Sustainability

Teijin Group Global Environmental Charter

The Teijin Group defines its Global Environmental Charter and Global Environmental Activity Goals in line with our corporate philosophy.

The Teijin Group Global Environmental Charter

In order to realize a sustainable society, and safeguard our planet and all life on it, we will:

1. Take action to preserve the global environment through promoting effective use of resources and energy, and reducing our environmental impact.
2. Provide society with products and services that reduce environmental impact through the development of science and technology that prioritizes consideration for the global environment.
3. Actively participate in social activities aimed at environmental preservation through education and raising awareness of group employees, and cooperating with local communities in which we conduct business activities.

(Established by resolution of the Board of Directors in December 1992; revised in May 2025)

The Teijin Group Global Environmental Activity Goals

Promotion of environmental preservation activities

1. Throughout our business operations, we will make efforts to reduce our environmental impact, including the reduction of CO2 emissions, conserve energy and resources, and make effective use of waste.
2. We will appropriately manage biological and chemical substances in compliance with the related laws and regulations to ensure that our use of these substances will not cause damage to the environment or to the safety and health of people.
3. We will provide as many people as possible with appropriate information and support so that our products will be transported, used, and disposed of in a safe and environmentally friendly manner.

Promotion of design for environment and environmental business

4. We will design products in an environmentally friendly manner in cooperation with our customers and suppliers, while promoting green purchasing and procurement as well as green transportation. In addition, we will conduct necessary assessment at the planning stage of business projects, thereby reducing potential risks to human health and the environment.
5. We will further develop technologies for environmental preservation and environmental improvement, including technologies that contribute to energy conservation and 3R activities (activities to promote the reduction, reuse, and recycling of materials) and will expand our environmental business taking advantage of our Group’s proprietary technologies and strong market presence.

Expansion of environmental communication and social contribution activities

6. We will clearly show our commitment to making contributions to society by such measures as setting and announcing environmental impact reduction targets and will engage in communication with a range of our stakeholders, including local communities in which we conduct business.
7. We will raise the awareness of all Group employees and provide them with education on environmental preservation as well as support them in conducting environmental preservation activities, such as energy conservation activities at their households and in their local communities.

(Established in December 1992; revised in July 2007)

Sustainability

Status of acquisition of environmental management system certifications

The Teijin Group has established the 'Standards for the establishment of the Group's ESH Management System' and is promoting the acquisition of ISO 14001 certification, an international standard for environmental management, according to the level of environmental impact.

Japan (20 companies, 34 factories)

Teijin	Iwakuni, Matsuyama, Chiba, Mishima, Ibigawa, Teijin Composites Innovation Center, Mihara Factory
Hiroshima Plastic	
Teiyo	
Teijin Frontier	Head office, Ibigawa factory
Teijin Frontier Knitting	Komatsu, Kaga, Kushi, Shibayama
Teijin Frontier Cuore	Head office
Frontier Tex	
Teijin Tedy	
Teijin Cordley	
Unisel	
Teijin Pharma	Tokyo Research Center, Iwakuni, Home Healthcare Technical Service Center
Infocom	Head office, Kansai
Infocom West Japan	Matsuyama
Teijin Eco-Science	Matsuyama
Teijin Kosan	Ehime
Toho Chemical Engineering & Construction	Mishima, Tokushima

Toho Machinery	
Teiken	Head office
Texet	Head office
Teijin Regenet	Iwakuni

Overseas (18 companies, 39 factories)

The Netherlands	Teijin Aramid	Delfzijl、Arnhem、Emmen
U.S.	Teijin Carbon America	Rockwood、Greenwood
	Teijin Automotive Technologies	Conneaut、Serepta、North Baltimore、Van Wert、Carey、Grabill、Huntington、Lenoir、Salisbury、Seguin
China	Nantong Teijin	
	Nantong Teijin Automotive Fabrics Finishing (Nantong)	
	Teijin Chemicals Plastic Compounds Shanghai	
	Teijin Polycarbonate China	
	N.I. TEIJIN AIRBAG FABRIC (NANTONG)	
Thailand	Teijin Polyester (Thailand)	
	Teijin (Thailand)	
	Thai Namsiri Intertex	Weaving：Chacheongsao、Dyeing：Samutprakarn
	Teijin Cord (Thailand)	
	Teijin Corporation (Thailand)	
	Teijin FRA Tire Cord (Thailand)	
Germany	Teijin Carbon Europe	
	J.H. Ziegler	Achern
Mexico	Teijin Automotive Technologies	Saltillo、Tijuana
Portugal	Teijin Automotive Technologies	Leça do Balio、Palmela

Czech Republic	Teijin Automotive Technologies	Čejetice、Čejetičky、Milovice
Hungary	J.H. Ziegler	Bábolna
South Korea	Teijin Lielsort Korea	
Spain	Esteve Teijin Healthcare S.L.	

Sustainability

Climate Change

The Teijin Group has designated "climate change mitigation and adaptation" as an important issue. Accordingly, the Group is leveraging lightweight and energy-efficient technologies to contribute to the transition to a carbon-free society. At the same time, the Group is making efforts to reduce greenhouse gas (GHG) emissions from its business activities. We have also announced our support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) in March 2019, and have been promoting information disclosure on climate change in line with these recommendations.

Governance

Policies related to materiality, such as climate change mitigation and adaptation, are matters for resolution by the Board of Directors, and sustainability initiatives in line with these policies are managed by the executive side, which also sets management indicators as appropriate. Progress on these initiatives is reported to the Board of Directors by the CEO or the Chief Human Resources Officer/Chief Sustainability Officer, as needed.

Strategy

We view climate change mitigation and adaptation as a business opportunity. Leveraging our accumulated strengths, we provide solutions related to renewable energy, such as optical fiber cable reinforcement materials and mooring ropes for offshore wind power generation, in the infrastructure & industrial market, as well as solutions for vehicle electrification extending driving distances and weight reduction in the mobility market. In addition, we analyzed the impact of climate change-related transition risks and physical risks on our operations from the three perspectives listed below. Based on this analysis, we have established long-term environmental targets and are making efforts to reduce our CO_2 emissions accordingly.

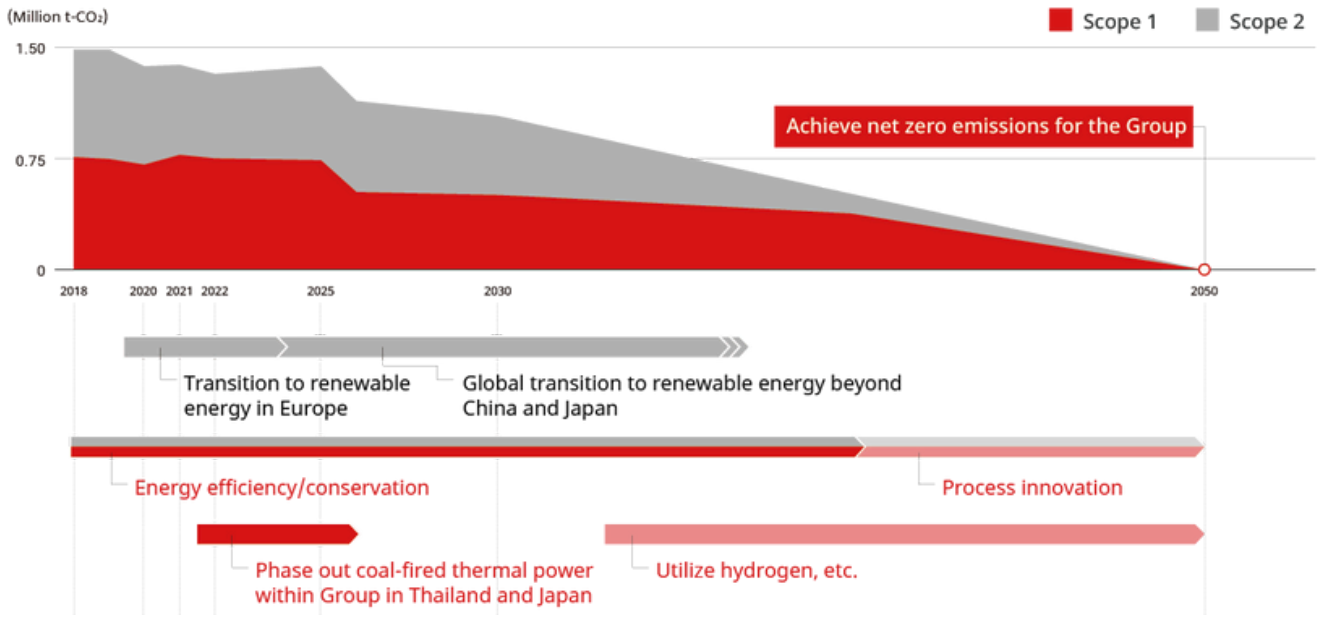
Climate Change-Related Opportunities and Risks

