy Institute CDP Worldwide-Japan WWF Japan

Related Information

Global Environmental Data

How manufacturers can transition to 100% renewable electricity

Epson Transitions to 100% Renewable Electricity at All Group Sites Worldwide

Case study - Production

Topic 1 : Energy Saving in Utility Facilities

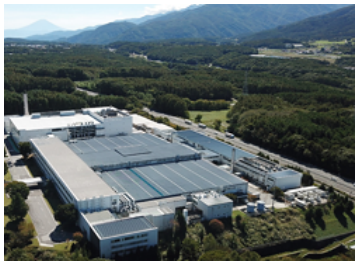
Topic 2 : Updating to a More Efficient Cogeneration System

Topic 3: Visualizing Air Conditioning to Help Reduce CO_2 Emissions

Other Case Studies

Topic 1: Energy Saving Initiatives in Utility Facilities[1]

At Suwa Minami Plant, Epson collaborated with Chubu Electric Power Miraiz Co., Inc. to implement energy conservation and decarbonization initiatives from 2018 to 2023. As a result, by fiscal 2023, the plant achieved an energy reduction of approximately 12.3% (equivalent to 2,846 kL of crude oil per year) compared to the base year of fiscal 2017, reducing annual emissions by approximately 4,745 t-CO_2.



Suwa Minami Plant

Main Initiatives

- Clarified the process for achieving targets by formulating a roadmap
- Introduced 123 out of 273 energy-saving measures, with 71 still planned and 79 abandoned.
- We are focusing on the three areas below to save energy.

(1) Changing existing equipment and facility operations

Example) Reducing the number of fan filter units in production cleanrooms

(2) Utilizing unused heat

Example) Utilizing unused heat in municipal water

(3) Updating equipment

Example) Selecting high-efficiency equipment when updating to electric air conditioning systems in cleanrooms or when updating boilers and turbo refrigerators

[1] Infrastructure and equipment necessary for factory operations, such as electricity, water, HVAC systems (including boilers and chillers), gas, and chemical supply systems required to maintain the factory environment

Energy Conservation Grand Prize (Best Practice Category)

Epson was awarded the 2024 Energy Conservation Grand Prize in recognition of the energy-saving initiatives it launched across its plants and offices under management leadership and for collaborating with partners to identify and implement effective measures for achieving energy efficiency while maintaining manufacturing and development environments. With support from Chubu Electric Power Miraiz, which provided expertise in energy use, Epson developed a decarbonization roadmap, created energy-saving proposals, dispatched personnel, outsourced energy measurement, and implemented training on energy-saving methods.

Topic 2: Upgrading to a More Efficient Cogeneration System[1]

The Suwa Minami Plant, where Epson manufactures core devices such as high-temperature polysilicon TFT LCD panels for 3LCD projectors and PrecisionCoreMicroTFP printheads, is one of Epson's most energy-intensive facilities in Japan. Theplant had used a cogeneration system (CGS) to generate between 40% and 60% ofits power needs since 2001, but in May 2014, Epson replaced that CGS with threenew high-efficiency CGS. The new systems use less natural gas to operate andreduced the plant's CO_2 emissions. The use of the three new CGS makes the overallsystem easier to maintain and provides a steady supply of electrical power.

[1] Cogeneration systems, also known as combined heat and power, utilize a single fuel source to produceand supply both electricity and heat.

Gas engine powered CGS

CGS Overview

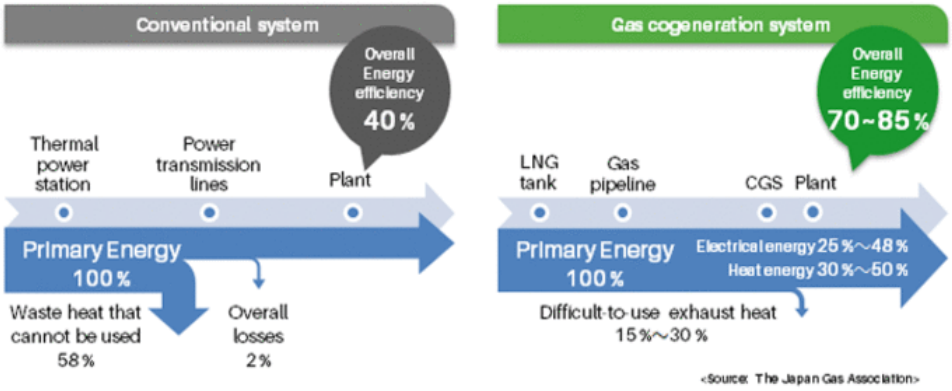
	Energy output	Units	Model	Fuel
New	2,270 kW	3	Gas engine	Natural gas
Old	7,200 kW	1	Gas turbine	Natural gas

Annual savings (by switching to a gas engine from a gas turbine system)

Amount of natural gas saved: 1,480,000 Nm^3
Reduction of CO_2 emissions: 4,900 tons

Benefits of CGS

Whereas about 60% of the energy generated by a typical power plant is lost as waste heat and during transmission, only about 15% to 30% of the energy generated by an on-site CGS is lost as waste heat. In addition to generating electricity, CGS also save energy because they effectively recycle about 30% of the waste heat into energy for heating or cooling.



Topic 3: Visualizing Air Conditioning to Help Reduce CO_2 Emissions

Epson Portland Inc. (EPI), in the US, has the important role of manufacturing Epson ink cartridges and other products for the Americas. The manufacturing process for Epson inkjet printer cartridges requires a clean room environment to ensure the levels of quality where more than 7 million kWh are consumed each year, on average, for air conditioning and production support equipment. In 2011, the Facilities team worked with the non-profit Energy Trust of Oregon to introduce a new air conditioning monitoring system to reduce EPI's energy use and environmental impact. The monitoring system allowed Facilities to observe and record the actual air temperatures in the ink cartridge production areas throughout the day.

EPI used the data to qualify the modification of the air conditioning system so that, when outdoor temperatures are lower than thosein the production areas, warm air is automatically exhausted and outside air is used for cooling, saving energy and money. Theseactions have helped EPI reduce its annual CO_2 emissions by more than 100 tons.
Since implementing this cooling system in 2011, EPI has taken advantage of various other energy conservation opportunities. Thesehave resulted in cumulative CO_2 reductions of approximately 655 tons.

Checking the operations of the air conditioning system on a monitor

Air conditioning system installed on the roof

Other Case Studies

Non-cleanroom program (P.T.Epson Batam/Indonesia) (PDF,524KB)

Actions to reduce power consumption (Singapore Epson Industrial Pte. Ltd./Singapore) (PDF,550KB)

Case Study - Value Chain

Epson has manufacturing sites and sales centers in all parts of the world making environmentally-conscious transportation an important consideration. Here we present examples of such environmentally-conscious transportation initiatives in which we introduced high cube containers[1] and changed our distribution center and shipping method.

[1] With a height of 9 ft 6 in (about 2.6 m), they are 1 ft (about 30 cm) taller than standard containers, whose height is 8 feet 6 inches (about 2.3 m).

Topic 1 : Utilization of Low-Carbon Shipping Services

Topic 2: Reducing CO_2 emissions by Revising Distribution Routes

Topic 3 : Improving Transport Efficiency with High Cube Containers

Topic 4: Reduced Environmental Impact by Changing Printhead Shipping

Topic 1 : Utilization of Low-Carbon Shipping Services

In fiscal 2024, Epson began using low-carbon shipping services to reduce greenhouse gas (GHG) emissions for some of its maritime shipping services to Europe. In the first year, we plan to use one-hundred 40-foot export containers from the Philippines to reduce our greenhouse gas emissions by approximately 230 tonnes compared to conventional maritime transport using heavy fuel oil ships. Decarbonization is a global challenge, and the shipping industry is transitioning to alternative fuels with low environmental impact with the goal of achieving net-zero GHG emissions by around 2050. European shipping companies in particular are accelerating their timelines to achieve this goal. Epson has partnered with global shipping giant Maersk to use a container ship service that operates on biodiesel and green methanol as alternative fuels on some routes. This will reduce GHG emissions on these routes by up to 84% compared to conventional ocean transport.

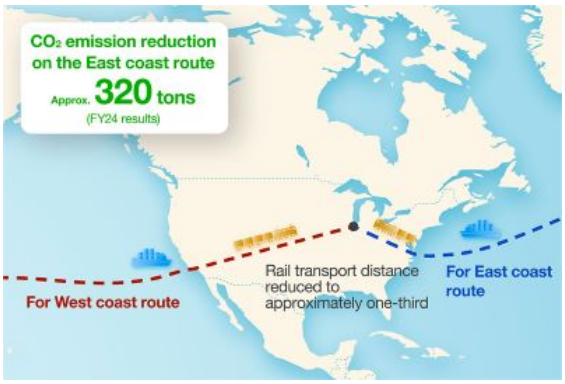
An alternative fuel Maersk container ship

See here for details. (PDF,583KB)

Topic 2: Reducing CO_2 Emissions by Revising Distribution Routes

New Regular Shipping Route for North America

Epson had been shipping products for North America from its production sites in Southeast Asia to a port in California on the U.S. West Coast. The products would then be transported by long-distance rail to a warehouse in Indiana. However, in 2024, we began using a new regular shipping route by sea to the U.S. East Coast from Southeast Asia. This new route helps to ensure business continuity in the event of a disaster and to reduce our carbon footprint. The new route reduces CO_2[1] emissions by approximately 320 tonnes per year compared to the previous route because, although the distance of maritime transport is longer, the distance of land transport by rail is significantly shorter.

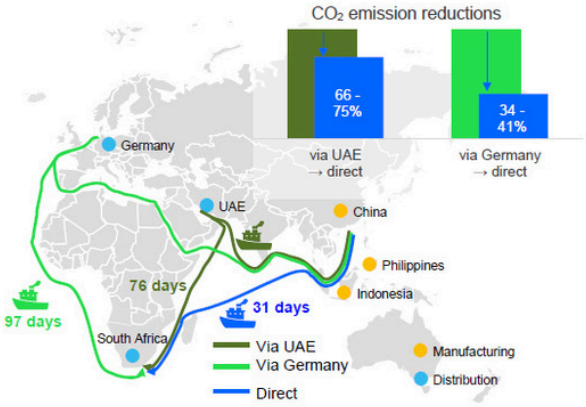


[1] The difference in emissions per container between the old route and the new route is multiplied by the number of containers shipped in FY2024 on the new route. The "Emissions calculator of 2024" was used to calculate the GHG emissions per container.

Direct shipping to the South Africa distribution center

Epson was providing consumer products for customers in southern Africa by shipping them to Johannesburg, South Africa from a distribution center in the United Arab Emirates or from a central warehouse in Germany. This approach was taken because Epson did not have its own distribution center in Africa and was using an existing distribution center.
Having to first ship products to the UAE or Germany from our production sites in Asia (China, Indonesia, and the Philippines) before delivery to southern Africa increased transport distances. We needed to address the issue of higher transport CO_2 emissions and long delivery times.
To do so, we established our own new distribution center in South Africa and began shipping directly to it from our production sites to serve the expanding African market. This dramatic change in distribution routes resulted in CO_2 emissions being reduced to 66–75% of those from shipments via the UAE, and to 34–41% of those from shipments via Germany.

Improvements achieved by changing the distribution flow



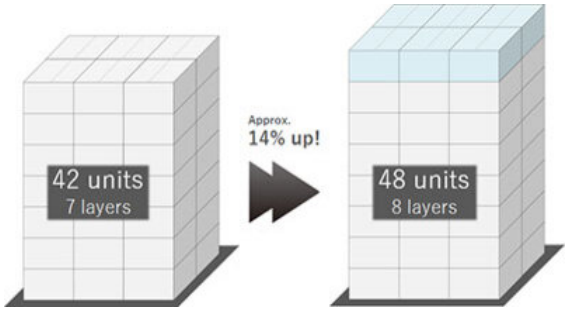
Topic 3 : Improving Transport Efficiency with High Cube Containers

Currently, high cube containers account for about 70% of shipping containers in the marketplace. Hitherto, Epson has used the standard type of container for shipping products from its factories, but with the widespread adoption of high cube containers, we are gradually making the switch.
Since the inner dimensions of the containers are higher, palletizing products for standard containers resulted in wasted space amounting to about 10%. Optimizing the pallets for high cube containers reduces the number of containers required, contributing to reducing environmental impact by raising transportation efficiency.

The head of logistics planning, who led the initiative, says, "All of our arrangements including the number of products shipped and the height of the pallet racks in our warehouses were optimized for pallet sizes to fit standard containers. In order to introduce high cube containers, it was necessary to ask for the cooperation of the warehouse managers at sales companies who receive the containers. We had to ask them to review the layout of their warehouses, optimize the method of stacking and so on. We had a very hard time adjusting the cost factors, but a shared awareness that this would reduce our environmental impact was a very important point in undertaking this activity."
For shipments from Southeast Asia, where many of Epson's finished products are manufactured, the switch to high cube containers for all areas of Europe was completed in fiscal 2011 and in fiscal 2015 for the U.S., Brazil and India.

Comparison of Standard and High Cube Containers

	40 ft Standard containers	40 ft High cube containers	Advantages
Container size (LWH)	12,033 x 2,352 x 2,393 mm	12,033 x 2,352 x 2,698 mm	1 ft (30 cm) up
Cubic capacity	67.7 m³	76.4 m³	12.9% up
Case of WF-2650 Series			
Packaging dimensions	488 x 434 x 301 mm		-
Palletize dimensions	976 x 1,302 x 2,108 mm	976 x 1,302 x 2,409 mm	**1 additional layer**
Number of units per pallet	42 units	48 units	**14.3% up**
Number of units per container	882 units	1,008 units	



Results of Switching Containers for Shipping to the U.S.

* We have calculated the reductions in CO_2 emissions emitted when transporting containers by cargo ship, train and truck from our manufacturing affiliates in Southeast Asia, as a result of reducing the number of containers shipped to the U.S. by about 200. The unit indicator by the Japan Ship Technology Research Association is used for calculating emissions during sea transport.

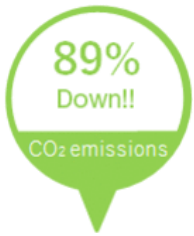
Topic 4: Reduced Environmental Impact by Changing Printhead Shipping

Previously, printheads for shipping to our printer manufacturing sites in Indonesia were gathered from our plants around Japan at Tohoku Epson in Yamagata Prefecture and transported by truck to Narita Airport for air transportation. By establishing a sea transportation pipeline from Sakata Port, which is located conveniently about 8 km from Tohoku Epson, we significantly reduced our costs and CO_2 emissions.

Containers shipped overseas from Sakata Port

CO_2 Reductions Due to Changing the Shipping Method (Unit: t-CO_2)

	Before		After	
	Distance	CO_2 emissions	Distance	CO_2 emissions
Land	Approx. 500 km	33.9	Approx. 8 km	0.5
Air	Approx. 5,800 km	401.3	-	
Sea	-		Approx. 6,200 km	47.7
Total		435.2		48.2



* We calculated the CO_2 emissions from shipping a 20-foot container from Tohoku Epson to Indonesia's capital, Jakarta. The unit indicator by the Japan Ship Technology Research Association is used for calculating emissions during sea transport.

Click here for details. (PDF,356KB)

Related Information

Decarbonizing Logistics: Actions for Our Environmental Vision

Closed Resource Loop

In pursuit of a circular economy, Epson is working to reduce resource use and eliminating waste emission form plants and offices, while promoting a shift to sustainable resources. In addition, we will contribute to resource-circulating society as a whole through technology.

Goal

Reduce Total Resource Inputs

Eliminate Waste

Replace with Sustainable Resources

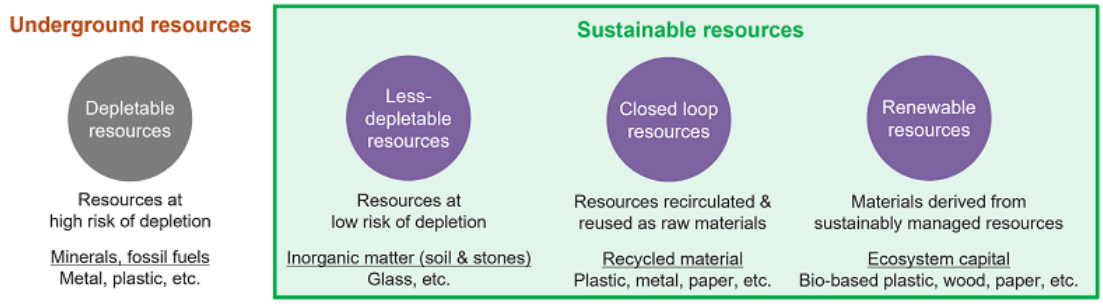
Contribution to Paper Circulation

Goal

Underground Resource[1] Free

Resource use often involves environmental impact In particular, fossil fuels and other underground resources cause greenhouse gases (GHGs) and harmful substances at each stage of extraction, utilization, and disposal, with negative impacts on human health. As long as we depend on underground resources, we cannot achieve a decarbonized society, nor can we achieve sustainability and enrich communities.
Epson is committed to reducing the total volume of resource inputs and replacing all resources with sustainable resource[2] such as closed loop resources by 2050 to reduce waste. Through such efforts, we aim to realize a sustainable society by using underground resource free.

Resource Utilization Image Toward Underground Resource Free



Main actions to become underground resource free

- Reduce total resource inputs by creating compact and lightweight designs, extended product life, product recycling, etc.

- Eliminate waste by minimizing production losses, reducing inventory, eliminating disposal in landfills, etc.
- Switch to sustainable resources such as recycled materials and biomass materials.

Target

2030: Sustainable resource rate[3] 50%

2050: Sustainable resource rate 100%

FY2024 Result

Sustainable resource rate: 33%

[1] Non-renewable resources such as oil and metals.

[2] Renewable resources, closed loop resources and less-depletable resources.

[3] The proportion of sustainable resources (renewable resources + closed loop resources + less-depletable resources) to raw materials.

Reduce Total Resource Inputs

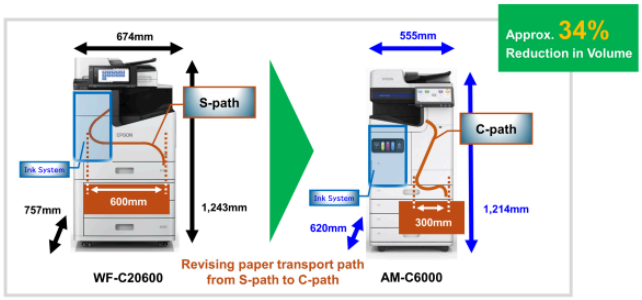
Compact and Lightweight Design

Epson seeks to deliver more customer value with fewer resources. By reducing waste through smaller and lighter product designs, we focus our resources on delivering the value that is truly required.

Case Study 1: Business Inkjet Printer

Compared to its predecessor, the WF-C20600, the AM-C6000 A3 color line inkjet MFP has been made smaller and lighter by revising the paper transport path of the machine and reducing the thickness of the frame plate. As a result, the AM-C6000 is approximately 30% lighter and 34% smaller in volume than its predecessor, while maintaining the same 60-page/minute printing speed, enabling installation in confined spaces.

Comparison of Printers' Volume



Comparison of Printers' Weight

Case Study 2: Business Projectors

The EB-PU22/PU21 series of high-brightness business projectors are approximately 60% smaller and 50% lighter than conventional models, while maintaining 20,000 lumens of brightness, enabled by a unique liquid cooling system and an optimized structure. It reduces the burden of carrying in and installation at events, large auditoriums, gymnasiums, etc.

EB-PU2220S

Installation image

[1] Comparison of size (W x D x H) of the following products, including protruding parts but excluding the lens.

EB-PU2220S: 586 x 492 x 218 mm / EB-L20000U: 620 x 790 x 358.5 mm

[2] Comparison of weights of the following products, excluding the lens.

EB-PU2220S: approx. 24.4kg / EB-L20000U: approx. 49.6kg

Case Study 3: Industrial Use SCARA robot

In the industrial SCARA robot T3, the controller has been made smaller and lighter, enabling it to be built into the main unit. This reduces the mass by approximately 25% compared to previous models in which the controller and main unit were installed separately, while also reducing complex wiring and increasing installation flexibility.

Epson LS3 SCARA robot and RC90 controller

The T3 has a built-in controller

Reuse and Recycle

To maximize the use of resources once they have been utilized, Epson is promoting the recycling of resources used for the product itself and consumables by providing product repair and maintenance services and promoting collection, recycling, and refurbishing initiatives in countries and regions around the world. In addition to reducing the use of new resources, we are working to create recycled resources throughout society through collaboration with our customers, industry, and local communities to expand the resource reuse and recycling loop.

Case Study 1: Circularity Program of Ink Container

Under the ink container recycling program currently in operation in Japan, we collect ink cartridges and ink packs that customers have finished using, sort out the reusable parts, and manufacture products using those parts to deliver them to customers again.

