

CSR Activity Report (CSR Guideline Activity Reports)

Safety, Accident Prevention, and Environmental Preservation

Ensure the safety and health of society and employees, and protect the environment in all business processes, from procuring raw materials and manufacturing to the supply and disposal of products.



Basic Approach to Environmental Preservation

Corporate efforts to help realize a sustainable society have become increasingly vital in recent years. Toray Group established its Medium-Term Environmental Plan in fiscal 2000 to strengthen and enhance initiatives for reducing environmental impact. The Group has set key performance indicators (KPIs) to reduce greenhouse gas emissions per unit of sales in order to fight global warming, as well as to reduce atmospheric emissions of certain chemical substances (PRTR substances and VOCs, etc.) and waste. These efforts have continued during the course of all five Medium-Term Environmental Plans up until fiscal 2020.

Under the Toray Group Sustainability Vision announced in July 2018, the Group aimed to achieve two targets per unit of revenue by 2030: a 30% reduction in greenhouse gas emissions from production activities and a 30% reduction in water usage, both compared with fiscal 2013.

Under the medium-term management program Project AP-G 2022, which covers the period from fiscal 2020 to fiscal 2022, the Group promoted the Challenge 30 Project, a company-wide project to tackle specific activities to realize the Toray Group Sustainability Vision of reducing greenhouse gas emissions and water consumption per unit of revenue. To achieve these two targets, three-year KPIs were included in CSR Roadmap 2022, the Group's medium-term CSR plan, and initiatives were implemented to meet the targets. With these efforts, the Group met its targets for fiscal 2030 ahead of schedule in fiscal 2022. Therefore, to further accelerate its activities to realize a sustainable world, the Group significantly raised the numerical targets in the Toray Group Sustainability Vision from the 30% reduction to a more than 50% reduction in both greenhouse gas emissions and water consumption per unit of revenue compared to fiscal 2013. The Group is also accelerating efforts by setting the target of reducing greenhouse gas emissions in Japan by at least 40% compared to fiscal 2013.

To meet the new targets, three-year KPIs have been included in CSR Roadmap 2025, which covers the period from fiscal 2023 to fiscal 2025. The company-wide Challenge 30 Project has also been renamed the Challenge 50+ Project to further promote reduction efforts through routine energy-saving activities, the introduction of renewable energy, elimination of the use of coal, and other means. Moreover, in addition to reducing greenhouse gas emissions and water consumption per unit of revenue, CSR Roadmap 2025 also continues to set KPIs relating to atmospheric VOC emission reduction and waste recycling rate improvement. The Group is taking steps to meet these, including by strengthening its management of priority-focus companies and factories, namely those have a particularly large environmental impact.

Using various communication and education tools, Toray Group is actively enhancing each employee's awareness and knowledge of environmental issues and sustainability. Specifically, the Group covers environmental topics in its in-house magazine "People." It also issues the internal "SI Report" concerning sustainability, and shares information worldwide about environmental accidents and near-misses. In addition, the Group conducts training at various organizational levels, including programs for new employees and seminars organized by Toray Corporate Business Research, Inc.

Since fiscal 2023, the Group has been offering intermediate and advanced environmental e-learning courses, building upon the basic course provided in fiscal 2022 (with an average of approximately 12,000 participants across three basic courses).

* Refer to the following activity reports for more information on basic approaches and policies regarding safety and disaster prevention, as well as for issue awareness and policies regarding individual environmental issues.

Related Policies

Ten Basic Environmental Rules (Established January 2000 and revised June 2011)

1. Prioritize environmental preservation

We shall comply with all laws, regulations, and agreements in all of our business activities. Taking biodiversity into consideration, we shall place the highest priority on environmental preservation in the manufacture, handling, use, sale, transport, and waste disposal of products.

2. Prevent global warming

We shall promote energy conservation and work to reduce our unit energy consumption and our carbon dioxide emissions.

3. Achieve zero emissions of environmental pollutants

We shall strive continuously to reduce our emissions with the ultimate goal of achieving zero emissions of hazardous chemical substances and waste materials into the environment.

4. Use safer chemical substances

We shall collect, maintain, and provide information on the health and environmental effects of the chemical substances we handle while striving to use safer chemical substances.

5. Promoting Recycling

We shall develop recycling technologies for products, containers, and packaging and cooperate with society in promoting the recovery and reuse of such items.

6. Improve the level of environmental management

We shall work to maintain and improve the level of our environmental management while working to upgrade our environmental management technology and skills, performing self auditing, and taking other measures.

7. Contribute to society through environmental improvement technologies and products

We shall meet the challenge of developing new technologies and shall contribute to society through environmental improvement technologies as well as products that place a low burden on the environment.

8. Improve the environmental management of our overseas businesses

In our overseas business activities, we shall place top priority on complying with local laws and regulations, and further, we shall manage those businesses in accordance with the management standards of the Toray Group.

9. Improve employees' environmental awareness

We shall strive to improve our employees' awareness of environmental issues through environmental education, social activities, internal communications activities, and other means.

10. Share environmental information with society

We shall deepen mutual understanding of Toray Group environmental policies and practices by widely publicizing our environmental preservation efforts and their results in environmental reports and other publications directed at local communities, investors, and the media.

Safety, Health, Accident Prevention and Environmental Preservation Management

Action Policy and Main Activities

Toray Group operates a policy for safety, health, accident prevention, and environmental activities. The policy is revised every year to reflect the results from the previous fiscal year, and specifies the main activities to implement in each policy area.

Safety, Health, Accident Prevention, and Environment Activity Policy of Toray Group in 2023

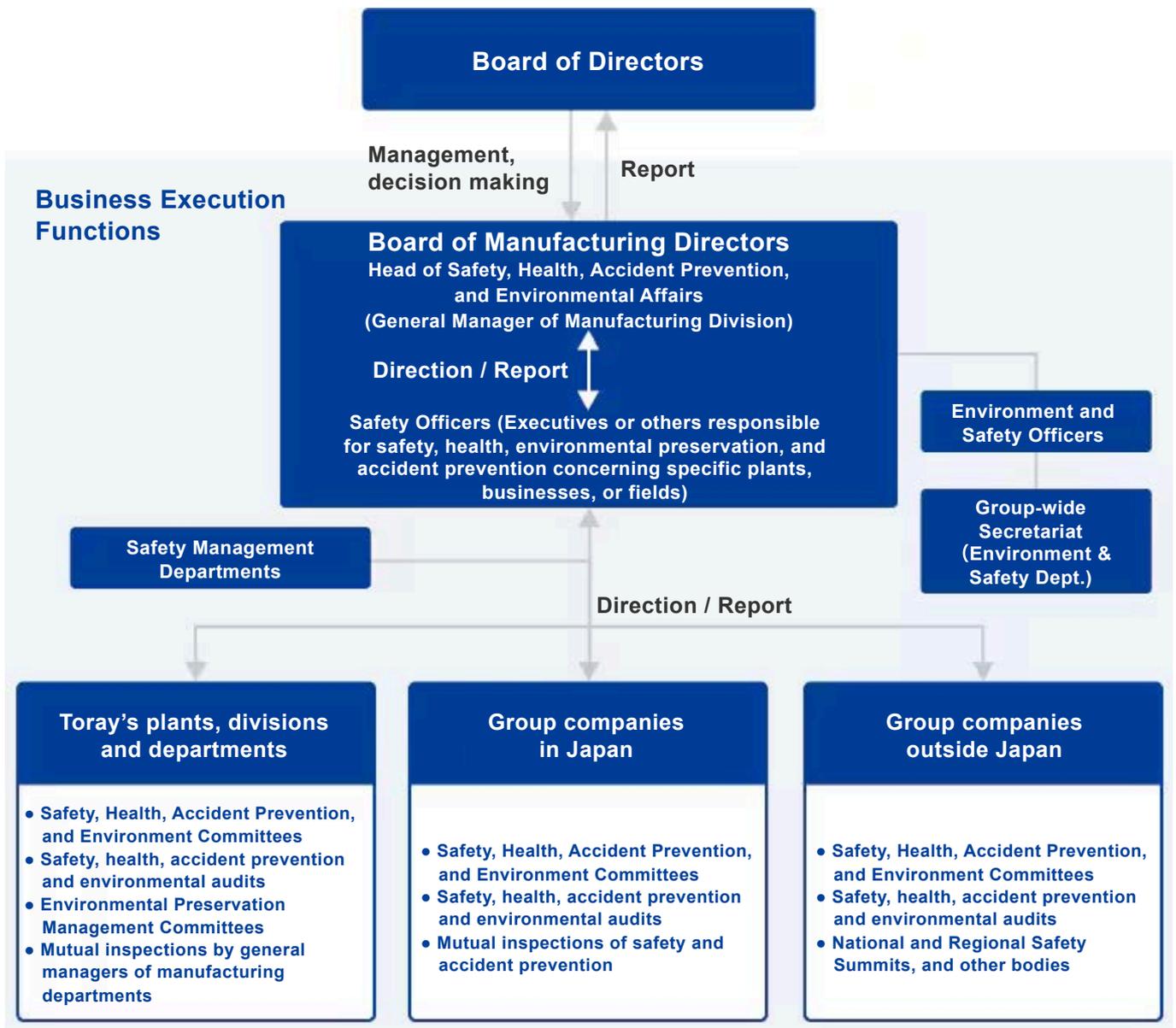
Action policy		Main activities
Safety	Pursue zero occupational accidents	<ul style="list-style-type: none"> • Follow rules thoroughly • Thorough elimination of similar accidents • Enhance safety activities in each business division
Healthier lives	Emphasize occupational health management	<ul style="list-style-type: none"> • Enhance and strengthen mental health management • Promote work environment improvement • Rigorous chemical substance management
Accident prevention	Pursue zero fire accidents	<ul style="list-style-type: none"> • Strengthen fire accident prevention management
	Enhance crisis management for natural disaster risks	<ul style="list-style-type: none"> • Strengthen preparation and response for large-scale earthquake and water disaster
Environment	Pursue zero environmental accidents	<ul style="list-style-type: none"> • Thorough elimination of similar accidents
	Promote Sustainability Vision	<ul style="list-style-type: none"> • Promote Challenge 50+ Project • Make efforts to reduce environmental impact • Address the problem of marine plastic waste

Structure

Safety, Health, Accident Prevention, and Environmental Preservation Promotion System

In order to promote the Toray Group's safety, health, accident prevention, and environmental preservation activities, the Head of Safety, Health, Accident Prevention, and Environmental Affairs (general manager of the Manufacturing Division¹) establishes and directs the relevant group-wide policies and key activities each year. Progress is managed by each group company and plant through various committees and audits, using the PDCA cycle.

Safety, Health, Accident Prevention, and Environmental Preservation Promotion System (Fiscal 2024)



¹ As of July 2024, the executive vice president (member of the board) responsible for the Manufacturing Division concurrently serves as the division's general manager.

Audits and Follow-Up Measures

Toray Group conducts annual audits to objectively assess and improve the execution and management of safety, health, accident prevention, and environmental initiatives at offices and plants of group companies. Internal audits are conducted using a standardized audit checklist, and encompass visits and production floor guidance provided by directors and managers from other group companies.

In fiscal 2023, audits were conducted for all 13 plants and one research laboratory at Toray Industries, 27 plants operated by 27 group companies in Japan, and 83 plants operated by 64 group companies outside Japan. The audits focused on the following areas: safety measures for edged tool work; prevention of electric fire and spontaneous combustion by heat storage inside heat insulating materials; compliance with revisions to the Industrial Safety and Health Act; and thoroughness of measures to prevent environmental accidents. The audits helped to secure systematic improvements by identifying and addressing facility issues and issues relating to management.

Responsible Care Program

Under Responsible Care (RC) programs, chemical companies pursue voluntary management of chemical substances, transparent disclosure, and communication with the public. Companies committed to RC take safety, health, and environmental measures across the entire product lifecycle—from development, manufacturing, distribution and consumer use to the disposal—and then disclose the results of their efforts.

Since 1995, Toray Group has participated as a founding member in the Japan Responsible Care Council (JRCC), established under the Japan Chemical Industry Association. The Group is committed to the safe handling of chemical substances and environmental preservation through RC activities.

In line with the Responsible Care Global Charter², Toray Group prepares RC activity plans and monitors their implementation group-wide. These plans and their results are compiled into a Responsible Care Implementation Plan/Report, which is submitted annually to the Japan Chemical Industry Association.

² The Responsible Care Global Charter was originally established in 2005 to encourage companies to take concrete action that is understandable to external stakeholders. The Charter was revised in 2014, and Toray Industries was a signatory to both the original and revised Charter.

ISO 14001 Certification

Toray Group is pursuing the acquisition of ISO 14001, the certification for environmental management system, by all of its group companies, offices, and plants. Toray Industries had completed accreditation for all 13 of its plants by the end of 2000. By fiscal 2023, 32 plants at 23 group companies in Japan and 68 plants at 50 group companies outside Japan were certified.

In fiscal 2023, Composite Materials (Italy) s.r.l. and its plant obtained certification for the first time. However, with the closure of the M3 Plant at Penfabric Sdn. Berhad (Malaysia), the total number of certified group companies increased by one, while the total certified plants remained the same.

Related Information

> [Sites with ISO 14001 Certification](#)

CSR Roadmap 2025 Targets

CSR Roadmap goals

1. Place the highest priority on safety, thoroughly uphold the basic rules, and strive to prevent disasters, fires, and environmental accidents
2. Based on the Toray Group Sustainability Vision, reduce environmental impact, focusing on addressing climate change, effectively utilizing water resources, and protecting the environment and biodiversity

Main Initiatives and Key Performance Indicators

	KPI
Safety	
(1) Aim for zero major accidents	3-①
(2) Achieve world's best standard for safety management	3-②
(3) Create a comfortable working environment to ensure the safety and health of employees and to raise the level of safety and health	-
Accident Prevention	
(4) Aim for zero fire and explosion accidents	3-③
Environmental Prevention	
(5) Aim for zero environmental accidents	3-④
(6) Reduce greenhouse gas emissions per unit of revenue	3-⑤⑥
(7) Reduce water consumption per unit of revenue	3-⑦
(8) Aim for a high waste recycling rate	3-⑧

(9) Reduce atmospheric VOC³ emissions

3-⑨

(10) Pursue the greening of each site in consideration of the regulations of each country and region and harmony with the surrounding environment

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Key Performance Indicator (KPI)	Target			Fiscal 2023 Result
	Fiscal 2023	Fiscal 2024	Fiscal 2025	
3-① Number of major accidents	0	0	0	1
3-② Achievement for world's best standard for safety management (not exceeding 0.05 frequency rate for occupational accidents resulting in lost work time)	No more than 0.05	No more than 0.05	No more than 0.05	0.40
3-③ Number of fire and explosion accidents	0	0	0	1
3-④ Number of environmental accidents	0	0	0	4
3-⑤ Reduction of greenhouse gas emissions per unit of revenue (%)	At least 40% lower than fiscal 2013 (Fiscal 2025)			36.0% ^{4&5}
3-⑥ Increase in solar power generation capacity (%)	At least 10% higher than fiscal 2022 (Fiscal 2025)			101%
3-⑦ Reduction of water usage per unit of revenue (%)	At least 40% lower than fiscal 2013 (Fiscal 2025)			35.3% ⁵
3-⑧ Waste recycling rate (%)	At least 86%	At least 87%	At least 87%	87.0%
3-⑨ Reduction of atmospheric VOC emissions (%)	At least 70% lower than fiscal 2000	At least 72% lower than fiscal 2000	At least 72% lower than fiscal 2000	72.5%

Reporting scope: Toray Group

3 Volatile organic compounds

4 Until fiscal 2022, this was calculated by multiplying the GHG emissions and revenue of individual subsidiaries worldwide by the applicable Toray Industries' equity share. In fiscal 2023 however, the calculation method changed, and the degree of financial control Toray Industries has over the individual subsidiary (not the equity share) is now used, in accordance with the GHG Protocol, the international standard.

5 The calculation of the figure for the baseline of fiscal 2013 includes data for companies that joined the Toray Group in fiscal 2014 or later.

Related Materiality for CSR

- Accelerating Climate Change Mitigation
- Promoting a Circular Economy
- Taking a Nature-Positive Approach
- Ensuring Safety and Fire Accident prevention

* Click [here](#) for CSR Roadmap 2025 from the perspective of materiality (PDF:392.4KB).

PDF

Looking to the Future

Toray Group will continue to carry out safety, accident prevention and environmental preservation activities based on international frameworks such as ISO 14001 and Responsible Care as well as the Group's medium- and long-term and single-year goals. The Group is committed to protecting the health and safety of employees and the public and reducing its environmental impact.

Click [here](#) for the main initiatives and KPIs for CSR Guideline No. 3 "Safety, Accident Prevention, and Environmental Preservation" during the CSR Roadmap 2025 period (fiscal 2023–2025).

CSR Activity Report (CSR Guideline Activity Reports) - Safety, Accident Prevention, and Environmental Preservation

Occupational Safety and Accident Prevention Activities

Toray Group pursues its own safety activities using occupational health and safety management systems (such as OHSAS 18001 and ISO 45001). Toray Group employees take part in an introductory training session immediately after joining the Group to learn and demonstrate their level of understanding of specific procedures and internal rules related to occupational safety. For mid-level employees and managers, the Group provides education on management and supervisory responsibility for occupational safety at every type of group training it holds, as well as studies of more concrete case studies related to the occupational health and safety management systems. In addition, officers in charge of production, as well as production engineering and Environment & Safety Department employees, conduct safety and health, accident prevention, and environment audits of all group companies and plants every year and evaluate and seek improvements in the status of activities from a standardized perspective. In addition, best practices are shared at sites throughout the Group to enhance the entire Group's performance. Employees are key stakeholders of Toray Group. Needless to say, ensuring their safety is the prerequisite to their capacity to make the most of their potential.

Officers and employees work together to implement persistent safety initiatives with the goal of zero accidents, out of respect for humanity and the sanctity of life.

To raise the awareness, every year, Toray Group creates a group-wide safety slogan. In 2023, the aim was for each and every employee of Toray Group to come together as a concerted group to raise awareness of safety as the top priority and to ensure that basic safety rules and work fundamentals are thoroughly followed on work sites by upholding the Group slogan—Top Priority is Safety, Pursue “Zero Accidents,” Following the rules and thoroughness in fundamentals. By keeping the same fiscal 2023 slogan for fiscal 2024, the Group is working to further enhance safety awareness and promote strict adherence to safety rules.

Due to the potentially serious impact of an accident not only within the company but on surrounding communities, the Group acts with strong determination to prevent accidents such as fires and explosions, making accident prevention a top priority.

Toray Group sets up safety and health committees and works to ensure the safety and health of its employees through united efforts of labor and management, based on occupational safety and health laws in the countries in which it operates. These efforts help to ensure a pleasant working environment.

2023 Safety Slogan

Top Priority is Safety, Pursue “Zero Accidents”

—Following the rules and thoroughness in fundamentals—

Every year, the Toray Industries president, executive vice presidents and other officers, as well as Group company presidents and plant managers meet at the Toray Group Safety Meeting. At the meeting, safety action policies and main activities are shared to set a common course, activities at worksites are reported, and safety awards are given to raise awareness of safety and foster horizontal development for good practices. In 2023, for the first time in four years, the meeting was held in person at the Toray Human Resources Development Center as the main venue. To allow even greater participation, the event was carried out using a hybrid format, allowing various Toray plants and group companies worldwide to join in online.



2023 Toray Group Safety Meeting at Toray Human Resources Development Center

Furthermore, the Safety Summit, on-site safety lecture by Toray Industries directors, and other events are held on a national and regional basis, and at each group company and plant of the Group. These efforts promote a common awareness of the Toray Group safety slogan, policies, and main activities, enabling centralized management of safety activities across the Group.

In addition, representatives of the senior management and labor unions at Toray Industries hold regular meetings. They discuss issues related to safety and health, establish a shared understanding of the issues, and engage in forward-looking discussions to improve the workplace environment. Safety and health committee meetings are also held at each business site (plant) every month, with the participation of the site head, managers and labor union representatives concerned. They share safety activity policies and give and receive instructions to prevent recurrence of occupational accidents that have recently occurred in Toray Group, while also reporting and discussing other matters related to occupational safety and health.



Opening of the 2023 Health and Safety Conference (slogan chanting) (Toray Construction Co., Ltd.)



Keynote Address by the general manager of the Environment & Safety Department (Toray Industries) at the East and North China Safety Meeting [Toray Industries (China) Co., Ltd.]

Examples of Workplace Initiatives in Fiscal 2023

Two of the Group Companies Receiving Safety Awards

Toray Engineering Co., Ltd. has been recognized for its ongoing activities in providing safe and secure equipment and facilities through the establishment of a safety equipment supply system. The company received an encouragement prize at the 8th Mukaidono Safety Award. This program was established in 2015 in honor of Masao Mukaidono, Professor Emeritus at Meiji University, who is a leader in product and labor safety in Japan. Awards are presented to individuals and organizations that have made significant contributions to maintaining, improving, advancing and spreading safety practices within various industrial sectors.

As an outstanding workplace for safety and health in fiscal 2023, Toray Coms Gifu Co., Ltd. has been honored with an excellence award from the Gifu Labor Bureau under the Ministry of Health, Labour and Welfare. While recognizing the company for its proactive efforts in ensuring the safety and health of workers through labor-management cooperation, this award also commends the company's health and safety standards, making it a model for other companies.



Professor Masao Mukaidono (left) and the general manager of the Product Safety and Quality Assurance Management Department (right) (Toray Engineering Co., Ltd.)



President holding the award certificate together with the general manager of the Operations Division (Toray Coms Gifu Co., Ltd.)