Category	Major opportunities	Time frame	Major initiatives
Opportunities concerning products and ser vices	• Increase in profits through the provision of solutions that contribute to "climate change mitigation and adaptation"	Short to long term	• Provision of solutions for vehicle electrification extending driving distances and weight reduction in the mobility market • Provision of solutions related to renewable energy in the infrastructure & industrial market

Category		Major risks	Time frame	Major initiatives
Transition risks	Policies and legal regulations	• Increase in costs due to carbon tax, EU Emissions Trading System, etc.	Short to long term	• Monitoring of trends in various policies and regulations • Introduction of internal carbon pricing system targeting capital expenditure that can lead to an increase/decrease in CO2 emissions
	Market and reputation	• Decrease in corporate value and worsening of reputation due to an increase in Group CO2 emissions	Medium to long term	• Management of CO2 emissions of Group companies both in Japan and overseas, including affiliated companies • Formulation and implementation of roadmap for achieving long-term environmental targets
Physical risks	Acute and chronic risks	• Suspension of business activities as a result of increased intensity of natural disasters such as typhoons and floods, long-term temperature increases, and rising sea levels, stemming from climate change	Short to long term	• Regular review of business continuity plan (BCP) and implementation of various disaster prevention drills

Roadmap for Reducing Group CO2 Emissions (Scope 1 + Scope 2)

Regarding CO2 emissions, Teijin is implementing initiatives based on its roadmap to achieve net zero emissions by 2050, including shifting to renewable energ y sources for electricity and clean energ y for heat sources. The shift to renewable energ y is progressing smoothly in Europe and is ahead of schedule in China. In addition, projects to fully phase out coal have finished in Thailand, and are likely to be completed in Japan by the end of FY2025, with the full benefits of these projects set to manifest from FY2026.



Scenario Analysis Related to Climate Change

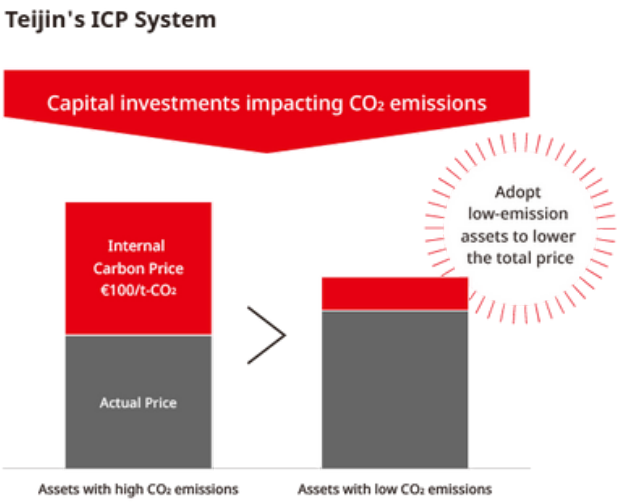
After identifying businesses and industries that have the potential to be significantly impacted by climate change, the Teijin Group has been conducting an analysis of the level of this impact based on the 1.5°C scenario and the 4°C scenario*, referencing World Energy Outlook (WEO), published by the International Energy Agency (IEA). In either scenario, differences in industry trends will have a minor impact on demand, or the positives and negatives will cancel each other out. Nonetheless, we will monitor industry trends and consider the appropriate time to make investments and allocate resources.

* 1.5℃ scenario: IEA NZE 2050 scenario, 4℃ scenario: IPCC RCP8.5

Internal Carbon Pricing System*

In FY2020, the Teijin Group established and introduced an internal carbon pricing (ICP) system targeting capital expenditure plans throughout the Group that can lead to an increase or decrease in CO2 emissions. In FY2021, we began applying this ICP system to our capital expenditures. In April 2023, we revised the ICP system, making changes to such aspects as set pricing and scope of application, taking into account such factors as the raising of our target for Groupwide CO2 emissions reductions and the recent changes in the external environment. With regard to ICP, we raised this price from €50/t-CO2 to €100/t-CO2 to better reflect the increased risks of carbon taxes being introduced and rising tax rates as well as higher emissions trading prices in various countries, especially in Europe. We have expanded the application of our pricing system for in-house CO2 emissions to include investments such as M&A, as well as decisions related to reducing emissions that do not necessarily involve capital expenditure, such as switching to renewable energy. In addition, with regard to indirect emissions from partners in our upstream value chain (Scope 3 Category 1), the revised ICP will be applied to capital expenditure for switching to recycled or biomass-derived raw materials purchased from other companies, thereby encouraging the reduction of CO2 emissions throughout the supply chain.

* A system that creates economic incentives to reduce CO2 emissions by establishing internal carbon prices to quantify CO2 emissions as costs, thereby promoting internal efforts to respond to climate change.



Converting to Gas Cogeneration System at the North Plant of Maruyama Factory

In October 2022, the Teijin Group made the decision to convert the in-house fossil fuel-based power generation facilities currently in use at the North Plant of Matsuyama Factory to a cogeneration system* running on city gas. With regard to the Group's specific targets for net zero emissions by FY2030, allowing for future business growth, this target requires us to reduce CO2 emissions by roughly 600,000 tons compared with FY2018 levels. The introduction of this gas cogeneration system in the North Plant of Matsuyama Factory is expected to achieve a reduction of 200,000 tons a year, or around 30% of this reduction. The total investment is expected to be over ¥10 billion, including the replacement of existing aging power receiving and distribution equipment, and the generating capacity of the new power plant is expected to be approximately 30,000 kW.

* Cogeneration systems supply both electricity and heat on-site, and their high energy efficiency results in significant reductions in CO2 emissions.

Risk Management

We position climate change-related risks as "Major Risks" and are working to manage them accordingly under our Total Risk Management (TRM) framework. Transition risks and physical risks faced by Group companies are identified and responded to alongside other risks via our TRM risk assessment. For transition risks, we have established a roadmap to achieve net zero CO2 emissions while monitoring the trends of government policies around the globe. We have also introduced an ICP system that targets capital expenditure linked to increases or decreases in CO2 emissions. Furthermore, we are striving to reduce Groupwide GHG emissions and GHG emissions within the supply chain (upstream). Through such efforts, we are curtailing the impact of transition risks. To address physical risks such as those involving rising temperatures and sea levels, we are evaluating and implementing the necessary measures to respond to water risks. At the same time, we are revising our BCPs as needed and implementing various kinds of disaster prevention drills.

1. To promote TRM, the Chief Sustainability Officer is in charge of operational risk, while the CEO is directly in charge of strategic risk.
2. The TRM Committee has been established under the Board of Directors to manage risks in an integrated manner.
3. The CEO chairs the TRM Committee, which is comprised of the Chief Sustainability Officer and other persons assigned by the CEO.
4. The Board of Directors deliberates and decides the basic policy and annual plan related to TRM proposed by the TRM Committee, as well as manages major risks for the Teijin Group, and establishes a system for business continuity.

Total Risk Management ›

Metrics and Targets

Our Groupwide GHG emissions targets were validated as targets that limit global temperature rise to "well below 2°C," and have received approval from the Science Based Targets initiative (SBTi), which recognizes GHG emission targets that are scientifically consistent with the targets of the Paris Accord.