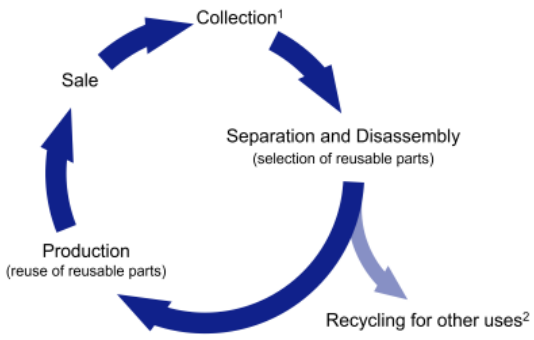


Figure: Scheme of the Circularity Program of Ink Container

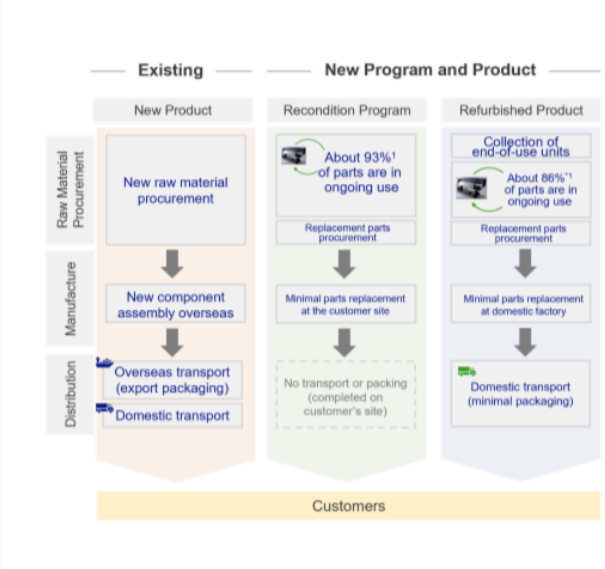
Applicable ink containers	Reusable Parts
Ink cartridge for large-format printers	 (Exterior Case)
Ink packs for large-format printers	 (Adaptor)
Ink cartridges for business printers	 (Exterior Case)

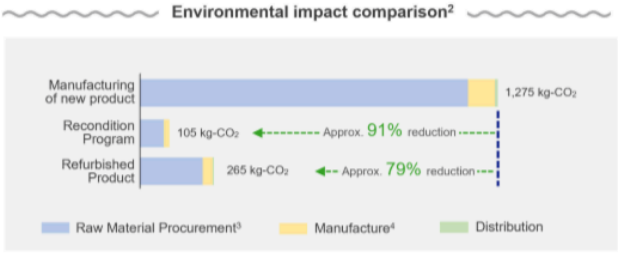
[1] Ink containers subject to this program that are collected by the pick-up and collection service in Japan.

[2] Non-eligible parts, damaged or dirty parts, and other items that are determined not to be reusable are sent for recycling.

Case Study 2: Provision of recondition program and refurbished products

To ensure that customers can use our products for a long time, we offer a long term care service called "Recondition Program" for up to 10 years for the SC-S80650 large format printer with eco-solvent ink for the sign and display market in the Japanese market. Epson also offers refurbished products that have been inspected, refreshed, and refurbished to the same quality as new products. The "Recondition Program" allows approximately 93% of the parts to continue to be used, while refurbished products allow approximately 86% of the parts to continue to be used, significantly reducing the use of new resources compared to discarding products and purchasing new ones.





SC-S80650

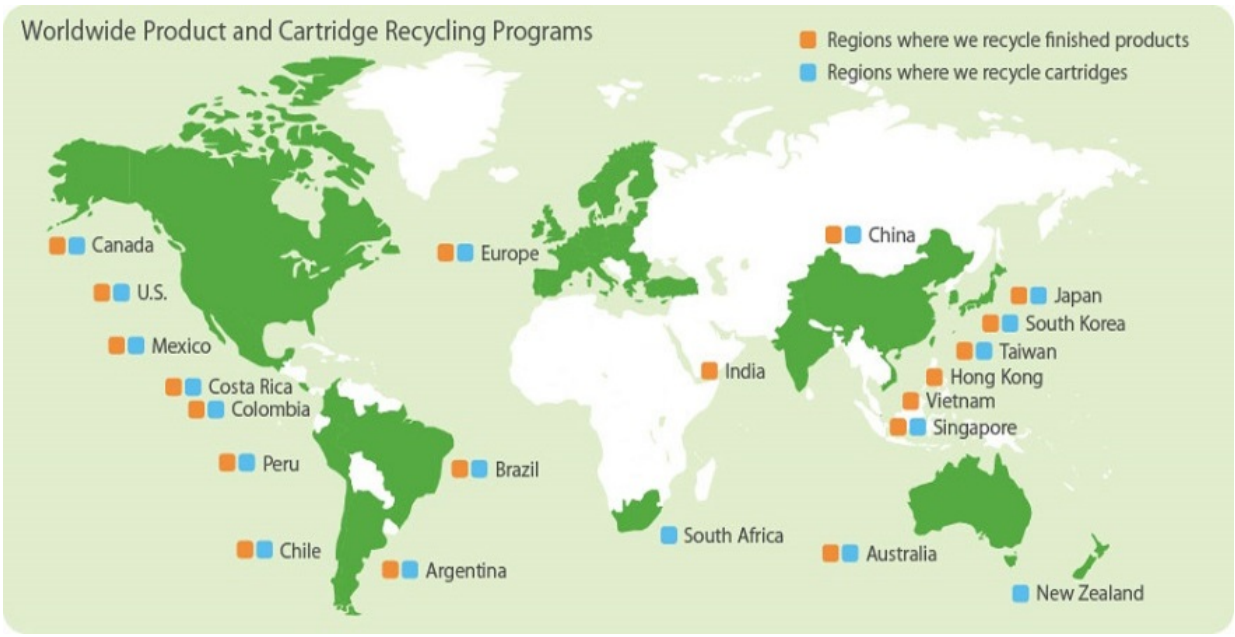
[1] Percentage of parts mass to be used continuously. Figures are based on maximum parts replacement. Parts to be replaced will vary depending on the condition of the aircraft.

[2] The environmental impact associated with the use and disposal/recycling of new, refurbished program aircraft and refurbished items are equivalent and are not included in this comparison. The total environmental impact (in terms of CO_2 equivalent) for use and disposal in the life cycle of new products accounts for about 67% of the total life cycle. This comparison is based on the case where parts replacement is implemented to the maximum extent possible, and the CO_2 reduction effect depends on the customer's usage environment and the condition of the product.

[3] The raw materials procurement of refurbished products includes the transportation load associated with the collection of end-of-life aircraft.

[4] Recondition program and production of refurbished products include disposal and recycling of replaced parts.

Collection and Recycling in each Country/Region



Click here for details on collection and recycling efforts in each country and region.

Eliminate Waste

Epson is working toward zero emissions by reducing generated business waste and using recycled materials.
Wastes are generated in our production processes, offices, and operations. Wherever possible, we reduce, reuse, and recycle these wastes on-site. Plastic runners from molding processes are recycled, for example. The remaining wastes, including valuable wastes, are recycled by a contractor. We carefully sort and separate wastes and select the best available recycling methods and contractors for each type. We will continue to reduce wastes and to work for general improvement in waste processing methods, including by allying with recyclers.
To help combat pollution from oceanic plastic wastes, Epson sales companies in Europe banned disposable cups and other single-use plastics in their office buildings in April 2019.

2024 Overview

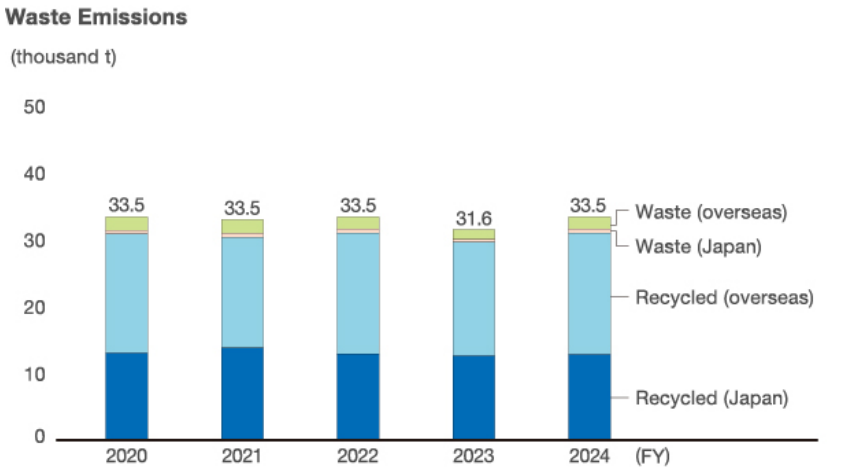
Target: No more than last fiscal year's 31.6k tons. (Actions were carried out using control metrics benchmarked against the previous year’s waste level.)
Result: 33.5k tons (5.9% increase from the previous year)

* The increase in the amount of waste discharged was due to an increase in the amount of raw materials used in production. However, the amount of waste per unit of raw materials used remained the same as the previous year.

5.9% Increase

Waste emissions (compared to FY2023)

Case study



* Waste emissions data includes special wastes that cannot be recycled and wastes that are unrelated to production.

Replace with Sustainable Resources

Adoption of Recycled Plastics

Because plastics are durable, lightweight, and easy to mold, they are used in a wide variety of products and have become an indispensable material in our daily lives. However, most of them are made from petroleum, an underground resource, and GHG and other environmental impact are generated in the process of mining and manufacturing.
Epson is working to reduce the use of petroleum-based plastics through the use of recycled plastics in its products.

Examples of recycled plastic use

Large Format Printer

A3 Inkjet Multifunction Printer

High-capacity Ink Tank Printer

A4 Document Scanner

Approx. 30% recycled plastic used in plastic parts

From the Left:
SC-P8570D/SC-T7700D series,
EM-C8100 series,
ET-4810 series, ES-C380W

Approx. 21% recycled plastic used in plastic parts

Business Projector
L890E series

Approx. 65% recycled plastic used in plastic parts

Compact PC
Endeavor DG150

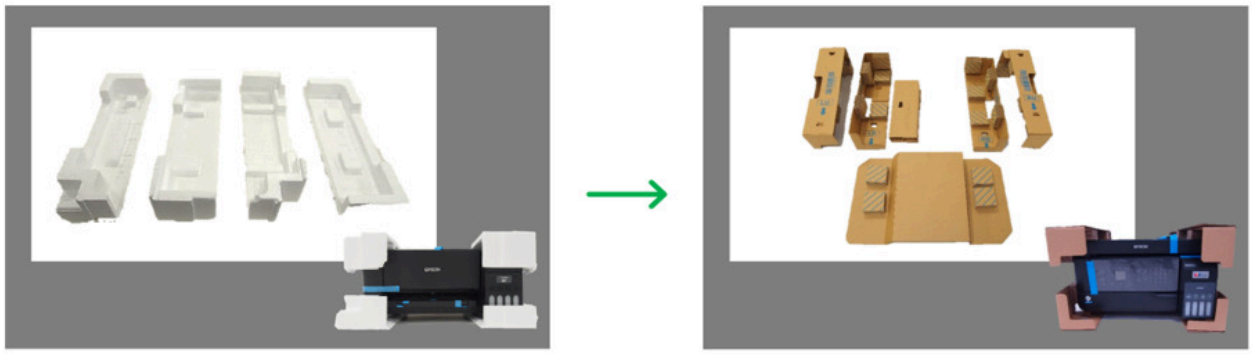
* The ratio refers to the proportion of recycled material in the total mass of plastic used. The mass is calculated considering the ratio of recycled materials, and the content may vary depending on procurement conditions.

Use of Paper Materials and Closed Loop Resources in Packaging Materials

Many of the packaging materials used to carefully deliver products to customers are made from petroleum-derived materials, an underground resource. Epson is working to replace such materials with paper-based packaging materials.

Case Study 1: High-capacity Ink Tank Printer

High-capacity ink tank printer ET-4810 series uses cardboard, a paper-based product, as cushioning material instead of traditional polystyrene cushioning materials. Furthermore, the cardboard contains over 80% recycled material. Additionally, the polypropylene tape used to protect the product during transport has been replaced with paper tape.



Polystyrene Cushioning Material
(ET-4800 series)

Cardboard Cushioning Material
(ET-4810 series)

Case Study 2: Business Projector

In the EB-L890E series of business projectors, cushioning material has been converted from traditional polystyrene to molded pulp with a 100% recycled material usage rate. In addition, more than 80% of the cardboard used for the packaging box is made of recycled materials.

Polystyrene cushioning material

Paper-based cushioning material

Case Study 3: Watches

Epson has applied its proprietary Dry Fiber Technology to develop a new packaging material made from the scraps generated during the sewing process of cotton clothing, which is used as a packaging material for for Epson watch products.

Click here for more about our environmental technology development efforts, including the application of Dry Fiber Technology

Contribution to Paper Circulation

There are many situations in which the value of paper media is important from the perspectives of visibility, portability, and preservation. Epson strives to supporting such values while contributing to the sustainable use of paper resources.

The PaperLab, a dry-process office papermaking machine, is a product that can recycle used copier paper into new paper. Epson proprietary "Dry Fiber Technology" enables on-site papermaking with almost no water required[1]. Utilizing PaperLab reduces environmental impact of paper production, such as the consumption of forest and water resources and GHG emissions, and also contributes to the preservation of biodiversity.
The PaperLab Q-5000, which was launched in March 2025, is a compact model that can be used in a wider range of situations by local governments, companies, etc. When combined with the Paper Source Processor Q-40, it enables the collection and recycling of waste paper while maintaining confidentiality, promoting the circulation of paper resources within corporate groups and local communities.

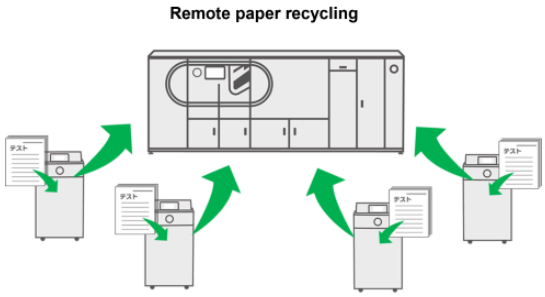
[1] A small amount of water is used to maintain a humidity inside the system.

PaperLab A-8100

A model that enables mass production and is ideal for locations with high paper usage

PaperLab Q-5000 (Main Unit) Q-40 (Paper Source Processor)

A model that enables installation on multiple floors or at individual offices



Reducing Water Consumption

Uses almost no water in the papermaking process. By reducing water consumption compared to standard copier paper[2], it helps mitigate the global issue of water resource scarcity.

[2] Refers to standard paper distributed in Japan.

Using Forest Resources Effectively

Used copier paper is recycled into new copier paper, without using any new wood resources. This process effectively utilizes wood as an ecosystem capital and contributes to the reuse of resources that have been used once. Additionally, the new paper produced by PaperLab is made from 100% recycled paper, complying with the R100 mark as specified by the 3R Activities

Promotion Forum.

Reducing CO_2 emissions

The PaperLab A-8100 enables local recycling of office and community waste paper into new paper products, thereby reducing CO_2 emissions associated with the transportation of waste paper for general recycling. Additionally, by using carbon offsets, the CO_2 emissions generated throughout the lifecycle of the PaperLab A-8100 are effectively reduced to net-zero. (Carbon offsetting has been certified by a third-party organization.)

Raising Awareness

The fact that new paper can be made on-site is a pleasant surprise for workplace employees, who become more eco-aware and interested in taking other environmental actions. Witnessing the moment new paper is made may also sparks the interest of children, potentially giving them ideas for ways to use science and technology to solve environmental problems. Furthermore, by using PaperLab paper for external documents, business cards, and promotional items, organizations can demonstrate their commitment to environmental responsibility and enhance their image.

Internal Case Study

Epson uses PaperLab extensively to recycle and reproduce paper used on its own sites. The recycled paper is primarily used for business purposes, including employee business cards. Additionally, Epson donates notebooks made from recycled paper used in-house to elementary and middle schools. Through this initiative, Epson not only raises awareness about paper recycling among children but also enhances its own brand recognition.

The paper recycling work is carried out by employees of Epson Mizube Corporation, a special subsidiary, which provides opportunities for employees with disabilities to expand their roles and play an active part within the organization.

Click here for more information about Epson's Dry Fiber Technology.

Product Recycling

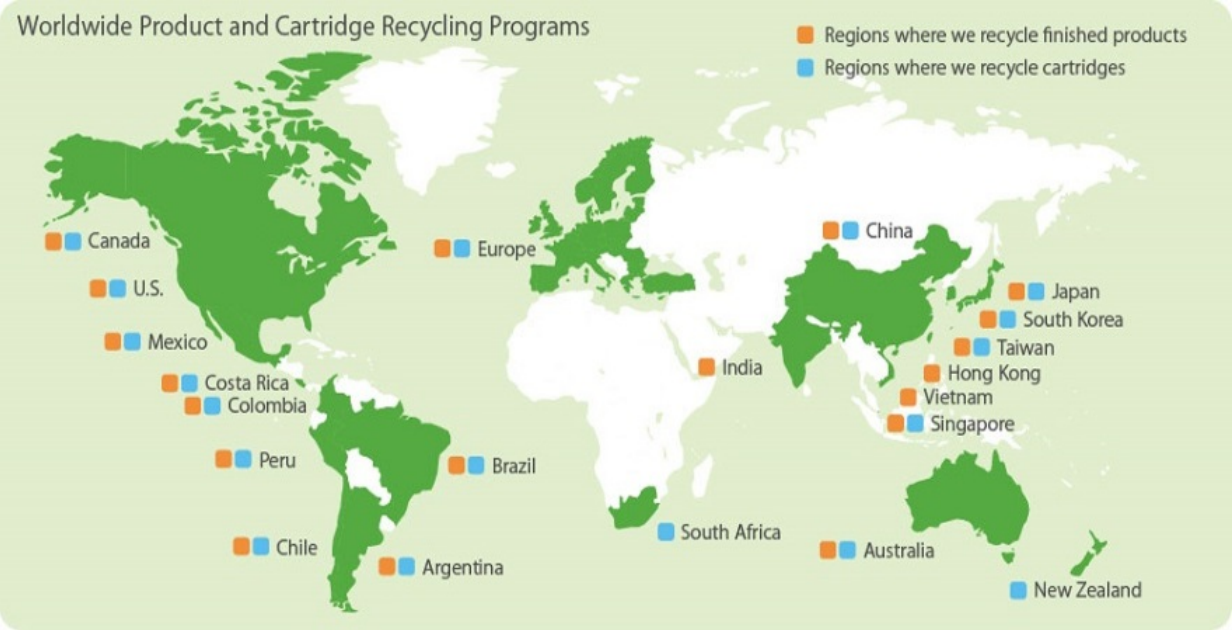
To expand the resource reuse and recycling loop, Epson collaborate with customers, industries, and regions to promote the collecting and recycling of used products in various countries and regions around the world.

Global Activities Overview

Initiatives in Each Region

Global Activities Overview

Epson's Global Collection and Recycling Systems



Collection and recycling programs for imaging equipment:

(Links to Country/Region Sites)

U.S.

Canada

Brazil

China

Taiwan

India

Australia

New Zealand

Japan

Collection and recycling programs for cartridges:

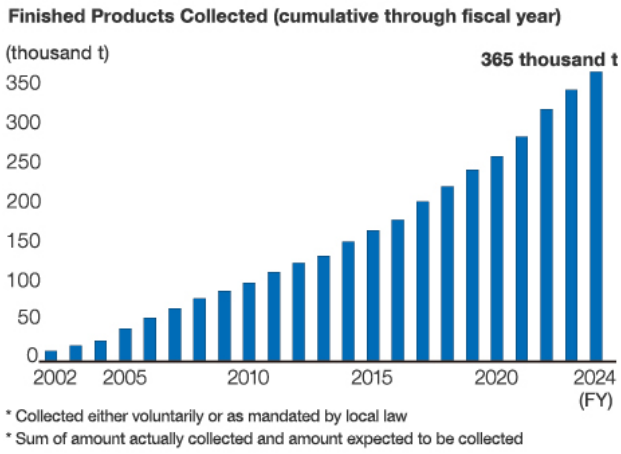
(Links to Country/Region Sites)

Europe | South Africa | U.S. | Canada

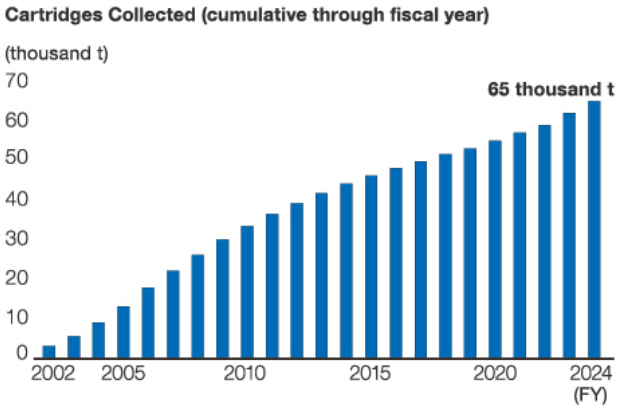
China | South Korea | Taiwan | Australia

New Zealand | Japan

Collection Trends for Products and Cartridges



* Collected either voluntarily or as mandated by local law
* Sum of amount actually collected and amount expected to be collected



Initiatives in Each Region

Summary of Activities in Each Region

- Europe
- Americas
- Asia
- Oceania
- Japan

Europe

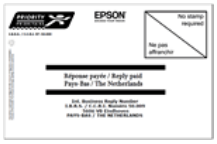
[Finished Products]

The European WEEE (waste electrical and electronic equipment) directive has been effective since 2005, and has been reflected in national legislation. To comply with the European WEEE directive, Epson is building recycling systems in each country. Moreover, Epson implements environmentally-conscious design in response to the WEEE directive 2012, that requires manufacturers to increase recyclability of products. Epson also acts quickly to comply with similar legislation that is expected to be adopted in EMEA[1] nations that are not EU member states.