Safety Meeting with the Central Japan Railway Company (JR Central) (Toray Industries, Inc. Gifu Plant)

On January 26, 2024, the Toray Industries Gifu Plant hosted a safety meeting with members of the Transportation Safety Department of Central Japan Railway Company (JR Central). The meeting included a presentation on the plant's safety activities, a tour of the film production department, and an exchange of opinions. The Gifu Plant representatives outlined their safety activities that began following a major accident in 1989, explained how the activities have evolved, and provided an overview of their current safety initiatives and approaches. JR Central shared their efforts to ensure safe and reliable transportation based on their Safety Charter and discussed their safety activities focused on the three pillars of people, systems, and equipment. The JR Central team commended the Gifu Plant for its high level of safety awareness, its proactive efforts to cultivate a safety-focused culture, and the comprehensive onsite safety measures it has implemented.



Safety meeting

Activity Report Meeting After a Workplace Accident and a Safety Conference (Toray Industries, Inc. Mishima Plant)

In March 2024, the Mishima Plant held a final report meeting concerning voluntary special safety activities implemented in response to a workplace accident that occurred at the plant in December 2023. Approximately 150 people, including online participants, attended the meeting. Four representative departments, including the film production section, the unit where the accident occurred, reported on their activity results. The plant also holds the Toray Mishima Plant General Safety Conference every year. It was recently held on December 18, 2023, at the Toray Human Resources Development Center. There were approximately 120 participants, including personnel from about 60 onsite group companies and offsite partner companies, as well as online attendees. The conference included reports on the safety performance of each department and company, recognition of outstanding cases, and presentations on safety initiatives by key departments and partner companies.



Final report meeting for voluntary special safety activities

Safety Audits at Group Companies Outside Japan (Toray Composite Materials America, Inc.)

To conduct a safety audit, an executive vice president of Toray Industries paid a three-day visit to the Decatur and Spartanburg Plants of Toray Composite Materials America, March 20-22, 2024. During the on-site inspections, the executive vice president offered guidance on enhancing safety, while emphasizing the need for work process automation and adherence to the 3S and 5S safety fundamentals.



Onsite inspection

Number of major accidents

■Reporting scope
Toray Group

■Target in 2023 (calendar year)
0

Result in 2023

1

Number of fire and explosion accidents

■Reporting scope
Toray Group

■Target in 2023 (calendar year)
0

Result in 2023

1

Achievement for world's best standard for safety management

(not exceeding 0.05 frequency rate for occupational accidents resulting in lost work time)

■Reporting scope
Toray Group

■Target in 2023 (calendar year)
No more than 0.05

Result in 2023

0.40

Toray Industries has collected data on all occupational accidents since 1980, and for Toray Group since 1990. Both the number of occupational accidents and frequency of occupational accidents resulting in lost work time have declined, compared with when the data was first collected. The frequency rate for occupational accidents resulting in lost work time for Toray Group overall in 2023 was 0.40. Although this is a positive result compared with that of Japan's manufacturing industry (1.29), it fell far short of the Group target of achieving the world's highest standard of safety management of 0.05 or lower. One reason for this is that group companies had many accidents resulting in lost work time. Accordingly, the Group is working to strengthen safety management at those group companies with support and guidance from Toray's main plant in Japan.

Toray Group will continue to identify the root cause of each accident to prevent reoccurrence, and avoid similar accidents based on the lessons learned in these accidents. Additionally, the Group will raise employee awareness of the need to practice safety first at all times.

Toray Group believes that safety activities depend upon a repetition of simple things. It is important to commit to the basics of safety and for everyone, without exception, to practice the basics at all times. The first step is to work on the comprehensive implementation of the 5S's—*seiri* (sort), *seiton* (set in order), *seiso* (shine), *seiketsu* (standardize) and *shitsuke* (sustain). Through these activities, all employees learn to adopt *seiketsu* and *shitsuke*.

Seiketsu fosters employees' motivation to keep the workplace standardized and clean, and *shitsuke* raises employees' awareness to adhere to the rules. They also take the time to reconsider movement pathways to make work safer. Managers repeatedly go around worksites, praising good behavior in an effort to raise workplace morale.

Next, the Group works to eliminate accidents in routine activities. Managers strive to maintain a sense of alertness in the workplace by continually reminding people to act with safety first, considering what the consequences (accidents) could be under any and all circumstances. In addition, if an occupational accident does occur, an accident report is sent out to the entire Toray Group. In an effort to eliminate similar accidents, the unit heads and unit chiefs of each workplace take a leading role in discussing the report with workplace team members, imagining the cause of the accident as a specific danger in their own workplace, in order to raise everyone's safety awareness and ensure commitment to the basics.

In fiscal 2023, a commuter bus accident occurred at a Group company outside Japan, resulting in multiple employee injuries. The accident was treated as a serious incident in accordance with company regulations. As part of its response measures, the company has implemented strict protocols for driver health management and is ensuring that employees wear seat belts while on board.

While there were no fire or explosion accidents at Toray Industries or Group companies in Japan in 2023, there was one such accident at a Group company overseas. The incident involved an explosion at a volatile organic compound (VOC) processing facility. In response, the company concerned revised its assessment criteria for equipment modifications to ensure compliance with Toray Industries' disaster prevention technical standards in the event of emergencies. In an effort to eliminate similar fire-related accidents, the Group has a system to enable Group companies to rapidly share critical information on fire-related accidents. The Group uses knowledge gained from previous accidents to adopt effective fire prevention strategies and implement unified accident prevention management standards.

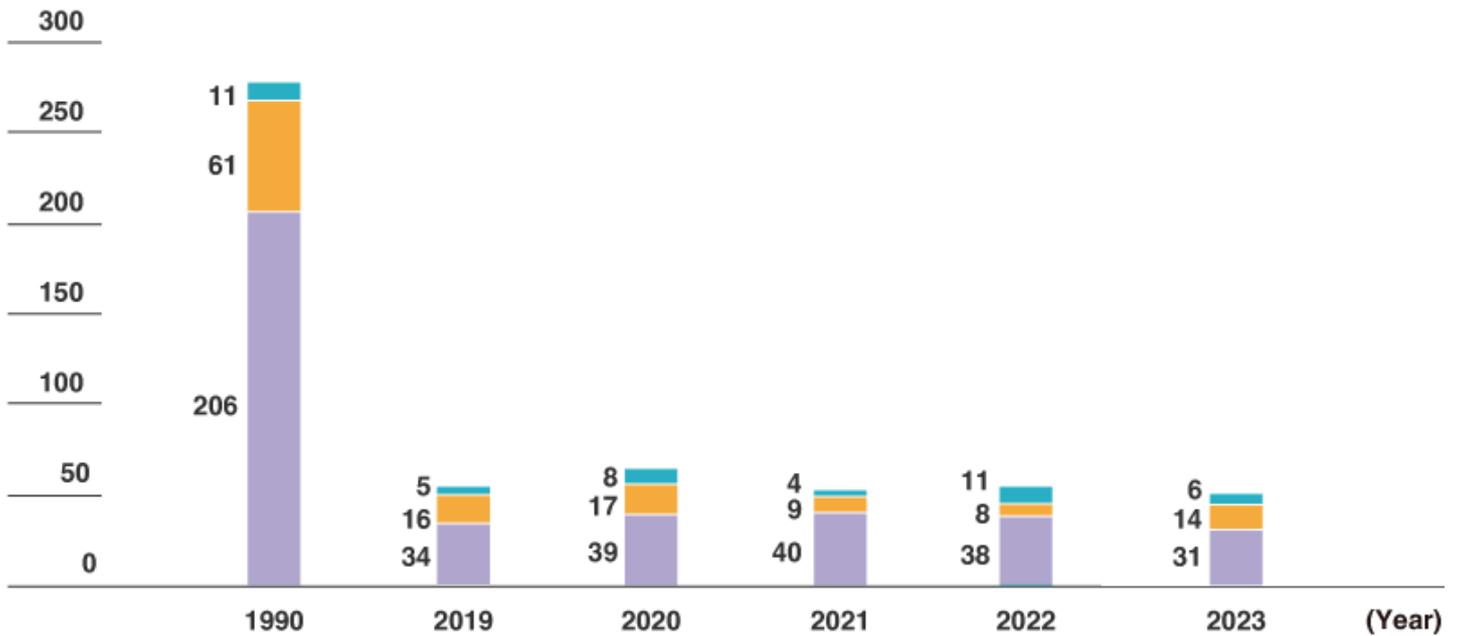


Example of work made safer by improving movement pathways by removing unnecessary items

Number of Occupational Accidents¹: Toray Group (Lost work time and non-lost work time)

■ Toray Industries, Inc. ■ Group companies in Japan ■ Group companies outside Japan

(No. of accidents)



¹ Data for Japan includes non-regular employees (part-time employees, contract employees, casual part-timers, and dispatched workers). Data from outside of Japan does not include temporary staff.

Occupational Accident Frequency Rate²: Toray Group

● Toray Group (all accidents) ● Toray Group (accidents causing lost work time)
● Japanese manufacturing industries (accidents causing lost work time)

(Rate)



² Occupational accident frequency rate: The number of fatalities and injuries at worksites per one million cumulative working hours.

Identifying Danger (Hazards), Evaluating Risk, and Accident Surveys

1. Identifying danger (hazards) and evaluating risk

Toray Group has a system whereby employees report any potential risks in the workplace to managers and the managers provide feedback on countermeasures and improvements. Before starting work, hazard prediction information, near miss reports, and safety proposals are shared with employees to confirm and mitigate risks. Company inspectors also carry out audits to review the system for preventing occupational accidents and the status of the implementation of countermeasures. If there are any problems, the inspectors give instructions for improvements.

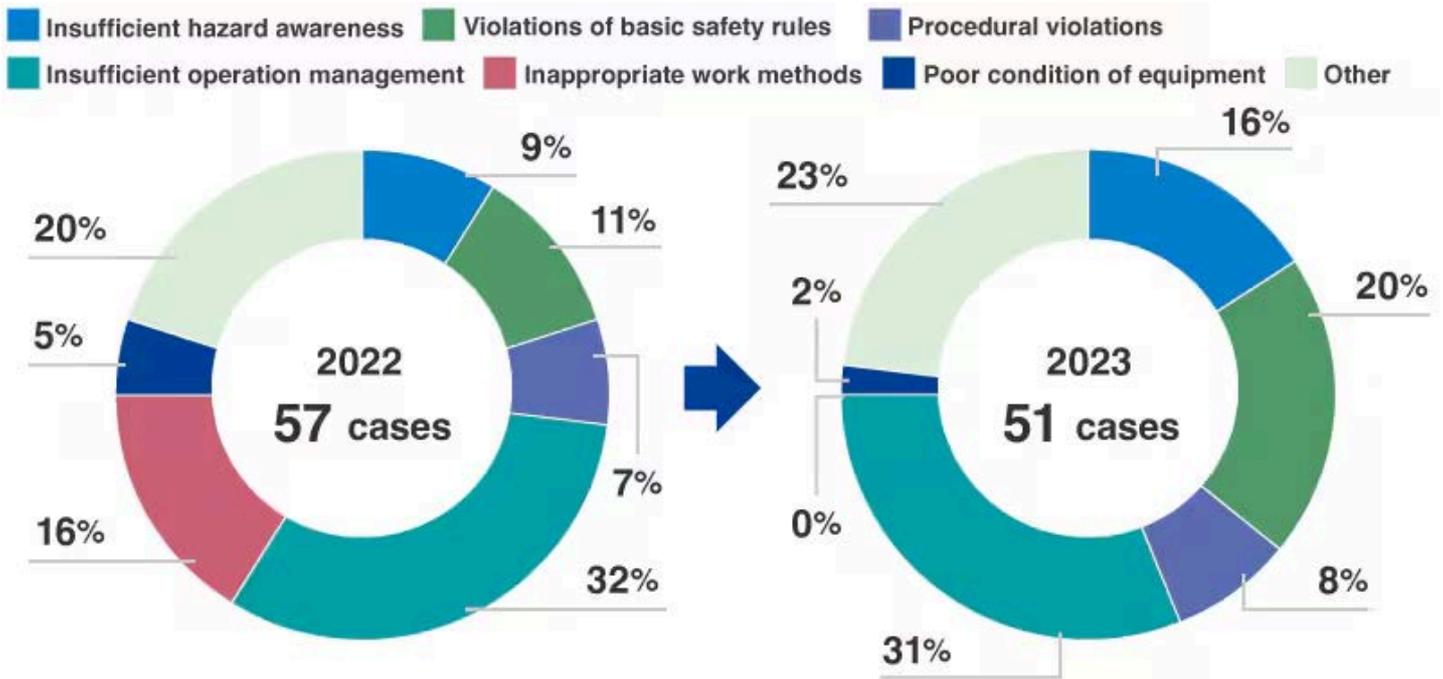
2. Accident investigation

In the event of an occupational accident, the emergency response review meeting and the countermeasure meeting are convened to clarify the chain of events leading up to the accident, identify the cause, and decide on and execute countermeasures. In addition, information about the accident is shared throughout the Group and measures taken to prevent a reoccurrence.

3. Prioritized risk reduction activities

Among the main causes of workplace accidents within Toray Group in 2022, 11% were due to violations of basic safety rules that everyone must follow, while 7% were attributed to procedural violations. These are situations where tasks were not performed according to the standard operating procedures, often due to carelessness. In 2023, the Group focused on eliminating accidents caused by both basic safety rule and procedural violations. Initiatives were launched to eliminate ambiguous rules, and provide manager-led training on rule adherence. Rule awareness activities were also carried out to help employees understand what can happen if rules are not followed and the purpose of the rules. In 2023, 20% of accidents were due to violations of basic safety rules and 8% were due to procedural violations. As a result of the 2023 activities, however, there were no accidents caused by basic safety rule or procedural violations in the first half of 2024, indicating that the initiatives have been effective. In 2024, the Group will continue to analyze the accidents that occurred in 2023 from various perspectives and promote improvement activities aimed at eliminating accidents, by utilizing the plan-do-check-act (PDCA) cycle method.

Causes of Occupational Accidents (Both Requiring and Not Requiring Work Absence) at Toray Group in 2022 / 2023



Enhancing Safety and Accident-Prevention Training

CSR Roadmap 2025
Main Initiatives (1)(2)(3)(4)

As part of their safety and accident prevention training, Toray Group companies and plants provide workshops and hands-on simulations to sensitize employees to dangers and hazards. Safety simulators enable workers to experience the dangers of electrocution, residual pressure, and getting caught in rollers. Virtual reality (VR) technology is also used to realistically simulate accidents at worksites. In the area of accident prevention, the Group conducts simulation training to teach employees about the risk of fires and explosions, and provides training on the fundamentals of accident prevention.

Additionally, the Group publishes on familiar topics regarding safety and accident prevention in its in-house magazine, People, in an effort to spread understanding of the fundamentals of accident prevention.

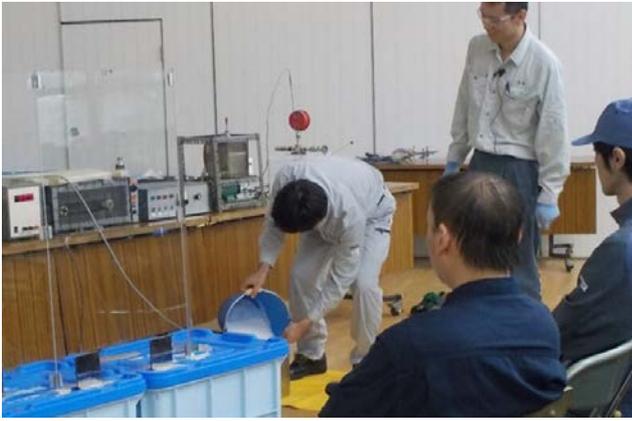


Simulation training at Mishima Plant (Toray Industries, Inc.)



Virtual reality simulation of actual worksite, involving collision with a forklift

Simulation training at Nagoya Plant (Toray Industries, Inc.)



Demonstrating the danger of fires and explosions at Gifu Plant
(Toray Industries, Inc.)

Implementing Safety Management Together with Subcontractors

CSR Roadmap 2025
Main Initiatives (1)(2)(3)

Toray Industries implements uniform safety activities for its own work as well as subcontracted work that is subcontracted to on-site Toray affiliates³ and Group companies. Monthly occupational health and safety committees and regular safety and liaison meetings are used to discuss the implementation status of safety activities and enhance communication with subcontractors, to ensure that all parties are aligned in the implementation of safety activities. Employees conduct on-site monitoring of operations in practice such as those involving forklifts and sharp-edged objects and use the results to generate recommendations for necessary improvements that enhance safety and ease of work. Subcontractors also submit their requests for work and equipment improvements, to increase physical safety.

³ Toray affiliates: Toray Industries' subsidiaries that provide ancillary services for plant operations



On-site monitoring of actual work (Toray Coms Nagoya Co., Ltd.)



Onsite forklift safety training session attended by 21 participants from seven group and partner companies involved in forklift operations (Toray Industries Inc. Ehime Plant)

Safety Management Implemented by Subcontractors

CSR Roadmap 2025
Main Initiatives (1)(2)(3)

Toray Group recognizes its duty to ensure the safety of the many subcontractors working at its sites. As colleagues working in the same workplace, subcontractors are made aware of, and expected to comply with, Toray Group rules. Subcontractors also participate in monthly meetings of occupational safety and health committees. Regular safety and liaison meetings are conducted to gain input from subcontractors and are used to communicate the Group's policies and to make sure all measures are implemented. In addition, the Group educates subcontractors who work on a short-term basis about Toray Group rules before work commences and manages safety thoroughly. At plants, Toray and subcontractors work together on safety initiatives, including safety posters, slogan contests and safety suggestions.



Safety meeting at Ishikawa Plant (Toray Industries, Inc.)

Preparing for Accidents through Fire-Prevention Drills

CSR Roadmap 2025
Main Initiatives (4)

All companies and plants in Toray Group are making efforts to improve their accident-prevention capabilities by carrying out fire-fighting drills specifically intended for fires and explosions. These drills include practice using water hoses, rescuing the injured, responding to a chemical leak, and giving emergency notification to authorities and local residents.

Since 2012, Group companies and plants have been conducting annual drills on setting up a company-wide emergency headquarters in response to a large-scale earthquake. The drills also involve checking on employees and monitoring facilities damage and supply chains. In 2023, the Group conducted a training exercise based on the scenario of not being able to set up the company-wide emergency headquarters at the Tokyo Head Office. This scenario presumed a catastrophic earthquake comparable to the Great East Japan Earthquake together with a major earthquake centered in the Tokyo metropolitan area. The exercise involved setting up the company-wide emergency headquarters in the Kansai region (Osaka Head Office, Shiga Plant) to manage the situation. In addition to conducting drills for the initial response to a large-scale earthquake, Group plants in seaside locations conduct drills of the evacuations that would be needed if a tsunami were triggered by a large-scale earthquake.



Fire prevention training (Maruichi Fiber Co., Ltd.)



Firefighting training (Ogaki Fuso Spinning Co., Ltd.)



Disaster prevention training at the Aichi Prefecture Petrochemical Complex (Toray Industries, Inc. Tokai Plant)



Fire hose deployment training conducted by the division first response firefighting team (Toray Industries, Inc. Okazaki Plant)

Initiatives for Improving Fire-Prevention Capabilities

CSR Roadmap 2025
Main Initiatives (4)

Toray Group is further enhancing its disaster prevention capabilities. In 2023, as part of the regularly held activities to strengthen fire prevention for the Fire Prevention Project Part II, Toray Group in Japan conducted certification training for FP⁴ key persons, who play a pivotal role on the frontlines by promoting accident prevention inspections and measures. As a result, a total of 223 individuals were newly certified. Toray Group's internal accident prevention experts provided support and guidance in identifying the root cause and taking countermeasures to prevent reoccurrence of those fire accidents and near misses for which the experts decided onsite audits and investigations were necessary.

The Group's earthquake measures seek to mitigate damage, while placing utmost priority on saving the lives of employees and preventing impacts on local communities. The Toray Group Business Continuity Plan (BCP) for a Large-Scale Earthquake outlines the emergency response to an earthquake and subsequent activities to maintain and restore business operations, as well as the Group's duties and normal readiness. In particular, for critical products, the Group develops BCPs that encompass supply chains and continually works to reduce risks.

⁴ FP : Fire Prevention

Examples of Workplace Initiatives in Fiscal 2023

First Aid and CPR Training

With the support of the Japanese Red Cross Medical Center and local fire departments, Toray Group conducts life-saving training using CPR mannequins and AEDs.



CPR training (Toray Industries Inc. Seta Plant)



Employees listening intently to the experiences of a paramedic [Toray Industries Inc. Basic Research Center (Kamakura)]

Distribution Safety Initiatives

CSR Roadmap 2025
Main Initiatives (1)(4)

Toray Industries is working to ensure safe distribution in its operations. In an effort to manage safety when transporting hazardous substances, the Company concludes security agreements with certain customers, raw material manufacturers, and shipping companies to designate their specific safety responsibilities and roles with regards to safety.

Initiatives to Reduce Health Effects of Chemical Substances on Employees

CSR Roadmap 2025
Main Initiatives (1)(2)(3)(4)

In consideration of the health risks to the Company's employees, including contracted, part-time, and dispatched employees, Toray Group is implementing the following initiatives for the handling of chemical substances.

1. Study the actual handling of chemical substances

Toray Group collects annual data on the volume of chemical substances handled by offices and plants of Group companies and volume in their possession. Furthermore, the Group clearly indicates the danger of mutagenicity for each chemical substance as stipulated in the Industrial Safety and Health Act, and discloses the risks.