Avoided CO2 Emissions*1

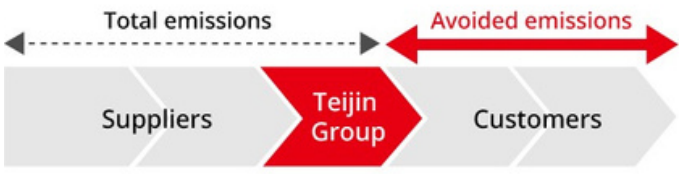
We aim to reduce CO2 emissions throughout the entire supply chain by using our long-cultivated technologies for reducing weight and increasing efficiency. By the early stage of FY2030, we aim to make the amount of our avoided emissions larger than the total CO_2 emissions*2. We have also been making efforts toward establishing a life cycle assessment (LCA) evaluation system, which visualizes the environmental burden of a product across its entire life cycle. Through these efforts, we aim to reduce CO2 emissions throughout the entire supply chain. In FY2023, we established the LCA Promotion Expert Meeting under which we are proceeding with Groupwide LCA initiatives.

*1 Calculated as the amount of avoided CO2 emissions that the Company's products have contributed to in the supply chain downstream.

*2 Total CO2 emissions are calculated for Scope 1, Scope 2, and Category 1 (Purchased goods and services), Category 2 (Capital goods), Category 3 (Fuel- and energy-related activities not included in Scope 1 and Scope 2), Category 4 (Upstream transportation and distribution), Category 5 (Waste generated in operations), Category 6 (Business travel), and Category 7 (Employee commuting) in Scope 3.

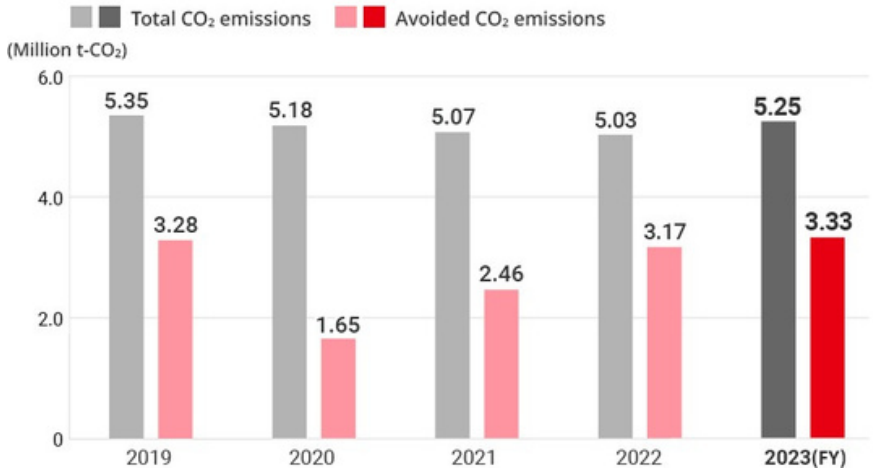
The Group's target (KPI)

FY2030: Achieve total CO2 emissions ＜ avoided CO2 emissions



Trends in total CO2 emissions and avoided CO2 emissions

In FY2023, our avoided emissions increased 5% compared with the previous fiscal year, to 3.33 million t-CO2, due to such factors as the increase in sales of carbon fibers.



	Total CO2 emissions	Avoided CO2 emissions
FY2021	5.07 million t-CO2	2.46 million t-CO2
FY2022	5.03 million t-CO2	3.17 million t-CO2
FY2023	5.25 million t-CO2	3.33 million t-CO2

Group CO_2[*1] Emissions[*2]

Through the early phase-out of all coal-fired power generation and the gradual transition to renewable energy sources for our electricity, we are working to decouple our business growth from GHG emissions.

*1 Includes CO2, methane, and N2O

*2 CO2 emissions are calculated with the GHG Protocol as reference. The amount of CO2 emissions equivalent to the amount of energy sold to other companies has not been deducted from this data. With regard to coefficients for fuel, we use emissions coefficients based on the Law Concerning the Promotion of the Measures to Cope with Global Warming. A s for emissions coefficients for electricity, we use adjusted emissions coefficients of individual electric power companies for power purchased in Japan. For power purchased overseas, we use power company-specific coefficients, in principle. However, in cases where the power company-specific coefficient is unknown, we apply the latest available IEA country-specific emissions coefficient.

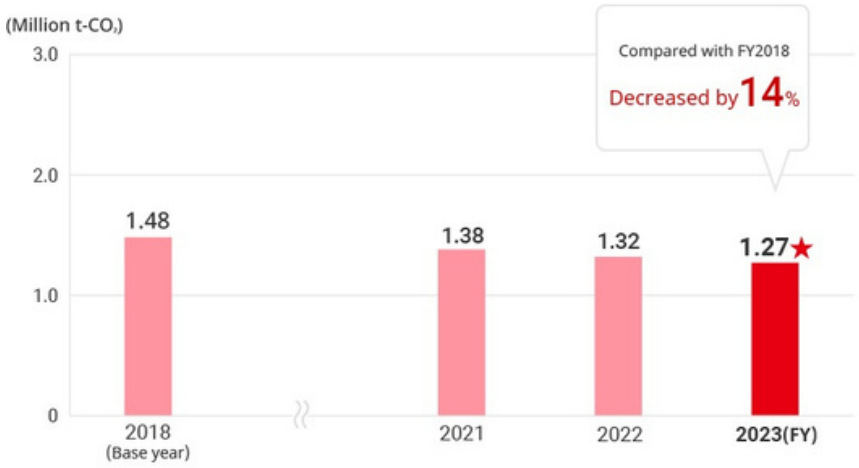
The Group's target (KPI)

FY2030: 30% reduction (vs. 1.48 million t-CO2 in FY2018)

FY2050: Achieve net zero

Trends in Group CO2 Emissions

In FY2023, Group CO2 emissions decreased 4% compared with the previous fiscal year, to 1.27 million t-CO2★ (Scope 1: 0.67 million t-CO2★, Scope 2: 0.60 million t-CO2★), owing to the introduction of renewable energy at overseas bases, among other efforts. This result represented an 14% decrease in emissions compared with FY2018.



Supply Chain CO_2 Emissions*

We have set a KPI pertaining to two-thirds of our total supply chain CO2 emissions and are working to reduce these emissions across the entire supply chain.

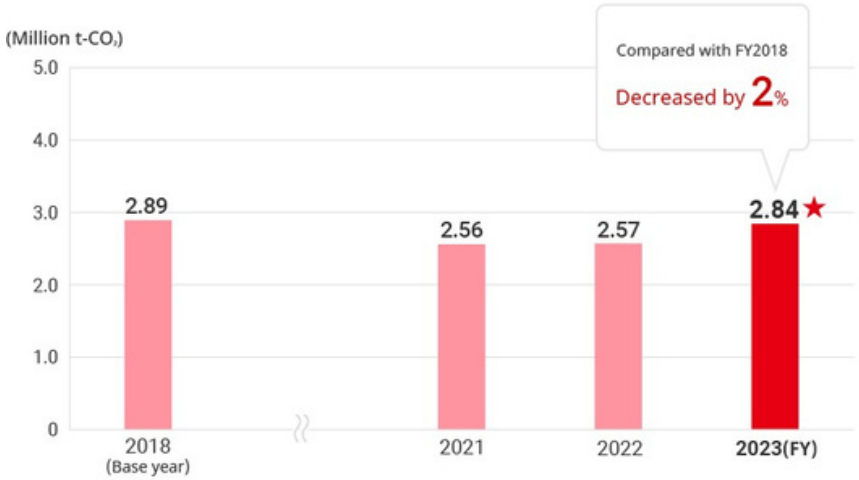
* Covers Scope 3 emissions in Category 1 (Purchased goods and services) except emissions from products purchased in the Fibers & Products Converting Business for the purpose of sale. Category 1 emissions are calculated by multiplying the purchased weight or purchased value of purchased goods and services by the emissions intensity in units of weight or value. Emissions intensity data for monetary units is from Emissions Unit Values for Accounting of Greenhouse Gas Emissions, etc., by Organizations Throughout the Supply Chain (Ver. 3.4) (March 2024) (Emissions Unit Values Database V. 3.4), published by the Ministry of the Environment. Emissions intensity data for weight units is based on the intensity data of the Ecoinvent Database (operated by Ecoinvent Association) or the LCA for Experts (GaBi) Database (operated by Sphera).