[1] Europe, the Middle East and Africa

[Cartridges]
Epson Europe B.V. (EEB) is building a collection and recycling system for cartridges while monitoring customer needs and legislative trends. In 2013, EEB rebuilt the system to provide customers with more collection options and to increase recycling efficiency.

■ Postal Collections
Customers request empty pre-printed envelopes, and return filled envelopes via post for consumer inkjet and LabelWorks cartridges. Customers simply request and attach a return label, and return up to ten cartridges in a package.



■ Epson Express Center
Customers return consumer inkjet, laser printer, and LabelWorks cartridges to the nearest Epson Express Center.

■ Box Collections
After customers go online and sign up to the program they receive a collection box for large format printer and laser printer (more than 10) cartridges. When the box is full, it will be collected by the recycling company.

Americas

[Finished Products]
In Canada and the United States, some states are seeking to introduce laws requiring manufacturers to collect and recycle products. In the U.S., Epson America, Inc. (EAI) has run a voluntary take back program since 2002.
In addition to the recycling program, EAI and the National Cristina Foundation have joined together with the goal of helping those who are facing economic challenges or have disabilities gain access to the technology of today.

In Brazil, the National Solid Waste Policy (PNRS) was launched in 2010, requiring the electronics industry to implement reverse logistics. Epson do Brasil Industria e Comercio, Ltda. (EDB) implemented a Collection Program for disposing of used products and consumables. The Collection Program operates throughout Brazil, with more than 100 collection points countrywide. Products and supplies collected are sent to an approved recycler who disassembles and then sends the item to recycling and/or co-processing[1] as required.

[1] Use of waste to replace new resources and fossil fuels.

[Cartridges]
In the U.S. and Canada, EAI has created a mail-based recycling program for ink cartridges. In the U.S., customers can return toner cartridges by attaching an electronic return label printed from a website.

Asia

[Finished Products]
In India, Epson India Pvt. Ltd. works on promoting recycling program by making an original logo under the India e-waste (Management and Handling) Rules, 2011 Directives.
In Taiwan, Epson Taiwan Technology & Trading Ltd. complies with the Resource Recycling Act.
In South Korea, Epson Korea Co., Ltd. (EKL) is part of the E-Cycle Governance and comply with laws related to resource conservation and recycling promotion, as well as the Resource Circulation Act for Electrical and Electronic Products, which came into effect in January 2008.

[Cartridges]
In Taiwan, Epson Taiwan Technology & Trading Ltd. set up a system in 2001 using a toll-free number and a website to accept collection requests directly from customers to facilitate on the-spot collection.

In Singapore in 2012, Epson Singapore Pte. Ltd. joined with Canon Inc. to cooperate with the Singapore National Environment Agency and National Library Board to begin promoting The Homecoming Project to collect ink and toner cartridges. Under the program, consumers can deposit ink and toner cartridges from any manufacturer in collection boxes installed in 21 branches of the national library.

Oceania

[Finished Products]
Epson Australia Pty. Ltd. (EAL) partners with ANZRP (Australia & New Zealand Recycling Program), a not-for-profit organization that operates the TechCollect program. This program offers a free service for the general public and small businesses to drop off their e-waste for responsible recycling, as part of the National TV and Computer Recycling Scheme, regulated under the Recycling and Waste Reduction Act.

[Cartridges]
EAL participates in the Cartridges 4 Planet Ark program. EAL is a founding member of this promotion to recycle ink cartridges and toner cartridges. The aim of the program is to prevent cartridges from entering the waste stream and thereby reduce the potential environmental impact arising from the end of life disposal of cartridges.

[Lamps]
EAL has in place a projector lamp recycling program whereby used projector lamps are recycled, and EAL will recycle any brand lamps - not just Epson. Approximately 95% of the weight of the lamp is recycled.

Japan

[Finished Products]
Since 2003 Japan has legally required producers to collect and recycle unwanted computers from individuals and as businesses. In 1999, Epson launched a voluntary program to collect and recycle other Epson-brand waste electrical and electronic equipment (WEEE) also, such as printers, scanners, and projectors, from businesses ahead of the enforcement of applicable laws.

[Cartridges]

Epson has built various cartridge collection schemes while monitoring customer needs. In addition to being good for the environment, Epson's cartridge recycling program provides employment to persons with disabilities at Epson Mizube Corporation, a special subsidiary to support the employment of disabled individuals within the Epson Group.

■ Take-Back Service

Epson has set up a collection service for customers who consume large numbers of cartridges. As part of this service Epson makes donations to
environmental conservation organization.

■ Bellmark Program

Epson has participated in the Bellmark program since 2005. In addition to reducing wastes and helping to preserve the environment, the Bellmark program supports participating schools by awarding them points for ink cartridges collected. Schools use these points to purchase educational materials and equipment.

■ Cartridge Collection Program at Epson Sites in Japan

In 2011, Epson started collecting used ink cartridges at Epson Group sites in Japan to increase its aid to the Bellmark program. Collection boxes have been installed at every Epson business site to collect cartridges from employees, business partners, and members of the community. The collected cartridges are recycled, and Bellmark points are granted based on the number of cartridges collected. The points are then donated to the Bellmark Educational Support Foundation, local schools, or schools that were damaged by natural disasters. The results of our activities in fiscal 2024 were 67,165 points.

■ Ink Cartridge Satogaeri (Homecoming) Project

Printer manufacturers in Japan joined forces in 2008 to form the Ink Cartridge Satogaeri (Homecoming) Project, a program that uses approximately 3,600 post offices and local governments across Japan to collect used ink cartridges.
The project has donated to environmental protection organizations, allowing customers to indirectly participate in social contribution activities.

Collection box

The Ink Cartridge Satogaeri Project (Japanese)

■ Joint Environmental Program

In April 2012, Epson and Catalina Marketing Corporation launched an environmental program where used ink cartridges from coupon printers are collected and refilled. Under the program, Epson collects used ink cartridges from nearly 30,000 inkjet coupon printers installed in retail stores across Japan. Epson then refurbishes and refills the cartridges for reuse at the stores. Except for the label, almost all parts of the cartridge are reused and product quality is managed just as it is for new cartridges.

Case Study - Reduction of Waste

Topic 1: Recirculating & Reusing Cushioning Materials

Topic 2: Reducing Waste Ink

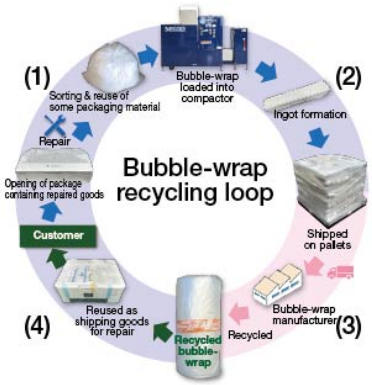
Topic 3: Making Printer Parts from Used Paper

Other Case Studies

Topic 1: Recirculating and Reusing Cushioning Materials

Epson Service, which provides repair services for Epson brand products in Japan, has established a scheme to recycle and reuse cushioning materials that were previously disposed of as waste. Soft plastics such as bubble-wrap accounted for approximately 90% of the company's CO_2 emissions from waste.

In this scheme, (1) packaging materials for incoming products are sorted and some are reused; (2) the bubble-wrap is compacted for efficient transportation and (3) delivered to the manufacturer as raw material; (4) recycled cushioning material is purchased and used when shipping repaired products back to customers. This will reduce waste by 4.2 tonnes per year, reduce CO_2 emissions by 3.9 tonnes per year, and enable the continued use of bubble-wrap made from 80% or more recycled material.

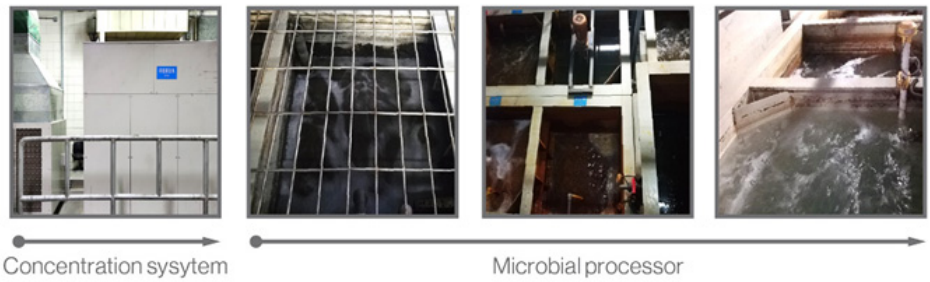


Topic 2: Reducing Waste Ink

Epson Engineering (Shenzhen) Ltd., a printer production site in China, previously treated all waste ink from its printing inspection processes for printheads as industrial waste. The amount of waste and the high cost of treating it had become a challenge. The factory undertook to reduce waste ink by implementing a combined waste ink concentration system and microbial processor, a solution that was already in use in an Indonesian factory. As a result, about half the waste was restored to quality good enough it could be sent to the sewer and the other half could be recycled as concentrated liquid and sludge. That reduced waste ink by 481 tons per year and lowered yearly processing costs by about ¥30 million.
In addition, waste ink remaining after printing inspection is

	Liquid waste reduction (yearly)	Monetary value of benefit (yearly)
Ink concentration	481 t	¥29,990,000
Reuse	56 t	¥17,750,000

collected in a tank and gets a quality check (for foreign matter, viscosity, etc.), sent through filters, and reused.



Topic 3: Making Printer Parts from Used Paper

Epson has established an internal paper resource cycle that uses paper used inside the company as a raw material. For example, we use our dry fiber technology to turn used paper into a raw material for functional recycled parts.

PT. Indonesia Epson Industry (IEI) is our largest printer manufacturing site. Some 12% of the waste created at IEI is paper used in printing inspection processes for printers. We have introduced dry fiber technology to take this used paper and reuse it as raw material for porous pads in printers. The result is a roughly 25% reduction in used paper waste (FY2016 results).


Porous pad production machine

Porous pads, which absorb liquid like a sponge, are included in the maintenance boxes of business inkjet printers and large format printers to boost printer performance. Epson will continue to bring out the potential of paper resources as we develop and take advantage of new high-function parts that enhance product performance.

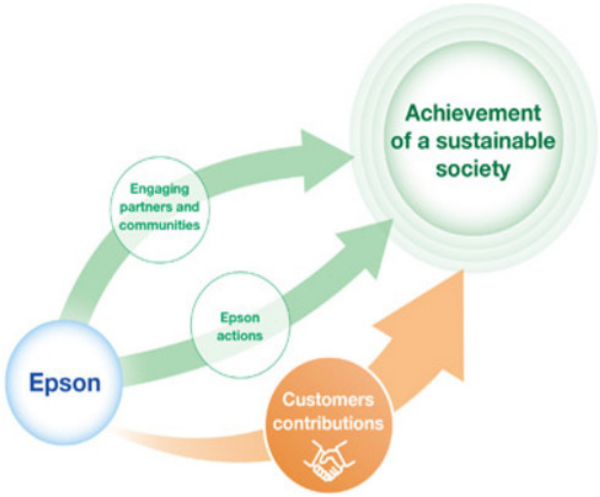

Maintenance box

Other Case Studies

Achieves zero waste to landfill (Epson Telford Ltd.) (PDF,210KB)

Customer Environmental Impact Mitigation

The impact that one company can have on the achievement of a sustainable society is limited, but Epson is looking to make an impact and make the world a better place through products and services that support customers' sustainability efforts and through collaborative action with local communities and partners.



As a manufacturer, Epson has always asked itself what it can do to achieve a sustainable society and has worked for many years to increase the energy efficiency of its production processes and products, improve resource efficiency, and eliminate harmful and hazardous substances.

To make a greater contribution, we seek to drive work process innovations by minimizing the environmental impacts incurred by our customers when using Epson products and by raising operational efficiency and productivity. Achieving this will mean taking on new challenges to offer value existing technologies cannot provide.

Epson's answer is to use our original technologies to provide products and services offer this value to our customers worldwide.

Related Information

Product Environmental Information (Environmental Labels)

Life Cycle Thinking

Goal

Case Study

Goal

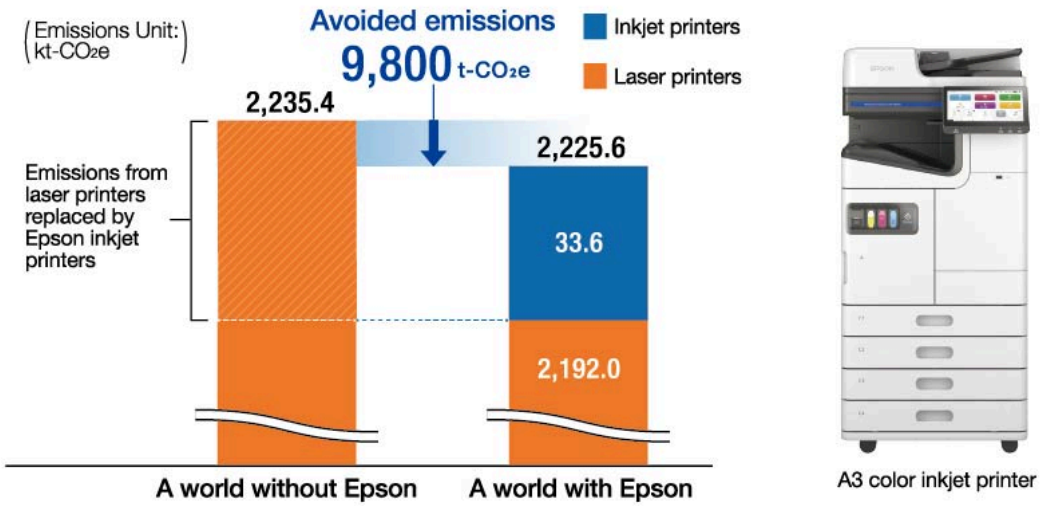
Reducing environmental impact through products and services

In addition to reducing its own greenhouse gas (GHG) emissions and using resources responsibly, Epson aims to help customers lower their environmental impact through its products and services. By providing and promoting products and services with a lower environmental impact than conventional alternatives, Epson contributes to reducing the overall environmental footprint of society.

Promoting Avoided Emissions

Avoided emissions is the difference between the GHG emissions that would have resulted from the introduction and use of environmental impact smaller products or services over their entire life cycle and the emissions that would have resulted if they had not been introduced. This is a quantitative indicator of the contribution of products or services to the reduction of GHG emissions in society. Epson aims to maximize the avoided emissions through products and services that contribute to the reduction of environmental impact. In addition, by visualizing (calculating and disclosing) avoided emissions, Epson will concretely demonstrate its environmental contribution, thereby achieving both business growth and avoided emissions expansion.
Epson's inkjet printers require less limited lifetime parts in addition to the low power consumption through Heat-Free Technology, which uses no heat to eject ink. By promoting the replacement of laser printers, thereby reducing the environmental impact associated with printing and contributing to the environmental impact reduction of society. To ensure that the information is fair to customers, the calculation logic was developed based on the guidelines published by the World Business Council for Sustainable Development (WBCSD) and confirmed by a third-party organization. avoided emissions by replacing laser printers with Epson A3 color inkjet printers in FY2024 will be 9,800 t-CO_{2e}[1].

■Avoided emissions for A3 color inkjet printers (FY2024 results)



A3 color inkjet printer

[1] Based on the calculation method confirmed by Mizuho Research & Technologies, Ltd., the value is obtained by multiplying the difference between the weighted average of the publicly available lifetime CO_2 emissions of major laser printers in the global market and the lifetime CO_2 emissions of Epson's A3 color inkjet printer by the number of Epson A3 color inkjet printers sold in a given fiscal year. The assumptions differ from those used in the FY2023 results disclosure due to a review of the calculation conditions.

For information on Epson's inkjet technology, please click here.
Creating the Future with Heat-Free Technology

Case Study

We sell products and services that transform the way our customers work. In so doing, we are minimizing their environmental impacts while also raising their operational efficiency and productivity.

- Our innovative products and services make our customers' jobs and lives easier and more enjoyable while also shrinking their environmental footprints.
- Our products and services enable new business processes and offer outstanding economic and environmental value.

Office

Home

Manufacturing Plant

Stores

Other (Textiles, Labels, Photographs)

Case Study - Customer Environmental Impact Mitigation

We sell products and services that transform the way our customers work. In so doing, we are minimizing their environmental impacts while also raising their operational efficiency and productivity.

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Office | Home | Manufacturing Plant | Stores | Other (Textiles, Labels, Photographs)

Office

Business Inkjet Printers

Eco-conscious office solutions

Interactive projector

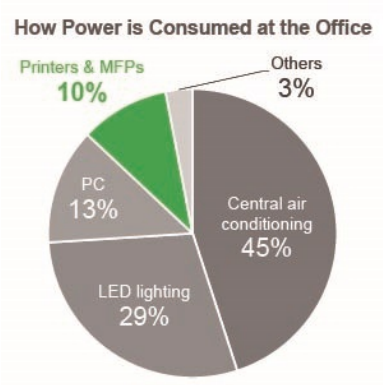
Shrinking the Environmental Footprint of Offices with a Combination of Performance and Efficiency

Epson's business inkjet printers employ our original Heat-Free Technology to eject ink without heat. This technology offers a striking advantage in terms of electricity consumption. With a broad lineup of office printers spanning various speeds, we provide the most suitable low electricity consumption printer for each customer, helping reduce the environmental footprint in the office.

Recommendations for Office Environmental Initiatives

Businesses are more sensitive than ever to environmental issues. Many try to save energy by adjusting their thermostat settings or adopting LED lighting. What they may overlook is that printers and MFPs account for about 10% of total power consumed in a typical office.

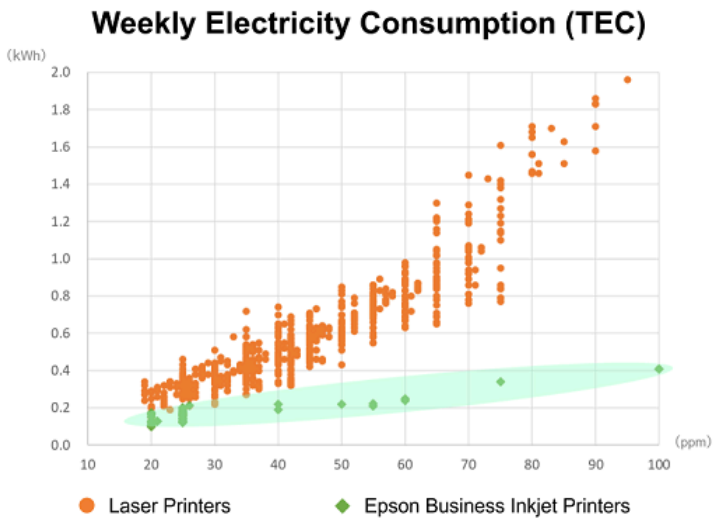
We see an opportunity to help them further cut their energy use and costs. Epson inkjet printers draw very little power when printing because ink droplets are ejected by the action of piezoelectric elements that contract under only a tiny applied voltage. In contrast, laser printers require heat–and a lot of electricity–to fuse toner to paper.



* Epson research based on data from commissioned survey conducted in March 2018 by SOMPO Risk Management & Health Care Inc.

Weekly Electricity Consumption

The TEC [1]graph below [2] compares Epson business inkjet printers with laser printers from other companies across different speed categories. Epson's business inkjet printers deliver outstandingly low electricity consumption across all speed categories.

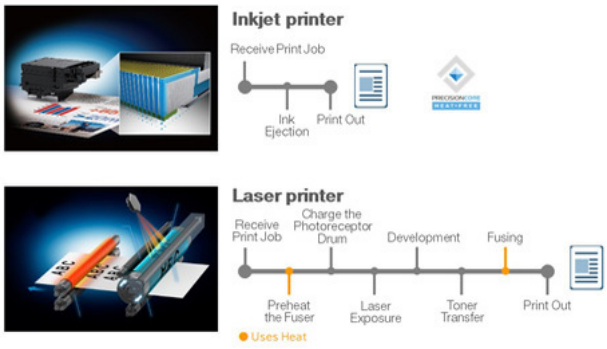


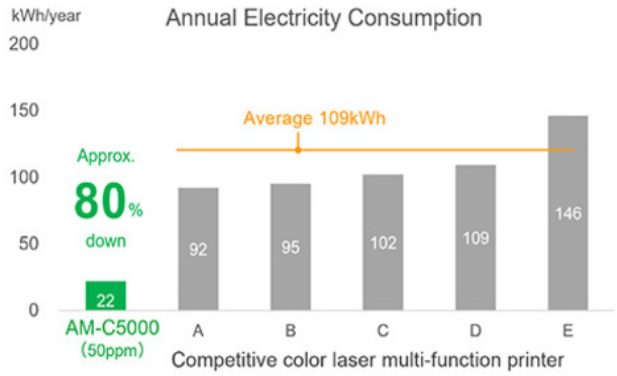
[1] TEC (Typical Electricity Consumption) refers to the weekly electricity consumption (5 days of operation and sleep/off mode alternately + 2 days of sleep/off mode) assuming the use of standard printers in the office.