2. Implement chemical substance risk assessments

Toray Group implements risk assessments using a variety of tools, which include working environment measurements for the chemical substances that it handles, ECETIOC Targeted Risk Assessment (TRA), CREATE-SIMPLE assessments, and control banding. The risk assessment results are used to protect the health of employees by implementing comprehensive measures to prevent worker exposure to organic solvents and dust where it is required.

3. Conduct follow-up through internal audits

Toray Group conducts an annual safety, health, accident prevention, and environmental audit, to objectively evaluate the methods for handling chemical substances and working conditions. The audit is used to identify any oversights or unattended issues and implement necessary improvements.

4. Other

Toray Group endeavors to maintain and improve working conditions by conducting working environment measurements and on-site monitoring of actual work in accordance with the risk level of handled substances. It also conducts medical checkups to continually follow-up on the health status of employees. To prevent health issues among workers, the Group conducts training on the dangerousness of handled chemicals, and prepares and keeps records of the on-site monitoring of actual work.

Health Effects and Response to Asbestos

CSR Roadmap 2025
Main Initiatives (3)

Toray Group has manufactured and imported building materials containing asbestos in the past. In addition, certain buildings and facilities were constructed using such materials and thermal insulation containing asbestos. Starting in 2005, when asbestos-related health hazards became a social concern in Japan, Toray took action to address the issue of its own asbestos-containing facilities. The health program offers medical examinations to current and former employees who handled even small amounts of asbestos and wish to undergo an examination. Toray Group is working in good faith with individuals diagnosed with asbestos-related health issues by assisting with their applications for workers' compensation and providing an ongoing program of medical examinations. The Group has not been contacted about health issues by residents living near affected plants.

The cumulative health impacts on former and current Toray Group employees as of March 31, 2024 are as follows.

Certified occupational accidents arising from handling asbestos (Toray Group): 130 (111)*

Certified health victims based on Japan's Act on Asbestos Health Damage Relief (Toray Group): 8 (8)*

Medical examination recipients involving asbestos (Toray Group): 4,041

* Figures in parentheses refer to fatalities as of March 2024.

Click [here](#) for the main initiatives for CSR Guideline 3, "Safety, Accident Prevention, and Environmental Preservation" in CSR Roadmap 2025.

CSR Activity Report (CSR Guideline Activity Reports) - Safety, Accident Prevention, and Environmental Preservation

Conserving Energy and Reducing Greenhouse Gas Emissions

Seeking to contribute to a carbon-neutral world, Toray Group pursues initiatives for reducing greenhouse gas emissions. In the Toray Group Sustainability Vision announced in July 2018, the Group set out the target of reducing greenhouse gas emissions¹ from production activities per unit of revenue by 30% compared with the baseline year of fiscal 2013 across the entire Toray Group worldwide as a quantitative target for fiscal 2030. In its CSR Roadmap 2022, the Group set out an interim target of reducing greenhouse gas emissions per unit of revenue¹ Group-wide by 20% by fiscal 2022 compared with fiscal 2013. As a result of efforts to reduce CO₂ emissions during manufacturing by conserving energy with improved manufacturing processes, increasing utilization of renewable energy, and reducing coal consumption, the Group reduced greenhouse gas emissions per unit of revenue by 34.6%² by the end of fiscal 2022.

In March 2023, the target set out in the Toray Group Sustainability Vision for reducing greenhouse gas emissions from production activities per unit of revenue was raised significantly from a 30% reduction compared with the baseline year of fiscal 2013 to a reduction of more than 50%¹. The Group also set a target of reducing absolute greenhouse gas emissions for Toray Group in Japan by at least 40%¹ compared to fiscal 2013, thereby accelerating the Toray response to climate change.

As of the end of fiscal 2023, the Group as a whole achieved a 36.0% reduction in greenhouse gas emissions per unit of revenue, and a 25% reduction in greenhouse gas emissions within Japan.

¹ Scope 1 (direct emissions from plants, offices, and vehicles, etc. owned by the Group) and Scope 2 (indirect emissions resulting from the production of electricity and other energy consumed by the Group) emissions.

² Until fiscal 2022, this was calculated by multiplying the GHG emissions and revenue of individual subsidiaries worldwide by the applicable Toray Industries' equity share. In fiscal 2023 however, the calculation method changed, and the degree of financial control Toray Industries has over the individual subsidiary (not the equity share) is now used, in accordance with the GHG Protocol, the international standard. The reduction is 32.7%.

Energy Conserving Activities

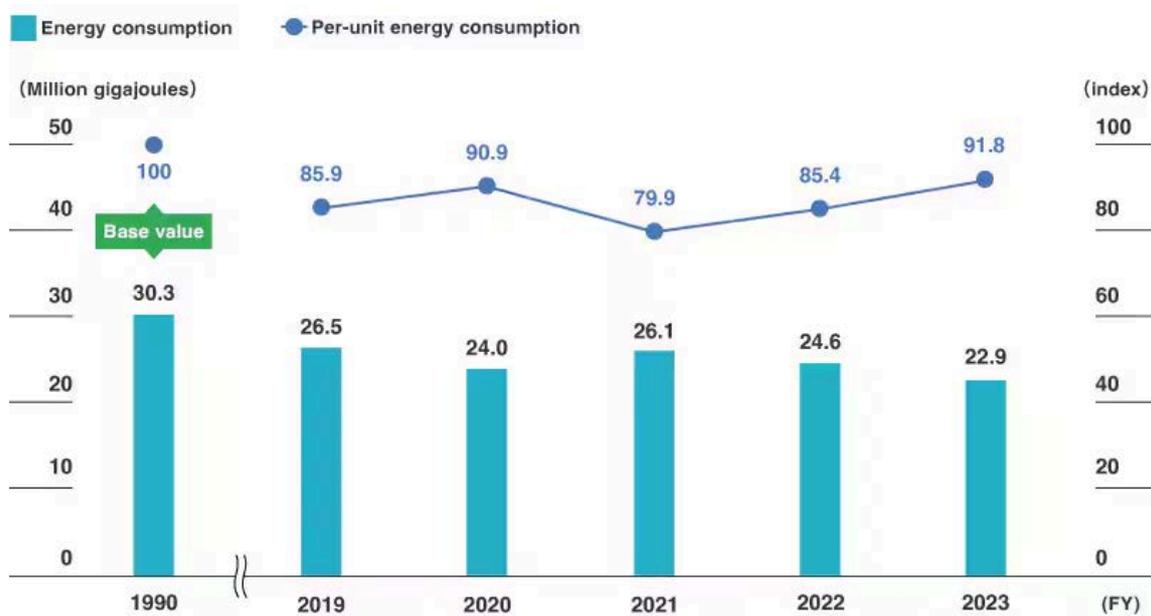
Toray Group sets annual energy-conserving targets for each company and plant and promotes group-wide energy-conserving activities. It also checks the progress of its energy-conserving measures on a monthly basis.

Toray Industries is promoting energy-conserving activities with a goal of reducing its per-unit energy consumption³ by 2% annually.

In fiscal 2023, energy consumption decreased by 6.9% year on year due to more efficient use of energy and efforts to reduce energy waste and loss. However, per-unit energy consumption deteriorated 7.5% year on year due to a 13.0% reduction in production volumes, while improved 8.2% compared to the baseline year of fiscal 1990.

³ Energy consumption per converted production volume

Energy Consumption and Per-unit Energy Consumption Index (Toray Industries, Inc.)⁴



⁴ The energy consumption shown in this graph does not include renewable energy.

As part of its proactive energy-conserving activities, Toray Group organizes teams whose members are familiar with manufacturing processes and facilities to help carry out annual energy-conserving diagnostics at plants in Toray Industries and its group companies around the world to come up with ideas for further energy conservation. In fiscal 2023, these activities were conducted at one of Toray Industries' plants, and at two group company plants in Japan. As a result, the Group reduced greenhouse gas emissions by about 5,000 tons-CO₂ per year or more equivalent.

Reduction of greenhouse gas emissions per unit of revenue (%)

Result in fiscal 2023

36.0%⁵

■ Reporting scope: Toray Group
■ Target: At least 40% lower than fiscal 2013 (Fiscal 2025)

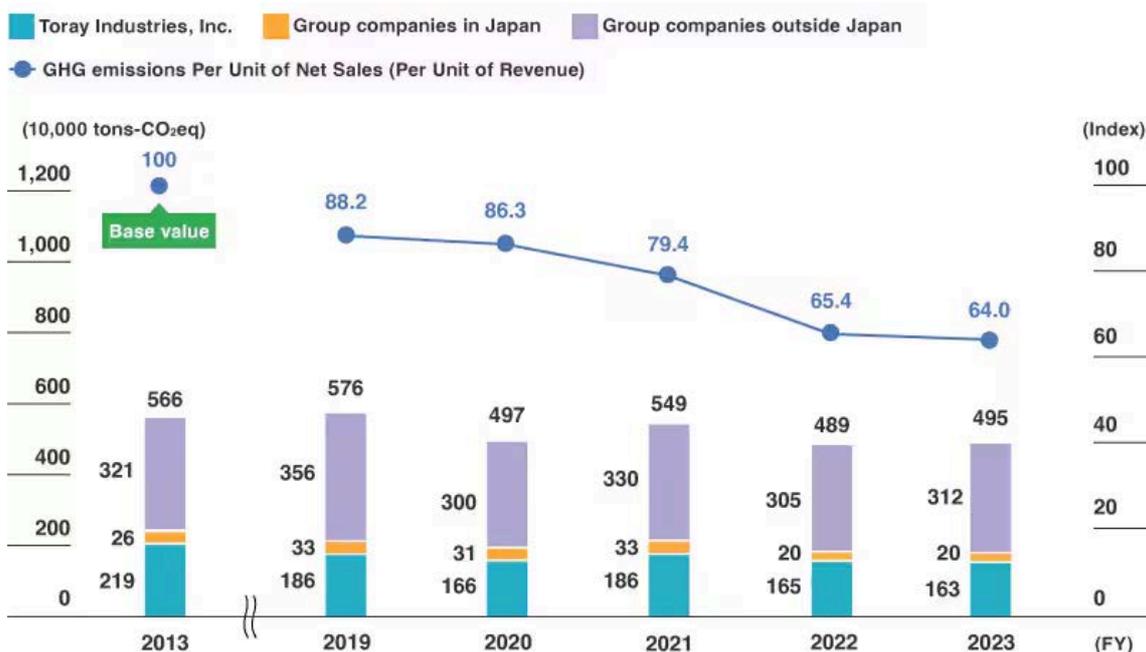
Toray Group's greenhouse gas emissions (Scope 1 and 2) reduction target was established in the CSR Roadmap 2025. The Group as a whole implements systematic reduction measures with the goal of achieving a 40% reduction of greenhouse gas emissions per unit of revenue by fiscal 2025, compared to fiscal 2013.

Overall greenhouse gas emissions (Scope 1 and 2) for Toray Group in fiscal 2023 increased by 1.2% year on year to 4.95 million tons-CO₂ equivalent. In terms of per unit of revenue, the Group reduced emissions by 36.0%⁵ compared to the baseline year of fiscal 2013. In addition to an increase in groupwide sales revenue, the reduction was due to efforts to achieve a maximum reduction of greenhouse gas emissions (such as improving processes to conserve energy, utilizing renewable energy, and reducing coal use at group plants).

⁵ Until fiscal 2022, this was calculated by multiplying the GHG emissions and revenue of individual subsidiaries worldwide by the applicable Toray Industries' equity share.

In fiscal 2023 however, the calculation method changed, and the degree of financial control Toray Industries has over the individual subsidiary (not the equity share) is now used, in accordance with the GHG Protocol, the international standard.

Greenhouse Gas Emissions (Scope 1 and 2) and Greenhouse Gas Emissions Per Unit of Net Sales (Per Unit of Revenue) (Toray Group)



Note: Per unit of net sales until fiscal 2019, as Japanese GAAP was used until then, and per unit of revenue from fiscal 2020 onwards, as International Financial Reporting Standards (IFRS) have been adopted since then.

Figures for the baseline year of fiscal 2013 are recalculated to include companies that joined Toray Group in fiscal 2014 or later.

In addition, the calculation method for the baseline year of fiscal 2013 and fiscal 2023 changed to multiplying greenhouse gas emissions by the degree of financial control Toray Industries has over the individual subsidiary, in accordance with the GHG Protocol, the international standard.

The calculations for fiscal 2019 through fiscal 2022 are based on multiplying greenhouse gas emissions by equity share.

Using the same calculation method as in fiscal 2023, which multiplies by the degree of financial control Toray Industries has over the individual subsidiary, greenhouse gas emissions for fiscal 2022 are 5.12 million tons.

Reduction of Coal Use at Plants Outside of Japan

In April 2024, Indonesian group company P.T. Easterntex ceased coal-fired power generation and switched to purchased power, while also installing gas boilers to generate its steam supply. This change is expected to reduce its CO₂ emissions by 150,000 ton-CO₂ per year.



New gas boilers at P.T. Easterntex

Toray Group Greenhouse Gas Emissions (Scope 3)

In addition to Scope 1 (direct emissions from plants, offices, and vehicles, etc. owned by the Group) and Scope 2 (indirect emissions resulting from the production of electricity and other energy consumed by the Group), Toray Group also calculates Scope 3 emissions (other indirect emissions).

Toray Group Scope 3 Emissions

(10,000 tons-CO₂eq)

Category 1: Purchased goods and services	859.7
Category 2: Capital goods	51.8
Category 3: Fuel and energy related activities	95.6
Category 4: Upstream transportation and distribution	18.4
Category 5: Waste generated in operations	0.9
Category 6: Business travel	0.6
Category 7: Employee commuting	2.1
Category 8: Upstream leased assets	0.4
Category 9: Transportation and delivery (downstream)	3.0

Category10: Processing of sold products	—
Category11: Use of sold products	274.6
Category12: End-of-life treatment of sold products	447.5
Category13: Leased assets (downstream)	1.1
Category14: Franchises	0.0
Category15: Investments	—
Total	1,755.6

Calculation Method for Scope 3 Categories

Category ⁶	Calculation Method
1. Purchased goods and services	Calculated by multiplying the volume of purchased products and services (physical and monetary data) by the emission factor for each item. (See Inventory Database for Environmental Analysis (IDEA) [Ver. 2.3] and Emission Factor Database for Calculating Greenhouse Gas Emissions of Organizations Through the Supply Chain [Ver. 3.4] and emission factors provided by suppliers.)
2. Capital goods	Calculated by multiplying the amount of payment for purchased capital goods by the emission factor. (See Emission Factors for Calculating Greenhouse Gas Emissions of Organizations Through the Supply Chain [Ver. 3.4].)
3. Fuel and energy related activities	<p>Fuel Calculated by multiplying the amount of purchased fuel by the emission factor for the fuel type. (See IDEA [Ver. 2.3].)</p> <p>Electricity and Steam Electricity: Calculated by multiplying the input data of electricity procured from power companies by the average emission factor of all power sources. (See Emission Factors Database for Calculating Greenhouse Gas Emissions of Organizations Through the Supply Chain [Ver. 3.4].) Steam (heat): Calculated by multiplying the input data of procured heat by its emission factor. (See Emission Factors for Calculating Greenhouse Gas Emissions of Organizations Through the Supply Chain [Ver. 3.4].)</p>

Category ⁶	Calculation Method
4. Upstream transportation and distribution	<p>Raw Materials Emissions for transportation are calculated by multiplying weight and distance by emission factors for each type of transportation. (See Shippers' Guide to Energy Conservation Promotion, 7th Edition, Ministry of Economy, Trade and Industry.) Also, emission impacts from storage and loading/unloading are minimal and therefore not included.</p> <p>Products Emissions for transportation are calculated by multiplying weight, distance, and loading rate by emission factors for each type of transportation. (See Emission Factors for Calculating Greenhouse Gas Emissions of Organizations Through the Supply Chain [Ver. 3.4].) Also, emission impacts from loading/unloading are minimal and therefore not included.</p>
5. Waste generated in operations	Calculated by multiplying the amount of waste for each type of waste by the emission factor applicable to type of waste. (See Emission Factors for Calculating Greenhouse Gas Emissions of Organizations Through the Supply Chain [Ver. 3.4].)
6. Business travel	Calculated by multiplying the total number of employees by the emission factor. (See Emission Factors for Calculating Greenhouse Gas Emissions of Organizations Through the Supply Chain [Ver. 3.4].)
7. Employee commuting	Calculated by multiplying the total number of employees and the average number of days of operation by the emission factor. (See Emission Factors for Calculating Greenhouse Gas Emissions of Organizations Through the Supply Chain [Ver. 3.4].)
8. Upstream leased assets	Calculated by multiplying floor area of relevant building by the emission factor per unit of floor area. (See Emission Factors for Calculating Greenhouse Gas Emissions of Organizations Through the Supply Chain [Ver. 3.4].)
9. Transportation and delivery (downstream)	Calculated by taking the emissions related to upstream transportation and distribution (Category 4) and factoring in the emission shares based on whether Toray or a third party is the shipper. Only emissions related to transportation and distribution up to the first sales destination are included in the calculation.
10. Processing of sold products	Toray Group primarily sells a wide variety of materials and substances as intermediate goods for various applications. It is difficult for the Group to ascertain how its materials and substances are processed into final products, making it impossible to reasonably estimate the corresponding emissions. Accordingly, this category has been excluded from the Group's emissions calculations.

Category ⁶	Calculation Method
11. Use of sold products	For products that generate emissions during the direct use stage, emissions are calculated by multiplying the sales volume in the reporting year by the product's estimated lifetime emissions (estimated using a standard scenario established by Toray Group for each product concerned). The main products that generate emissions during the direct use stage include manufacturing plants, equipment, devices, and machines provided by Toray Engineering Co., Ltd., as well as dialysis-related and blood purification devices from Toray Medical Co., Ltd.
12. End-of-life treatment of sold products	Calculated by multiplying the sales volume of products sold by Toray Group to third parties by the waste emission factors associated with each product (assuming complete combustion and incineration)
13. Leased assets (downstream)	Calculated by multiplying the floor area of relevant buildings by the emission factor per unit of floor area. (See Emission Factors for Calculating Greenhouse Gas Emissions of Organizations Through the Supply Chain [Ver. 3.4].)
14. Franchises	Considered to be zero, as the Toray Group does not have any franchises
15. Investments	Not calculated, due to low relevance to Toray Group

⁶ The number of companies included in the calculations differs by category.

Related Information

Toray Industries has obtained third-party assurance of its greenhouse gas emissions from LRQA Limited for Scope 1 and 2 emissions for Toray Industries and group companies outside of Japan, as well as for Scope 3 emissions (categories 1, 2, 3, 4, 5, 6, 7, and 8) for the entire Toray Group.

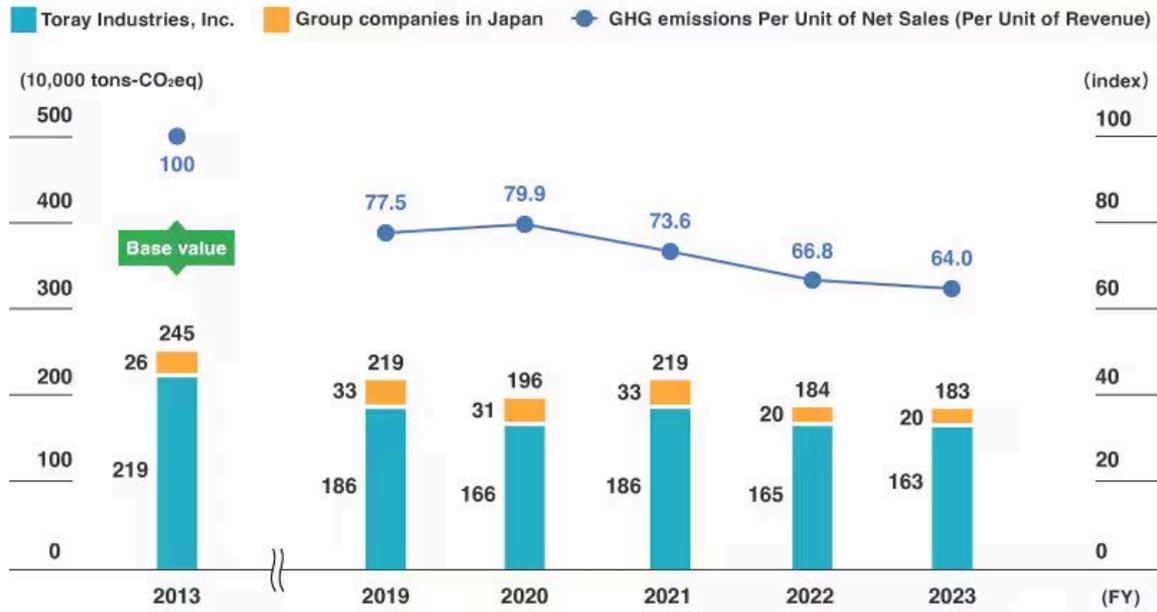
> [Third-Party Assurance](#)

Greenhouse Gas Emissions (Scope 1 and 2) for Toray Industries and Its Group Companies in Japan

CSR Roadmap 2025
Main Initiatives (6)

In fiscal 2023, greenhouse gas emissions (Scope 1 and 2) at Toray Industries and its group companies in Japan decreased by 0.8% compared to the previous fiscal year. Greenhouse gas emissions per unit of revenue improved by 4.2% compared to the previous fiscal year, due to efforts to reduce emissions and an increase in sales revenue. This resulted in a 36.0% reduction compared to fiscal 2013.