The Group's target (KPI)

FY2030: 15% reduction (vs. 2.89 million t-CO2 in FY2018)

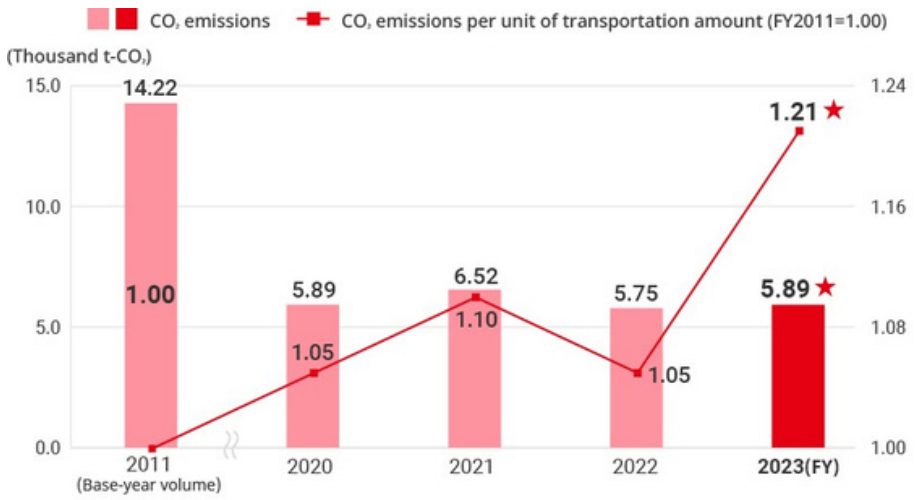
Supply Chain CO2 Emissions

In FY2023, emissions increased due to an increase in the items subject to calculation. This result represented a 2% decrease in emissions compared with FY2018, to 2.84 million t-CO2★.



CO2 Emissions in Logistics

In FY2023, CO2 emissions associated with the logistics domain amounted to 5.89 thousand t-CO2★, which is an increase of 0.14 thousand t-CO2 from the previous fiscal year. In FY2023, although there was a recover in demand for aircraft and automobile applications, the overall volume of freight transportation decreased 5.9 thousand t-km compared with FY2022, due in part to the slowdown in the Chinese economy. CO2 emissions in logistics were up year on year as due to decreased transport efficiency caused by concerns over delays in marine transport, despite our ongoing measures to reduce the environmental burden of logistics that we implemented in FY2023, to the greatest extent possible, including improving the truck loading rate and promoting a modal shift (utilizing Japan Railway transportation and shipping). Following these reduced efficiency, in the entire Group's logistics, CO2 emissions per unit of transportation increased 0.16 compared with the previous fiscal year. The standard basic unit per 1,000 t-km (t-CO2/1,000 t-km) was 1.21★ (against 1 in FY2011). In FY2024, in addition to shortening drayage distance by changing the point of discharge and to promoting container round use, we will continue efforts to lower emissions per unit by increasing vehicle size (expanding bulk transportation), improving the truck loading rate, and promoting a modal shift.



* The scopes for calculating CO2 emitted by logistics for each fiscal year are as follows.
FY2011: Teijin Limited (excluding the aramid fiber business), Teijin Film Solutions Ltd., and the former Teijin Fiber Co., Ltd.'s apparel business that was consolidated with Teijin Frontier Co., Ltd.
FY2020: Teijin Limited, Teijin Frontier Co., Ltd., Teijin Pharma Limited, and Teijin Cordley Limited (*)Teijin Film Solutions Ltd. and Teijin Engineering Ltd. are not included.
Since FY2021: Teijin Limited, Teijin Frontier Co., Ltd., Teijin Pharma Limited, and Teijin Cordley Limited (*)Teijin Engineering Ltd. is not included.

Sustainability

Resource Recycling

We promote resources recycling initiatives with a focus on reducing the amount of landfill waste.

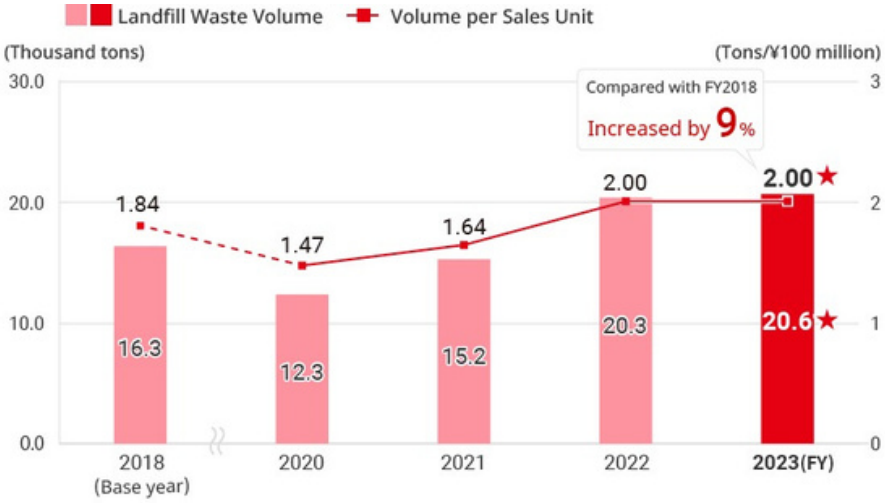
Metrics and Targets

The Group's target (KPI)

FY2030: 20% improvement in landfill waste volume per sales unit (compared with FY2018)

We are working to reduce landfill waste volume through such efforts as reusing and recycling waste. We are moving forward with proactive efforts to reduce landfill waste volume at Teijin Automotive Technologies NA Holdings Corp, which generates a particularly large volume of waste, including reducing the volume of plastic waste by improving the yield rate at each of Teijin Automotive Technologies NA Holdings Corp factories. In FY2023, our landfill waste volume was 20.6 thousand tons★, which represents a 9% increase in volume per sales unit compared with FY2018, reaching 2.00★.

Trends in landfill waste volume and volume per sales unit



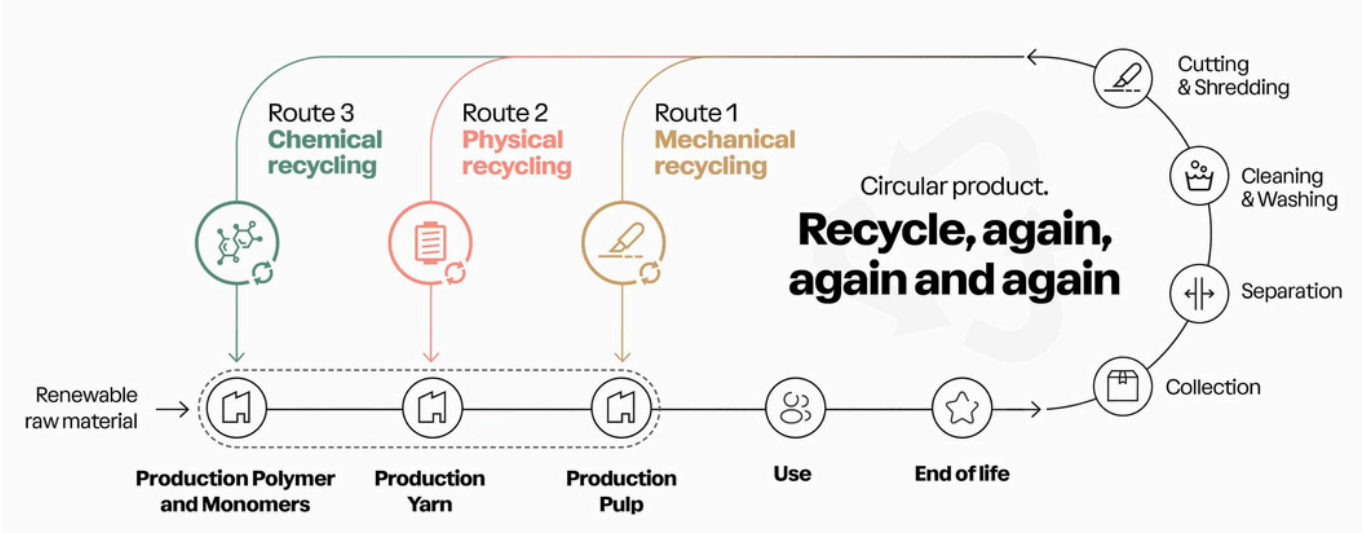
* Landfill waste volume is calculated based on the amount of waste disposed of directly in landfills.