[2] As of June 16, 2025, A3/A4 monochrome and color machines registered on energystar.go.jp. The TEC value of Epson's business inkjet printers includes products other than registered products, calculated based on the test method of the ENERGY STAR® Program Requirements for Imaging Equipment Product Specification. Actual power consumption may vary depending on customer usage.

Reduces Annual Electricity Consumption

WorkForce Enterprise printers are equipped with PrecisionCore Heat-Free Technology and use no heat in the printing process. That means they consume far less power than laser printers, which in turn reduces their running costs. According to the results of an independent study, AM-C5000 may consume, on average, 80% less electricity per year than comparable competing color laser multifunction printers.





* The annual power consumption graph is based on test data from Keypoint Intelligence, commissioned by Epson. The LM-C5000 was tested in May 2023 for European models. Epson selected the comparison models from the top five vendors in the 41-50 pages per minute color laser MFP class [3]. Using the standard energy consumption testing method from Keypoint Intelligence, the devices were tested with their default settings. The energy usage for weekdays was calculated based on a workload of 2x4 hours of printing, with 16 hours in sleep and standby modes. For weekends, the energy usage was calculated based on 48 hours in sleep and standby modes. During each 4-hour printing period, a total of 69 pages of test patterns (DOC, XLS, PPT, HTML, PDF, and Outlook email) were printed six times.

[3] Source: IDC's Worldwide Quarterly Hardcopy Peripherals Tracker 2023Q1, Units Share by Company

Seiko Epson received the Agency for Natural Resources and Energy Commissioner's Award (Product & Business Model Category) for their new MFPs [4] under the fiscal 2023 Grand Prize for Excellence in Energy Efficiency and Conservation awards program organized by the Energy Conservation Center, Japan. Among other things, the new MFPs were recognized for their higher energy efficiency compared with the previous models for the reason such as the introduction a new circuit unit reduces power consumption in sleep mode and during operation. (December 2023)

[4] WorkForce Enterprise LM-C6000/C5000/C4000 linehead inkjet multifunction printers.

Link to News Release

Eco Features

WorkForce Enterprise WF-C/AM-C series

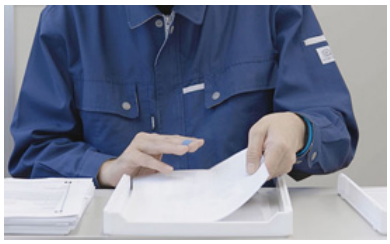
- Inkjet multi-function printers with linehead enabled by Epson PrecisionCore and Heat-Free Technology take the combination of print performance and energy efficiency to the next level.
- Epson WorkForce Enterprise series demonstrates superior energy efficiency than a typical A3 color laser office MFPs.
- The maximum power consumption is below 320W[5], making it suitable for use with the common 100V, 15A outlets found in typical office settings.

[5] WF-C21000 series: 320W, WF-C20750 series: 300W, AM-C series: 190W

An Eco-Conscious Office Created by Combining Inkjet Printers with an Office Papermaking System

Epson is proposing eco-conscious office solutions that benefit the environment.
Epson wrings the maximum benefit for customer from solutions that combine inkjet printers, which employ Epson's proprietary Heat-Free Technology to reduce office power consumption, waste, and printing costs, with dry process office papermaking systems, which efficiently recycle paper to conserve water and forest resources. In addition to allowing a more environmentally friendly way to take advantage of the convenience of paper, an in-office paper recycling ecosystem delivers customer value by reducing costs and strengthening information security.

Epson installed 16 PaperLabs at its nine main sites in Japan. Through the local recycling of paper for local consumption, Epson is looking to reduce the amount of new paper purchased by the Epson Group. Furthermore, the Eco-Conscious Office Center in EPSON SQUARE MARUNOUCHI serves as a model for a metro office. It demonstrates to visitors that a greener office can be achieved anywhere.
Epson is giving potential customers a concrete idea about how they can improve their environmental performance by publicly disclosing our paper recycling operations and recycling data.



Raising Meeting Productivity with Interactive Communication

Epson's interactive projectors increase the productivity of interactive meetings, deliver more effective presentations, and even contribute to a smaller environmental footprint.

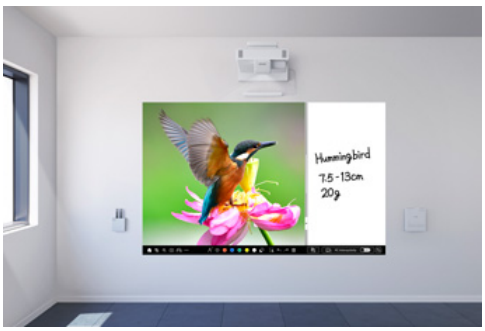
Interactive projector
EB-1485Fi
(known as the BrightLink 1485Fi in certain markets)

Reduce Your Environmental Footprint with Videoconferencing

Connect your existing videoconferencing system to the projector, and use the projector's multi-location interactive and split-screen functions to display your videoconference on one side of the screen and your presentation on the other, to achieve virtual face-to-face collaboration.
This interactive projector can reduce the need for travel and reduce your environmental footprint.

Multi-location Interactive Function

- Share your PC screen with up to four locations.
- Participants in all locations can annotate a presentation and save the content to their PCs.



Split Screen Function

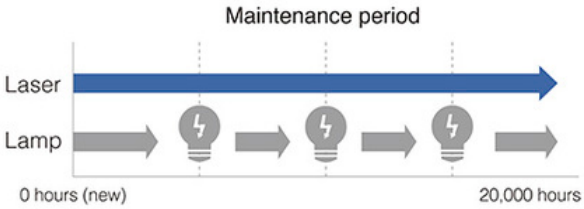
- Achieve virtual face-to-face collaboration while sharing whiteboard and PC screen images.
- Clearly display different content on a split screen that measures up to 100 inches.

Use as a Copyboard

The all-in-one interactive projector with copyboard, electronic blackboard, and other common whiteboard functions saves both resources and installation space. Directly annotate up to 20 sheets' worth of projected data and images, no PC required. Increase meeting productivity and minimize printouts by saving data or by emailing it directly from the projector.

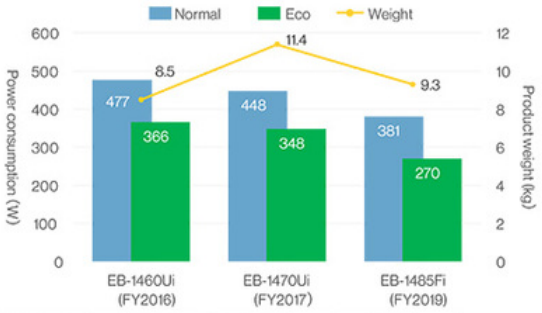
Maintenance-free Light Source

The laser light source is extremely reliable, eliminating the worry of lamp failure during important presentations.



Energy and Resource-saving

Within the projector's lifecycle, CO_2 emissions will be the greatest during the stage in which it is used by the customer. Through product improvements, we will offer reductions in the consumption of electricity and natural resources during use.



Brightness	4,400 lm	4,000 lm	5,000 lm
W/lm	0.11	0.11	0.076
g/lm	1.9	2.9	1.9
Light source	Lamp	Laser Diode (do not need to replace)	

* Power consumption values for projectors operating at 100-120 V. We used normal mode power consumption to calculate energy efficiency (W/lm).

Eco Features

EB-1485Fi

- Connect your videoconferencing system to the projector, and use the multi-location interactive and split-screen functions to display your videoconference on one side of the screen and your presentation on the other, to achieve easy remote collaboration and reduce the need for travel. Helps to reduce your environmental footprint.
- This all-in-one interactive projector includes copyboard, electronic blackboard, and other whiteboard functions to save both resources and installation space.
- Projected data and images can be annotated with digital pens. Minimize printouts by saving data as is or by emailing it directly from the projector.
- The laser light source is extremely reliable, eliminating the worry of lamp failure during important presentations.
- Energy-saving features
  - An illuminance sensor detects ambient brightness and automatically adjusts the output of the lamp
  - You can reduce power consumption by as much as 29% using ECO mode

Office | **Home** | Manufacturing Plant | Stores | Other (Textiles, Labels, Photographs)

Home

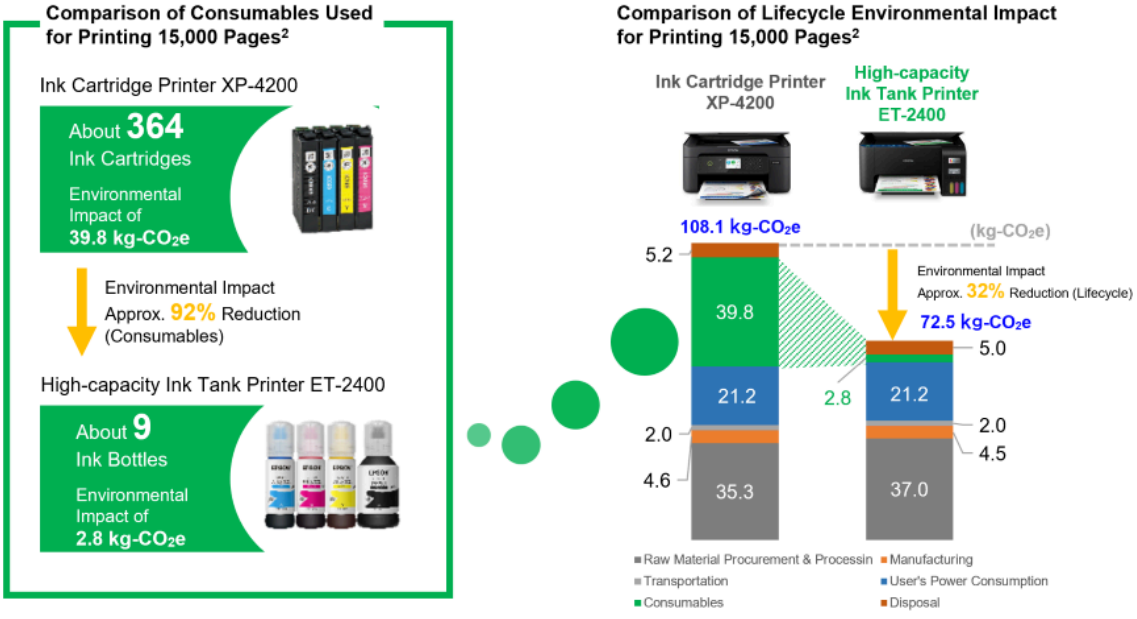
High-Capacity Ink Tank Printer

Reducing Environmental Impact with High-Capacity Ink Tank System

Inkjet printers with a high-capacity ink tank system are refilled from bottles. Compared to traditional cartridge-based printers, the high capacity of ink bottles reduces the frequency of consumable replacements for the same amount of ink used, thereby minimizing the resources required for consumables, including its packaging.

Comparison of Environmental Impact with Ink Cartridge Printers

A comparison of the environmental impact between the high-capacity ink tank printer ET-2400 and the ink cartridge printer XP-4200[1] shows that for printing 15,000 pages[2], the number of consumables used is reduced from 364 ink cartridges to nine ink bottles, resulting in a 92% reduction in the environmental impact of consumables. This contributes to reducing the overall environmental impact across the entire lifecycle of the high-capacity ink tank printer.



[1] Calculated based on Epson's evaluation criteria using data from each stage of the product lifecycle (raw material procurement, manufacturing, transportation, use, and disposal) with verification of the calculation method by Mizuho Research & Technologies, Ltd. Results may vary depending on customer usage and product specifications.

The impact of paper is not considered in this calculation.

[2] The number of pages printed over five years based on a printing speed of 10.5 ipm, in accordance with TEC standards.

Reducing Environmental Impact with High-Capacity Ink Tanks

As of October 2024, the cumulative global sales of Epson's high-capacity ink tank printers have reached 100 million units. Compared to ink cartridge printers that meet similar printing needs, this has resulted in a cumulative mitigation of approximately 1.63 million tons of CO_2emissions[3]. By shifting to high-capacity ink tank systems, resource consumption for consumables can be reduced, contributing to the overall reduction of environmental impact across society.

[3] The mitigation in environmental impact is calculated by comparing the total CO_2 emissions over the entire product lifecycle of corresponding ink tank models and ink cartridge models, then multiplying the difference by the sales volume in each region. For the cumulative calculation, approximately 62.5 million units out of the 100 million total were considered, as they have comparable ink cartridge model counterparts.

Eco Features

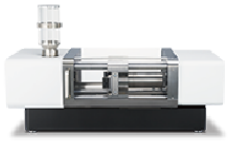
- Inkjet printers with high-capacity ink tanks reduce resource consumption associated with consumables compared to traditional inkjet printers, contributing to lower environmental impact throughout their lifecycle.

Office | Home | **Manufacturing Plant** | Stores | Other (Textiles, Labels, Photographs)

Manufacturing Plant

Inkjet Digital Label Press

Smart Headset



Micro Injection Molding Machine

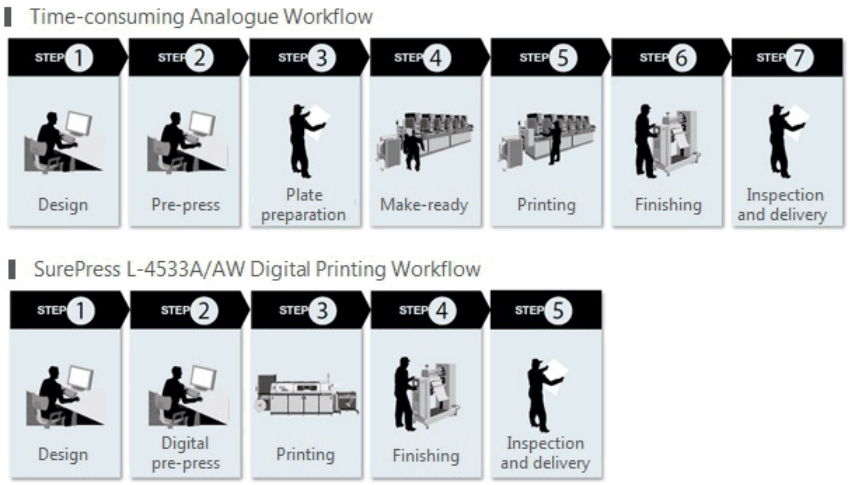
Label Printing Technology Shifting from Analog to Digital

The trend toward short-run print jobs has spread to labels and packages, giving rise to demand for efficient printing systems that can agilely respond to this demand. Epson's digital inkjet label presses provide customers with a new label printing workflow that meets their needs.

Digital LabelPress
SurePress L-4733A/AW

An Efficient Label Printing Process with a Low Environmental Impacts

A digital printing process does not need the press plates and other prepress processes required by analog printing processes. And, since a digital process does not use developer or film or plate materials, it conserves resources. Capable of stable, consistent output, a digital process does not require mock-ups and thus can reduce the waste of ink and label substrates during setup. Digital label presses thus offer both a more efficient workflow from start to finish and lower environmental impacts.



Water-based pigmented inks for less hassle

SurePress AQ ink T4, the water-based pigment ink used in Epson's digital label press, has high fusing properties and does not require precoating of the printed paper.

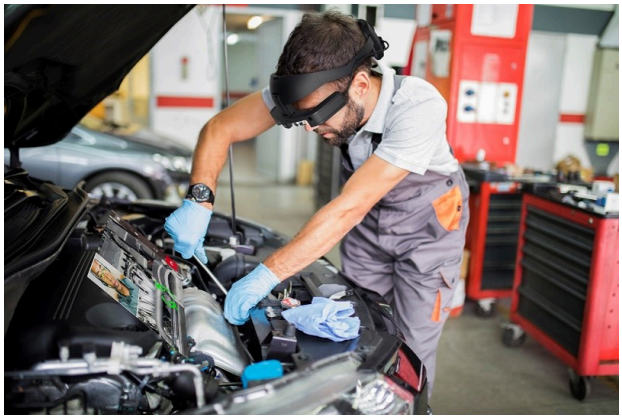
Eco Features

SurePress L-4733A/AW

- Save resources by removing the need for pre-press process like plate making, and eliminating the use of developer and films.
- Easy color-matching and no replacement of plates makes the SurePress less wasteful, and enables it to consume less standard label stock and ink.
- No need for special cleaning eliminates waste fluid emissions from maintenance.
- Removing the need for pre-treatment, SurePress water-based ink has good adhesion on a variety of standard label stocks.

Reducing Environmental Impacts by Providing Remote Work Assistance with Smart Headsets

Epson's smart headsets with binocular, see-through lenses increase operational efficiency and work quality by displaying digital manuals and work instructions in the field of vision and enabling workers to perform work with both hands. In industrial settings, these headsets can be used by managers to provide remote service and maintenance personnel, for example, with instructions and assistance.

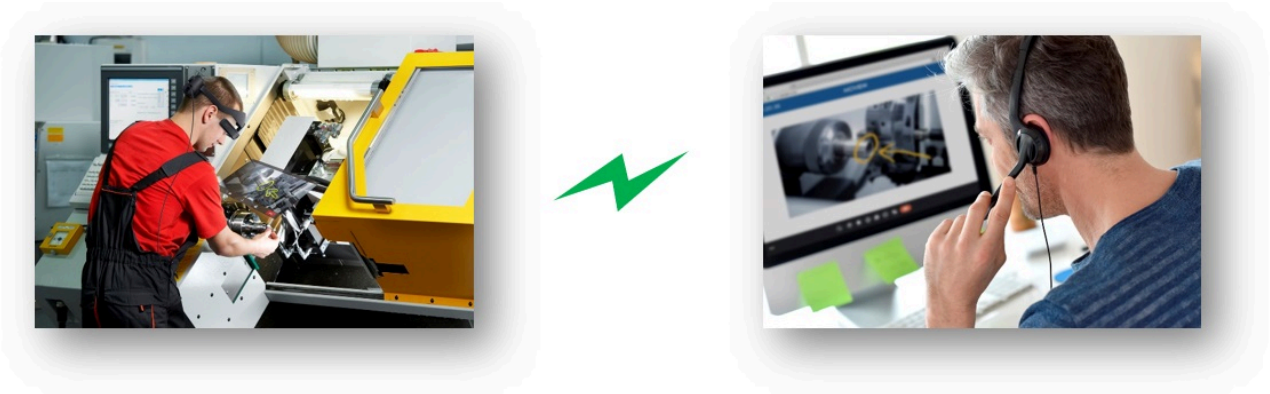


MOVERIO BT-45CS[1]

[1] Helmet is not included as product

Remote Work Assistance

The centered high-resolution 8 mega-pixel front-facing camera enables workers to share their view and receive help with complex tasks through streaming or recorded Full HD pictures and videos.
In addition to safely increasing work efficiency and contributing to greater overall operational efficiency, Epson's smart headsets enable skilled personnel in a remote location to provide technical instructions to workers on the ground. This helps to reduce the need for travel and, consequently, your environmental footprint.



Advantages

- Printed paper manuals and instructions are rendered unnecessary.
- Greater work efficiency thanks to hands-free operation.
- Tasks can be completed safely because the binocular, see-through lenses allow workers to see their surroundings through projected content.
- Images and voice can be shared with workers in remote locations so that assistance can be provided effectively.

Usage Scenes

Used for work where they wear caps, or where they do not need to wear anything on their head

- Infrastructure (server room)
- Manufacturing (assembly of office automation equipment, household appliances, vehicles, etc.)
- Maintenance (large equipment such as aircraft, semiconductor manufacturing equipment)
- Agriculture (technology transfer)


Used for work where wearing a helmet is mandatory

- Infrastructure (electricity, gas, water)
- Manufacturing (heavy machinery, steel, robotics)
- Construction, Public Works (building construction, excavations, bridges)

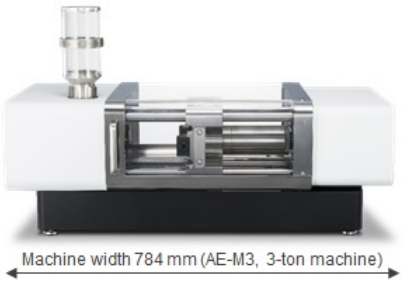

Eco Features

BT-45CS

- The headsets are equipped with a camera and sensors that provide remote personnel with an accurate picture of the situation so that they can provide workers on the ground with instructions and assistance without having to travel, so the environmental impacts associated with travel can be reduced. The headsets also promise to reduce downtime and time losses associated with travel.
- Hands-free operation enables tasks to be performed safely and efficiently, improving both operational efficiency and work quality.