Greenhouse Gas Emissions and Greenhouse Gas Emissions Per Unit of Net Sales (Per Unit of Revenue) (Toray Group in Japan)



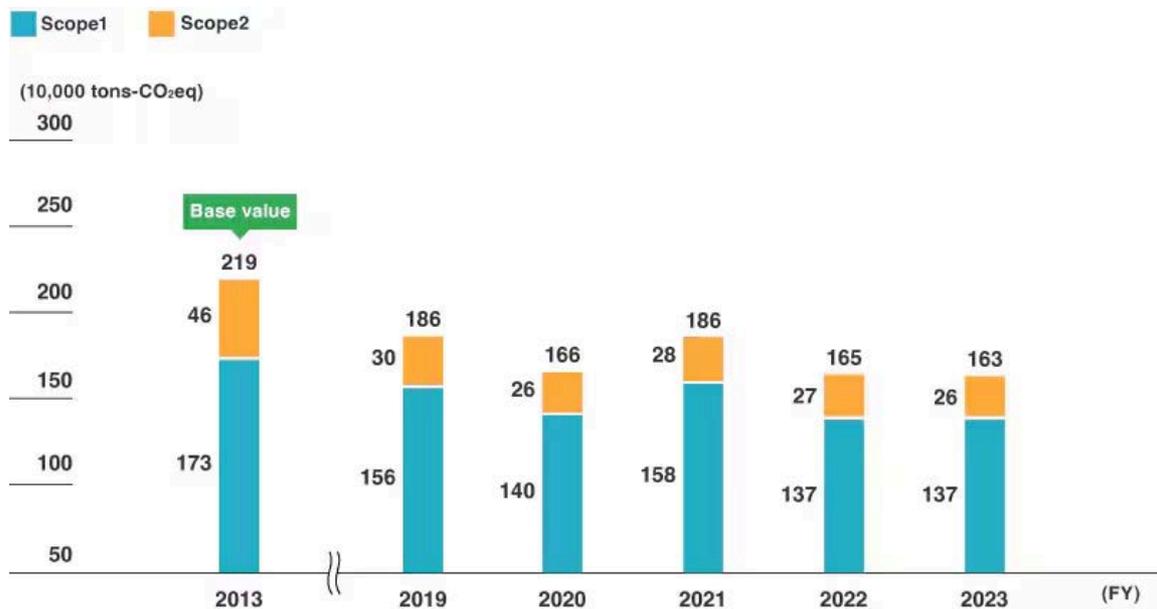
Note: Per unit of net sales until fiscal 2019, as Japanese GAAP was used until then, and per unit of revenue from fiscal 2020 onwards, as International Financial Reporting Standards (IFRS) have been adopted since then.

Figures for the baseline year of fiscal 2013 are recalculated to include companies that joined Toray Group in fiscal 2014 or later.

In addition, the calculation method for the baseline year of fiscal 2013 and fiscal 2023 changed to multiplying greenhouse gas emissions by the degree of financial control Toray Industries has over the individual subsidiary, in accordance with the GHG Protocol, the international standard.

The calculations for fiscal 2019 through fiscal 2022 are based on multiplying greenhouse gas emissions by equity share.

Greenhouse Gas Emissions (Scope 1 and 2) (Toray Industries, Inc.)



Increase in solar power generation capacity (%)

■Reporting scope	■Target
Toray Group	At least 10% higher than fiscal 2022 (Fiscal 2025)

Result in fiscal 2023

101%

Under its CSR Roadmap 2025, Toray Group has set the rate of increase for solar power generation capacity as a KPI and is focused on the adoption of renewable energy systems.

In fiscal 2023, the installation of solar power systems at the Toray Industries Shiga Plant and at group company plants in China and Hungary resulted in a 101% increase in capacity. Going forward, the Group will continue to promote the installation of solar power systems.

In addition, the Tokai Plant of Toray Industries began co-combusting sludge fuel, which is carbon neutral, as boiler fuel from fiscal 2017.



Solar power generation system at Toray Industries Shiga Plant

Renewable energy generated in fiscal 2023

100,770 MWh

Toray Group has installed solar power generation facilities at the following plants:

<p>Toray Industries, Inc.</p>	<ul style="list-style-type: none"> • Shiga Plant • Seta Plant • Ehime Plant • Okazaki Plant • Mishima Plant • Nasu Plant • Basic Research Center (Kamakura)
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Group companies in Japan	<ul style="list-style-type: none"> • Toray Textiles, Inc. • Toray Plastics Precision Co., Ltd. • Toray KP Films Inc. • Toray Advanced Film Co., Ltd. • Soda Aromatic Co., Ltd. • Toray Fine Chemicals Co., Ltd. • Toray Carbon Magic Co., Ltd. • Toray Engineering Co., Ltd. • Toray Engineering West Co., Ltd. • Toray Engineering Central Co., Ltd. • Toray Construction Co., Ltd. • Toray Precision Co., Ltd. • Toyo Jitsugyo Co., Ltd.
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Group companies outside Japan	
America United States	<ul style="list-style-type: none"> • Toray Resin Co. • Toray Plastics (America) , Inc. • Toray Membrane USA, Inc.
Europe Italy Hungary	<ul style="list-style-type: none"> • Delta-Tech S.p.A. • Zoltek Zrt.
Asia East Asia Southeast Asia	<ul style="list-style-type: none"> • Toray Fibers (Nantong) Co., Ltd. • Toray Polytech (Foshan) Co., Ltd. • Toray Polytech (Nantong) Co., Ltd. • Toray Sakai Weaving & Dyeing (Nantong) Co., Ltd. • Toray Plastics (Suzhou) Co., Ltd. • Toray Plastics Precision (Zhongshan) Ltd • Toray Film Products (Zhongshan) Ltd. • Yihua Toray Polyester Film Co., Ltd. • Toray Membrane (Foshan) Co.,Ltd. • TAK Advanced Film (Nantong) Co., Ltd. • Toray Advanced Materials Korea Inc. • Thai Toray Synthetics Co., Ltd. • Penfabric Sdn. Berhad

Substantial Use of Renewable Electricity at Toray Industries

Toray Industries signed a green power supply service⁷ agreement with Mitsui Fudosan Co., Ltd. for the Toray head office located in Tokyo's Nihonbashi Mitsui Tower.

By utilizing, through Mitsui Fudosan, the environmental value of the wind power facilities that Electric Power Development Co., Ltd. operates, Toray's head office has effectively used 100% renewable energy since April 2022. On a global basis, the estimated annual reduction in greenhouse gas emissions should be around 1,500 tons-CO₂. In April 2023, the Nagoya Branch of Toray Industries, which is located in the Nagoya Mitsui New Building, introduced a Green Power Supply Service, allowing it to effectively procure renewable energy. This same step was taken by the Osaka Head Office, which is located in the Nakanoshima Mitsui Building, in April 2024.

⁷ Green power supply service: A unique service developed by Mitsui Fudosan that uses non-fossil fuel energy certificates to provide electricity to the tenants of its office buildings, which is effectively generated using 100% renewable energy.

Initiatives Under the Fukushima Zero Carbon Declaration Project (Toray Advanced Film Co., Ltd.)

Toray Film Processing Co., Ltd. received the Excellence Award in the Intermediate Level category of the manufacturing division at the Fukushima Zero Carbon Challenge Awards Ceremony. The company was recognized for efforts by its Fukushima Plant as part of the Fukushima Zero Carbon Declaration Project.



Fukushima Governor (center) and Fukushima Plant Manager (second from the right)

Energy-Saving and Equipment Efficiency Initiatives (Toray Advanced Materials Korea Inc.)

Toray Advanced Materials Korea Inc. was recognized for contributing to the development of the regional energy industry through energy savings, improved recycling rates, and efficient and stable facility management. They were awarded the North Gyeongsang Province Governor's Prize at the 2023 North Gyeongsang Province Energy Award Ceremony.



Leader of Power Team 1 (left) receiving the award with colleagues

Initiatives to Protect the Ozone Layer

Toray Industries ceased using chlorofluorocarbons (CFCs) in all manufacturing processes and stopped purchasing CFCs for use in refrigeration equipment in 1994. The Company finished upgrading refrigeration equipment using CFCs in fiscal 2019.

Related Information

For disclosure of information related to climate change in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), refer to [Toray Group's Approach to Climate Change](#).

Click [here](#) for the main initiatives for CSR Guideline 3, "Safety, Accident Prevention, and Environmental Preservation" in CSR Roadmap 2025.

CSR Activity Report (CSR Guideline Activity Reports) - Safety, Accident Prevention, and Environmental Preservation

Chemical Management

Compliance Status Regarding Worldwide Chemical Substance Regulations

All business divisions of Toray Industries Inc., as well as its group companies in and outside Japan, have chemical substance management systems in place for securing compliance with relevant regulations worldwide. The Company does this by registering relevant chemical substances while managing and reporting on the quantities it produces and imports, and by confirming that no prohibited or restricted substances are used. Toray is also working to substitute safer product substances for those of which the concern for negative impact on humans and the environment is very high (such as SVHC, substances of very high concern, under REACH).

In fiscal 2023, the following key activities were conducted:

- Registration and notification of chemical substances in compliance with country-specific regulations
- Revision of its Safety Data Sheets (SDS) in response to Japan's revised Industrial Safety and Health Act
- Substitution of polyamide 12 fine particles, which are banned under the EU's restriction of intentionally added microplastics, with polyamide 4 fine particles that are marine-biodegradable
- Development of PFAS-free materials, including water-repellent textiles, polyimide materials, and electrolyte membranes
- Development of new wavelength conversion sheets using cadmium-free materials

Management of Chemicals in Products (CiP)

Toray Industries has established the Toray Green Procurement Guidelines (established June 2004, latest revision June 2022) with the aim of reducing the impact on the global environment of the entire cycle from product development, manufacturing, distribution, use, to disposal. The guidelines address the following legally regulated substances by identifying them as either banned or controlled substances. In addition, the company identifies and manages controlled substances according to the relevant laws and regulations for each business.

Banned Substances

- Class I specified chemical substances regulated under the Japanese Act on the Regulation of Manufacture and Evaluation of Chemical Substances
- Substances banned under the Japanese Industrial Safety and Health Act

Controlled Substances

- 10 restricted substances under the EU RoHS Directive
- Azo compounds that form specified amines under the Japanese Act on Control of Household Products Containing Harmful Substances
- Ozone depleting substances under the Japanese Act on the Protection of the Ozone Layer
- Radioactive substances

Controlled substances other than those listed above are designated primarily in accordance with the laws and regulations pertaining to chemSHERPA¹.

¹ chemSHERPA: Information-sharing scheme for chemical substances, managed by the Joint Article Management Promotion-consortium (JAMP) (<https://chemsherpa.net/english>)

The Group provides information on the chemical components in all chemical products using Safety Data Sheets (SDS), regardless of whether they are classified as hazardous under the Globally Harmonized System (GHS) of Classification and Labelling of Chemicals. Additionally, for materials such as yarn and film, the Group also provides customers with information on the chemical substances they contain in a format similar to the SDS.

Further Improving Chemical Management in Toray Group

To better respond to increasingly stricter regulations worldwide, Toray Group is working to enhance its chemical management by utilizing IT systems and improving in-house training. The Toray Chemicals Management System (TCMS), which began operating in fiscal 2019, is used to reliably and promptly confirm the registration status of chemical substances and regulations in destination countries, as well as to issue SDS compliance with specific countries' laws and regulations.

In addition, the Group also established a new in-house education system to raise awareness and increase the knowledge levels of employees in charge of chemical management. In fiscal 2023, Toray Industries conducted training for Group employees who wished to participate on six topics, including chemical management systems in China and the EU's proposed PFAS restrictions. A total of 1,462 employees took part in the training sessions.

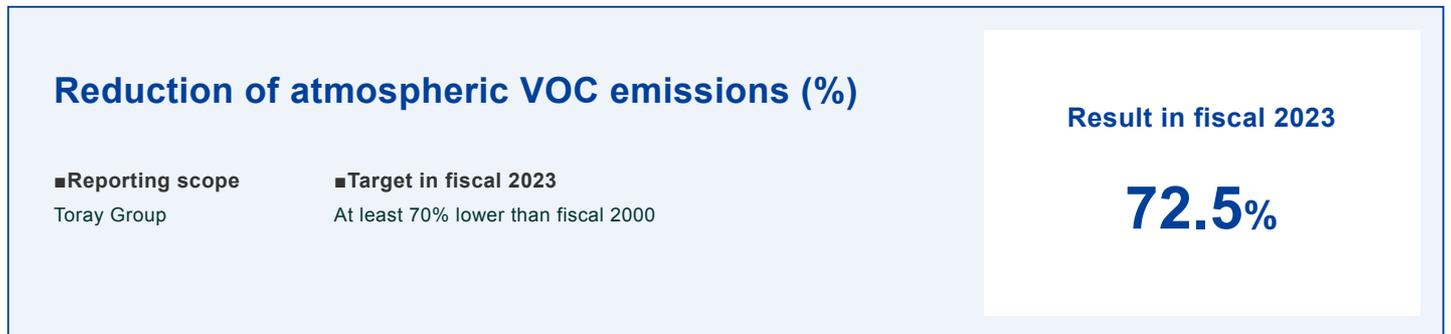
CSR Activity Report (CSR Guideline Activity Reports) - Safety, Accident Prevention, and Environmental Preservation

Initiatives to Prevent Air and Water Pollution

Toray Group works continuously on environmental conservation measures at its production sites. It is working to prevent air pollution caused by volatile organic compounds (VOCs), sulfur oxides (SOx), nitrogen oxides (NOx), and dust emissions, as well as to prevent water pollution by reducing biochemical oxygen demand (BOD) and chemical oxygen demand (COD). Given that Toray Group processes involve many organic chemicals, reduction of atmospheric VOC emissions has been identified as a top priority. Under the Group's CSR Roadmap 2025, covering fiscal years 2023 to 2025, KPIs have been established to drive this initiative. Going forward, the Group will continue efforts to reduce VOCs and other air pollutants by installing recovery systems and switching fuels. It will also keep decreasing BOD and COD through stable operation and expansion of wastewater treatment facilities.

Reduction of Atmospheric VOC Emissions

CSR Roadmap 2025
Main Initiatives (9)

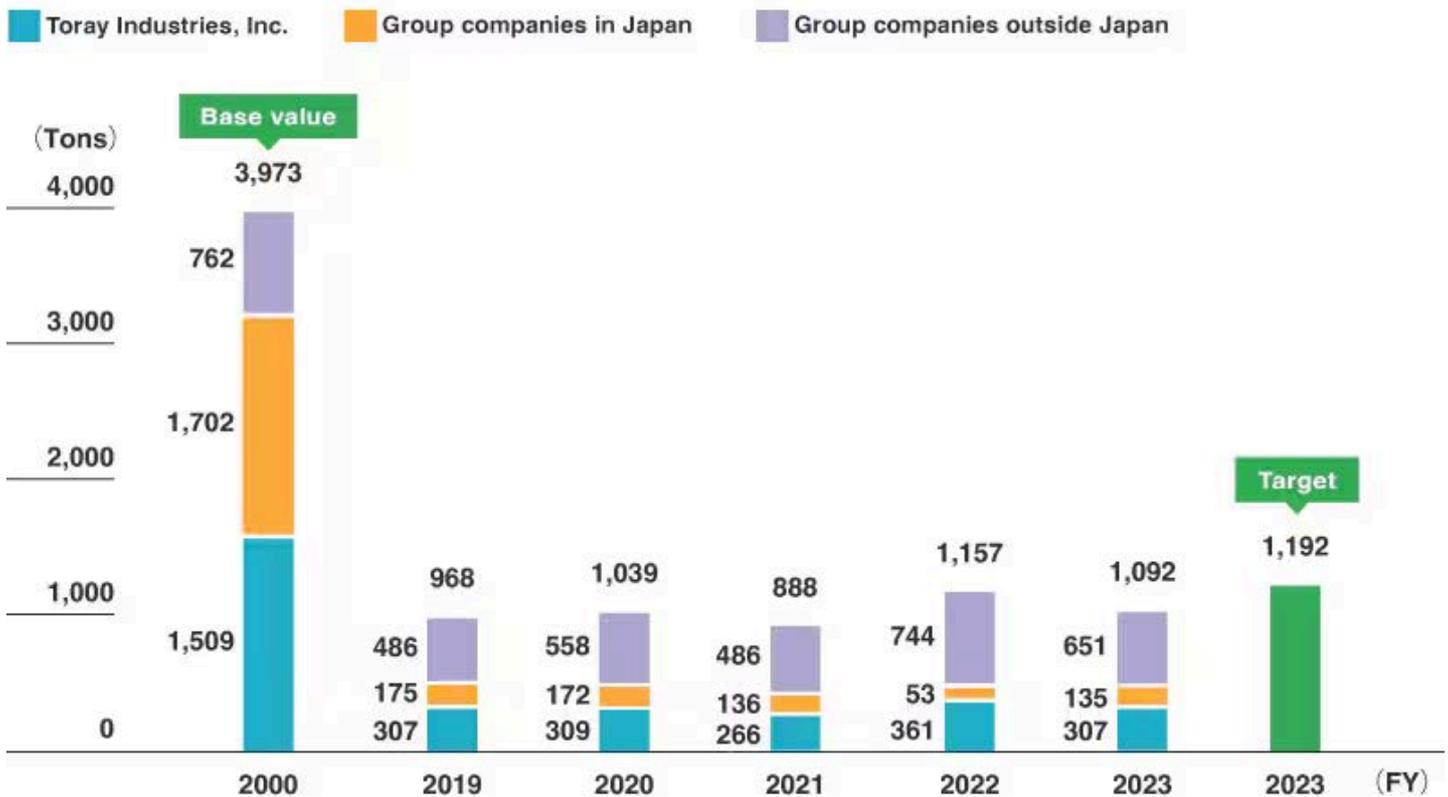


In fiscal 2023, Toray Group's atmospheric VOC emissions were 1,092 tons, down 5.6% (65 tons) compared to the previous fiscal year.

The emissions were 72.5% below the base year of fiscal 2000, achieving the CSR Roadmap 2025 target of a 70% reduction compared to the base year.

Going forward, as it works on business expansion, the Group will keep striving to achieve the KPI set under the CSR Roadmap 2025, namely, an annual reduction target of 72% or more compared to fiscal 2000. To achieve this goal, the Group will designate companies with high VOC atmospheric emissions as companies subject to supervision and work with these companies to further reduce emissions.

Atmospheric VOC Emissions



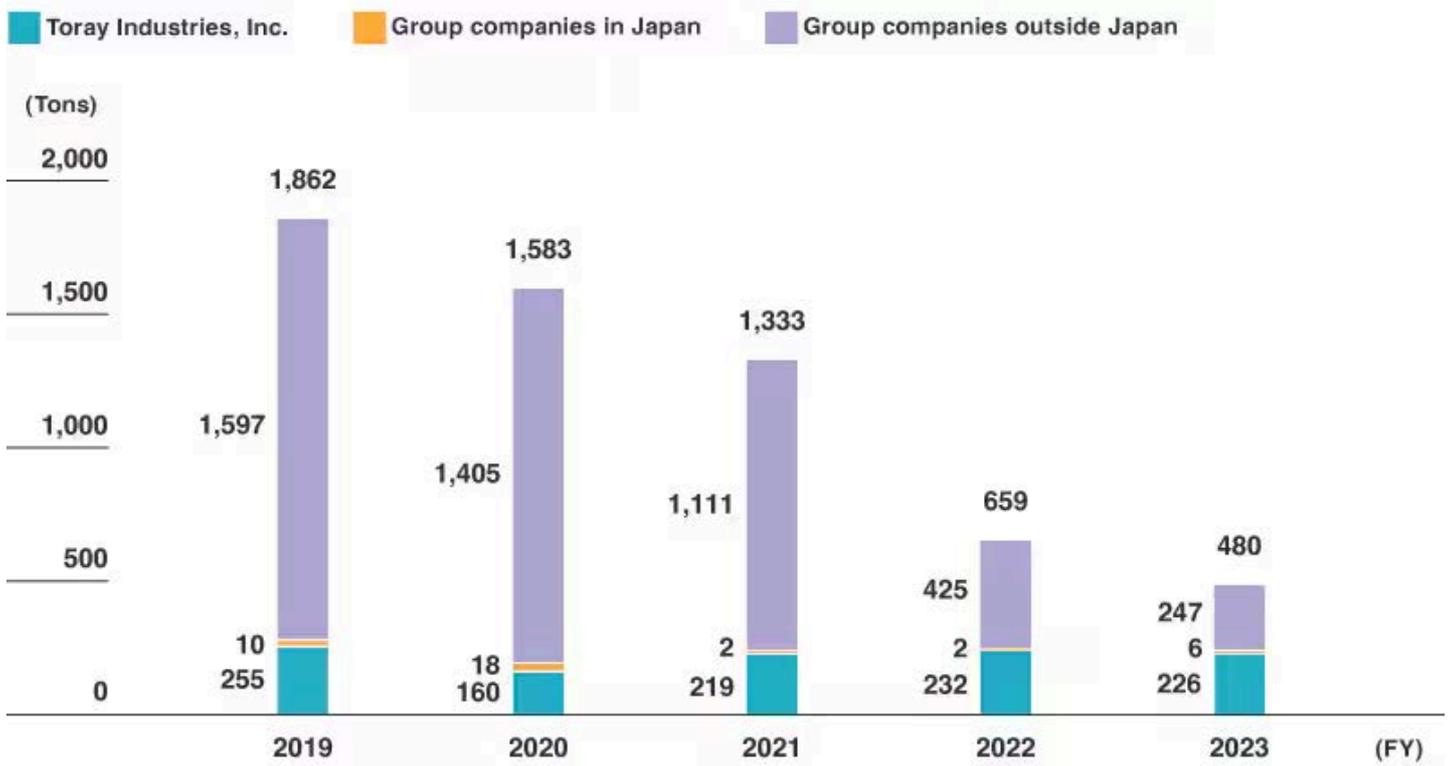
The Group will also keep voluntarily reducing atmospheric emissions of substances subject to the PRTR Act, which include chemicals of concern due to potential health impacts, while closely monitoring regulatory trends in each country or region where its production sites are located.