* Per sales units are calculated using consolidated net sales as the denominator.

* As it was found that some bases had double-counted some of the amount of landfill waste volume, we corrected the figures from FY2018 to FY2022. The FY2030 per sales unit target was also revised for this reason.

Aramid Fiber Circular Production Process

Teijin Aramid B.V. is working toward a circular economy. For more than 20 years, Teijin Aramid has had a successful record of mechanically recycling end-of-life products to Twaron pulp. Teijin Aramid plans to gradually move forward with the circular production process using various innovative technologies and sources of pre- and post-consumer waste. Teijin Aramid has been making progress on developing a physical recycling technolog y for fiber-to-fiber recycling. The first industrial-scale production run was achieved in April 2023, followed by a second run in April 2024. Teijin Aramid is also working on the development of chemical recycling technology for aramid fibers; this is a longer-term development. Next to the recycling technologies, Teijin Aramid is working on procuring sustainable raw materials from its suppliers. Teijin will comply with future regulations while meeting customer demands.



Sustainability

Pollution

We are working to systematically reduce emissions of hazardous chemical substances associated with our business activities and commit to preventing environmental pollution.

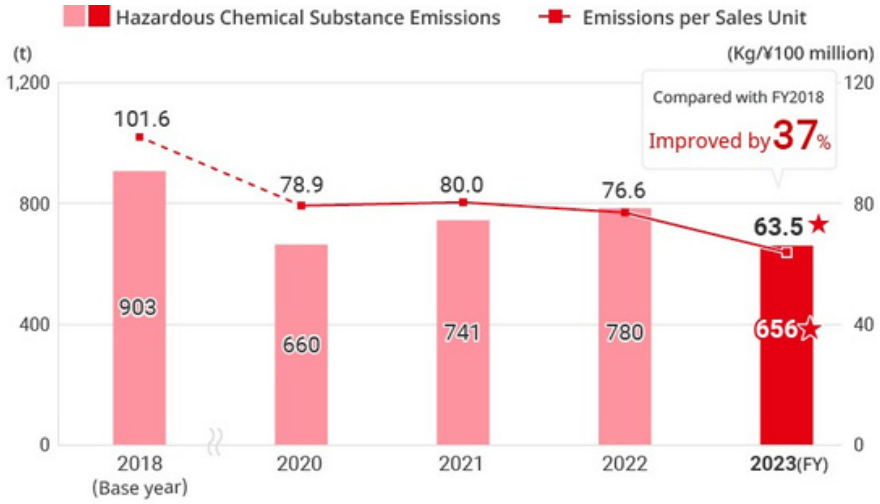
Metrics and Targets

The Group's target (KPI)

FY2030: 20% improvement in hazardous chemical substance emissions per sales unit (compared with FY2018)

We are working to reduce hazardous chemical substance emissions through ongoing efforts to prevent leaks and transition to processes that create fewer emissions. In FY2023, due to those efforts in the carbon fibers and resin and plastic processing businesses, our hazardous chemical substance emissions decreased by 17% compared with the previous fiscal year, reaching 656 tons★. This represents a 37% improvement in emissions per sales unit compared with FY2018.

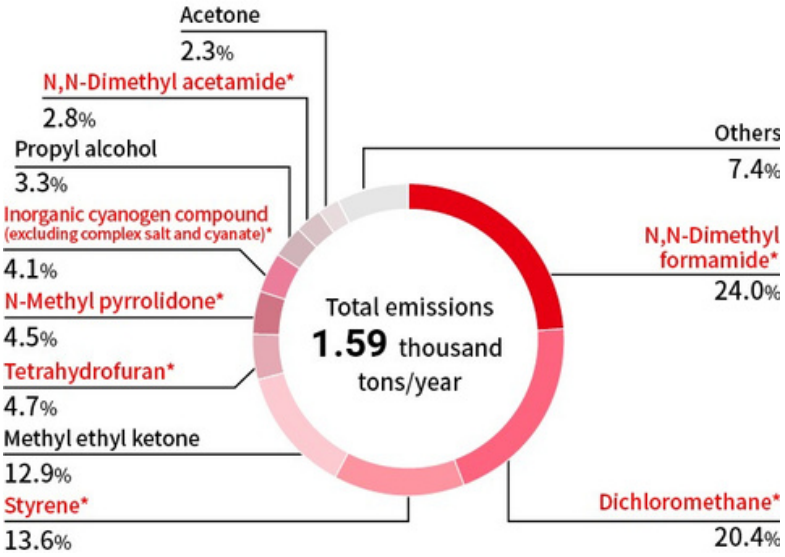
Trends in hazardous chemical substance emissions and emissions per sales unit



* Among the Class 1 designated chemical substances under the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof and chemical substances indicated by the Japan Chemical Industry Association, chemical substances emissions to atmosphere, water, and soil which are harmful to aquatic environments and the ozone layer in the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) classification defined by the United Nations (UN) are subject to the calculation for emissions.

* Per sales units are calculated using consolidated net sales as the denominator.

Top 10 chemical substance emissions ★



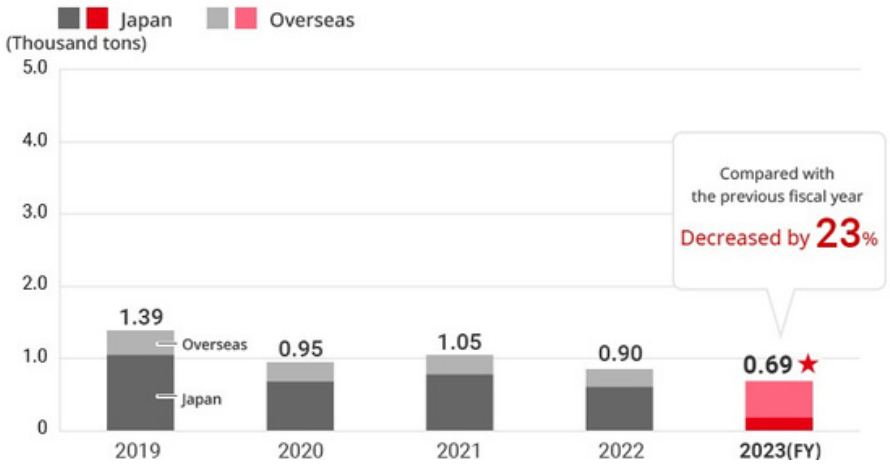
* For the Class 1 designated chemical substances under the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof and chemical substances indicated by the Japan Chemical Industry Association, the emissions are subject to the calculation of atmospheric, soil and water, and landfill amounts within business sites.

* Red text: the Class 1 designated chemical substances under the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment.