Make More with Less: Micro Injection Molding Machines for Superior Financial and Environmental Performance

The smaller the parts, the greater the waste of materials and energy consumed in the manufacturing process.
Epson’s micro injection molding machines solve this customer issue by allowing users to make more with less.
Epson’s AE-M3 and AE-M10 micro injection molding machines employ a proprietary disk drive system that dramatically reduces machine size, making them ideal for molding small, precision parts with exceptional energy efficiency.
These machines are standard-equipped with a hot runner system that minimizes waste and efficiently uses input resources.



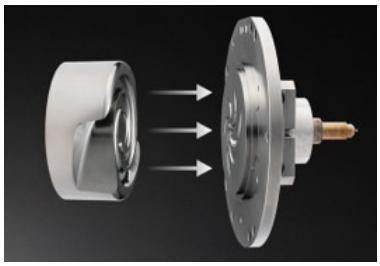
Micro Injection Molding Machine AE-M3／M10

* Only available in Japan

Fast, Precision Injection with Minimal Energy and Waste

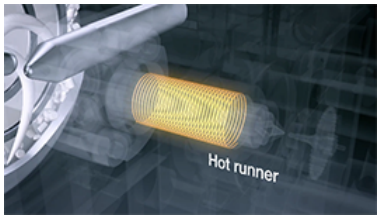
Injection molding machines melt a plastic material with a heater and precisely inject the molten material into a mold cavity, where the material cools and hardens before being ejected as a molded product.

Epson's micro injection molding machine employs a proprietary disk drive system to melt and inject the plastic. The molten plastic is precision injected with minimal energy. The short melting path has the additional benefit of reducing damage to thermally sensitive materials, thus helping to ensure good molding quality.



The proprietary disk drive system dramatically reduces machine size and energy consumption

The hot runner system that is standard on these molding machines minimizes material waste from runners and other parts in the molding process. It also shortens cooling time after mold clamping, which reduces molding time (cycle time) and thus increases productivity.



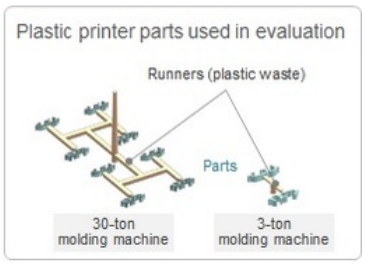
The hot runner system minimizes waste plastic and reduces cycle time

Click here for a movie of the injection molding process

*The video above was provided using the service of YouTube™. YouTube™ is a trademark of Google Inc.

Reduces CO_2 by Conserving Energy, Saving Space, and Reducing Waste Plastic

Epson's micro injection molding machines have a far smaller environmental impact than the average 30-ton molding machine. In addition to unrivaled compactness and an energy saving design, our machines eliminate much of the waste material from runners and such that are generated in the part molding process.



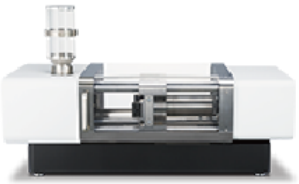
* This evaluation compares the impacts of a 30-ton machine and a 3-ton machine when producing 500,000 Epson printer parts per month. Calculations were checked using a method of Mizuho Research & Technologies Institute. Epson's AE-M3 (3-ton molding machine) produces two parts at a time and has a molding time of 694 hours, whereas the average 30-ton molding machine of other companies produces eight parts at a time and has an average molding time of 382 hours. The manufacturing, transportation, and disposal stages of products and accessories are not taken into account when calculating CO_2 emissions.
These are the estimated results of a hypothetical model based on Epson's actual results, and the calculation results may differ depending on the conditions of the customer's equipment and materials.
Calculation conditions: Cubic volume of part was 0.5㎤, plastic material was POM, the 30-ton machine was a composite imagined using the mean value of three representative models from other manufacturers, and the installation area was the molding machine installation space + incidental equipment + work space.

2022 Good Design Award
The micro injection molding machine AE-M3 and AE-M10 won a 2022 Good Design Award, which presented annually for designs that benefit and enrich our lives and society. In addition, these were selected for the Good Design Gold Award and the Good Design Best 100.

< Reasons for Award >
Global industries need to find ways to economically produce the goods that are needed in only the amounts they are needed. However, there is a structural dilemma in that high-mix, low-volume production results in large losses; in fact, making more with less-less waste, less energy-is hard to do. We live surrounded by all kinds of plastic products, most of which are made using large plastic molding machines that waste significant amounts of material. Epson's micro injection molding machines are revolutionary in that they can efficiently do the work of a large factory in an area the size of a desktop.

Link to News Release

Eco Features



AE-M3/M10

Designed around the concept of “making more with less,” the AE-M3 and AE-M10 are micro injection molding machines that support on-demand production and mass customization.

- A proprietary disk drive system dramatically reduces machine size and achieves exceptional energy efficiency. These machines are standard-equipped with a hot runner system that minimizes waste and efficiently uses input resources.
- The machines save energy and reduce plastic waste, thereby reducing CO_2 emissions by as much as 78%[1] compared to an average 30-ton machine from other manufacturers.

[1] A 78% reduction from the average CO_2 emissions of a standard 30-ton machine from other manufacturers. This figure is an estimate for when the same quantity of parts is produced using a model based on Epson's actual results.

Other (Textiles, Labels, Photographs)

Stores

Intelligent Receipt Printers

Intelligent Receipt Printers that Control Peripherals

TM-T70II-DT2 and TM-T88VI-DT2 are next-generation receipt printers with integrated printer and PC functions that support smart store operations when connected with tablet and POS peripherals.

TM-T70Ⅱ-DT2

TM-T88VI-DT2

Greatly Simplified System Configuration

These receipt printers are loaded with interfaces for connectivity with a wide assortment of peripheral devices. They can be used with a web browser and are not dependent on any specific operating system or terminal type, simplifying POS system configuration.

Easy maintenance

The latest applications are always available through the cloud (Web server), reducing the environmental impact of service staffs' business travel for onsite installation and updates.

POS configuration flexibility

The number of POS systems can be flexibly changed depending on the level of demand, contributing to the optimization of equipment utilization and reducing electricity consumption.

Every network terminal is available
Electricity-saving devices like smartphones can be used because the Intelligent receipt printer is not restricted by the type of terminal or operating system.

Resource-saving design
By using the paper saving modes for standard receipt lengths, it is possible to achieve up to a 49%[1] reduction in paper usage.

Eco Features


TM-T70Ⅱ-DT2


TM-T88Ⅵ-DT2

- Because the number of POS systems can be flexibly changed depending on the level of demand, users can reduce the electricity consumption of their operation by removing unnecessary devices.
- The latest applications are always available through the cloud (Web server), reducing the environmental impact of service staffs' business travel for onsite installation and updates.
- Electricity-saving devices like smartphones can be used because the Intelligent receipt printer is not restricted by the type of terminal or operating system.
- By using the paper saving modes for standard receipt lengths, it is possible to achieve up to a 49%[1] reduction in paper usage.

[1] The combination of paper saving and backward paper feeding is measured using a test pattern defined by Epson, with the actual reduction amount varying depending on the printing pattern.

Office ⌄ | Home ⌄ | Manufacturing Plant ⌄ | Stores ⌄

Other (Textiles, Labels, Photographs) ⌄

Other (Textiles, Labels, Photographs)

Garment Printer ⌄

Driving Production Process Innovations with Digital Textile Printers

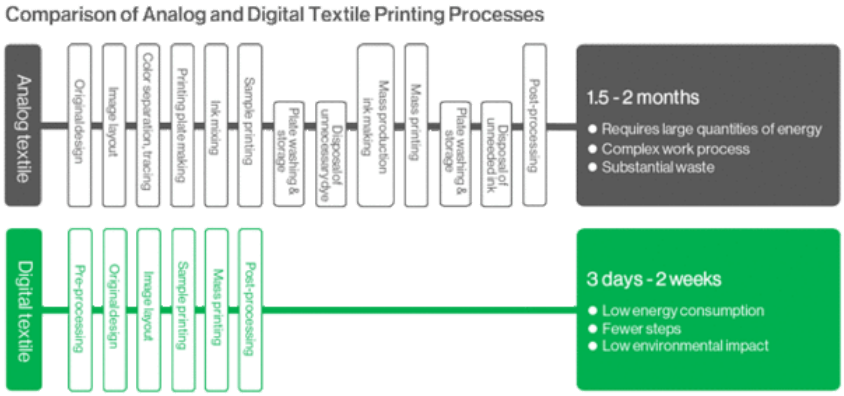
Epson's digital textile printers faithfully reproduce prints in vivid colors and wonderful detail-and they do so with outstanding throughput and minimal environmental impact.

Digital Textile Printer
Monna Lisa

Streamlined Manufacturing Process

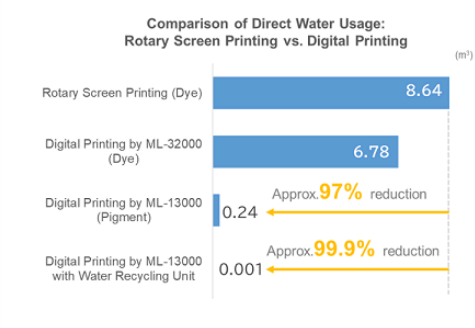
Epson's inkjet digital textile printers expand your design possibilities while minimizing your use of energy, water, materials, and time compared to conventional processes. Digital textile printing involves the use of printing systems to print out digital data to direct to fabric. It is different from traditional analog printing in which dedicated printing plates are pressed directly onto the fabric. Digital printing has the following characteristics:

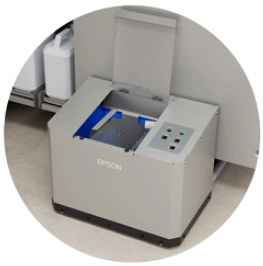
1. Faithful reproduction of fine gradations and subtle color tones
2. Since no analog plates are needed, digital textile printing saves storage space, eliminates time spent on plate management, and enables small production runs at low cost and with fast turnaround
3. Minimize the environmental impact in comparison with analog printing by using a little less dyeing material and requiring no water for plate washing.



Reduction of Water Usage

A study[1] shows that around 20% of wastewater worldwide comes from fabric dyeing and treatment.
Digital textile printing conserves water because, unlike rotary screen printing and other analog printing processes, there are no plates to wash. Digital textile printing with pigment inks is particularly stingy when it comes to water use. Since no post-processing is required, water use can be reduced by up to 97%.[2] Furthermore, a water recycling unit can be used in conjunction with the printer to automatically detect the water quality of wastewater from the belt washing process. Maximizing the use of recycled water allows for a reduction of up to 99.9% in the total amount of water used.
In the future, we will expand the number of printer models compatible with this optional unit to help reduce the amount of industrial wastewater generated in textile printing.



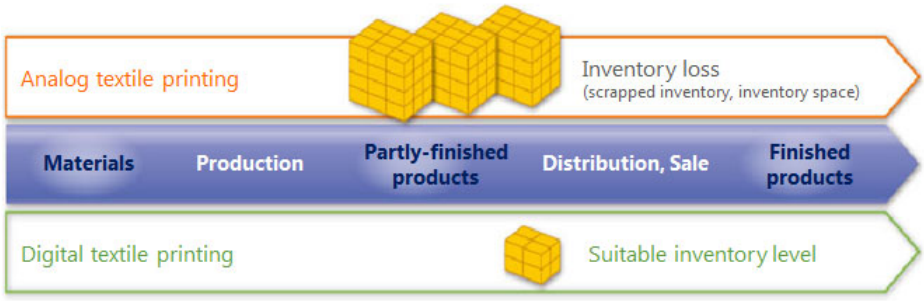


[1] World Bank, 2019 How Much Do Our Wardrobes Cost to the Environment?

[2] Report on Direct Water Usage in Digital Textile Printing (November 2024), commissioned by Seiko Epson to Furuhashi Environmental Research Institute, a comparison is made between the processes of rotary screen dye-printing and inkjet dye/pigment-printing by Monna Lisa. This comparison examines the direct water usage for dyeing a fabric that is 1.5 meters wide and 300 meters long, noting that these figures may vary depending on the usage environment and measurement conditions.

Efficient Inventory Management

Digital inkjet printing has a short processing time ranging from 3 days to 2 weeks, encompassing all stages from pre-processing to post-processing, making it ideal for small-lot, diverse production. This approach minimizes inventory losses associated with materials, partly-finished products, and finished products, from production through distribution and sale.



Eco Features

Digital Textile Printer
Monna Lisa

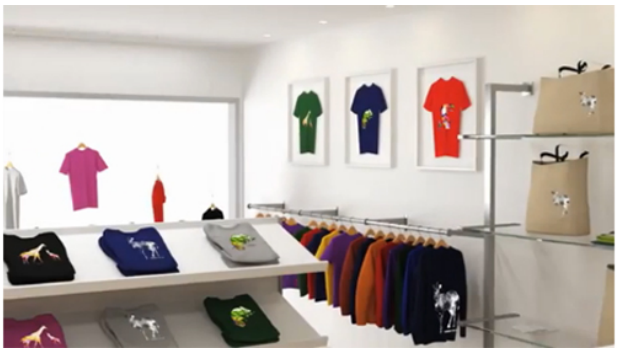
- Since the digital textile printing process:
  - Is shorter and does not require printing plates, it uses less energy and water than a traditional analog process, and wastes far less ink.
  - Is Ideal for small-lot production. Minimizes inventory losses from manufacturing through to sales.
- Digital textile printer inks have acquired Eco Passport certification, indicating that they meet international safety standard for chemical substances of textiles.

See here for a partnership that aims to transform the fashion industry.

The Future of Fashion Co-created with YUIMA NAKAZATO

An Inkjet Workflow for Brightly Colored Garments with Fineness of Detail

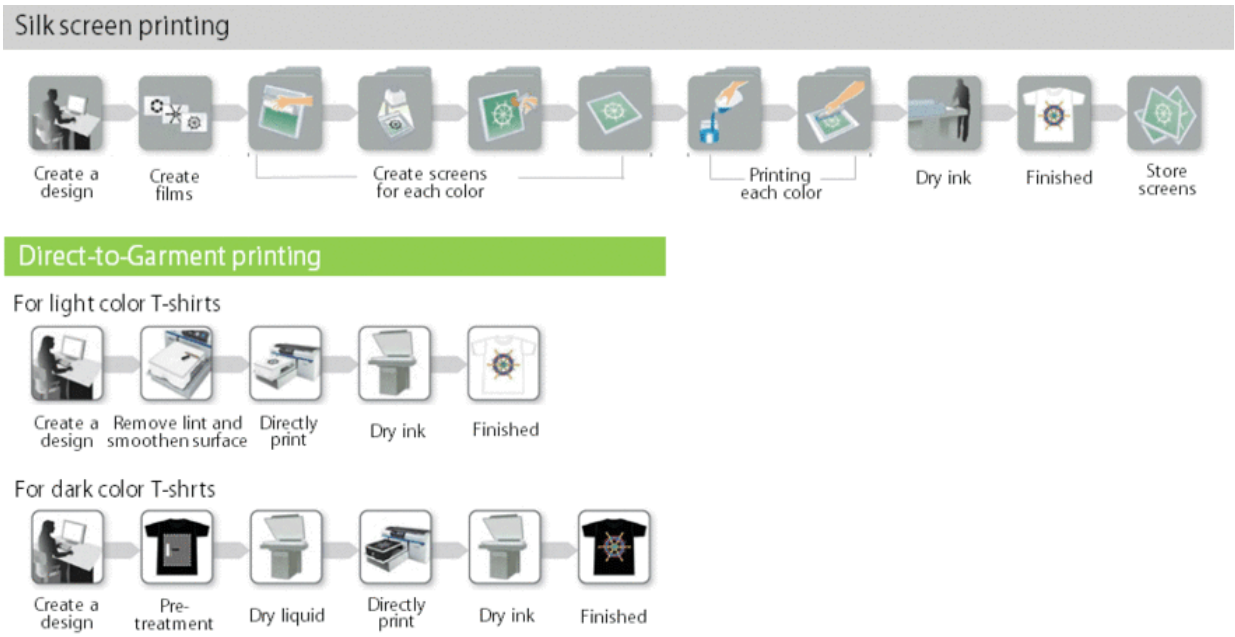
To meet the demand for original printing on cotton products such as T-shirts, polo shirts, and tote bags, we apply our advanced technology cultivated in inkjet printers to achieve vivid and delicate garment printing at low environmental impact cost.



SureColor SC-F2200 series

Transforming the Garment Printing Workflow

Traditional silk-screen printing requires extensive preparation, including the production of screens and the mixing of ink, as well as maintenance. For photos and other multicolored prints with gradations, the print process is long, and the longer the process, the more energy, water, materials, and other resources are used.
Digital prints produced with a SureColor SC-F2200 series print digital data from a PC directly onto T-shirts and other garments. So, not only is there no need for screens or plates but images and photos can be reproduced with smooth gradations and in full color.
The SureColor SC-F2200 series shortens the garment printing workflow. Moreover, the inkjet process saves resources and is more environmentally conscious than analog processes because there are no films, screens, or plates to produce, wash, or store.



Infant-safe Prints on Textiles

The UltraChrome DG inks and pretreatment liquid used in Epson's garment printers are Eco Passport [1] certified and complies with ZDHC MRSL [2] level1, indicating that they meet international safety standard for textiles. Under this standard, even printed textiles that directly contact the skin of infants and toddlers are safe. Additionally, the inks are approved with GOTS [3].

[1] Eco Passport by Oeko-Tex ® is a system by which textile chemical suppliers demonstrate that their products can be used in sustainable textile production.

[2] The evaluation is based on analytical testing in accordance with the Manufacturing Restricted Substances List (MRSL), which prohibits the intentional use of chemicals in the manufacturing process of textile products and others. It demonstrates compliance with the ZDHC MRSL Guidelines. ZDHC: Zero Discharge of Hazardous Chemicals.

[3] An international standard for products made from organic textiles.

Eco Features

SureColor SC-F2200 series

- Streamlined garment printing workflow compared to silk-screen printing.
- Saves resources because no plates or screens are used, unlike traditional printing processes that require a separate film and screen for each color. No washing required, since there are no screens.
- UltraChrome DG ink and pretreatment liquid are certified of Eco Passport.

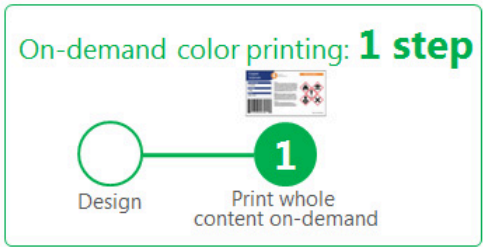
The Value of Color on Demand

Easily print full-color labels, tickets and tags - where and when users need them and in the quantities required.
Eliminate large inventories of pre-printed labels on demand by printing labels in short runs.

Epson ColorWorks Color Label Printers
(From the left: CW-C4000 series, CW-C6000 series, CW-C6500 series)

Epson's ColorWorks Inkjet Label Printers Simplify Traditional Processes

Thermal printers were traditionally used to overprint black onto pre-printed labels, but this approach can be slow, disruptive, wasteful and inconvenient.
Epson's range of on-demand color inkjet printers eliminates these issues easily. With the ability to print customized color labels, tickets and tags in-house as and when required, users no longer have to worry about inventory, production downtime, label waste, lost orders or late shipments.



Eco Features

- Simplifying the traditional label printing process, improve inventory management and reduce waste.
  - Streamline label production by printing color labels on-demand
  - No need to keep an inventory of pre-printed labels

Revamping the Photo Printing Workflow with Inkjet Minilabs

Epson inkjet minilabs are easier to maintain than traditional silver-halide photofinishing equipment. In addition to streamlining the photo printing workflow, they save maintenance costs, help to mitigate resource consumption and reduce the environmental impacts of the printing process.

Inkjet Minilab SureLab SL-D3000 series
(with sorter option)

Inkjet Minilab SureLab
SL-D1000 series

Efficient Photo Printing with Digital Printing

Silver-halide minilabs require chemical adjustment and calibration in the morning, as well as waste fluid processing and cleaning at the end of the day[1]. The SureLab SL-D3000 series/D1000 series inkjet minilab, however, does not require any special maintenance at startup and shutdown. Inkjet minilabs dramatically improve the photofinishers' work environment because, without chemicals, there is no waste liquid to be processed, no parts to be cleaned, and no chemical smell.

[1] According to Epson research.

Eco Features

SureLab SL-D3000 series／
D1000 series

- No chemicals means no liquid waste.
- No washing process means no water hookup is needed.

Product Environmental Information

Epson is taking steps to comply with the labeling requirements in major countries around the world.

Product Environmental Information

Epson Ecology Profiles

Safety Data Sheets for Printer Consumables

Compliance with Environmental Labels

An environmental label is a tool for making environmental declarations and providing other information about a product's environmental features or performance. The requirements for environmental labels are prescribed by various groups, including the International Standards Organization (ISO). The ISO defines the three types of environmental labels described below.

- Type Ⅰ Indicates that the product has met the criteria set by a certified third-party organization.
- Type Ⅱ A "self-declaration" label that indicates a company volunteers environmental information about its products.
(Epson's ecology profiles fall under the Type II category.)