In fiscal 2023, total atmospheric emissions of PRTR-regulated substances across the Toray Group amounted to 924 tons. This represented a 64.8% reduction compared to the base year of fiscal 2000.

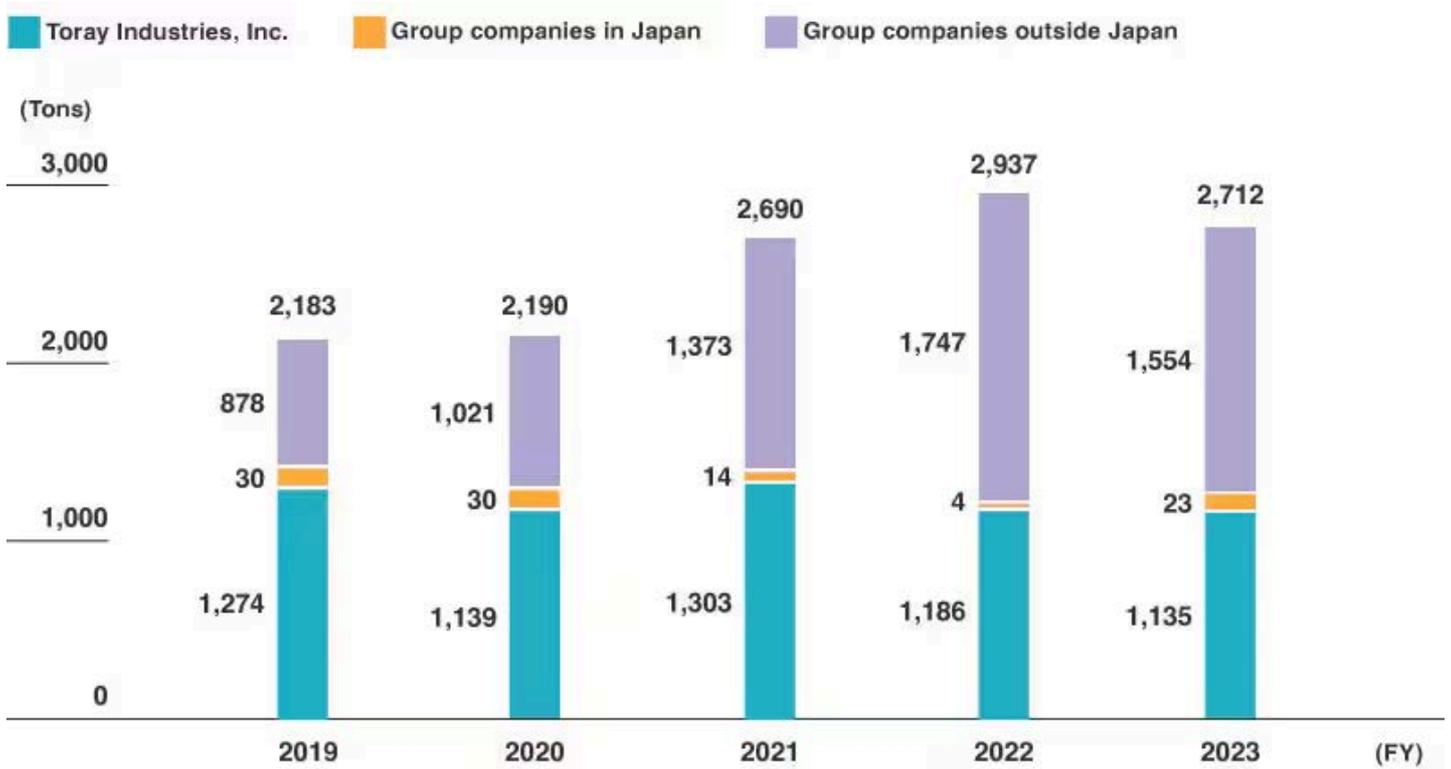
Air Emission Management (Fiscal 2023 Result)

In fiscal 2023, Toray Group recorded 480 tons of SO_x emissions (down 27% year on year), 2,712 tons of nitrogen oxide (NO_x) emissions (down 8% year on year), and 632 tons of dust emissions (up 21% year on year). The year-on-year reduction in SO_x and NO_x emissions was due to the downsizing of coal-fueled boilers at group companies outside of Japan. The year-on-year increase in dust emissions was due to changes in fuel type.

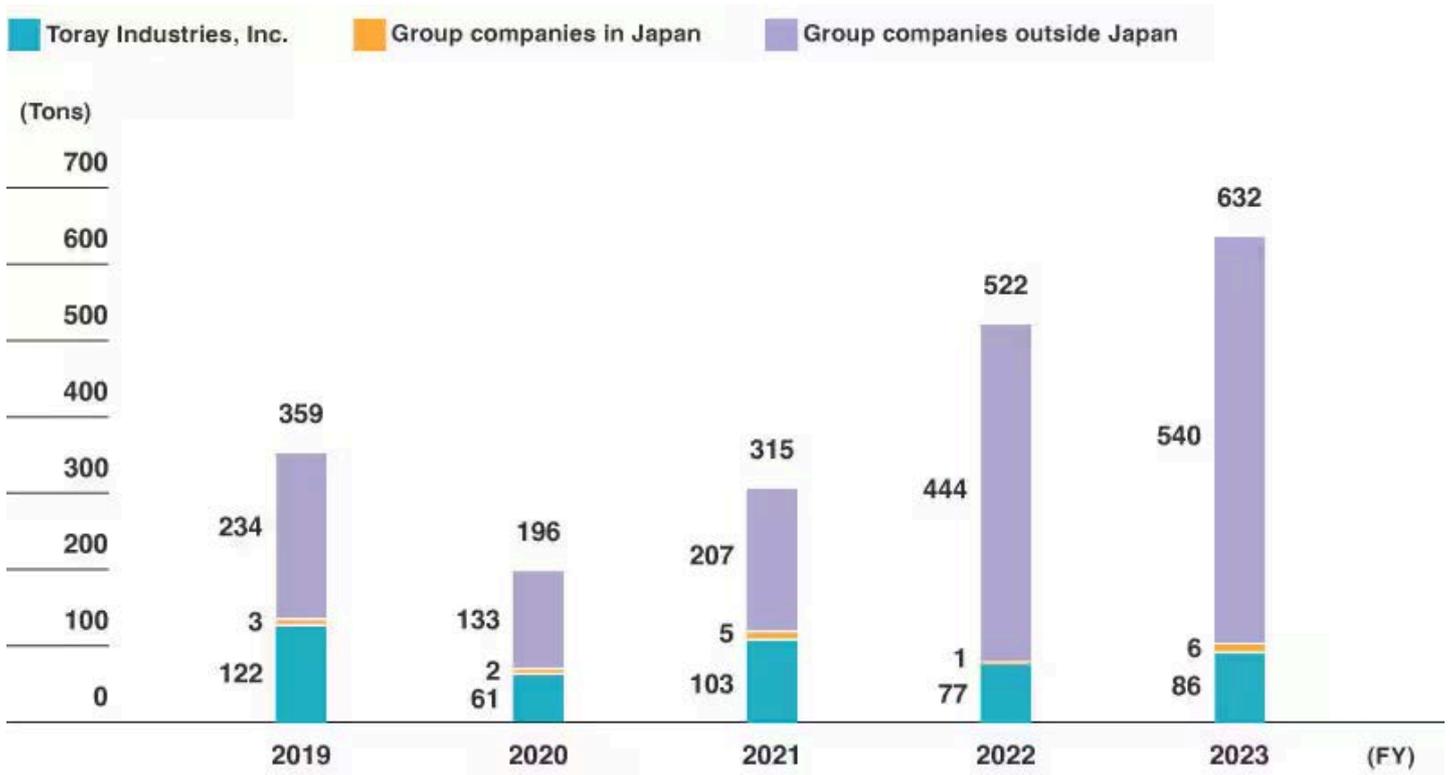
Atmospheric Emissions (SOx)



Atmospheric Emissions (NOx)



Atmospheric Emissions (Dust)



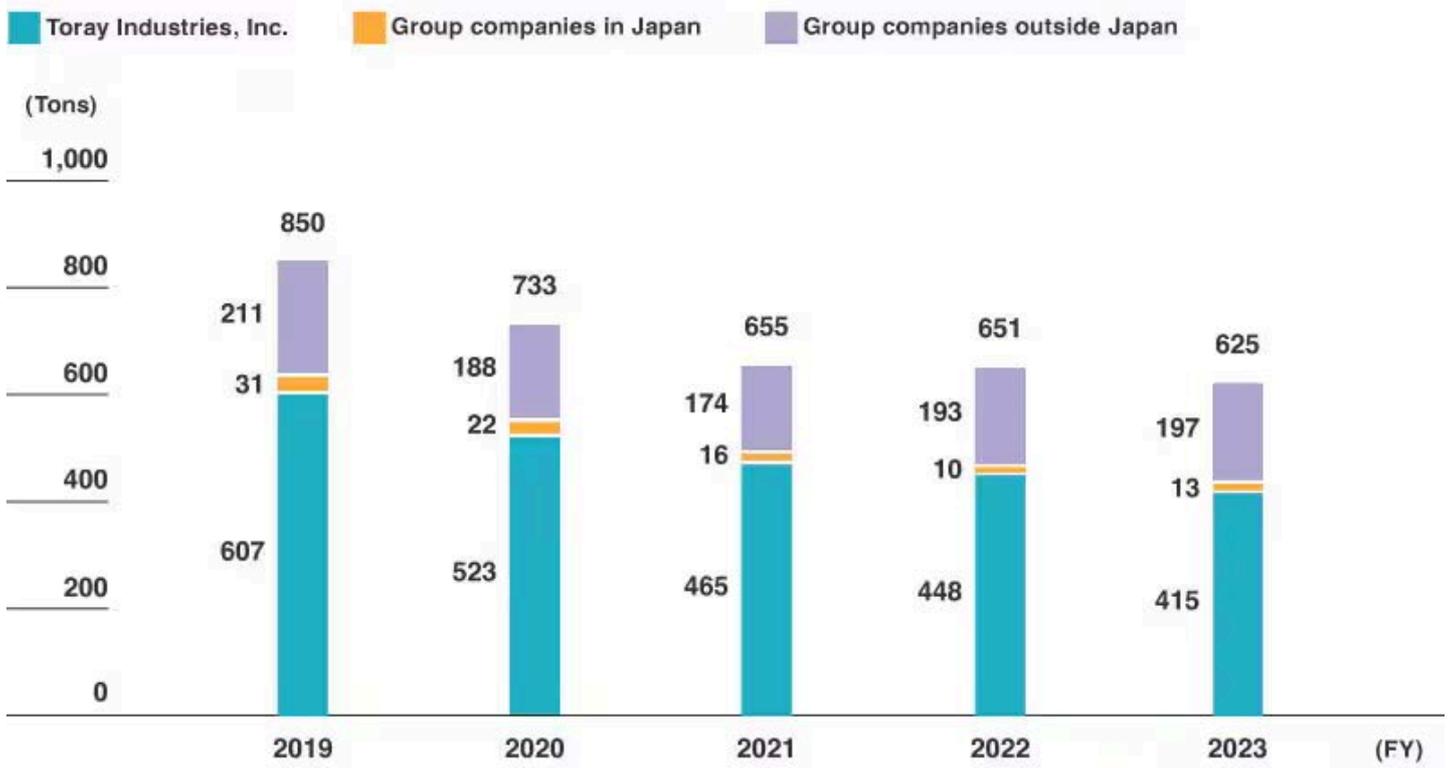
Wastewater Quality Management (Fiscal 2023 Result)

Toray Group monitors and complies with regulations concerning BODs, CODs, and nitrogen in countries and regions where it operates plants and implements water quality management for plant wastewater. Plants with high effluent loads are reducing effluents by installing wastewater treatment facilities (activated sludge method) that utilize the activated sludge method and other techniques. The Group is committed to remaining in compliance with regulations through everyday facilities operation management and regular self-testing of water quality.

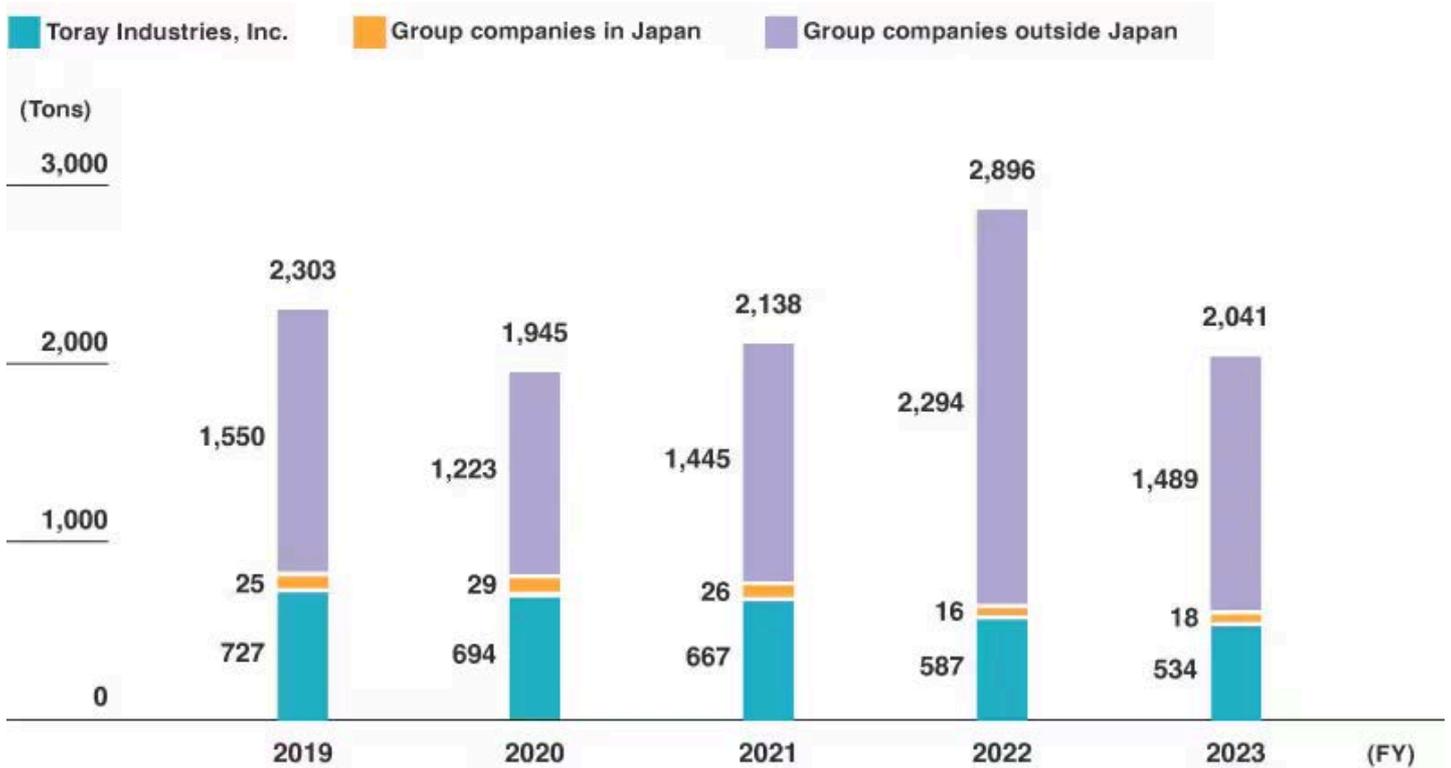
In fiscal 2023, Toray Group recorded 625 tons of BOD emissions (down 4% year on year) and 2,041 tons of COD emissions (down 30% year on year). BOD and COD emissions improved from the previous year due to enhancement of wastewater treatment process efficiency and other efforts.

Moving forward, Toray Industries will further strengthen the technical support provided to group companies to achieve greater reduction of effluent loads.

Water Emissions (BOD)



Water Emissions (COD)



The Group brings together wastewater managers every year to share and discuss strategies for enhancing wastewater management at production sites. The fiscal 2023 meeting was attended by 42 persons from Toray Industries' plants and 33 persons from group companies in Japan.

The Toray Industries Ehime Plant uses the activated sludge method to treat and detox wastewater before discharge, as it contains chemical substances from each production process.

Previously, excess sludge was either composted or disposed of after fermentation treatment. However, based on an idea from the wastewater treatment team, the plant launched a Blooming Flowers Project in August 2023, and began using its excess sludge and treated water to grow flowers.

If antimicrobial agents and detergents are not effectively removed from the plant's wastewater, they can cause the flowers to wither, so water quality management is now even more rigorous. By cultivating flowers, employees can visually confirm the treated water's safety, which also enhances water quality management. Utilizing excess sludge in this way has helped reduce the plant's industrial waste by approximately three tons per year.

This initiative was recognized with the Group's First Step Award in 2023. The award program seeks to encourage individual employees to take on new challenges.



Wastewater treatment using the activated sludge method



Blooming Flowers Project zone next to the water treatment facility

Related Information

- > [Communication with Employees](#)
- > [Toray owned media \(in Japanese only\)](#)

Click [here](#) for the main initiatives for CSR Guideline 3, "Safety, Accident Prevention, and Environmental Preservation" in CSR Roadmap 2025.

CSR Activity Report (CSR Guideline Activity Reports) - Safety, Accident Prevention, and Environmental Preservation

Initiatives for Managing Water Resources

Toray Group is working to provide solutions to water resources problems around the world, based on the following policies. In its own operations, the Group effectively uses and recycles water and properly manages water resources.

1. Toray Group recognizes that water is one of the most important resources for humanity, and that people are confronting problems related to water resources in many areas of the world.
2. Toray Group is committed to helping to solve global water resources problems through its products, technologies and services.
3. Toray Group continuously monitors the state of regional water resources, and conducts appropriate management of water resources, such as avoiding excessive water withdrawal so as to share these precious resources with the local communities where the Group operates.

Toray Group operates a variety of businesses around the world, and depending on the location, it may be greatly affected by water withdrawal restrictions. Its assessment, therefore, is that the Group faces a large risk regarding limits on water usage.

Accordingly, Toray Group uses the Aqueduct Water Risk Atlas, a water risk assessment tool provided by the World Resources Institute (WRI), to identify locations of high stress through water stress surveys in regions around the world where the Group's manufacturing sites and offices are located. In addition, the amount of water used in business activities in each region is monitored annually using a questionnaire from Toray Industries. Toray Group has determined that approximately 4.4% of its entire water withdrawals at all sites, including plants and offices, comes from regions where water stress is assessed to be high or extremely high.

As stated in the Toray Group Sustainability Vision, a target has been set for reducing water usage per-unit of revenue by 2030. The Group understands the effects of water stress and promotes the 3Rs (reduce, reuse, recycle) for water resources through improvement of manufacturing processes, water-saving activities, and utilization of recycled water.

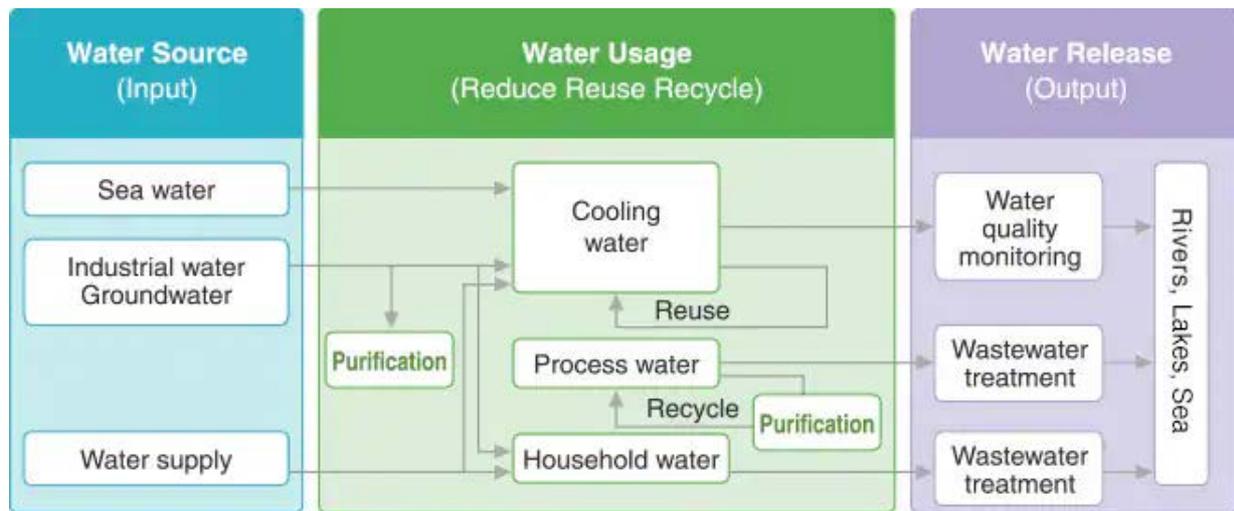
As a medium-term objective, under the CSR Roadmap 2025 (fiscal 2023-2025), the Group has also set a KPI to reduce water use per unit of revenue.