Impact on Atmosphere

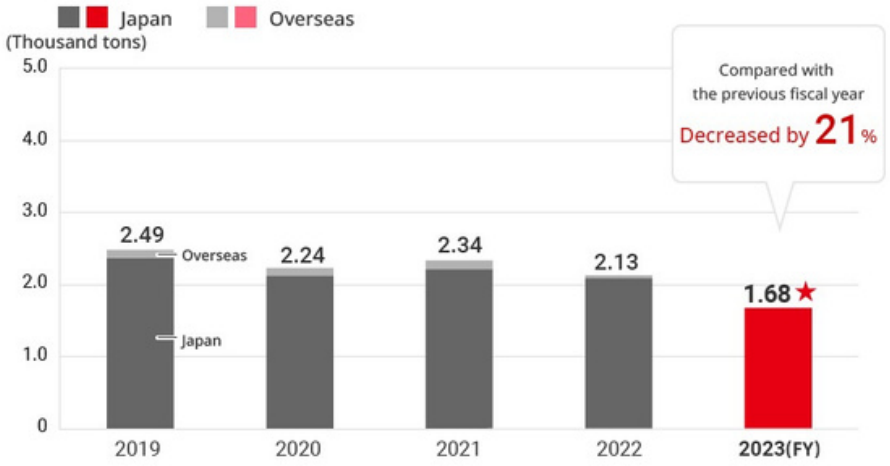
NOx emissions resulting from fuel use were down 23% from the previous fiscal year, at 0.69 thousand tons★. SOx emissions decreased by 21% from the previous fiscal year, to 1.68 thousand tons★. VOC emissions decreased by 4% from the previous fiscal year, to 1.49 thousand tons★.

Trends in NOx emissions

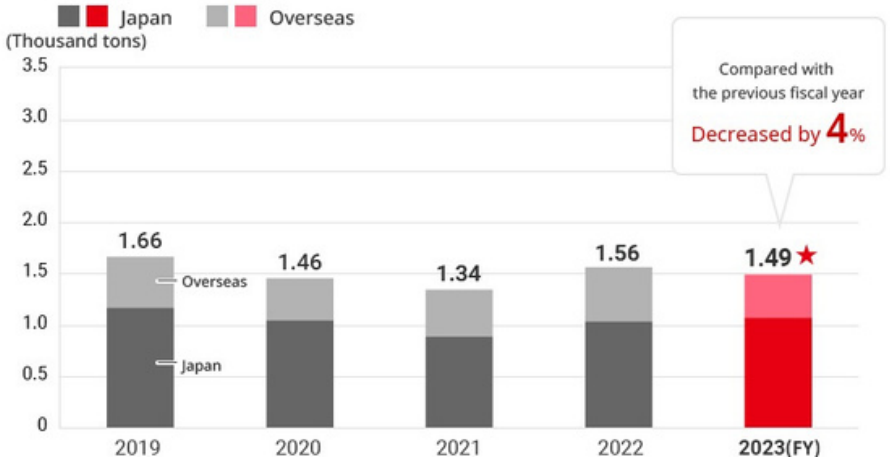


* Corrected the FY2021 NOx figures in January 2024.

Trends in SOx emissions



Trends in VOC emissions



Initiatives

In addition to conforming to each country's and territory's legislation relating to the prevention of soil pollution, the Teijin Group formulated guidelines for preventing soil and groundwater pollution. Under these guidelines, we are striving to prevent soil and groundwater pollution resulting from our business operations.

Sustainability

Water

In response to the increasingly critical water shortages and water pollution worldwide, the Teijin Group is endeavoring to reduce water consumption at business sites bearing in mind water-related risks, while promoting the efficient use of water resources.

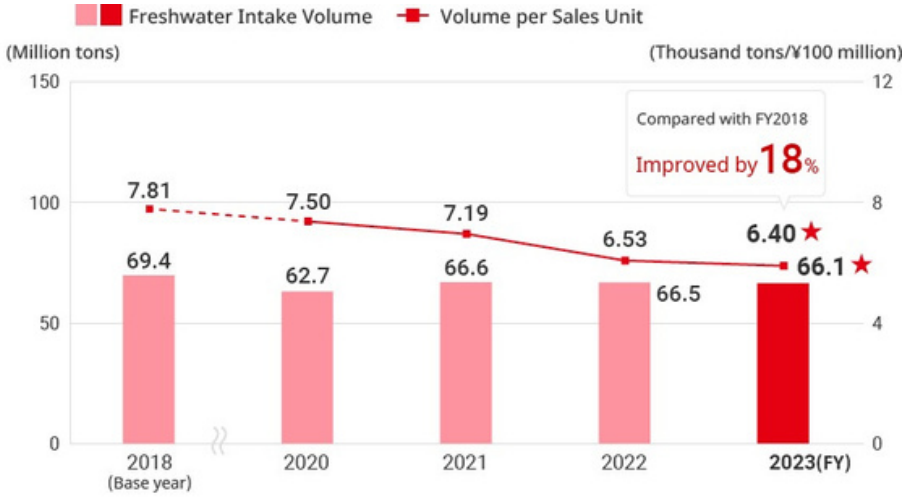
Metrics and Targets

The Group's target (KPI)

FY2030: 30% improvement in freshwater intake volume per sales unit (compared with FY2018)

We are expanding the number of products that use less water during the production process and are using water efficiently in our business activities. In these ways, we aim to achieve our target for reducing the amount of freshwater intake with a focus on curtailing water use at manufacturing sites and other locations that use high volumes of water. In FY2023, the freshwater intake volume amounted to nearly the same level as it was in the previous fiscal year, at 66.1 million tons★. This results in an 18% improvement in volume per sales unit compared with FY2018.

Trends in freshwater intake volume and volume per sales unit



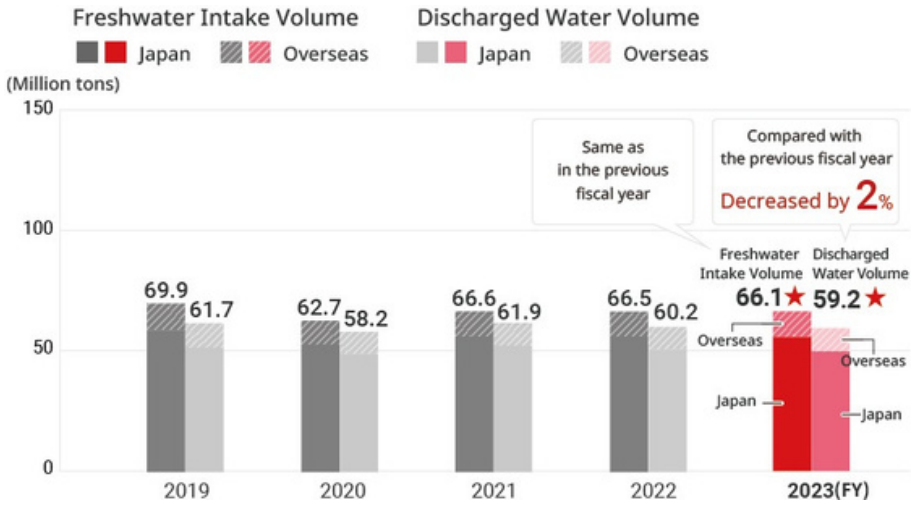
* The amount of freshwater intake is the total of industrial water, groundwater, and tap water.

* Per sales units are calculated using consolidated net sales as the denominator.

Environmental Load due to Wastewater

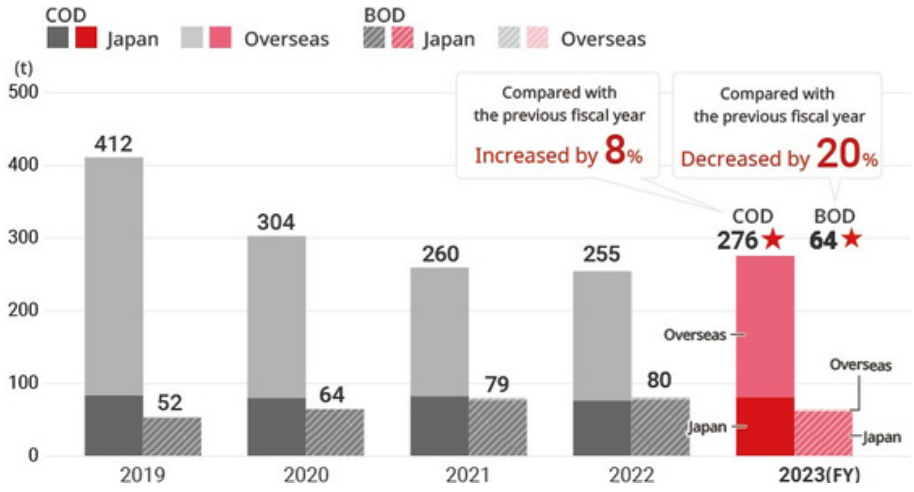
In FY2023, discharged water volume was down 1.7% from the previous fiscal year, to 59.2 million tons★. In addition, chemical oxygen demand (COD) increased by 8% year on year to 276 tons★, while biochemical oxygen demand (BOD) decreased 20% compared with previous fiscal year, to 64 tons★.