- Type Ⅲ Indicates that the environmental effects of a product throughout its life cycle - from raw material procurement through manufacturing, distribution, use, disposal and recycling - are analyzed using LCA methodology and that the results of such analyses are published as quantitative data. The accuracy and reliability of the claimed data must be verified before being made public.

Epson offers products that comply with environmental labels around the world, enabling customers to choose environmentally conscious products.

■ Eco Labels Acquired In different Product Categories

	Type I												
Country / Region	U.S.	Germany	Sweden	China	Taiwan	South Korea	Singapore	Thailand	Malaysia	Japan	North America	World wide	World wide
Eco Label	EPEAT®	Blue Angel	TCO	China Environment Labelling	Green Mark	Eco Label	Thai Green Label	Thai Green Label	MyHIJAU	Eco Mark	Ecologo	GREEN GUARD	ECO PASSPORT, GOTS, Blue Sign, ZDHC

inkjet Printers (incl. MFPs)	•	•		•	•	•	•	•	•	•	•		
Page Printers (Laser & LED)		•			•	•				•			
SIDM Printers				•	•					•			
POS Printers													
Label Printers													
Label Works													
Scanners	•			•	•					•			
Ink/Toner Cartridges					•	• (Toner Cartridges)				•			
Inks												• (Sign)	• (Textile, garment)
Paper										•			
Projectors			•		•	•				•			
PCs (Incl. monitors)										•			
Watches										•			

	Type II			**Type III**	**Other Support**		
Country / Region	**Europe**	**Japan**	**Worldwide**	**Japan**	**Japan/ North America**	**China**	**Europe**
Eco Label	**THE ECO DECLARATION**	**PC Green Label**	**Ecology Profile**	**SuMPO EPD**	**ENERGY STAR ®[1]**	**Energy Conservation Certification**	**Food Contact Material regulation**

Inkjet Printers (incl. MFPs)	•		•	•	•	•	
Page Printers (Laser & LED)	•		•		•		
SIDM Printers	•		•		•	•	
POS Printers	•		•		•		
Label Printers	•		•		•		
Label Works					•		
Scanners	•		•	•	•	•	
Ink/Toner Cartridges							
Inks							•
Paper							
Projectors	•		•			•	
PCs (incl. monitors)		•			•		
Watches							

[1] The ENERGY STAR ® Program is also being implemented by EFTA, Switzerland, Canada, Australia, New Zealand and Taiwan. Third-party certification became a requirement in North America from January 2011.

For more on environmental labeling and environmental information on Epson products, please contact the Epson sales company in the country or region in which you live.

Epson Ecology Profiles

The environmental attributes of Epson brand products are published in the form of an "ecology profile." For finished products such as printers and scanners, the environmental attributes of the product as a whole, including but not limited to accompanying packaging material, supplies, and consumables, are published in the format specified by ECMA-370 [1]. For electronic devices we use our own format to provide data regarding quantitative substances included in these products.

[1] ECMA-370 specified requirements for environmental declarations established by the international standards organization ECMA International. "The Eco Declaration" is often abbreviated as "TED."

File for Company environmental profile (PDF,175KB)

Please contact your country or region's Epson sales company for more information about the Eco Declarations.

Safety Data Sheets for Printer Consumables

To enable customers to safely and properly use Epson products, including consumable printer supplies (ink cartridges, toner cartridges, ribbon cartridges, etc.), Epson provides Safety Data Sheets (SDS), which describe a product's chemical content as well as how to operate, handle, and store the product.

Environmental technology development

Goal

Dry Fiber Technology (DFT)

CO_2 Absorption Technology

Metal Powder Manufacturing Technology

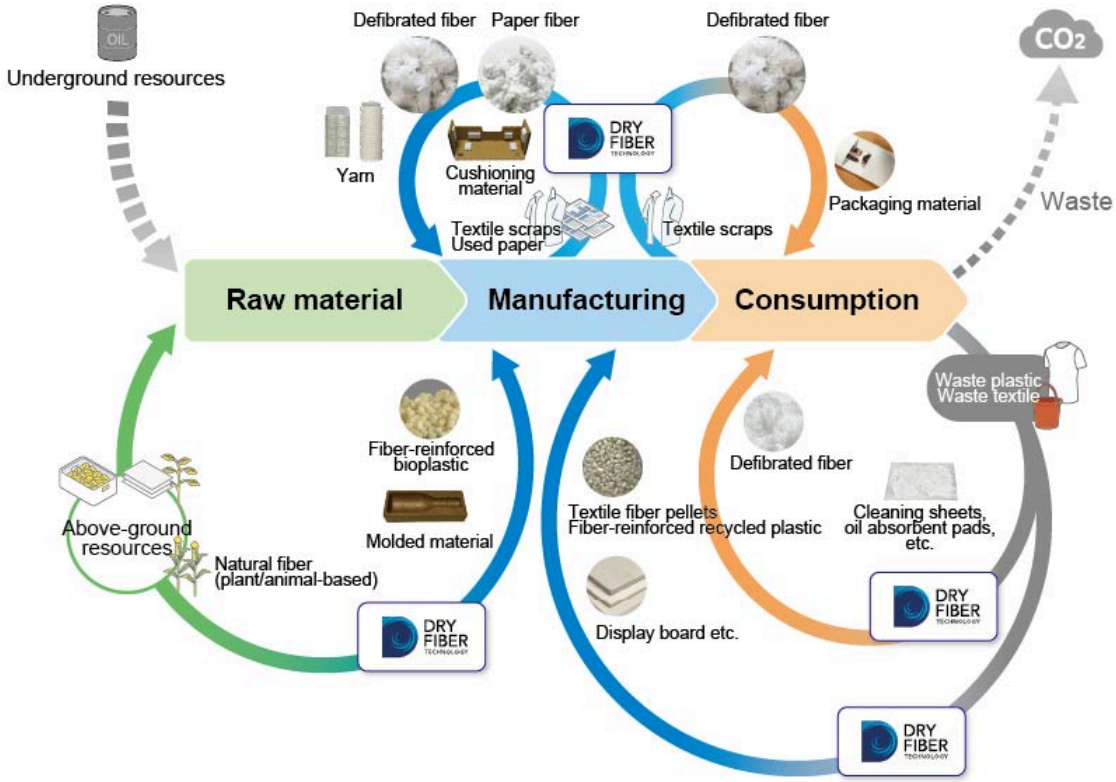
Goal

Developing environmental technology based on societal issues to foster the circular economy

We have identified four materialities in establishing the Epson 25 Renewed corporate vision. One of these is achieving sustainability in a circular economy. To realize this, we are focusing on developing technologies that contribute to closing the resource loop without relying on underground resources and aim for carbon negative. Additionally, we are actively promoting co-creation with partners to develop new solutions that contribute to reducing environmental impact, aiming to create new business opportunities.
For example, through material technologies such as Dry Fiber Technology (DFT) and Metal Powder Manufacturing Technology, we aim to replace underground resources with above-ground resources by utilizing unused materials and recycled materials.
Additionally, to achieve carbon negative, we are developing CO_2 absorption technologies to address unavoidable residual greenhouse gas emissions.

Epson 25 Renewed Corporate Vision

Dry Fiber Technology (DFT)



Closing the resource loop by recycling paper and textile fibers

Dry Fiber Technology is a defibration technology used in Epson's PaperLab dry-process office papermaking systems. We are evolving Dry Fiber Technology and expanding its use in-house to create sound-absorbing and cushioning materials for equipment from used paper. We are also developing new internal applications for cotton mill ends from clothing.
We have also entered into a joint development agreement with the Hong Kong Research Institute of Textiles and Apparel limited (HKRITA) to establish a process for defibrating elastic blended fabrics and tightly woven fabrics. This will enable the extraction of new recycled fibers from functional clothing, sheets, and dress shirts, as well as from factory mill ends, unsold items of clothing, and unwanted apparel.

HKRITA and Epson Develop Silk-like Regenerated Fiber from Cotton

Cotton-recovered cellulose fibers processed with Dry Fiber Technology (left: spinning, right: wet spinning)

Accelerating the social implementation of composite plastics for a circular economy in collaboration with Tohoku University

Using bioplastics and recycled plastics instead of virgin plastics is crucial for a circular economy. However, bioplastics often have lower mechanical strength and durability than virgin plastic, which limits their usage to certain applications.
Epson has been collaborating with Tohoku University under a comprehensive partnership agreement since 2006, engaging in systematic research and development as well as talent cultivation through industry-academia cooperation. Joint research on fiber-reinforced plastics, based on Dry Fiber Technology, is one of the efforts. In August 2023, the establishment of the "Sustainable Materials Co-

Creation Research Institute" aims to accelerate research and development, as well as social implementation, of foundational technologies for cellulose fiber-reinforced bioplastics and recycled plastics, which serve as sustainable materials to drive the circular economy.

The development of composite plastics using defibrated cellulose or fabric has been adopted as a sub-project under the "Construction of a Circular Economy System," which is part of the Cross-Ministerial Strategic Innovation Promotion Program (SIP)[1] Phase 3, led by the Cabinet Office. (July 2023)

[1] A national program led by the Council for Science, Technology, and Innovation (CSTI) aims to achieve scientific and technological innovation, transcending the boundaries of ministries and conventional fields.

Overview of Cross-Ministerial Strategic Innovation Promotion Program (SIP)

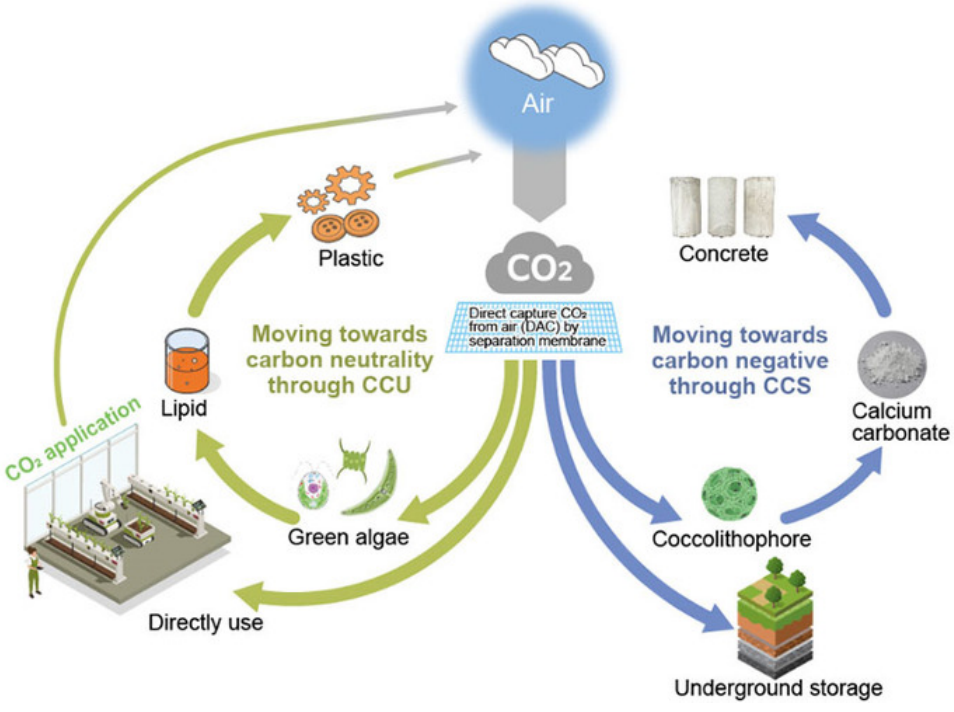
Related Information

Dry Fiber Technology

Epson and HKRITA Collaborating on the Development of New Fiber Recycling Technology Using Dry Fiber Technology

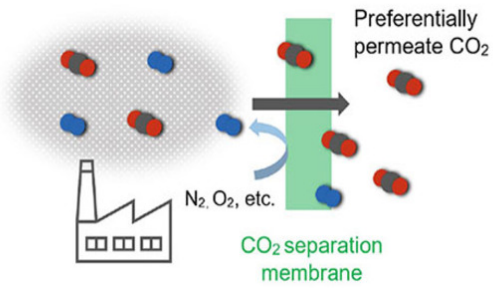
CO_2 Absorption Technology

Epson aims to establish CO_2 absorption technologies that can offset its own residual CO_2 emissions in pursuit of carbon negative, as outlined in its Environmental Vision 2050.



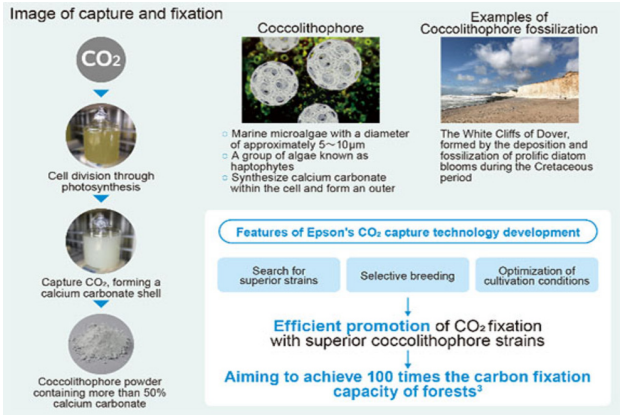
CO_2 separation membrane based on Epson's proprietary technologies

Epson is developing separation membrane that preferentially transmit CO_2 based on several proprietary technologies, such as thin film technology from inkjet heads. In the future, we aim to achieve high-efficiency CO_2 capture with compact, low-energy systems.



Biological carbon fixation

Epson is working on the development of CO_2 Currently, we are focusing on coccolithophore, which synthesize calcium carbonate, for CCS[2]. Through the optimization of cultivation conditions and the utilization of various breeding technologies, we have succeeded in increasing CO_2 fixation in our lab to 70 times that of forests[3]. Additionally, for CCU[4] In the future, we aim to more efficiently fix CO_2 and even pursue its utilization.



[2] CCS (Carbon dioxide Capture and Storage): Capturing CO_2 emitted from power plants, factories, etc., and storing it somewhere, such as underground

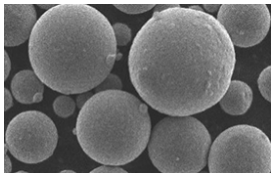
[3] Calculation is based on the data from the Forestry and Forest Products Research Institute (FFPRI), Japan

[4] CCU (Carbon dioxide Capture and Utilization): Capturing CO_2 emitted from power plants, factories, etc., and utilizing it such as direct use for the agricultural or for fuel production

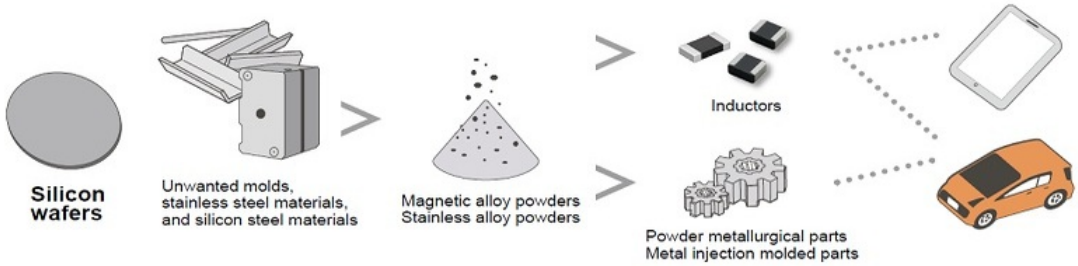
Metal Powder Manufacturing Technology

Recycling Metal Materials in the Epson Group with Original Metal Powder Manufacturing Technology

Epson Atmix Corporation is using its metal melting and atomizing process technologies to produce metal powder products. In February 2020, the company began taking silicon wafers that were used in Epson's semiconductor fabrication business and producing metal powder from them. This reuse of wafers reduces Epson's waste, CO_2 emissions, and use of underground resources such as virgin silicon. By the end of the 2021 fiscal year, Epson Atmix had recycled 8.5 tonnes' worth of silicon wafers. The company will continue to search for other materials that could potentially be upcycled into high-performance metal powders.



Super-fine powder with grain diameters of 10 microns or less



Metal refining plant that converts unwanted metals into material resources

In June 2025, Epson Atmix launched operatiions at a new plant to recycle used metals from the Epson Group's own operations and the local community. The recycled metals are used as raw materials for metal powder products. With the operation of this new plant, virgin raw materials such as blast furnace pure iron will be replaced with recycled metal materials, conserving underground resources and reducing CO_2 emissions.

Related Information

Metal Injection Molding (MIM)

Water Resources Management

Water is closely linked to other environmental factors, including climate change. Epson recognizes its dependence on water resources and acknowledges that the sustainability of water resources is critical for business continuity. Therefore, Epson proceed water management activities at the group level and at each site.

Water Resources (Performance)

Addressing Water Related Risk

Water Resources (Performance)

Production Initiatives

Epson has set group-wide goals for water usage efficiency and is working to reduce water consumption through the introduction of water-saving equipment and improving the recycling rate of industrial water. Additionally, the water intake situation at each site is monitored by categorizing it into surface water and groundwater. The company places importance not only on managing the water used in manufacturing processes but also on ensuring that all employees have access to safe drinking water and sanitary water environments. At some sites, improvements such as the introduction of water-saving toilets, as well as awareness-raising activities for employees on water conservation and pollution prevention, are being implemented.
Moreover, water management plans have been developed at 25 sites, which account for 88% of the total water usage across all manufacturing sites. These plans set goals for reducing water consumption and increasing water recycling rates, promoting the proper management of water resources at each site.

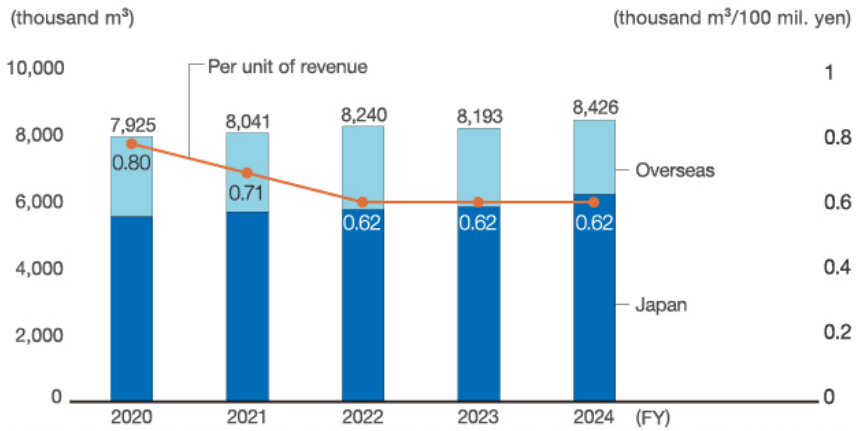
2024 Overview
Group Goal: 7.3 thousand m³ per billion yen (1% reduction in water intake per unit of annual revenue compared to the reference value)
Result: 6.2 thousand m³ per billion yen (16% reduction from the reference value)
Reference value: 7.4 thousand m³ per billion yen (average for FY2017 to FY2022)

16% Reduction

Water usage per unit of revenue
(compared to reference value)

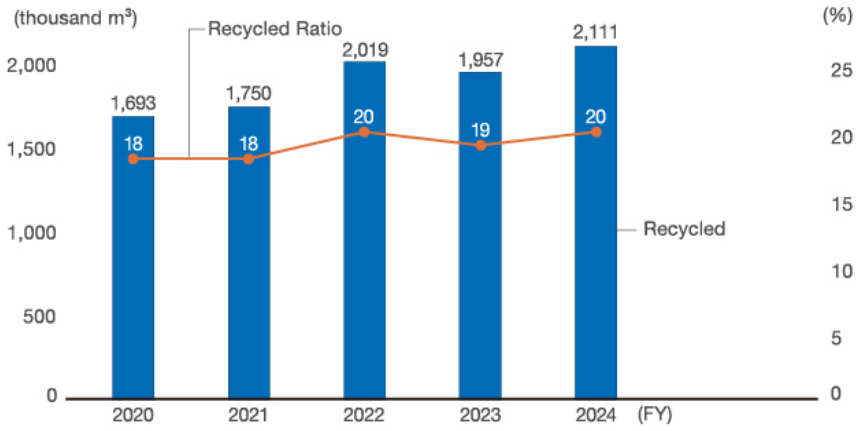
Case study

Water Usage



* Some figures differ from those in Sustainability Report 2024 because groundwater for snowmelt is accounted for.

Recycled Water



Registration and Certification as a "Water Cycle Company" by the Cabinet Secretariat (Japan)

Epson is actively promoting initiatives that contribute to the circulation of water resources, such as reducing water usage and promoting water recycling. In recognition of these outstanding efforts, Epson was registered and certified as a "Water Cycle ACTIVE Company" by the Headquarters for Water Cycle Policy, Cabinet Secretariat, under a system that started in 2024.

Click here for more information about the Water Cycle Companies Registration and Certification System (Japanese).