The Group fully understands local regulations regarding effluent and constantly monitors water quality, such as COD, before releasing effluent from its plants into public bodies of water. For example, Toray Sakai Weaving & Dyeing (Nantong) Co., Ltd., located in Nantong, China, recycles all water used for its looms and, additionally, purifies approximately 1,300 tons/day of effluent from the dyeing process using Toray reverse osmosis membrane water treatment technology before the effluent is drained. In this manner, group companies overseas reuse cooling water and recycle wastewater in an effort to reduce the amount of new water withdrawals taken from outside as industrial water.



Dyeing effluent is reused at Toray Sakai Weaving & Dyeing (Nantong) Co., Ltd. utilizing Toray reverse osmosis membranes.

Water Resource Management by Toray Group



Related Information

See the following page for information on how Toray Group handles water hazard risks (floods, storm surges, etc.).

> [Business Continuity Plan Initiatives](#)

Reduction of water usage per unit of revenue (%)

■Reporting scope

Toray Group

■Target

At least 40% lower than fiscal 2013 (Fiscal 2025)

Result in fiscal 2023

35.3%¹

In fiscal 2023, Toray Group used 207 million tons of water, approximately 7 million tons less than the previous fiscal year. Compared to the amount used per unit of revenue in fiscal 2013, set to an index value of 100, usage in fiscal 2023 was 64.7 points, down 3.4 points from the previous fiscal year. In fiscal 2023, the total volume of water used decreased and water usage per unit of revenue improved, thanks to the reuse of cooling water and effluent in the manufacturing process.

¹ The calculation of the figure for the baseline of FY 2013 includes data for companies that joined the Toray Group in FY 2014 or later.

Related Information

> [Environmental Data \(Water Usage\)](#)

Comparative Water Usage Per Unit of Net Sales (Per Unit of Revenue)² (Toray Group)

FY	2017	2018	2019	2020	2021	2022	2023
Comparative Water Usage Per Unit of Net Sales (Per Unit of Revenue)	82.5	77.9	77.1	82.4	71.7	68.1	64.7

² Per unit of net sales until fiscal 2019, as Japanese GAAP was used until then, and per unit of revenue from fiscal 2020 onwards, as International Financial Reporting Standards (IFRS) have been adopted since then.

Click [here](#) for the main initiatives for CSR Guideline 3, "Safety, Accident Prevention, and Environmental Preservation" in CSR Roadmap 2025.

CSR Activity Report (CSR Guideline Activity Reports) - Safety, Accident Prevention, and Environmental Preservation

Initiatives to Reduce Waste

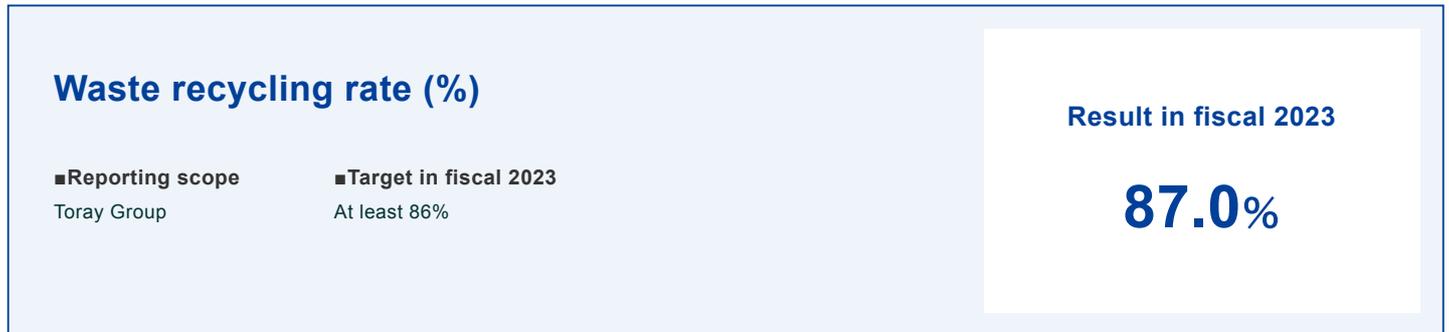
Toray Group is making effective use of resources as it works toward the realization of a sustainable, recycling-based world. Under its CSR Roadmap 2025, which covers fiscal 2023-2025, the Group has set a specific waste recycling rate¹ as a KPI and is actively working toward achieving it. In particular, intensive efforts are being made to reduce the number of group companies and plants with low recycling rates and to follow up on progress being made.

¹ Waste recycling rate = (recycled resources + resources with monetary worth) / (total waste + resources with monetary worth)

Results in Fiscal 2023

CSR Roadmap 2025
Main Initiatives (8)

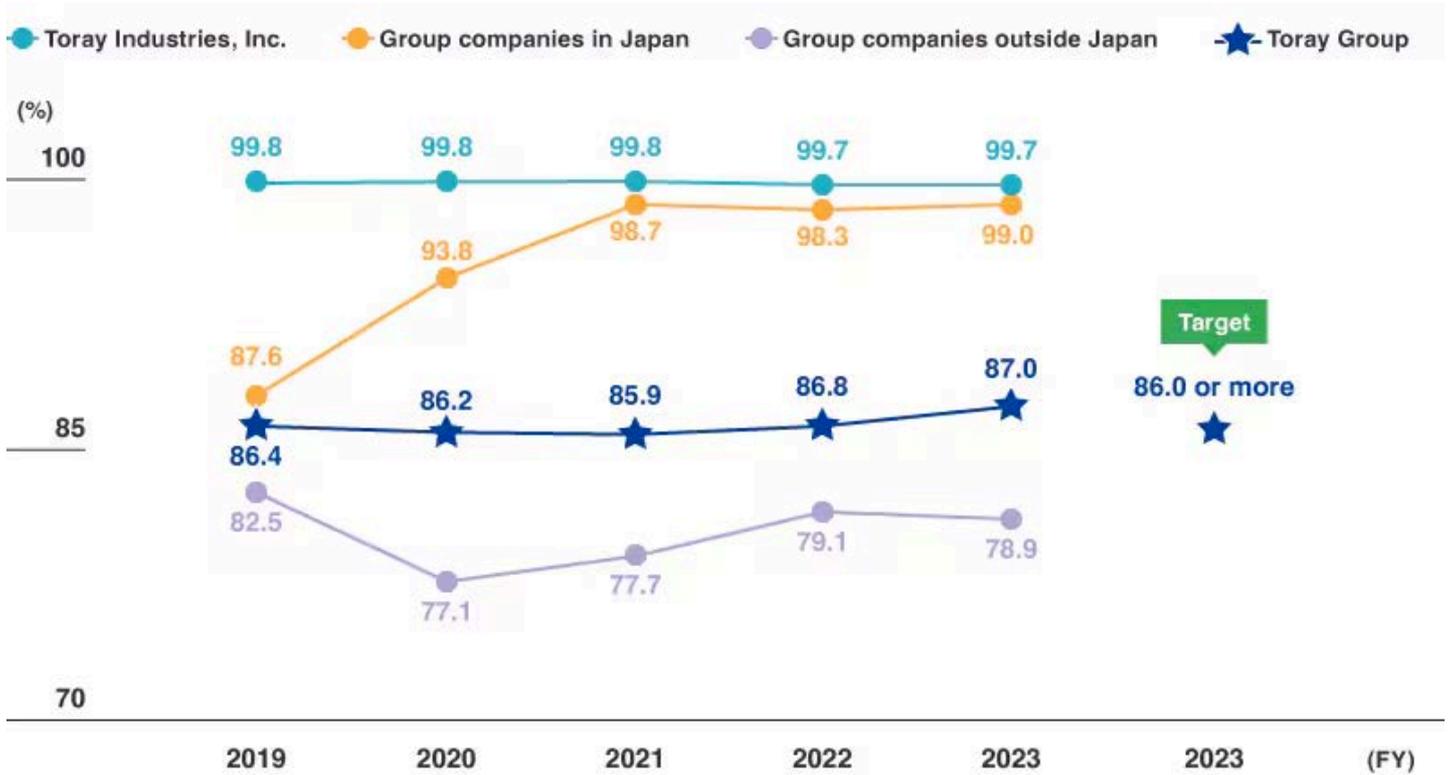
Recycling Rate



The Toray Group recycling rate in fiscal 2023 was 87.0%, up by 0.2 percentage points year on year, thanks to efforts to promote stable operation of sludge drying equipment at relevant group companies. As a result, the Group achieved its target of 86% or higher.

Going forward, Toray will continue efforts to achieve the waste recycling rate KPI set in the CSR Roadmap 2025. It has designated companies with low recycling rates as target companies and is promoting waste reduction and reuse (including conversion to valuable resources), as it strives for further reductions.

Recycling Rate (Toray Group)



Click [here](#) for the main initiatives for CSR Guideline 3, "Safety, Accident Prevention, and Environmental Preservation" in CSR Roadmap 2025.

CSR Activity Report (CSR Guideline Activity Reports) - Safety, Accident Prevention, and Environmental Preservation

Environmental Risk Management



Compliance with Environmental Laws and Accidents in Fiscal 2023

CSR Roadmap 2025
Main Initiatives (5)

In fiscal 2023, four environmental accidents occurred within Toray Group, some of which were minor. These were all accidents in which chemicals leaked into the ground, or wastewater emissions exceeded administrative and agreed standards for water quality. After promptly contacting the local governments, the plants involved confirmed, through analytical investigations and reviews of the surroundings based on internal rules, that the impact on the environment was extremely minor.

The causes of these accidents included incorrect valve operation, which allowed chemicals to enter a wastewater line, and deterioration of a containment pit, which resulted in partial chemical leakage into the ground. To prevent recurrences, Toray will take thorough measures such as implementing modifications to wastewater lines and repairing containment structures group-wide, as well as strengthening the management of wastewater within factories.

The Group received three complaints from residents near its facilities concerning noise, which were seriously examined and addressed by implementing improvements.

Environmental Accidents in Fiscal 2023 (Toray Group)

Administrative disposition due to violations of laws or ordinances ¹	0
¹ Serious environmental accidents resulting in improvement orders	
Accidents (environmental accidents, etc.) ²	0
² Environmental accidents for which improvement guidance and recommendations are issued	

Slight but temporary exceeding of standard values ³ ³ Environmental accidents for which improvement guidance and recommendations are not issued by local government	4
Complaints/requests (noise, odor, etc.)	3

Environmental Assessment

CSR Roadmap 2025
Main Initiatives (5)(6)(8)(9)(10)

Toray Industries conducts product safety reviews before launching new products on the market. As part of these reviews, a prescribed checklist is used for environmental assessment. The Environment & Safety Department confirms and evaluates the measures taken for each stage of the new product's life cycle, from raw material procurement, manufacturing, packaging and distribution, to product use, recycling, and disposal.

<Evaluation Checklist Items (excerpt)>

- Does the product comply with the Toray Green Procurement Guidelines? (e.g. Is it free from prohibited substances?)
- To help protect biodiversity, do the operational emissions exceed the standard values for regulated substances?
- Is recycling used within the processes and are waste heat and unused energy utilized effectively?
- Have the amounts of exhaust gas and noise generated during product use been reduced?
- Have measures been taken to reduce the environmental impact, such as by preventing the generation of harmful gases during incineration and by avoiding the leaching of hazardous substances during landfilling?

Preventing Soil and Groundwater Pollution

CSR Roadmap 2025
Main Initiatives (5)

Toray Group constructs protective embankments around its facilities and storage tanks for hazardous chemicals, and takes precautions to ensure that none of these dangerous substances leak or discharge into the surrounding area or contaminate the soil onsite. In fiscal 2023, remediation using wells to clean up groundwater pollution continued at Toray Monofilament Co., Ltd., and remediation to address soil pollution continued at Toray Industries' Nagoya Plant. Toray Group will continue these ongoing remediation efforts and voluntary surveys to monitor soil and groundwater pollution.

Click [here](#) for the main initiatives for CSR Guideline 3, "Safety, Accident Prevention, and Environmental Preservation" in CSR Roadmap 2025.

CSR Activity Report (CSR Guideline Activity Reports) - Safety, Accident Prevention, and Environmental Preservation

Environmental Accounting

Fiscal 2023 Environmental Accounting Report (Toray Industries, Inc.)

Toray Industries, Inc. has been practicing environmental accounting since 1999, to track investments and gauge their cost effectiveness.

In fiscal 2023, the Company's environment-related investment amounted to 1.8 billion yen, up 0.31 billion yen compared to the previous year, reflecting an increase in investments in energy-saving initiatives. Cost totaled 9.7 billion yen, up 0.44 billion yen compared to the previous year, due to soaring fuel prices and other factors.

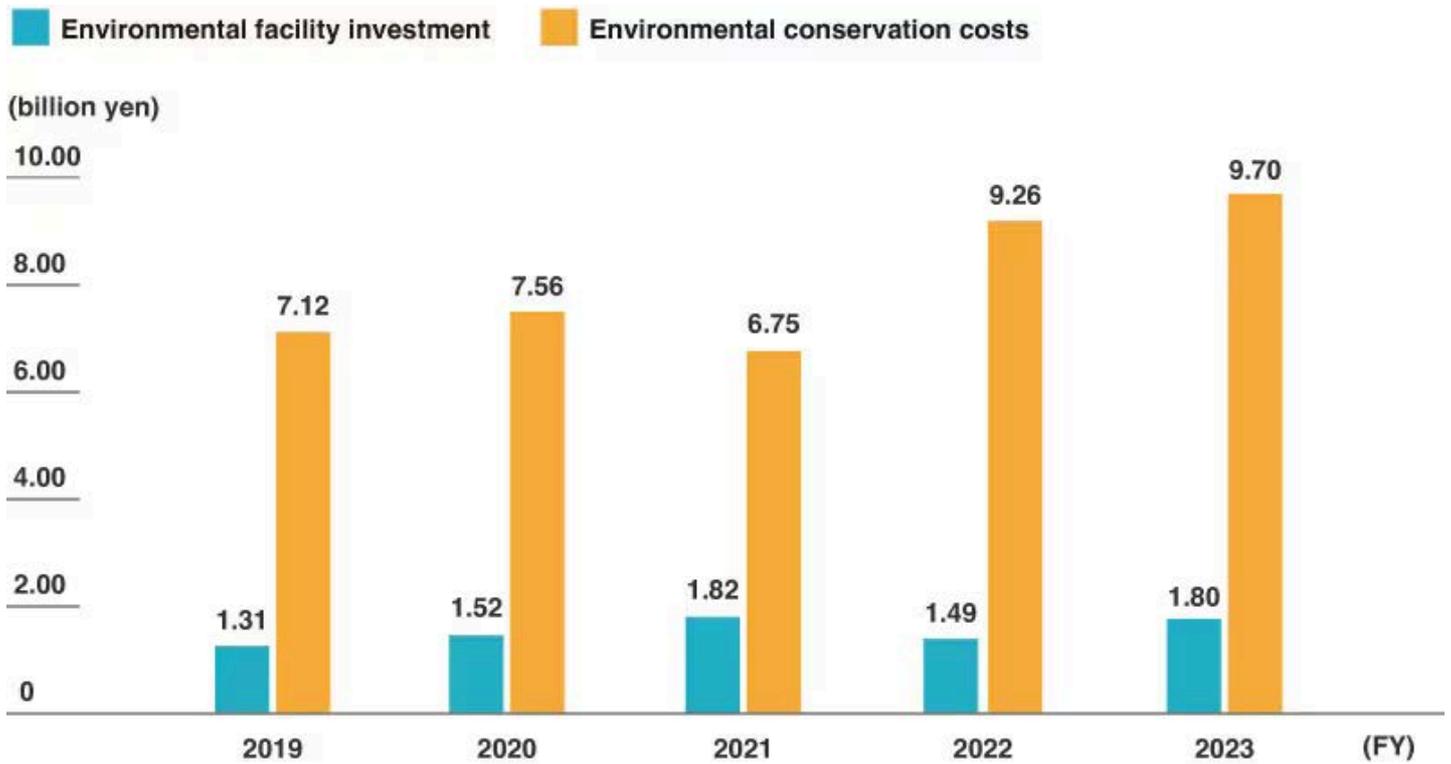
Fiscal 2023 Environmental Accounting Report (Toray Industries, Inc.)

Expenses				
Item		Subcategory and description	Investment (million yen)	Cost (million yen)
Business area costs	Pollution prevention costs	Air (including CFC countermeasures)	108	4,283
		Water quality	561	2,485
		Noise and vibration	17	13
		Greening	0	238
		Odors and other	103	228
	Global environment conservation costs	Energy conservation and combating global warming	349	63
	Resource recycling costs	Industrial waste reduction, recycling, disposal, and PCB waste disposal services	170	1,138
Upstream and downstream costs		Product recycling	494	326
		Container and package recycling	0	0

Expenses			
Item	Subcategory and description	Investment (million yen)	Cost (million yen)
Management activity costs	Indirect labor costs, ISO certification and maintenance, environmental communications, and education	0	612
Social initiative costs	Regional initiatives, support for organizations, etc.	0	156
Environmental remediation costs	SOx fines, soil purification, etc.	0	154
Total		1,801	9,697

Effectiveness		
Item		Amount (million yen)
Financial effects	Reduction in energy costs	63
	Reduction in industrial waste disposal costs	44
	Sale of valuable recycled resources with monetary value	744
Quantitative environmental effects	Reduction of greenhouse gas emissions	2,200 tons- CO ₂ eq

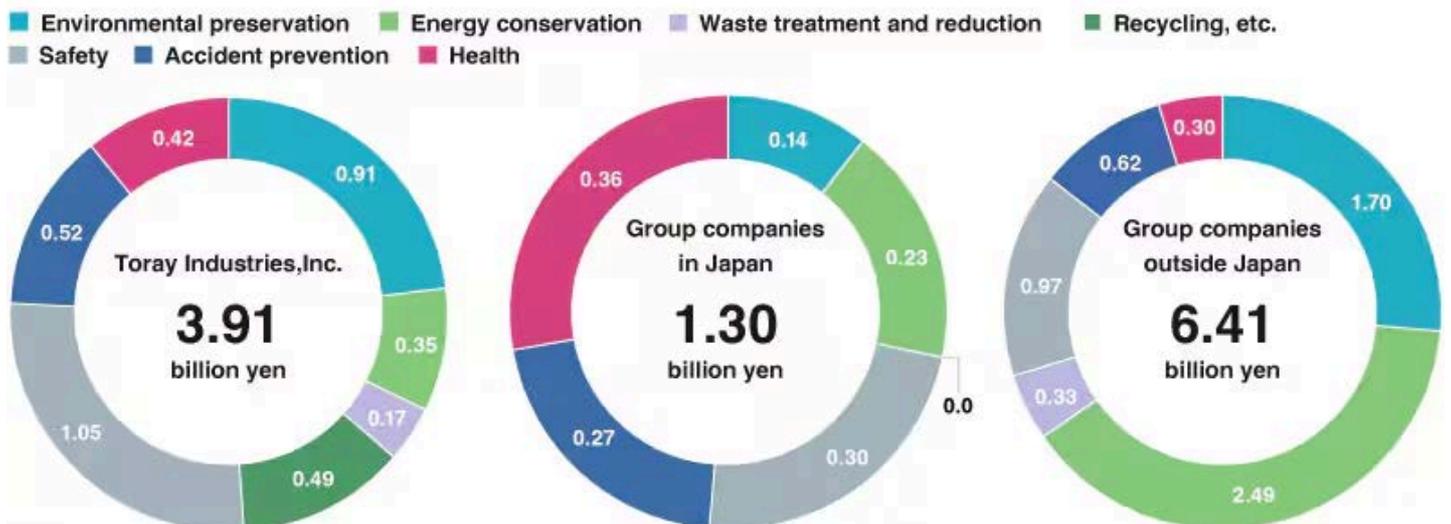
Environmental Facility Investment and Environmental Conservation Costs (Toray Industries, Inc.)



Facility Investment in Safety, Health, Accident Prevention, and Environmental Preservation Projects (Toray Group)

Toray Group reports on facility investments relating to safety, health, accident prevention, and environmental preservation projects. The Group continues to invest in safety improvements to facilities. As part of its environmental conservation efforts, the Group has invested in the expansion of exhaust gas emissions and wastewater treatment facilities and additional instrumentation to enhance wastewater management.

Fiscal 2023 Facility Investment in Safety, Health, Accident Prevention, Environmental Preservation, and Energy Conservation Projects (Toray Group)



Toray Industries Environmental Accounting Standards

- Some categories were changed based on the Ministry of the Environment's Guidelines for FY 2005.
- Only economic effects that can be determined with a high degree of certainty are included in the calculation. Presumed effects are not included.
- Capital investment also includes facility investments for which environmental preservation is not the main objective. Capital investment resulting from leases is also included. Expenses include labor costs and depreciation. However, internal labor costs related to local volunteer activities are not included.
- Energy cost reduction figures show the amount of reduction for the 12 months after the completion of an energy saving facility. Expenses are not recorded as they are deducted when the effect is calculated.
- Waste disposal cost reduction figures show the amount of reduction achieved through waste reduction efforts and resource recycling for 12 months after the measures are undertaken.
- Effects of reducing greenhouse gas emissions are measured over a 12-month period following the completion of measures or facilities to save energy.

CSR Activity Report (CSR Guideline Activity Reports) – Safety, Accident Prevention, and Environmental Preservation

Biodiversity Initiatives

Next to the issue of climate change, the issue of biodiversity preservation has been a major focus of the international community in recent years. Biodiversity forms the basis of natural capital such as water, air, plants, animals, and minerals that are indispensable to human society. Climate change caused by human activities, depletion of natural resources, ecosystem destruction, and species extinction are causing biodiversity loss to occur at an alarming rate, making it a serious problem facing humankind. This has sparked an international discussion about the importance of taking a nature positive approach to stopping and reversing biodiversity loss.