Trends in freshwater intake volume and discharged water volume



* The amount of freshwater intake is the total of industrial water, groundwater, and tap water.

Trends in COD and BOD



* Applies to wastewater discharged into rivers, oceans and lakes. Until FY2021, the COD value was used at sites measuring both COD and BOD. From FY2021, the COD values is calculated when discharging into sea areas and lakes, and the BOD values is calculated when discharging into rivers.

* Corrected the FY2022 COD figures in November 2024.

Water Risk Evaluation

The Teijin Group's Materials Business and Fibers & Products Converting Business have a high level of dependence and impact on water. At the main manufacturing bases of these businesses (25 bases), we have conducted evaluations of basin water risks and operational water risks using the Water Risk Filter tool developed by the World Wide Fund for Nature (WWF). The evaluation of basin water risks confirmed that multiple bases face risks in terms of water scarcity, floods, and water quality. Meanwhile, the evaluation of operational water risks confirmed that all bases are curtailing risks related to water scarcity, floods, and water quality through the promotion of appropriate response measures. Specifically, to address and reduce the risk of water scarcity, these bases are pursuing measures such as projects to reduce the volume of water used in the product cleaning process. For the risks of floods, the bases have formulated business continuity plans to ensure that operations can continue even in the event of a large-scale natural disaster or other unexpected event. With regard to water quality risks, the bases are striving to reduce COD and BOD. In these ways, our manufacturing bases are promoting measures to appropriately respond to water risks.

Basin water risks existed at the main manufacturing bases (25 bases)

Very Low – Middle High Very High

Facilities		Water scarcity	Flooding	Water quality
Japan	Teijin (Matsuyama City, Ehime Prefecture)		High	
	Teijin (Iwakuni City, Yamaguchi Prefecture)		High	
	Teijin (Mihara City, Hiroshima Prefecture)		High	
	Teijin (Mishima City, Shizuoka Prefecture)		High	
	Teijin (Godo Town, Gifu Prefecture)		High	
United States	Teijin Carbon America (Tennessee)		High	
	Teijin Carbon America (South Carolina)		High	
	Renegade Materials (Ohio)		High	Very High
	Teijin Automotive Technologies NA Holdings (Michigan)			High
The Netherlands	Teijin Aramid (Arnhem)			Very High
	Teijin Aramid (Emmen)			Very High
	Teijin Aramid (Delfzijl)			Very High
Germany	Teijin Carbon Europe (Heinsberg)			Very High
	J.H. Ziegler (Aachen)			Very High
Portugal	Teijin Automotive Technologies Portugal (Leça do Balio)			
Czech Republic	Teijin Automotive Technologies Czech (Milovice)			Very High
China	NANTONG TEIJIN (Nantong, Jiangsu Province)			Very High
	Teijin Polycarbonate China (Jiaxing, Zhejiang Province)		High	Very High
	Teijin Chemicals Plastic Compounds Shanghai (Shanghai)		High	Very High
Thailand	Teijin Polyester (Thailand) (Pathum Thani Province)	High	High	High
	Teijin (Thailand) (Ayutthaya Province)	High	High	
	Thai Namsiri Intertex (Mueang Samut Prakan District)	High	High	High
	Teijin Cord (Thailand) (Ayutthaya Province)	High	High	High
Vietnam	Teijin Frontier Shonai (Viet Tri)		High	
South Korea	Teijin Lielsort Korea (Asan)		High	

Sustainability

Biodiversity

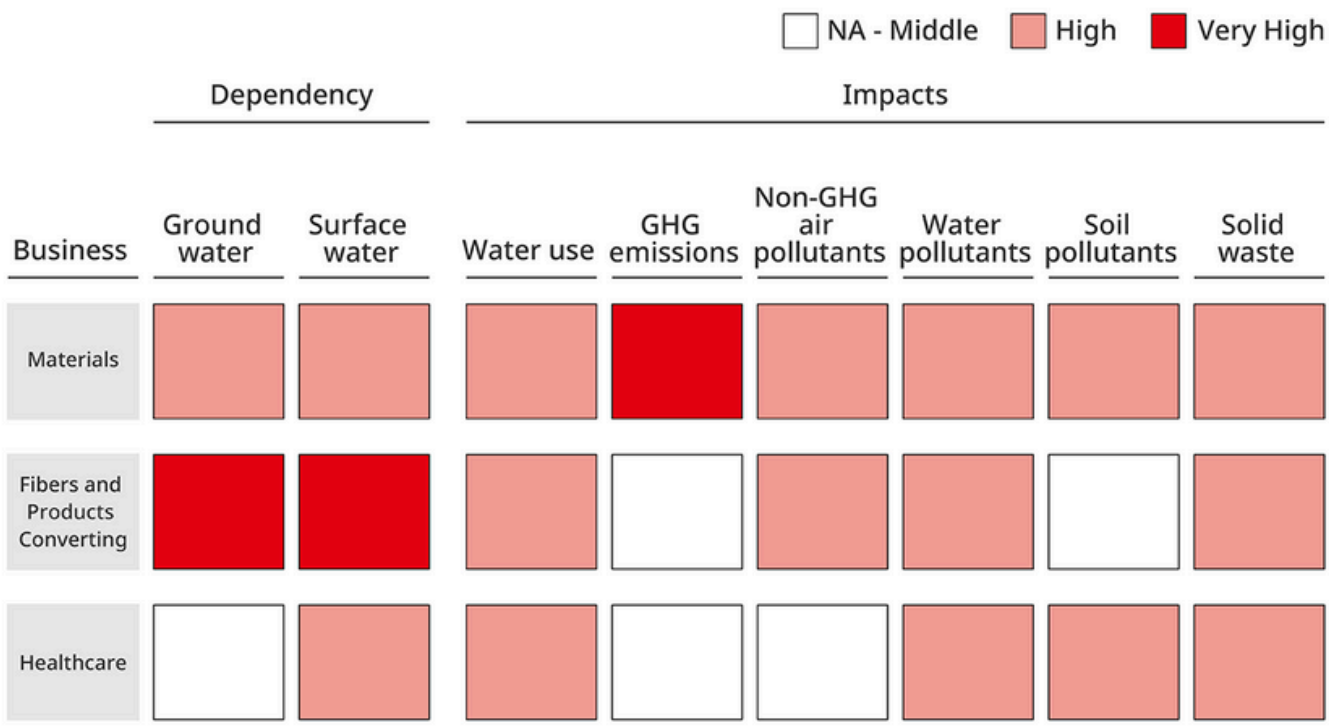
The Teijin Group has adopted its desire for "Safeguarding our planet and all life on it" as one of the Values of its Corporate Philosophy. To that extent, the Group considers biodiversity throughout the entire life cycle of its products, from raw material procurement to production and product utilization, and strives to reduce its environmental burden.