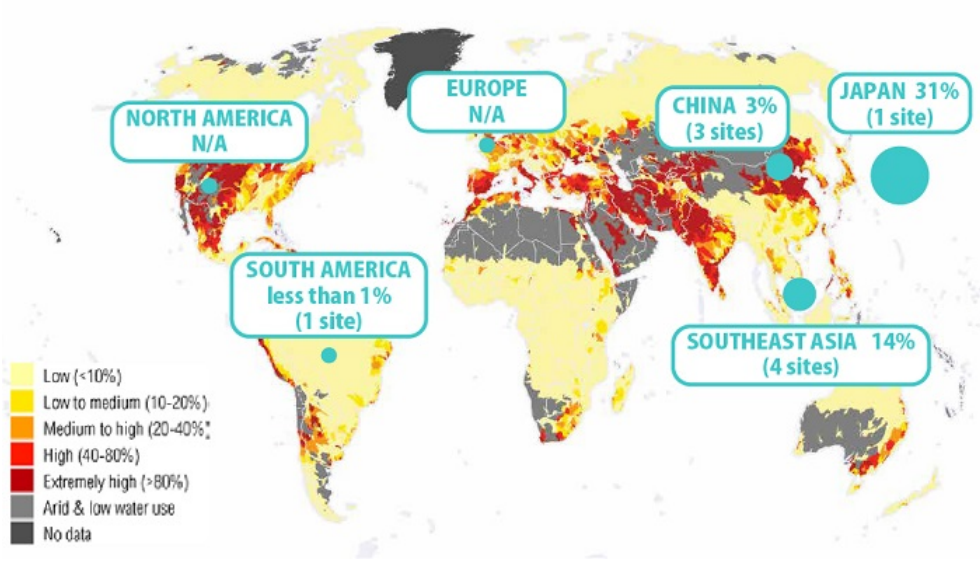
Addressing Water Related Risk

The water-related risks of Epson's production sites were assessed using two global standard tools for water risk assessments: Aqueduct, developed by the World Resources Institute (WRI), and Water Risk Filter, developed by the World Wide Fund for Nature (WWF). These tools assess water primarily from a perspective of physical quantity of water resources and water pollution risks. The

results of the assessments showed that no Epson site qualifies for the highest risk level per the overall risk indicators. However, it was found that nine of Epson's manufacturing sites in Japan, China, Southeast Asia, and South America are located in areas with water stress.

These nine sites account for 23% of the total number of manufacturing sites across the group and use approximately 4,100 thousand m³ of water (FY2024). We confirmed the local water risk situation through questionnaires and interviews at nine sites identified as being located in areas with water stress. Furthermore, we conducted interviews with local organizations that supply water to those production sites. As a result, we learned that the impact on operations from water shortages is limited at those sites.

Ratio of water withdrawal in areas with high water stress (by region) and water stress map (FY2024)



* The percentage of Epson's total water usage in each region with water stress is shown on a baseline water stress map from Aqueduct Global Maps 2.1 (WRI). The size of the circles visually indicates the percentage of water usage in each region.

* This map is a derivative of the World Resources Institute's Aqueduct Global Maps 2.1, created by Seiko Epson Corp. under the Creative Commons license provided by www.wri.org

Therefore, a reduction in water intake is not a major issue even at sites identified as being located in areas with water stress using screening tools. Nevertheless, water is an important resource. We recognize we must use water approximately. With this awareness in mind, considering insights gained from communication with the World Wide Fund for Nature Japan (WWF Japan), which has expertise in water resources, we have set the medium-term target below emphasizing water use efficiency. Moving forward, we will continue to monitor water usage and engage in activities to reduce water consumption within our company to realize this medium-term target. Together with this, we will comply with water-related regulations and continue to consider measures for sustainable water use in each basin in collaboration with environmental conservation groups and local stakeholders. Furthermore, to understand and assess water risks across the entire supply chain, Epson conducted a survey of some of its suppliers in FY2024. Based on their responses, we are analyzing water risks in the watersheds where our suppliers are located.

【Medium-term Target】

Group Target: Improve water use efficiency (1% reduction in water intake per unit of annual revenue compared to the reference value)

Period: From FY2023 to FY2025

Target value: 7.3 thousand m³ per billion yen

Reference value: 7.4 thousand m³ per billion yen (average for FY2017 to FY2022)

Evaluation and Response to Water-Related Risks under the 1.5°C Scenario

Based on the scenarios equivalent to a 1.5°C temperature increase presented by the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA), as well as analysis of water-related risks using internal and external information, we have confirmed that the changes in operational risks in the future due to factors such as flooding, sea-level rise, and drought are limited for our business locations. Short-term climate-related risks concerning our business locations and supply chain will be

addressed through our Business Continuity Plan (BCP).

Related Information

Response to TCFD Recommendations

Environmental Risk Management (Including initiatives for reducing water-related risks)

Global Environmental Data

Case study - Water Resources Management

Topic 1: Reducing Water Use by Improving Production Processes

Topic 2: Preserving Water Resources and Reducing Organic Waste

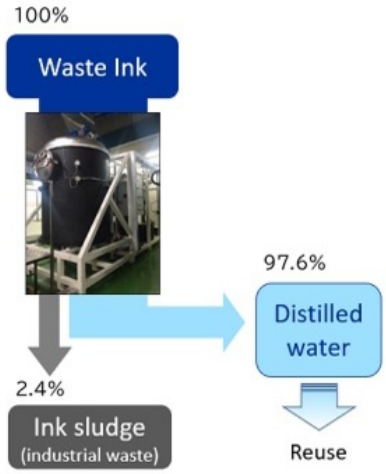
Other Case Studies

Topic 1: Reducing Water Use by Improving Production Processes

PT. Epson Batam, which manufactures ink for inkjet printers and ink bottles for printers with high-capacity ink tanks, has been reducing its water use since 2018, chiefly by improving its production processes. In FY2021, it reduced the cubic volume of water used by approximately 6,800 tonnes compared to FY2017.

Improvement 1: Introduction of a cooling water circulation system (FY2018-2020)
A new cooling water circulation system, which consists of a cooling system, flow meter, temperature sensor, and other components, reduced the amount of cooling water used when reusing waste after ink bottles are formed.

Improvement 2: Utilization of distilled water produced in waste ink treatment (FY2021)
The introduction of a high-efficiency waste ink treatment system with an evaporation system produces a more condensed form of waste ink, reducing the amount of ink sludge that is recycled as industrial waste. The amount of distilled water produced when the waste liquid is condensed increased, and the distilled water is reused for lavatories, leading to a reduction in the amount of water used.



Conceptual illustration of waste ink treatment by the waste ink treatment system (Improvement 2)

Topic 2: Preserving Water Resources and Reducing Organic Waste

Jakarta, the capital of Indonesia, is struggling with land subsidence cause by flooding in the rainy season and groundwater shortages when it is dry. P.T. Indonesia Epson Industry (IEI), a large-scale printer production site, has introduced biopores, holes in the ground where rain can infiltrate. This solution has gained a lot of attention as something even households can do. In FY2018, IEI put biopores in 260 spots on its premises. These allow about 8,400 liters of rain to go into the ground every year. They also help prevent flooding and the pooling of water where mosquitoes breed. Additionally, fallen leaves and other organic waste can go into the biopores, which enabled IEI to reduce waste by 272 kg. The organic matter turns into compost, which enriches the soil.

IEI has installed biopores about 800 spots total by 2020, and is extending the initiative outside its premises.

IEI employee digs hole for a biopore; a biopore in the ground

Other Case Studies

Initiatives of surface processing for metal plating (Singapore Epson Industrial Pte. Ltd.) (PDF,550KB)

Pollution Prevention and Chemical Management

To minimize the effects we have on the ecosystem and human life, Epson is working to control substances of concern in products, manage chemicals used in production processes, and manage environmental risks. Epson also emphasizes communication with stakeholders.

Management of Chemical Substances in Products

Chemical Management (Performance)

Environmental Risk Management

Management of Chemical Substances in Products

Epson gives preference to lower-impact alternatives when selecting the components and raw materials that make up its products.

Management of Chemical Substances in Products

The European RoHS Directive, REACH Regulation, U.S. TSCA, and other international chemical substance regulations have become stricter, making it more important than ever to properly manage the chemical substances that are used in products. Epson systematically controls product substance content at the purchasing, production, and shipping stages to ensure compliance with these restrictions.

Purchasing

- Instruct suppliers to comply with the requirements stated in the Epson Group Green Purchasing Standard for Production Materials[1].
- Exclude substances that are subject to legal, regulatory, or other restrictions, and obtain information about substances contained in parts and materials[2].

Production

- Confirm that no restricted substances are present in parts and materials before producing products.
  (Analyze parts and materials using x-ray fluorescence (XRF) spectrometer.)

Shipping

- Confirm that restricted substances have not been used in products before they are shipped.

[1] A written standard that sets forth requirements for the building and maintenance of a substance control system by suppliers who provide parts and materials used in Epson products. The standard also defines requirements relating to the elimination or exclusion of legally restricted substances and requirements for providing

information on substances present in parts and materials.

[2] Use of the industry standard information sharing scheme chemSHERPA

Green Purchasing

Examples of Management of Chemical Substances in Products

Legal and Regulatory Compliance

More and more nations are regulating chemicals. We investigate regulations and chemical hazards as early as possible by using such as an industry standard survey tools, analyze the information we obtain, and then supply products accordingly.

Measures for Meeting the RoHS Directive[1]

Epson has made compatibility with the European RoHS directive a standard feature of its entire lineup of products throughout the world, regardless of whether a particular product is bound for the European market or not.

[1] The European RoHS Directive restricts the use of the following 10 hazardous substances in electrical and electronic equipment: lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyl (PBB), polybrominated diphenyl ether (PBDE), phthalates DEHP, BBP, DBP and DIBP.

Actions for REACH Compliance

European REACH (Registration, Evaluation, Authorization and restriction of Chemicals) Regulation requires that we register the import and production of chemical substances and that we communicate and report when products contain harmful substances (e.g., substances of high concern: SVHC). Epson is meeting these requirements by submitting information in SCIP, the database for information on Substances of Concern In articles as such or in complex objects (Products) established under the European Waste Framework Directive, which became mandatory from January 2021. We also make information on the chemicals used in ink available to customers in the form of safety data sheets (SDS) published in 24 European languages on the websites of our European sales companies.

We are also responding to countries and areas besides Europe, to similarly meet our legal and societal obligations, as well as the needs of our customers.

Click here for information on our actions to comply with REACH regulations in Europe.

Response to GHS [2]

The United Nations declared in 2003 that a globally harmonized set of rules was needed to inform consumers and dealers about the hazards and appropriate handling of chemicals. Different nations and regions have enshrined these rules as law and made them obligatory at different times. Epson has continued to respond to the rules as they primarily apply to ink cartridges and toner cartridges.

[2] GHS (the Globally Harmonized System of Classification and Labelling of Chemicals) provides a unified, worldwide set of rules on harmful chemical substances. It harmonizes classification standards and labels for the hazards associated with individual chemicals and the way safety data sheets are written.

IEC 62474 compliance

Epson tracks the chemicals contained in Epson products by obtaining composition data on products from its suppliers based on the IEC 62474 Declarable Substances List (DSL).

With the exception of some substances, such as those that are exempt from the European RoHS Directive and SVHC of the European REACH Regulation, Epson products do not contain substances on the IEC 62474 DSL.

Providing Ink for All Types of Printed Matter

We provide inks with safe chemical properties as required for products made with inkjet technology (labels, stickers, fabric, etc.).

The Highest Level of Textile Product Safety

Eco Passpor[3] certification

Epson's textile printer inks[4] have acquired Eco Passport certification, indicating that they meet international safety standards for chemical substances used in textile production. Even printed textiles that directly contact the skin of infants and toddlers are safe.

[3] Eco Passport by Oeko-Tex® is a system by which textile chemical suppliers demonstrate that their products can be used in sustainable textile production.

[4] UltraChrome DS inks for textile printers, UltraChrome DG inks and dedicated fabric processing agents for garment printers, digital textile printer inks.

- **Safe Printing Ink for Food Labels**

Compliant with Food Contact Material regulation[5]

Epson's SurePress digital inkjet label presses and ColorWorks on-demand color label printers inks are compliant with Food Contact Materials (FCM) - EU Regulation framework (EC) No. 1935/2004.

[5] Only applicable when non-food contact surface printing.

Sample of food packages

Click here for the news release about the European FCM (PDF, 150KB)

Switching to Safer Materials (e.g. Eliminating Harmful Substances)

Epson standards specify substances that are prohibited from inclusion in products, and substances whose inclusion must be controlled. Information on these substances is collected and managed in a database. This database is used to ensure safety in all processes, from design and procurement to volume production. Epson is proactive in eliminating from its products substances that could adversely affect the environment or human health.

Chemical Management (Performance)

Epson has a system in place to control chemical substances in its production processes. We specify what substances are prohibited or restricted within the Epson Group and carefully assess the safety of chemicals before they are used at any Epson site. We use a

"E-Chem" chemical substances management system to register information about chemical substances used in production as well as in other areas. The system is also used to track the quantities of substances used, volatile organic compound (VOC) released into the environment, and emissions of substances subject to reporting under the Pollution Release and Transfer Registers (PRTR) system.

In Japan, we inspect CFC-related equipment and calculate the amount of leakage in accordance with the "Fluorocarbon Emissions Control Act" to ensure legal compliance. The Epson Group is currently below the reporting requirement in terms of amount of leakage.
CFCs have a very great greenhouse effect that is hundreds to more than 10,000 times greater than that of carbon dioxide. Hoping to prevent global warming, Epson will work to avoid leaks of CFC refrigerants and switch to refrigerants with a smaller greenhouse effect.

We report and publish data on these chemical substances and communicate with local communities to build trust.

Please see ESG data for data on PRTR substance emissions and VOC emissions.

Related Information
Global Environmental Data
Epson Group Business Site and Company Environmental Data (Japanese)

Environmental Risk Management

Any environmental pollution resulting from Epson's business activities could have a serious impact on residents of the surrounding area, as well as for the rest of the region or country. We follow Group-wide standards for pollution control and ensure that all members are well acquainted with the ideas and laws of environmental risk management. Each promotion unit uses ISO 14001 to identify and assess the risk of failing to meet standards or of experiencing environmental complaints or incidents in an ongoing effort to continuously mitigate those risks.

In FY2024, there was one instance where legal standard was exceeded, but the site promptly responded by reporting to the authorities and making improvements to the equipment. This incident had no significant impact on the environment. Additionally, there were no complaints, accidents, administrative penalties, or environmental-related fines.

Financial Assistance for	Description
Legal limit exceeded	Exceedance of sewage discharge standards [One instance: the level of biochemical oxygen demand (BOD)]

Environmental due diligence
We investigate the environmental aspects prior to acquiring new businesses and land through M&As as part of due diligence. We investigate all newly acquired sites, and not only manufacturing sites, to confirm whether there are any problems involving things such as soil and groundwater pollution and hazardous wastes prior to entering into new contractual agreements.

Soil and Groundwater Remediation

Epson is actively assessing the current status of soil and groundwater contamination at its sites and is working on remediation and preventive measures. Additionally, to prevent contamination from chemical substances and reduce associated risks, Epson is enhancing the safety of environmental facilities, including leak prevention measures.

As of FY2024, 6 sites have been confirmed to have contamination resulting from past business activities. At sites such as the head office, where trichloroethylene in groundwater was found to exceed regulatory standards during voluntary inspections, we are continuously implementing barrier measures and water extraction remediation to prevent off-site contamination. These measures require a long-term approach, but both the extent and concentration of contamination have been showing a declining trend, and regular monitoring confirms that no contamination is escaping off-site.

Moreover, if new contamination is discovered during investigations conducted under the Soil Contamination Countermeasures Act, such as when changes to the land are made, we will report the findings to the authorities and implement remediation and countermeasures appropriate to the specific conditions of each site. We will also work with authorities to ensure transparency of information.

Moving forward, Epson will continue to advance remediation using appropriate methods in line with legal requirements and developments in remediation technology, while also prioritizing communication with authorities and neighboring communities.

Site	Target Substances	Remediation	Causes of contamination	Investigation types for confirming contamination
Head Office	Groundwater: Trichloroethylene	Barrier, pump and treat, monitoring	Used in past business activities	Voluntary inspections (before regulation)
Fujimi	Groundwater: Trichloroethylene	Barrier, pump and treat, monitoring	Used in past business activities	Voluntary inspections (before regulation)
Suwa-Minami	Groundwater: Trichloroethylene	Barrier, pump and treat, monitoring	Used in past business activities	Voluntary inspections (before regulation)
Shiojiri	Groundwater: Trichloroethylene	Barrier, pump and treat, monitoring	Used in past business activities	Voluntary inspections (before regulation)
	Soil: Fluorine, lead	Containment (Capping) and monitoring	Unable to identify (no usage history from business activities)	Investigation in compliance with the Soil Contamination Countermeasures Act (construction plan)
Hirooka	Soil: Arsenic, fluoride, lead Groundwater: Arsenic	Containment (Capping) and monitoring	Unable to identify (no usage history from business activities)	Investigation in compliance with the Soil Contamination Countermeasures Act (employee dormitory demolition)
Ina	Soil: Fluoride, lead, trichloroethylene	Containment (Capping) and monitoring	Used in past business activities	Investigation in compliance with the Soil Contamination Countermeasures Act (factory building demolition)

Click here for the data on the trend of trichloroethylene concentration in groundwater.

Drainage Management

Epson's Chitose Plant is located upstream from Lake Utonai, which has been designated as a national wildlife protection area and a Ramsar Site.

Wastewater generated in manufacturing processes is detoxified and then discharged into sewers. To prevent leaked chemicals and other substances from leaking offsite, rainwater is collected in a retention basin to monitor the pH and oil levels before flowing into Lake Chitose and Lake Utonai via the Bibigawa River. All chemicals, waste materials, and wastewater treatment systems are located indoors to prevent them from leaking off the site.

Waste Management

Epson's internal policy specifies that wastes must be processed in the country in which they originate. We do not directly import or export any wastes, including hazardous wastes specified under the Basel Convention.
However, we employ subcontractors who satisfy the requirements of the Basel Convention to process fluorescent lamps, etc., that originate in countries and regions where it is difficult to process them domestically.

PCB Waste Storage
As of FY2022, PCB waste that was discovered and kept in storage has been finished to disposed of. Furthermore, when new PCB waste is discovered in the future, we will promptly carry out proper disposal by the legal deadline.

Asbestos

All buildings owned by the Epson Group in Japan were investigated for asbestos by the end of the 2019 fiscal year. Level 1 asbestos (extremely high friability) and level 2 asbestos (high friability) are enclosed, sealed or, when necessary, removed to prevent human exposure. We also regularly test for airborne asbestos dust indoors in areas where asbestos-containing building materials are used, including where asbestos has been enclosed and sealed, to verify safety.

Related Information
ISO 14001 Certification List
Epson Group Business Site and Company Environmental Data (Japanese)

Biodiversity Conservation

We both benefit from and affect biodiversity in myriad ways. Epson believes that preserving biodiversity is also vital to maintaining our business activities and our employees' lifestyles. Basically, we look to preserve biodiversity throughout our business activities and to raise employee awareness of its importance.

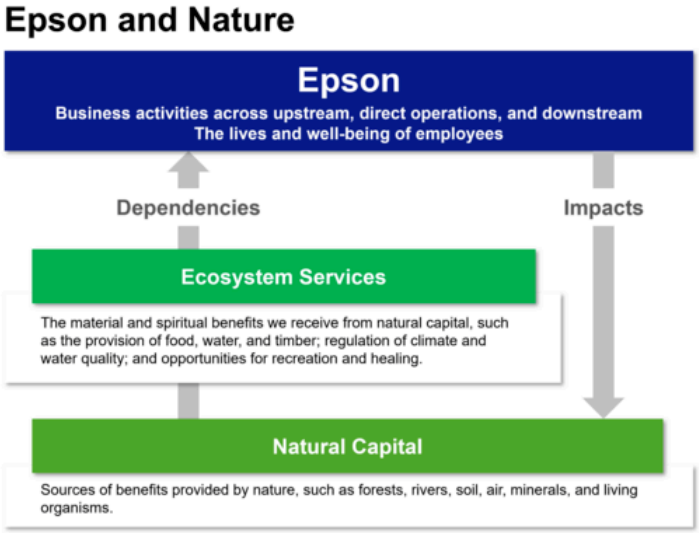
Approach

Response to TNFD Recommendations

Case Study

Approach

Epson's business activities and employees' lives are supported by ecosystem services ("Dependences" in the diagram). Additionally, our activities have both direct and indirect impacts on nature ("Impacts" in the diagram).
The global loss of biodiversity poses a significant risk to our business operations and daily lives. To prevent further loss of biodiversity, we must reduce the negative impact on nature. At the same time, as the importance of biodiversity conservation increases, we believe that our technology can contribute to solving these challenges. This also presents a business opportunity for Epson.



We are steadily mitigating the impact of five factors that cause biodiversity loss with initiatives in climate change strategy, resource

recycling and conservation, and pollution prevention and chemical management. Furthermore, Epson is advancing its analysis and response to the relationship (dependencies and impacts) between nature and its own business and supply chain, as well as the risks and opportunities related to biodiversity.