Toray Group views conservation of biodiversity as a critical global environmental issue that is of equal importance to reducing greenhouse gas emissions. Toray is contributing to biodiversity conservation and the nature positive approach through its business activities. This includes water treatment technology to produce reliably safe drinking water, water conservation through the reuse of treated wastewater, and air purification using fiber filter-related materials.

The Group also uses environmental assessment checklists to conduct safety reviews for all products and to carry out environmental risk investigations before making capital investment. The checklists enable the Group to ensure that it is not exceeding legal limits on regulated substances contained in exhaust gas, wastewater, and waste from manufacturing. Before utilizing land for the first time, Toray also uses the checklist to confirm any biodiversity-related factors such as regulations for production sites, the need for surveys of rare organisms, and any concerns from citizen groups. Through these efforts, Toray strives to assess its impact on biodiversity and help build a sustainable world.

Toray Group Biodiversity Basic Policy Established December 2010

Basic Approach

Toray Group appreciates the gifts of nature that biodiversity provides and strives to realize the conservation and sustainable use of biodiversity. The Group contributes to society through the development and dissemination of products and technologies which advance conservation of biodiversity.

Action Guidelines

1. We take into consideration the impact of our business activities on biodiversity and strive to realize the conservation and sustainable use of biodiversity.
2. We endeavor to develop environmentally friendly technologies and products and contribute to the conservation of biodiversity by making them available for use.
3. We practice fair use of genetic resources on the basis of relevant international agreements.
4. We recognize the influence of biodiversity within the supply chain and pursue coexistence with nature.

5. We strive to raise employee awareness on biodiversity and contribute to the building of a society that nurtures biodiversity through our communication with stakeholders.

Note: Toray Group respects Nippon Keidanren's Declaration of Biodiversity (Guide to Action Policies) and the Japanese Ministry of the Environment's Guidelines for Private Sector Engagement in Biodiversity.

The Group is a promotion partner of Nippon Keidanren's Declaration of Biodiversity. The policies and details of Toray Group's initiatives are outlined in the Initiative based on the [Declaration of Biodiversity by Keidanren](#).

Toray Industries Inc. has also participated in the 30 by 30 Alliance for Biodiversity since its launch by Japan's Ministry of the Environment on April 8, 2022.

With the goal of halting and reversing biodiversity loss (nature positive approach) by 2030, the Alliance was established by the Ministry of the Environment as a voluntary coalition of industry groups, government agencies, and private companies. Its aim is to help achieve the worldwide initiative for conserving 30% or more of Earth's land and ocean area as healthy ecosystems by 2030.



Working Group Initiatives for Biodiversity

In 2010, Toray Group launched a cross-organizational working group to develop biodiversity initiatives, which have been prioritized and implemented under the guidance of the Toray Group Biodiversity Basic Policy.

In 2023, the team was renamed the Nature Positive (NP) Subcommittee, and some of its functions were updated.

In 2024, the entire framework for promoting initiatives aimed at realizing the Toray Group Sustainability Vision was also revised.

[TCFD Report Ver.2.1](#) [PDF](#)

> [Disclosure Based on TNFD Recommendations](#)

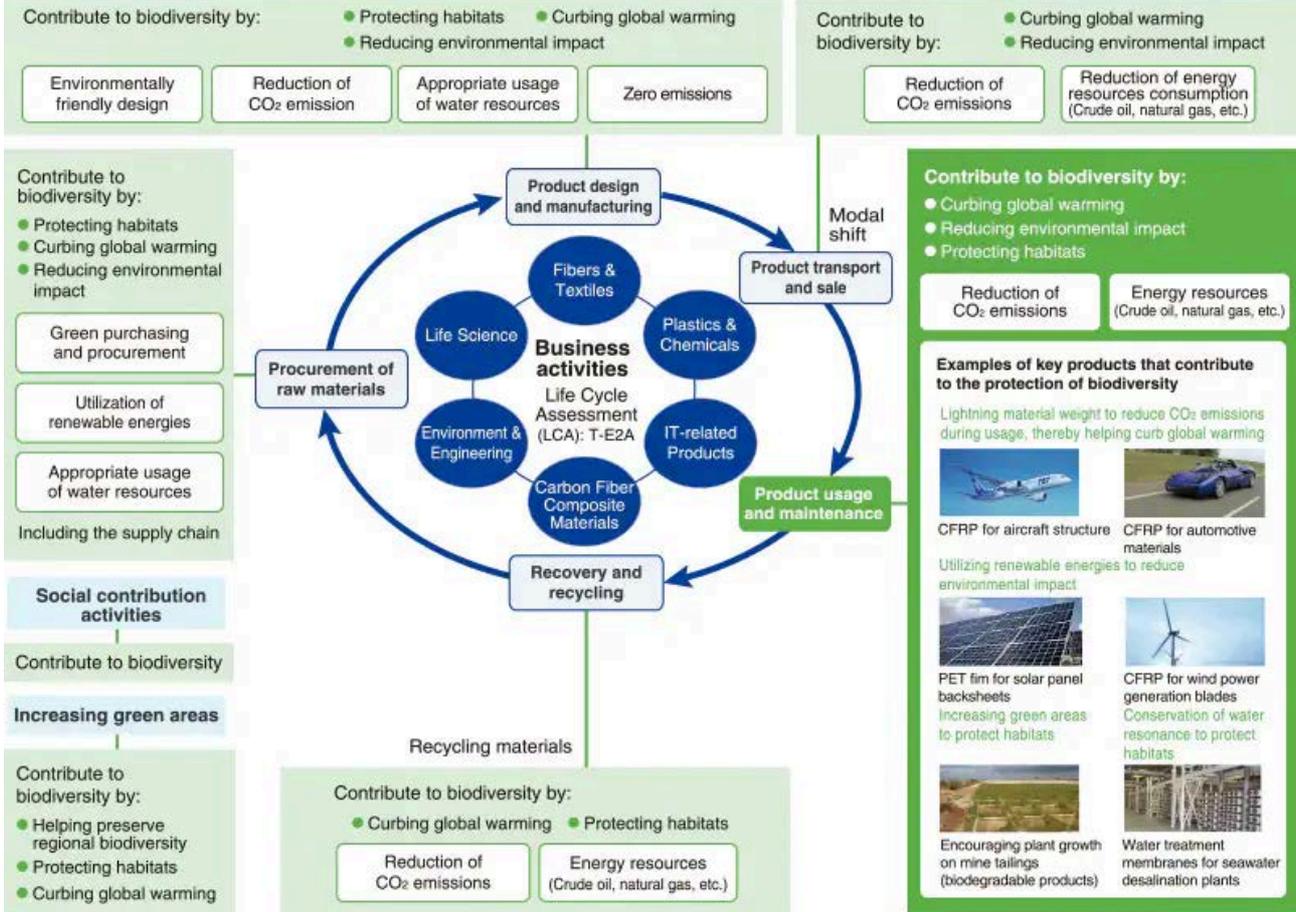
Analysis of Biodiversity-related Opportunities and Risks Across the Toray Group Supply Chain

The Group conducted an analysis of the biodiversity opportunities and risks relating to its business activities, namely, upstream raw material procurement, water and energy resource use, product and service design, operational emissions, and land use for operations, as well as downstream product use, disposal, collection, and recycling.

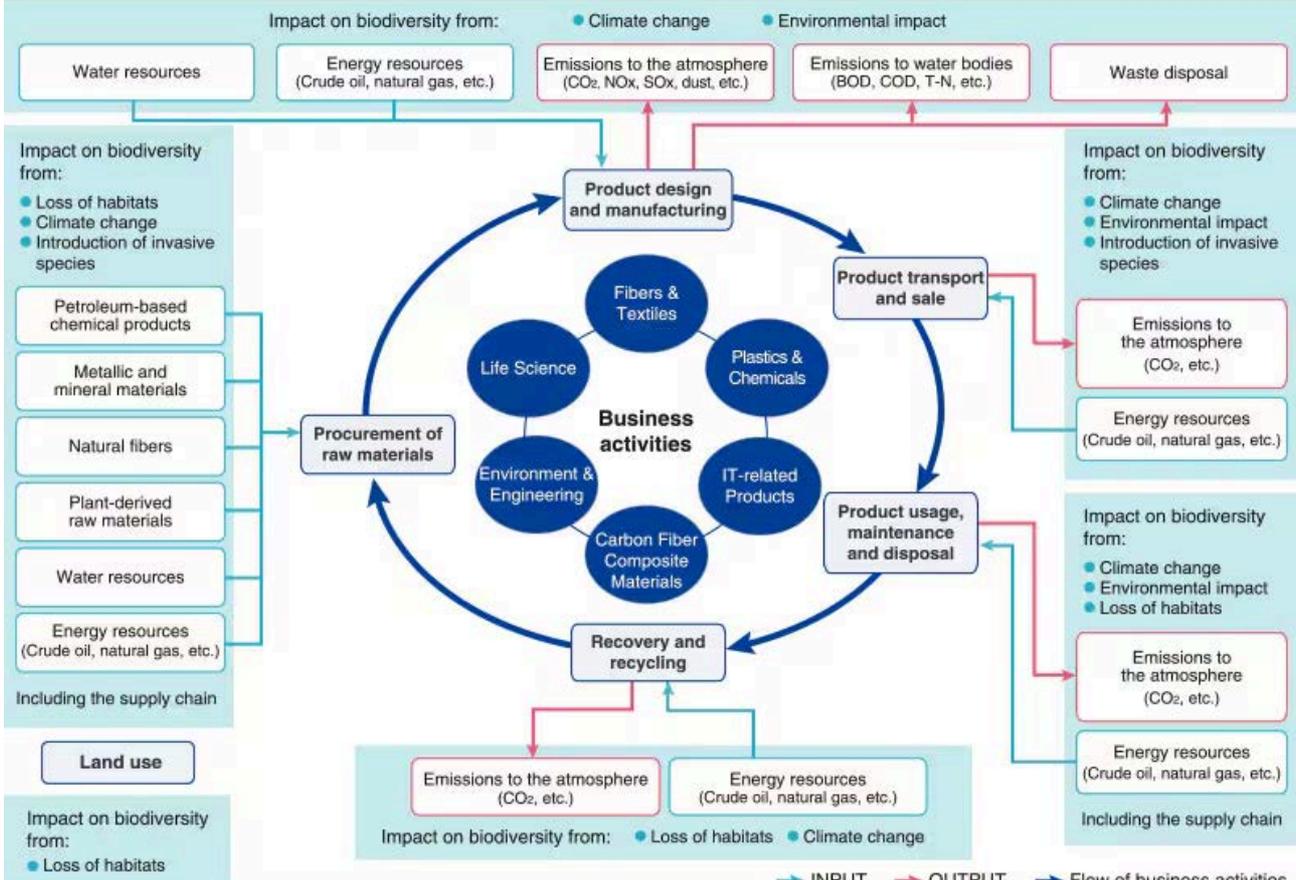
On the opportunity side, business activity effects on biodiversity include contribution to CO₂ emissions reduction by offering products that reduce the weight of parts for aircraft and other equipment as well as protecting forests and habitats by offering products that maintain green areas and protect water resources. On the risk side, activity effects include the reduction of natural capital due to the use of water and energy resources, as well as impact on climate change and the environment resulting from emissions into the atmosphere and water bodies.

The two diagrams below show the biodiversity-related opportunities and risks across Toray Group's supply chain.

Opportunities



Risks



Note: These diagrams were produced based on the Map of Corporate Activities and Biodiversity® published by the Japan Business Initiative for Biodiversity.

Toray Group Strategy

Established in 2018, the Toray Group Sustainability Vision outlines a range of goals to be achieved by 2050. These include helping to create a net zero emissions world, where greenhouse gas emissions are completely offset by absorption (in other words, a net zero emissions, carbon-neutral world), a world where resources are sustainably managed, and a world with a restored natural environment, with clean water and air for everyone. The Group has been promoting initiatives to achieve these goals.

In May 2020, the Long-Term Corporate Vision TORAY VISION 2030 was announced with the aim of achieving sound, sustainable growth and creating social value by fiscal 2030. Then in March 2023, the three-year Project AP-G 2025 was launched with the title, Innovation and Resilience Management—Value Creation for New Momentum. As part of this effort, the Group has been promoting its Green Innovation businesses, which help solve global environmental problems and resource/energy issues, along with its Life Innovation businesses, which promote better medical care, health maintenance and longevity, public health, and human safety, including disaster and extreme weather response measures. Recently, the Green Innovation businesses and Life Innovation businesses were combined and renamed as Sustainability Innovation businesses. By expanding the products supplied by these businesses, Toray Group aims to provide essential solutions to solve global issues through nature-positive approaches.

Green Initiatives as Part of Business Activities (Products and Technologies)

Business activities that serve as green initiatives include the use of water treatment technology to produce clean and reliable drinking water, water resource conservation through the reuse of sewage and wastewater, and air purification using textile materials for filters. They also include the recycling of plastic products, switching to bio-based raw materials, and transitioning to clean energy and hydrogen fuel. Through its business activities, Toray is working to help preserve biodiversity and adopt a nature positive approach.

Related Information

- > [Webpage: Four Perspectives of the World as Envisioned by the Toray Group in 2050—A world with a restored natural environment, with clean water and air for everyone](#)
- > [Realizing a Circular Economy](#)

Production Activity Initiatives

CSR Roadmap 2025
Main Initiatives (10)

Initiatives to reduce the impact of emissions during operations, etc.

Toray is working on the effective use and appropriate management of water resources through water recycling and reuse. While reducing volatile organic compounds (VOCs), sulfur oxides (SOx) and nitrogen oxides (NOx), the Group is preventing air and water pollution by reducing biological oxygen demand (BOD) and chemical oxygen demand (COD) through reliable operation and enhancement of wastewater treatment facilities. It is also working to reduce waste through recycling and reuse.

Related Information

- > [Initiatives for Managing Water Resources](#)
- > [Initiatives to Prevent Air and Water Pollution](#)
- > [Initiatives to Reduce Waste](#)

Increasing Green Areas

Toray Group's Basic Policy for Increasing Green Areas Established June 2012

- Toray Group contributes to the preservation of the natural environment by promoting tree planting using planting methods suitable for the biodiversity of local habitats.
- Toray Group aims to surround its production plants with greenery by giving priority to tree planting in areas at the boundaries of factory sites.
- Toray Group sets goals for making each of its production plants greener while considering how to attain harmony with the surrounding environment as well as regulations concerning green space ratios in each respective country or region.

Plants at Toray Industries and its group companies in Japan are operating greenery policies and plans, guided by the Toray Group Basic Policy for Increasing Green Areas¹. The plans encompass initiatives to conserve green areas, including natural forests² that have been protected since the plants began operating. Sustainable greenery conservation initiatives also help to conserve the environment for communities.

Efforts to increase green areas by creating environmental conservation forests around Toray Industries' plants began in the autumn of 1973, when about 4,000 employees went to temples and shrines (which in Japan are usually surrounded by greenery) and mountains to collect tree seeds that had fallen there. Under the guidance of the late Professor Akira Miyawaki, who researched plant ecology at Yokohama National University, the seeds were grown into seedlings at each workplace, and employees painstakingly planted them one by one.

Nearly 50 years have passed since then, and the trees grown from seeds, including laurel, camphor, and oak, now cover over 10,000 m² around the Mishima Plant at Toray Industries.

It is still working to conserve the environment by increasing green areas. Altogether, Toray Industries has created green areas covering approximately 200,000 m² at 12 plants, including Mishima Plant and the Basic Research Laboratories (now the Basic Research Center) through the shrine forest method³.

¹ Toray Group Basic Policy on Increasing Green Areas was established in 2012, evolving out of greenery policies that were first established in 1973.

² Natural groves or forestation by species based on potential native vegetation

³ Modeled after traditional forestry techniques used by Japanese shrines, this greening method reproduces green spaces in a state close to natural forests by using trees that are native to the area. In order to create forests with local genes, Toray employees collected seeds from shrines and forests near plants, grew them into seedlings, and planted the seedlings to create forests at the plants.

Toray Industries, Inc. (Mishima Plant)



Immediately after planting (1973)



Current state (photo taken in 2023)

Toray Industries, Inc. (Tokai Plant)



Tree planting (1976)



Current state (photo taken in 2023)

Created through coordinated efforts by 12 companies, including Toray Industries (Tokai Plant), the Chita Peninsula Greenbelt was officially recognized in October 2023 as a “nature symbiosis site” by the Ministry of the Environment. This designation aims to help realize the government’s nature positive goals by recognizing areas of the country where biodiversity conservation is being promoted through private sector initiatives. This recognition acknowledges corporate efforts to not only maintain and manage green spaces, but to also help enhance biodiversity in the surrounding areas. The determination was partially based on Toray’s collaborative efforts with local governments, university students, experts, and NPOs. Other recognized efforts include the continuous development of waterfront biotopes and wildlife mounds, which have confirmed the presence of species that once lived in traditional countryside landscapes.

As a result of its greening efforts, the Tokai Plant of Toray Industries was certified in 2022 as “Excellent Stage 2” in the OMA (Operation, Management and Active use) category of the Social and Environmental Green Evaluation System (SEGES). This green certification program is provided by Japan's Organization for Landscape and Urban Green Infrastructure. The plant has also been recognized under the Aichi Biodiversity Corporate Certification Program run by Aichi Prefecture.

Supply Chain Initiatives

As one of its biodiversity conservation initiatives, Toray Group conducts a regular survey of products to determine the usage of bio-based raw materials in product manufacturing. The Group has also developed rules for checking the biodiversity impacts of products and applies the rules to all products from the development stage.

Among them, palm oil is a key raw material for follow-up action. Since fiscal 2020, the Group has been surveying relevant suppliers to find out whether raw materials are made with palm oil that uses certified palm nuts. Toray also surveys suppliers about the possibility of switching from non-certified palm oil to certified palm oil.

Going forward, Toray Group will continue to promote the use of palm oil that is environmentally friendly and ensures respect for human rights.

In addition, the Toray Group CSR Procurement Guidelines include requirements for biodiversity conservation and for minimizing environmental impact. Suppliers are asked to comply with these guidelines.

The Group is also promoting the collection and reuse of the packaging materials that come with Toray products.

Related Information

- > [Establishing Sustainable Supply Chain](#)
- > [Toray Group Distribution Initiatives](#)

Social Contribution Initiatives

CSR Roadmap 2025
Main Initiatives (10)

Toray Group carries out biodiversity conservation through social contribution activities as a good corporate citizen. The Group is promoting various initiatives, including the creation of a group plant waterside biotope with the help of local students. In collaboration with municipalities and NPOs, Toray employees are also engaged in volunteer cleanup activities along rivers and beaches, as well as tree planting.

Please see the following page for more information.

Related Information

- > [Social Contribution Activities as a Good Corporate Citizen Activities Carried Out in Fiscal 2023](#)

Responding to Deforestation

Rapid deforestation worldwide is believed to have significant impacts on the global environment and human lives, contributing to wildlife extinction, accelerating climate change, and spreading infectious diseases.

To help address this issue, Toray Group follows the first of its Ten Basic Environmental Rules, namely, "prioritize environmental preservation." This means complying with all relevant laws, regulations, and agreements throughout its business activities. As a result, the Group is compelled to prioritize environmental preservation, while taking biodiversity into account for every stage of its product lifecycles, including manufacture, handling, use, sales, transport, and disposal. The Group conducts its business activities while placing utmost importance on protecting forests.

Examples of Toray Group Activities

- For its “[Message to Shareholders \(in Japanese only\)](#)” publication, the Group uses paper made from wood harvested from responsibly managed forests, based on the standards of the Forest Stewardship Council (FSC).
- The Group promotes green procurement, actively purchasing and using recycled paper.
- The Group reduces its usage of paper supplies such as paper cups and copy paper.
- Each group plant and company makes efforts to [preserve nearby green spaces](#).
- Employee tree planting activities are conducted as part of social contribution initiatives.

Disclosure Based on TNFD Recommendations

In January 2024, Toray Industries expressed its support for the recommendations of the Taskforce on Nature-related Financial Disclosures (TNFD), released in September 2023, and the Company was recognized as a TNFD early adopter.

It has also joined the TNFD Forum, an organization supporting TNFD discussions.

Currently, Toray is conducting investigation and analysis based on the TNFD’s LEAP approach. The results, along with details of Toray Group’s initiatives, will be compiled and published as the “Toray Group TNFD Report” (tentative title).



Materiality of Environmental Restoration

In June 2023, Toray Group identified 11 issues related to CSR materiality.

As part of its CSR materiality, Toray Group includes contributing to the restoration of the natural environment by taking a nature-positive approach. It addresses this issue by providing environmentally friendly products including those that promote cleaner water and air, and by promoting efforts for green space conservation and proper management of chemicals.

> [Materiality](#)

Corporate governance structure

Initiatives related to biodiversity and natural capital are interrelated with initiatives on climate change and resource circulation.

Therefore, under Toray Group’s Climate Change Action Project, which promotes environmental impact reduction efforts such as lowering greenhouse gas emissions, it established a Nature Positive (NP) Subcommittee. This subcommittee drives group-wide initiatives and devises comprehensive strategies to reduce impacts on biodiversity and natural capital.

The NP Subcommittee coordinates with other subcommittees promoting climate change and circular economy initiatives to identify, assess, and prioritize Toray Group’s dependencies, impacts, opportunities, and risks related to biodiversity and natural capital. Additionally, key issues within the NP Subcommittee’s activities are periodically

reviewed by Toray's Executive Committee, which serves as a consultative body for the Board of Directors. Progress made on the NP Subcommittee's activities and the results of Executive Committee deliberations are reported to the Board of Directors at least once a year. The board monitors these reports and incorporates biodiversity and natural capital issues as key elements in business decisions, ensuring oversight and comprehensive decision-making.