Analysis of Dependence and Impact on Nature

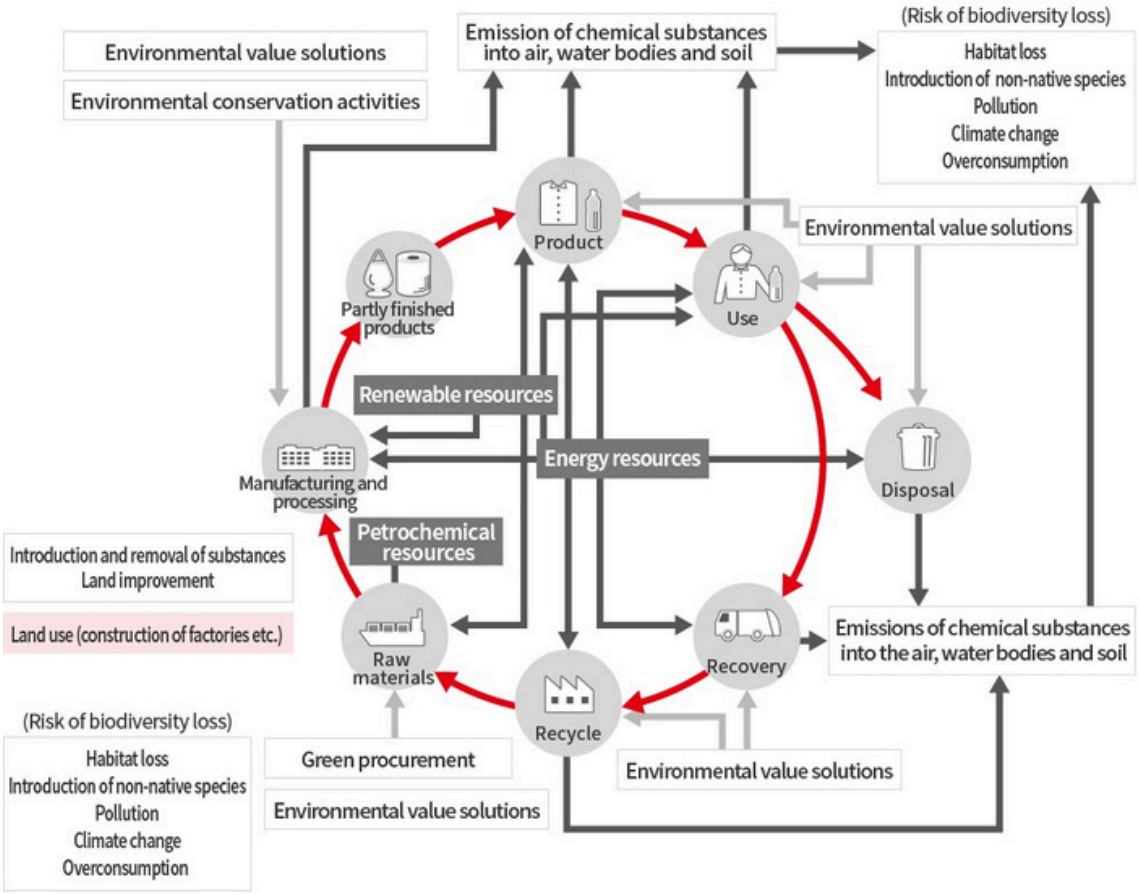
Making use of ENCORE*, the Teijin Group has conducted an analysis of the dependence and impact on nature in each business unit. Based on the results of an analysis of the level of impact of ecosystem services in relevant sectors and the impact on nature caused by impact drivers, we confirmed that primarily the Materials Business and the Fibers & Products Converting Business are dependent on groundwater and surface water. In addition, these businesses have an impact on nature through water use, greenhouse gas (GHG) emissions, non-GHG air pollutants, soil pollutants, and solid waste.

* ENCORE (Exploring Natural Capital Opportunities, Risks, and Exposure): A tool jointly developed by the Natural Capital Finance Alliance (NCFA)--a network of international financial institutions--and the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC), among others. Its purpose is to help private companies understand the level of their dependence and impact on natural resources.

Teijin Group's Dependence and Impact on Nature



In addition, the Group has created a Risk Map of Biodiversity Loss Due to Business Activities that visually presents the factors that affect biodiversity arising from business activities in the Materials Business and the Fibers & Products Converting Business. We are developing conser vation activities based on the recognition of the impact our business activities have on natural capital and biodiversity.



Initiatives

Initiatives to Reduce CO2, Landfill Waste, Hazardous Chemicals, and Water

To reduce its environmental burden, the Teijin Group has established key performance indicators (KPIs) for CO2 emissions, water use, hazardous chemicals, and landfill waste and are pursuing relevant efforts accordingly. Please click on the following links for more details.

Initiatives for Green Procurement

When purchasing or procuring products and ser vices, the Teijin Group recommends purchasing and procuring from suppliers that strive to reduce environmental burden in such ways as selecting products and services that consider the environment and have the smallest environmental burden possible. Please click on the following link for more details.

Supply Chain Sustainability ›

Initiatives to Address Marine Plastics

As a manufacturing company producing materials and other products, the Teijin Group has been striving to implement the 3Rs (Reduce, Reuse, Recycle) toward the realization of a recycling-oriented society, but we realize that even more effort is required. It is for this reason that we have identified "achievement of a circular economy" as a materiality. A society in which a consumption-only economy continues is not a sustainable one. The Group wants to contribute toward the shift to a circular economy in which, just like the natural ecosystem cycle, resources continue to circulate, and the "throwaway" concept does not exist. We will, of course, endeavor to recycle resources in our production activities. But even more, we will promote the circularization of society by, for example, encouraging material recycling based on local production for local consumption in which discharged resources are used as recycled products and returned to the market. In this way, we will also contribute toward resolving the increasingly serious problem of marine plastics. Please click on the following link for more details.

Materiality 2 Achievement of a Circular Economy ›

Teijin Forest in Bangladesh

Teijin Group aims to achieve net zero carbon emissions by 2050. To that end, we are phasing out coal-fired thermal power to reduce carbon emissions from our business activities while promoting energy conservation and renewable energy and pursuing process innovation and other technological innovations. As an additional effort, Teijin's European Sustainable Technology Center (ESTIC) team compensates for the emissions from employee air travel. The team is collaborating with The Institute of Forestry and Environmental Sciences at the University of Chittagong (IFESCU), Bangladesh through Professor Mohammad Mosharraf Hossain to remove CO2 from the atmosphere by creating small but diverse and thriving forests using an adapted version of the Japanese plantation technique known as the Miyawaki Forest model.

The collaboration leverages an academic practice at IFESCU that requires every undergraduate student at the Institute to plant at least twenty seedlings of different plant species during their first semester and maintain the plantation for four years by mandatory reporting on the status of the plants at the end of each semester. The exercise aims to teach students the entire life cycle of planting trees and taking care of them till a plantation is established by each batch. In this project, the students were taken through the experience of creating a Miyawaki forest.

In 2022, just after the resumption of classes after the long vacation due to the COVID-19 pandemic, the Teijin Forest was established on a degraded riparian site on both banks of a stream flowing through the campus of the University of Chittagong. The forest has seedlings of 70 different indigenous plant species, including a few threatened and critically endangered plant species of Bangladesh. The students routinely maintain the plantation and are happy to be a part of the Teijin Forest. This has helped them learn to raise seedlings, prepare the site for the Miyawaki forest model, source composts needed from the Rohingya refugee camp in Cox's Bazar as a circular solution to waste management, and finally create a thriving small forest. They are going through the experience of learning how a forest offsets a fraction of Teijin's carbon footprint, conserves indigenous plant species, and makes an excellent habitat for insects and wildlife. The students also learn to take measurements to report carbon capture through plantations.

The Teijin Forest has become a pilot demonstration plot for people to know about the Miyawaki forest model, the first instance of plantation-based voluntar y carbon trading in Bangladesh. The Teijin Forest has already been recognized as a nature-based solution (NbS). The forest has its own set of challenges, such as some insect attacks, the high anthropogenic interferences leading to the reconstruction of the fences several times, the uncontrolled livestock grazing has caused some damages, and the severe rainfall in 2022 has damaged a few trees. However, this is part of the experience for Teijin as well to see the realities of establishing an forest. Overall, the forest has already shown stunning growth capturing carbon both as plant biomass and as soil carbon pool.

Teijin Forest within the University of Chittagong campus

At the start of the project (2022)

A s of 2023