Factor	Relationship to Epson	Theme	Main Initiatives
Climate change	Greenhouse gas emissions	Climate change strategy	Energy-saving product designs Production and transport measures
Land use	Land alternations accompanying underground resource mining	Resource recycling Resource saving	Reduced-resource products and recycling Reduced resource inputs Waste recycling
Non-native species	Introduced along with imports of raw materials, parts, etc.		
Overconsumption	Consumption of timber resources		
Pollution	Release of chemicals into the environment due to insufficient control	Pollution Prevention and Chemical Management	Reduced inclusion in products and use during manufacturing of hazardous substances

Related Links

Environmental Vision 2050

Response to TNFD Recommendations

In June 2024, Epson expressed its support for the recommendations of the Taskforce on Nature-related Financial Disclosures (TNFD) and began disclosing information in accordance with the TNFD framework from FY2025.

Taskforce on Nature-related Financial Disclosures

Click here to Response to TNFD Recommendations.

Case Study

Forest Conservation

Epson has launched a three-year international partnership with the World Wide Fund for Nature (WWF), a global conservation organisation, to support WWF’s forest conservation and nature restoration activities at the "Deforestation Fronts" worldwide. Epson shares WWF's vision of "build a future in which people live in harmony with nature" and contributes to the preservation and restoration of forest biodiversity through its support of WWF's conservation activities.

Forest conservation projects supported by Epson in partnership with WWF

In May 2024, Yasunori Ogawa, global president of Epson(at the time), visited a project in Sumatra, Indonesia, and observed WWF's local activities, including the following:

- Forest and wildlife monitoring and patrols
- Promotion of sustainable agriculture and forest restoration (agroforestry) in cooperation with local communities
- Support for local communities (agriculture, education, healthcare, etc.)

Installation of equipment for wildlife research and observation, such as trail cameras

Inspection of nurseries for practicing natural restoration and agroforestry-based agriculture

See here for a news release regarding the partnership.

Consideration for Paper

The raw material for paper, wood, is a resource obtained from forests. Epson is mindful of paper procurement and usage from the perspective of forest conservation.

■ Paper Products Procurement

Epson manages its entire supply chain from the immediate supplier all the way back to the forest to ensure the legality, sustainability and environmental safety of the paper products we procure.

Paper Products Procurement

■ Internal Paper Reduction Activities

Seiko Epson corporation (Japan) is working on reducing paper usage in its internal operations. By reviewing business operations that use paper, we achieved the goal of halving the average daily paper usage per employee company-wide in the first half of fiscal 2021 compared to the same period of the previous year.

■ Promoting Paper Recycling

The paper made by Epson's dry-process office papermaking machine, PaperLab, is 100% composed of waste paper and does not use any new wood. Epson actively promotes the recycle of paper used within the company through PaperLab.

Additionally, Epson manufactures printer ink absorbers, sound-absorbing materials for PaperLab using parts made from recycled paper with its proprietary Dry Fiber Technology.

Click here for information about how PaperLab contributes to the environment.
Click here for more information about Epson's Dry Fiber Technology.

Water Conservation

Epson has formed a three-year partnership with Conservation International, an international environmental NGO dedicated to protecting nature, to safeguard water resources. Under this partnership, Epson is contributing USD 1.27 million to Conservation International's watershed restoration and water quality improvement projects in the Philippines, Indonesia, and Brazil, helping to restore water sources and improve water quality in these regions. Local employees of the Epson Group are also participating in these projects as part of Epson's global water resource protection activities.

See here for a news release regarding the partnership.
Click here for details about the project.

Signing ceremony for the establishment of the Kalunpan River Basin Management Council (support project)

Coral Reef Transplant Project (Indonesia)

PT. Epson Batam (Indonesia) has been helping to back a coral transplant project on Abang Island since 2015 to preserve biodiversity. The project, which involves people from Indonesia's fishing and tourist industries as well as government and NGOs, was created to grow coral reefs (coral gardens) by planting coral fragments over a gradually larger area. Every summer, local Epson Group employees dive into the sea to transplant coral or check its growth. In addition to preserving marine biodiversity, this project also helps to strengthen the disaster resilience of coastal areas by reducing the risk of wave damage through the formation of coral reefs. Residents of Abang Island are hopeful that the transplanted coral can improve the environment for fish and increase their numbers.

Support for Wildlife Rescue Center (Belgium)

Epson Europe B.V., Belgium Office (Belgium) continues to support the activities of Natuurhulpcentrum VZW, the largest wildlife rescue center in Belgium, through the donation of projectors and printers.
The donated equipment enhances visitor engagement and streamlines administrative operations, helping to ensure that rescued animals receive the best possible care.

Greening and Beautification Activities (Global)

Epson conducts greening and beautification activities around the world to foster a culture in which each employee voluntarily and actively participates in local community activities as a citizen.

In November 2024, more than 70 employees of Epson (Thailand) Co., Ltd. participated in a mangrove planting project along the Gulf of Thailand, contributing to the conservation of the local ecosystem and the expansion of ocean carbon sinks.


Afforestation activities along the coast of the Gulf of Thailand

Employees of Epson Wuxi Co., Ltd. (China) and members of their families have been participating in local tree planting events that have taken place every March since 2010. In 2025, 40 participants planted trees at the event, contributing to conservation of the ecosystem and restoration of the Taihu Lake basin.


Tree planting in the Taihu Lake basin

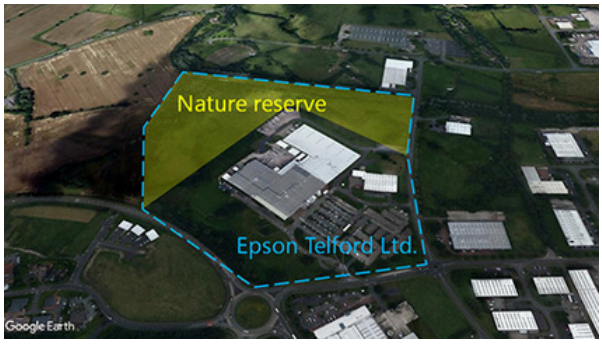
To mark World Environment Day 2024, volunteers from Epson Deutschland GmbH (Germany) picked up trash along the banks of the Rhine River in a project that also helped to keep plastic waste from flowing into the sea.

Cleaning up the Rhine

Starting in 1992, employees of Epson Portland Inc. (U.S.) have been volunteering their time to pick up garbage several times a year along a section of U.S. Highway 26, which runs just north of the company.

Activities in Protected Area (U.K.)

Epson Telford Ltd. (ETL) is a core production site for manufacturing ink cartridges for European market and textile ink. It was the first site within the Epson group to achieve ISO14001 and participates in many environmental preservation activities such as recycling of wastes and energy-saving. With an area of 220, 000 m², the site includes a nature reserve that many rabbits have made their home.



ETL has not only reduced its production based environmental impact, but also protects and supports its local environment by:

- Setting aside about 1/3 of its land for the nature reserve,
  - Creating special areas to preserve the habitat of the crested newt and great burnet[1], which have been specified as rare species in the U.K.
  - Planting trees to offset company car emissions
  - Introducing bee hives within the site so as to improve the diversity of local living creature and preserve bee species.

Also other local species have visited or have made homes within the sites.

- Raptors: Buzzards, kestrels, owls
- Birds: Partridges, red starts, yellow hammers, green woodpeckers
- Others: Foxes, etc.

[1] Both species have been registered by the International Union for Conservation of Nature (IUCN) on the Red List (Least Concern: LC).

Bee hives introduced in the site

Pond in the special area

Find out about the IUCN

Eco Community

We are working to achieve new socially and economically sustainable practices through environmental community action centered on products and services.

Eco Education

Eco Communication

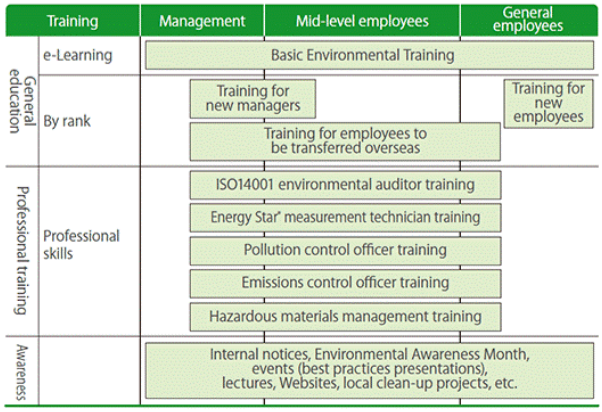
Eco Education

Epson wants its employees to remain mindful of the environment while on the job. We feel it is important for them to consider how their conduct, both at work and at home, affects the environment and we want them to take the initiative in coming up with solutions. Toward that end, Epson provides environmental education and promotes correct understanding of ecological practices.
Epson also contributes to broader environmental preservation by sharing its knowledge and experience with outside organizations.

In-House Environmental Education

Our environmental education curriculum for employees consists of a general education program, a professional education program, and general awareness-building activities. The general education program consists of a mandatory Basic Environmental Training course as a first step, followed by echelon-based training courses in which non-management employees, managers, and executives learn what action they need to take in their respective positions to address environmental issues. In the professional education program, employees select the courses they need in their particular area in order to acquire the skills and knowledge required for environmental action. We also build general environmental awareness among all personnel in a variety of ways, including through environmental messages from managers and executives to all employees and by implementing special actions during Environmental Sustainability Month and Energy Conservation Month.

Environmental Education System (Japan)



FY2024 Environmental Education (Japan)

Training	Participants (Certification Recipients)[1]
Basic Environmental Training (2024 Edition)	19,133
ISO14001 environmental auditor training	86 (1,398)

[1] This is the number of persons who took Basic Environmental Training during the period it was offered (July 2024 to March 2025).

ISO 14001 figures show the number of certified person as of the end of March 2025.

Development of local and social environmental human resources

In response to requests from schools, communities, and other organizations, our employees give guest lectures and deliver on-site educational programs for students.

Support for Local Environmental Education and Glocal Human Resource Development (Japan)

Topic 1

Epson supported a program called the SDGs QUEST Mirai Koshien 2024 Koshinetsu Area Tournament. This is a program that encourages high school students to explore the Sustainable Development Goals (SDGs) as a team, think proactively about the future of our planet, and develop ideas to solve societal issues. These ideas are then presented and recognized through a formal competition. Since its launch in 2019, over 10,000 students have participated, generating a wide range of ideas. The 2024 Koshinetsu Area Competition, covering Nagano, Yamanashi, and Niigata prefectures, was the first regional event of its kind.

Twelve finalists were selected from the entries submitted by teams from local high schools. At the final ceremony held in March 2025, the team “jibasangirls” from Niigata Prefectural Sanjo High School was awarded the Seiko Epson Prize for their proposal titled, “Revitalizing Local Industries in Tsubame-Sanjo, the Town of Manufacturing.”

In August 2025, four members of the team were invited to Seiko Epson to deepen their understanding and interest in the history, technology, and corporate culture of a manufacturing company. They also had the opportunity to engage in discussions with our employees about their ideas, allowing them to gain practical learning experience.

We will also support the 2025 Alps Area Tournament (Nagano, Yamanashi, and Shizuoka Prefectures) and provide strong backing for local high school students who want to take on challenges and learn.

2024 Koshinetsu Area Tournament Seiko Epson Prize
Niigata Prefectural Sanjo High School Jibasangirls

Revitalizing Local Industries in the Manufacturing Town of Tsubame-Sanjo
To help revitalize the local metalworking industry in Tsubame-Sanjo, the team proposed a hands-on select shop called “JIBASAN LABO.” The idea was inspired by their research into the effects of “magic metal,” and combines youth-oriented products with interactive workshops. This concept aims to spark new possibilities for local industries by engaging younger people through both experience and innovation.

Click here for the presentation video (Japanese)

Check here for the information about the Koshinetsu Area Tournament and the results of the 2024 nationwide tournaments (Japanese).

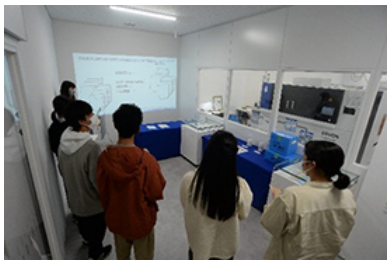
Topic 2

In Suwa City, Nagano Prefecture, where Epson is headquartered, the Suwa Future Creation "Children's Dream Project" is being promoted as an opportunity for elementary and junior high school students to think about local community development. Epson helped implement an environmental education program as part of the project’s fiscal 2023 activities under the theme "Achieving a Zero Carbon City." An Epson employee served as one of the lecturers to introduce participants to the current state of global environmental issues and the company's environmental initiatives. Suwa City, the host of the event, also introduced its efforts to improve the environment of Lake Suwa and reduce and recycle food waste. Participants listened with great interest and had a lot of questions.

Topic 3

Nagano Senior High School, in Nagano Prefecture, has been designated by the Ministry of Education, Culture, Sports, Science and Technology to participate in a glocalization project to promote innovation in high school education in collaboration with local communities. The aim is to develop human resources who can recommend solutions to local issues from a global perspective.
In November 2021, first-year students who are doing research into local sources of renewable energy and into the question of what companies and individuals can do to address global environmental problems visited Seiko Epson as part of their fieldwork. Epson shared knowledge that we have accumulated in these areas through our own activities, provided real-life examples, and talked about the concept of co-creation and the adoption of locally generated renewable electricity for realizing our environmental vision.

Students were also shown products such as Epson's PaperLab, which is a dry-process office papermaking system, and large format printers that are capable of printing on paper and a variety of other materials. In this way, the students learned more about the resource-related issues that Epson sees as important and about our products and services that help to reduce environmental impacts.



Nagano Senior High School: Nagano Glocal Project (Japanese)

Environmental Lectures for University Students (Japan)

In February 2020, we hosted practicum students of Shinshu University for a course called the Eco-Mind Program: Experience-Based Training for Environmental Competence.

This practicum is designed to give students a chance to learn directly from real-world practitioners about issues and initiatives in the environmental field. The head of Seiko Epson's environmental affairs organization lectured on Epson's environmental stance and initiatives while providing specific examples. He took questions from the students and listened to their ideas.

After the lecture, the students were given a tour of Epson's Manufacturing Museum and a demonstration of how Epson's PaperLab dry process office papermaking system recycles and produces paper. They were also given a tour of Epson Mizube Corporation, an Epson subsidiary that sorts and processes used ink cartridges. They deepened their understanding about a variety of actions that we as a manufacturing company are taking to address social issues.

When addressing environmental concerns, it is important to take local action to solve global issues. That is why we seek to realize a sustainable society, starting from here in Shinshu, and will continue to engage the local community in a wide range of ways.

Environmental Education for elementary school Students (China)

In October 2023, Tianjin Epson Co., Ltd. collaborated with the Tianjin Society for the Promotion of Ecological Ethics and Tianjin Nankai Ecology and Environment Bureau to educate approximately 200 elementary school students about everyday garbage separation and recycling.

Our employees shared the knowledge and expertise on waste sorting and resource utilization that Epson has accumulated through its business activities, aiming to raise the students' awareness of environmental protection.

Related Information

Future Generation Education (Environment)

Eco Communication

Introduction of communications on environmental topics.

Environmental Management Seminar (Japan)

In January 2023, Epson Sales Japan hosted an environmental management seminar entitled "Future Supplier Engagement as Seen by Sustainable Companies." It was open to companies interested in eco-conscious initiatives in their supply chains. In addition to members of Kokuyo Co., Ltd. and Seiko Epson Corporation who are responsible for promoting those companies' sustainability efforts, the seminar featured an expert speaker, Mitsuru Omori, Senior Manager at The Japan Research Institute, Limited. The two companies introduced their past efforts and discussed market trends and the environmental responses that will be required of supply chains in the future and shared with participants the current status and prospects of supplier engagement in the decarbonization trend.

Epson Wins fourth Consecutive Award at ESG Finance Awards Japan

The ESG Finance Awards Japan, organized by the Ministry of the Environment, recognizes progressive, exemplary initiatives driven by investors, financial institutions, financial services providers, and companies that have made an impact by actively engaging in ESG financing or environmental and social enterprises with the goal of encouraging the spread and expansion of ESG financing. In the Environmentally Sustainable Company category, companies are evaluated on the quality of their information disclosures concerning things such as risks, business opportunities, and strategic opportunities related to environmental issues that could have a substantial impact on corporate value and on the effectiveness that the initiatives they have disclosed have had on corporate management.
Epson was selected as an "Environmentally Sustainable Company" and was awarded Silver, making this the fourth consecutive year that Epson has been recognized in the Environmentally Sustainable Company category. (February 2025)

Click here for the video introducing the initiatives (Japanese).

Reasons Seiko Epson Was Selected for the Silver Award and the Minister of the Environment Award
The secretariat praised the company for its organizational ingenuity in promoting sustainability, such as having the CFO also serve as the CSuO. The company has shown a commitment to embedding its purpose, "Our philosophy of efficient, compact and precise innovation enriches lives and helps create a better world," internally even as external conditions have become more challenging. In the future, the company is expected to achieve qualitative improvements in its initiatives by clearly demonstrating the relationship between non-financial initiatives and corporate value, as well as to achieve results in growth areas.

Environmental Value Award at the 3rd Annual Nikkei SDGs Management Grand Prix

The Environmental Value Award is granted to companies that earn a high overall score for initiatives relating to climate change, resources, and biodiversity. Companies are evaluated on things such as policies regarding the analysis of risks and opportunities and environmental audits; greenhouse gas emissions, the scope of emissions measured, and actual GHG quantities; quantitative measurement and long-term targets for wastes, power consumption, and water resources; climate change adaptation measures and environmental solutions; and activities to protect ecosystems.
Seiko Epson won its first Environmental Value Award in recognition of its efforts to reduce its own greenhouse gas emissions and, increasingly important, those of its business partners, as well as for its support for the TCFD recommendations and disclosure of emissions information in securities reports, and its ambitious targets for introducing renewable electricity.
Epson will continue to strive to contribute to the world through its technologies, products and services in order to achieve a better, more sustainable world as envisioned by the SDGs. (November 2021)

Discussion with Other Companies (Japan)

The Kansai Productivity Center (KPC) is a non-profit organization that assists companies that have a large presence in the Kansai Region, a large area of Japan that includes cities such as Kyoto, Osaka, and Nara, with management innovation and human resources development. In December 2021, Epson responded to a request by the KPC to host a group of visitors taking a course in management strategy at the KPC's Management School. The visitors, who were from four leading Kansai companies in various industries, were exploring the topic of management's response to environmental problems, which they believe will be an important part of business administration in the future. They discussed a number of subjects with Seiko Epson executives, including the impact that decarbonization and carbon neutral initiatives will have on society and companies. Both sides benefited from the exchange of information.
In addition, we familiarized the visitors with Epson and some of its business activities by giving them a tour of Epson's Monozukuri Museum and paper recycling center, where paper used internally is recycled using the PaperLab, a dry-process office papermaking system, and by showing them Epson Mizube, a special subsidiary that employs a large number of people with disabilities, providing them with reasonable accommodations and jobs that fit their abilities.

Community Dialog (Japan)

Seiko Epson and Epson Group companies in Japan organize events to exchange ideas with the local residents of the communities in which we operate for the purpose of cultivating a deeper understanding of our environmental initiatives and risk management system.

Click here for details.

Environmental Communication Guidelines

Epson's Global Environmental Communication Guidelines, established in 2008, provides rules for environment-related communications. The guidelines are used throughout the Epson Group to help ensure that the information we release about our environmental programs and environmental performance is correct and easy to understand.

Related Information

Evaluation by External Parties

Environmental Message

Engineering Precision. Innovating Sustainability.

Here at Epson, our technology is driven by our commitment to society and the environment. We focus on the essential and eliminate the unnecessary to create greater value. With this philosophy at our core, Epson has always strived to meet sustainability needs and will continue to do so.

"Engineering Precision. Innovating Sustainability."

This message expresses Epson's commitment as a manufacturer to realizing a sustainable future by driving technological advances based on a philosophy of efficient, compact, and precise innovation.
The pursuit of ever greater efficiency, compactness, and precision that we have embraced for so long goes well beyond technology. "Efficient, compact, and precise" encompass a philosophy for eliminating waste, reducing dimensions, and increasing precision.
We believe that this approach can enable us to create even greater social value. In other words, it is the idea that less is more. More and bigger by themselves do not equal enrichment. After all, bigger is not always better. Epson considers spiritual and cultural enrichment to be as important as material and economic enrichment.
We believe that enriching the lives of current and future generations lies at the crux of sustainability.
We at Epson respect the natural environment as something that helps to enrich lives and thus seek to strike a harmonious balance between our business activities and the environment. And we will continue to challenge ourselves to realize a sustainable future.

Purpose

Environmental Vision 2050

Decarbonization

Environmental History

Global Environment Portal

Canada	U.S.	Latin America	Brazill
Austria	France	Germany	Italy
Portugal	Spain	Switzerland	United Kingdom
Europe,Middle East & Africa	China	Hong Kong	Japan
South Korea	Taiwan	Singapore	Australia
New Zealand			