Investigation and analysis based on the LEAP approach

To identify priority areas such as business sectors, activities, value chains, and regions that could have significant relationships with Toray Group's dependencies, impacts, opportunities, and risks related to biodiversity and natural capital, the Group conducted an investigation using [ENCORE](#), a recommended analysis tool.

The analysis revealed that Toray Group's business activities are heavily dependent on groundwater and surface water. There could also be significant impacts on water use, air pollutants, and solid waste.

Further investigation and analysis are currently underway.

Click [here](#) for the main initiatives for CSR Guideline 3, "Safety, Accident Prevention, and Environmental Preservation" in CSR Roadmap 2025.

CSR Activity Report (CSR Guideline Activity Reports) - Safety, Accident Prevention, and Environmental Preservation

Environmental Impact Overview

Environmental Impact Overview Fiscal 2023

	Toray Industries, Inc.					Group companies in Japan					Group companies outside Japan				
	2020	2021	2022	2023	Compared to previous year (%)	2020	2021	2022	2023	Compared to previous year (%)	2020	2021	2022	2023	Compared to previous year (%)
INPUT															
Energy (1,000,000 gigajoules) ¹	25.3	27.3	25.6	24.2	94.5	5.3	5.8	5.4	5.1	94.1	50.9	63.4	61.3	64.0	104.4
Derived from non-renewable energy sources	24.0	26.1	24.6	22.9	93.2	5.3	5.8	5.0	5.1	101.5	50.7	63.2	61.1	63.6	104.1
Derived from renewable energy sources	1.2	1.2	1.1	1.3	113.7	0.0	0.0	0.4	0.0	2.0	0.2	0.1	0.3	0.4	145.0
Water usage (1,000,000 tons) ¹	165.7	171.8	166.2	160.9	96.8	11.5	11.5	8.6	8.2	95.2	37.6	40.5	39.1	37.7	96.4
Industrial water	129.9	130.9	127.1	122.5	96.4	3.5	3.7	1.1	1.9	169.7	16.5	20.4	14.1	18.8	133.5
Public water	0.2	0.2	0.2	0.2	96.8	0.3	0.3	0.4	0.3	64.4	10.3	10.1	16.5	8.7	52.8
Seawater	6.2	9.5	8.2	8.4	102.9	1.3	1.5	0.7	0.9	133.2	4.0	0.0	0.0	0.0	—
Groundwater	23.4	25.2	24.6	23.2	94.3	6.3	5.9	6.4	5.1	79.3	2.0	4.8	4.2	4.0	95.4
Others	6.0	6.0	6.1	6.6	108.3	0.1	0.1	0.1	0.1	56.7	4.8	5.2	4.2	6.1	146.3
OUTPUT															
GHG (10,000 tons CO₂eq)¹⁻³															
6 gases including CO ₂	165.7	186.2	164.7	162.6	98.7	30.7	33.3	19.5	20.1	103.0	300.5	329.8	305.1	312.4	102.4
Scope1 ⁴	140.3	157.9	137.3	136.7	99.6	4.1	5.5	3.4	3.2	93.1	137.3	140.9	113.1	109.3	96.6
CO ₂	132.6	148.4	129.3	129.6	100.3	4.1	5.1	3.2	3.2	98.8	137.3	140.9	113.1	109.3	96.6
CH ₄	0.3	0.3	0.3	0.3	103.6	0.0	0.0	0.0	0.0	—	—	—	—	—	—
N ₂ O	7.3	8.9	7.7	6.8	87.9	0.0	0.4	0.2	0.0	0.9	—	—	—	—	—
Other gases (HFCs, PFCs, SF ₆)	0.0	0.3	0.0	0.0	—	0.0	0.0	0.0	0.0	—	—	—	—	—	—
Scope2	25.5	28.3	27.4	25.9	94.6	26.6	27.7	16.1	16.9	105.1	163.1	188.8	192.0	203.2	105.8
PRTR Law-specified substances (tons)⁵															
Atmospheric emissions	211.0	183.3	145.1	153.0	105.4	104.4	89.8	111.3	120.6	108.4	480.6	442.8	564.2	650.3	115.3

	Toray Industries, Inc.					Group companies in Japan					Group companies outside Japan				
	2020	2021	2022	2023	Compared to previous year (%)	2020	2021	2022	2023	Compared to previous year (%)	2020	2021	2022	2023	Compared to previous year (%)
Water emissions	22.2	26.5	28.0	13.5	48.1	3.1	0.0	0.0	2.7	—	0.7	3.7	3.1	0.3	9.7
Waste transfers	577.4	499.1	733.4	1,396.5	190.4	2,468.9	957.4	917.5	969.0	105.6	4,276.9	4,611.1	5,287.7	1,033.7	19.5
Air pollutants (tons)¹															
SOx	160.1	219.4	232.0	226.2	97.5	17.9	2.4	1.6	6.1	382.6	1,404.7	1,111.3	425.1	247.3	58.2
NOx	1,139.2	1,302.6	1,186.0	1,135.0	95.7	29.7	14.3	4.2	23.3	554.4	1,020.7	1,372.9	1,746.7	1,553.8	89.0
Dust	60.9	102.6	77.0	86.0	111.7	1.5	4.7	1.0	6.1	611.8	133.3	207.4	443.5	539.8	121.7
VOC	309.2	266.1	361.0	306.9	85.0	172.2	136.4	52.7	134.6	255.3	557.8	485.9	743.5	650.7	87.5
Industrial wastewater (million tons)¹															
	150.1	154.4	143.9	139.1	96.7	7.7	8.2	5.6	5.3	94.7	24.3	25.7	29.1	23.9	82.3
Total water consumed (million tons)															
Note: Calculated by subtracting industrial wastewater from water withdrawn															
	15.6	17.4	22.2	21.8	98.3	3.8	3.3	3.0	2.9	96.1	13.2	14.8	10.0	13.7	137.4
Water pollutants (tons)															
BOD	523.5	464.7	447.9	415.3	92.7	21.6	16.3	10.2	12.8	125.2	188.3	174.0	193.0	196.8	102.0
COD ¹	694.0	666.6	586.7	534.3	91.1	28.8	25.9	15.6	18.1	115.9	1,222.6	1,445.4	2,294.0	1,488.9	64.9
Nitrogen	340.4	405.8	389.3	357.9	91.9	8.6	7.6	4.1	8.9	216.0	—	—	—	—	—
Phosphorus	18.7	19.0	31.7	31.9	100.7	0.6	0.7	0.4	0.8	207.0	—	—	—	—	—
Waste (1,000 tons)¹															
Recycled	27.0	27.6	26.7	23.7	88.6	12.3	11.3	10.8	9.4	86.7	84.3	99.7	100.6	73.2	72.8
Incinerated and other	0.1	0.4	0.2	0.1	65.7	2.0	0.3	0.7	0.4	60.0	11.5	15.7	32.0	28.3	88.4
Direct landfill Diposal	0.0	0.0	0.0	0.0	—	0.9	0.3	0.3	0.2	57.8	17.7	19.2	19.1	15.8	82.6
Coal ash (1,000 tons)¹															
Recycled	66.6	69.0	67.5	62.3	92.3	—	—	—	—	—	12.5	15.8	11.6	8.0	69.1
Direct landfill Diposal	1.3	1.5	1.2	1.4	114.8	—	—	—	—	—	0.3	0.3	0.4	0.4	112.3
Hazardous waste (1,000 tons)^{1&6}															
Hazardous waste	2.1	2.3	0.9	1.7	184.4	2.8	2.7	2.0	2.2	109.4	—	0.0	0.0	0.0	—
Non-hazardous waste	25.0	25.7	26.0	22.2	85.3	12.5	9.2	9.8	7.8	79.3	—	134.6	151.7	117.3	77.3

¹ Toray Industries' fiscal 2023 energy consumption, water use, greenhouse gas emissions (Scope 1 and 2), air emissions (Sox, NOx, dust, and VOC), wastewater, chemical oxygen demand (COD) and industrial waste, as well as overseas group companies' energy consumption, greenhouse gas emissions (Scope 1 and 2), and industrial waste, has been verified by a third party, LRQA Limited.

² CO₂-equivalent emissions are calculated from the conversion factor for each gas.

³ Until fiscal 2022, this was calculated by multiplying the GHG emissions and revenue of individual subsidiaries worldwide by the applicable Toray Industries' equity share. In fiscal 2023 however, the calculation method changed, and the degree of financial control Toray Industries has over the individual subsidiary (not the equity share) is now used, in accordance with the GHG Protocol, the international standard.

⁴ CO₂ is aggregated for group companies outside Japan.

⁵ In fiscal 2023, the Group's PRTR-regulated substances, including those handled outside Japan, have been updated to align with the new legal requirements.

⁶ Data corresponding to "industrial waste subject to special control," as defined in Japan's Waste Disposal and Public Cleansing Act, is recorded as hazardous waste generated.

GHG Emissions in Toray's Supply Chain (Scope3)

(10,000 tons CO₂eq)

	Toray Industries, Inc. ⁷		Toray Group ⁸	
	2020	2021	2022	2023
Category 1: Purchased goods and services	—	231.5	898.0	859.7
Category 2: Capital goods	10.2	9.2	39.6	51.8
Category 3: Fuel and energy related activities	63.1	19.0	94.5	95.6
Category4: Upstream transportation and distribution	3.8	4.3	21.0	18.4
Category5: Waste generated in operations	—	2.0	1.1	0.9
Category6: Business travel	—	1.3	0.6	0.6
Category7: Employee commuting	—	0.2	2.2	2.1
Category8: Upstream leased assets	—	—	0.2	0.4
Category9: Transportation and delivery (downstream)	—	—	—	3.0
Category10: Processing of sold products	—	—	—	—
Category11: Use of sold products	—	—	—	274.6
Category12: End-of-life treatment of sold products	—	—	—	447.5
Category13: Leased assets (downstream)	—	—	—	1.1
Category14: Franchises	—	—	—	0.0
Category15: Investments	—	—	—	—
Total	77.1	267.5	1,057.1	1,755.6

⁷ Figures for fiscal 2020 and 2021 are aggregated for Toray Industries. Figures for categories 2, 3, and 4 have been verified by a third party, LRQA Limited.

⁸ Figures for fiscal 2022 onward are totals for Toray Group. Figures for categories 1, 2, 3, 4, 5, 6, 7, and 8/Figures for all categories have been verified by a third party, LRQA Limited.

Index of Environmental Impact Per Unit of Sales⁹

	Toray Industries, Inc.					Group companies in Japan					Group companies outside Japan				
	2020	2021	2022	2023	Year-on-year comparison (points)	2020	2021	2022	2023	Year-on-year comparison (points)	2020	2021	2022	2023	Year-on-year comparison (points)
GHG emissions	59.8	57.0	48.5	46.7	-1.8	74.2	75.1	53.7	40.5	-13.2	58.4	50.1	44.4	40.8	-3.6
PRTR atmospheric emissions	41.0	30.2	22.0	23.6	1.6	11.0	8.9	12.9	10.7	-2.2	34.1	24.4	28.6	31.0	2.4
SOx emissions	3.2	3.7	3.6	3.6	0.0	38.5	4.8	3.8	11.0	7.2	6.8	4.2	1.5	0.8	-0.7
Water usage volume	84.3	74.2	66.0	65.2	-0.8	66.4	64.9	93.0	41.2	-51.8	37.6	31.7	37.6	25.4	-12.2
BOD emissions	40.8	30.7	27.3	25.9	-1.4	22.0	15.5	11.3	10.9	-0.4	14.2	10.3	40.3	10.0	-30.3
Landfilled waste volume	0.9	0.9	0.6	1.4	0.8	31.5	7.0	10.5	4.6	-5.9	35.3	29.9	27.2	21.1	-6.1

⁹ The amounts per unit of sales shown in the table are referenced to an index value of 100 set for the base year of fiscal 2001.

Aggregate Environmental Impact Data by Company Type and Location

	Toray Industries, Inc.	Group companies in Japan	Group companies outside Japan
GHG	All 13 plants and 1 research laboratory	47 plants at 27 companies	85 plants at 66 companies
PRTR Law-specified substances	All 13 plants and 1 research laboratory	42 plants at 25 companies	85 plants at 66 companies
SOx, NOx, dust	All 13 plants and 1 research laboratory	39 plants at 25 companies	85 plants at 66 companies
BOD	All 13 plants and 1 research laboratory	39 plants at 25 companies	85 plants at 66 companies
COD ¹⁰	All 13 plants and 1 research laboratory	39 plants at 25 companies	85 plants at 66 companies
Nitrogen and phosphorus	All 13 plants and 1 research laboratory	39 plants at 25 companies	—
Waste	All 13 plants and 1 research laboratory	42 plants at 25 companies	85 plants at 66 companies

¹⁰ COD figures for Toray, group companies in Japan and Korea are given in COD_{mn} (using the potassium permanganate method). Other group companies outside Japan are given in COD_{cr} (using the potassium dichromate method).

CSR Activity Report (CSR Guideline Activity Reports) - Safety, Accident Prevention, and Environmental Preservation

Chemical Substance Emissions and Transfer Data

PRTR Law-Specified Substance¹ Emissions and Transfer Data for Fiscal 2023

Toray Industries, Inc. ²	Tons (dioxins: mg-TEQ)			
	Substance name	Atmospheric emissions	Water emissions	Soil emissions / company landfill
Methyl acrylate	0.3	0.4	0.0	0.0
Acrylonitrile	8.7	3.8	0.0	223.0
Acetaldehyde	1.7	0.0	0.0	0.0
Antimony and its compounds	0.0	0.0	0.0	0.4
Asbestos	0.0	0.0	0.0	3.2
4,4'-Isopropylidenediphenol (Bisphenol A)	1.7	0.0	0.0	7.8
Xylene	2.0	0.0	0.0	0.0
Chlorobenzene	0.1	0.0	0.0	2.5
Chloroform	1.0	0.0	0.0	10.9
Cobalt and its compounds	0.0	0.8	0.0	2.7
4,4'-diaminodiphenyl ether	0.0	0.0	0.0	0.3
Inorganic cyanide compounds (except for complex salts and cyanates)	24.2	0.0	0.0	0.0
1,4-Dioxane	0.1	2.7	0.0	0.0
3-(3,4-Dichlorophenyl)-1,1-dimethylurea (Diuron)	0.0	0.0	0.0	0.4
Dichlorobenzene	10.7	0.0	0.0	0.5
Dichloromethane	37.1	0.0	0.0	3.6
2,6-Di-tert-butyl-4-cresol (BHT)	0.0	0.0	0.0	0.1
N, N-dimethylacetamide	3.9	0.0	0.0	415.2
N, N-dimethylformamide	6.0	0.0	0.0	105.5
Styrene	5.1	0.0	0.0	1.3
Terephthalic acid	0.0	0.0	0.0	12.4
Dimethyl terephthalate	0.0	0.0	0.0	3.4
Trichloroethylene	1.7	0.0	0.0	5.4
Toluene	1.0	0.0	0.0	43.2
Nickel	0.0	0.0	0.0	9.1

Toray Industries, Inc. ²	Tons (dioxins: mg-TEQ)			
	Substance name	Atmospheric emissions	Water emissions	Soil emissions / company landfill
Nitrobenzene	0.0	0.0	0.0	13.7
Biphenyl	0.1	0.0	0.0	6.0
Phenylenediamine	0.0	0.0	0.0	49.4
Phenol	0.0	2.0	0.0	0.6
Bromomethane	27.4	0.0	0.0	0.0
Hexamethylenediamine	0.0	0.8	0.0	0.3
Hexane	0.0	0.0	0.0	0.2
Benzene	2.7	0.7	0.0	0.0
Poly(oxyethylene) alkyl ether (limited to those the alkyl group is C=12-15 and mixture thereof)	0.5	0.0	0.0	9.6
Poly(oxyethylene) alkylphenyl ether (limited to those the alkyl group is C=8)	0.0	0.0	0.0	0.9
Manganese and its compounds	0.0	0.2	0.0	1.0
Methyl methacrylate	3.2	0.0	0.0	16.1
Methylenebis (4,1-phenylene) diisocyanate	0.0	0.0	0.0	55.5
Octamethylcyclotetrasiloxane (D4)	0.0	0.0	0.0	0.1
Cyclohexane	11.9	2.0	0.0	0.0
Tetrahydrofuran (THF)	0.1	0.0	0.0	0.0
1,3,5-Triazine-2,4,6-triamine (Melamine)	0.0	0.0	0.0	8.9
2-Tert-Butoxyethanol	0.0	0.0	0.0	5.2
Acetic anhydride	0.0	0.0	0.0	34.2
Methyl isobutyl ketone (MIBK)	0.1	0.0	0.0	2.7
N-Methyl-2-pyrrolidone (NMP)	1.5	0.0	0.0	341.0
Dioxins	0.0	0.0	0.0	0.0
Total	152.9	13.5	0.0	1,396.2

Group companies in Japan ³	Tons (dioxins: mg-TEQ)			
	Substance name	Atmospheric emissions	Water emissions	Soil emissions / company landfill
Butyl acrylate	0.1	0.0	0.0	204.0
Allyl alcohol	0.1	0.0	0.0	3.1
Ethylbenzene	32.2	0.0	0.0	35.4
Epichlorohydrin	0.0	0.0	0.0	24.1
Xylene	25.0	0.0	0.0	20.0
N, N-dimethylformamide	0.0	0.0	0.0	0.2
1,2-Dichloroethane (Ethylene dichloride)	0.0	0.0	0.0	2.3
N, N-dimethylacetamide	13.1	0.0	0.0	124.7
N, N-dimethylformamide / DMF	9.9	0.0	0.0	85.5
Triethylamine	0.1	0.0	0.0	2.9

Group companies in Japan ³	Tons (dioxins: mg-TEQ)				
	Substance name	Atmospheric emissions	Water emissions	Soil emissions / company landfill	Waste transfers
	Toluene	18.4	0.0	0.0	122.4
	Zinc bis(N,N-dimethyldithiocarbamate) (synonym: Ziram)	0.0	0.0	0.0	0.2
	Hydrazine	0.0	0.0	0.0	0.2
	Hydroquinone	0.0	0.0	0.0	0.6
	Pyridine	0.1	0.0	0.0	2.1
	Hexane	1.9	0.0	0.0	69.1
	Poly(oxyethylene) alkyl ether (limited to those the alkyl group is C=12-15 and mixture thereof)	0.0	2.7	0.0	38.7
	Formaldehyde	0.1	0.0	0.0	0.1
	Methacrylate acid	0.0	0.0	0.0	15.3
	Methyl methacrylate	0.1	0.0	0.0	0.0
	Methylnaphthalene	4.7	0.0	0.0	0.0
	Molybdenum and its compounds	0.0	0.0	0.0	1.8
	Di-2-ethylhexyl adipate (DEHA)	0.0	0.0	0.0	0.2
	Ethylene glycol monobutyl ether (Butyl cellosolve)	0.0	0.0	0.0	3.0
	Cyclohexane	0.4	0.0	0.0	2.4
	Silicon carbide	0.0	0.0	0.0	3.5
	Tetrahydrofuran (THF)	1.6	0.0	0.0	81.2
	Paraformaldehyde	0.0	0.0	0.0	0.0
	n-Heptane	5.6	0.0	0.0	12.9
	Acetic anhydride	6.7	0.0	0.0	4.6
	Methyl isobutyl ketone (MIBK)	0.4	0.0	0.0	1.1
	N-Methyl-2-pyrrolidone (NMP)	0.1	0.0	0.0	106.8
	Dioxins	0.0	0.0	0.0	0.0
	Total	120.6	2.7	0.0	968.4

¹ Chemical substances designated Class 1 under the April 2023 revision of Japan's PRTR Law

² The list shows emissions and transfers of 46 substances (out of Toray Industries' 67 PRTR Law-specified substances) exceeding 50 kg and dioxins.

³ The list shows emissions and transfers of 32 substances (out of the 56 PRTR Law-specified substances for group companies in Japan) exceeding 50 kg and dioxins.

CSR Activity Report (CSR Guideline Activity Reports) - Safety, Accident Prevention, and Environmental Preservation

Sites with ISO 14001 Certification

Sites with ISO 14001 Certification (as of May 2024)

Toray Industries, Inc. : All 13 plants	
Shiga, Seta, Ehime, Nagoya, Tokai, Aichi, Okazaki, Mishima, Chiba, Tsuchiura, Gifu, Ishikawa, Nasu	
Group companies in Japan: 32 plants at 23 companies¹	
<ul style="list-style-type: none"> • Ichimura Sangyo Co., Ltd. • Sowa Textile Co., Ltd. [Hakui]² • Toray Opelontex Co., Ltd. • Toray Coatex Co., Ltd. [Kyoto, Chemical Products] • Toray Textiles, Inc. [Tokai] • Du Pont-Toray Co., Ltd. [Tokai] • Toray Hybrid Cord, Inc. • Toray Monofilament Co., Ltd. • Toray Plastics Precision Co., Ltd. [Mishima, Koriyama] • Toray PEF Products Inc. [Konan] • Toray Celanese Co., Ltd. • Toray KP Films Inc. • Toray Advanced Film Co., Ltd. [Takatsuki, Fukushima, Nakatsugawa] • Soda Aromatic Co., Ltd. [Noda, Koriyama, Okayama Chemicals] • DuPont Toray Specialty Materials Kabushiki Kaisha • Toray Fine Chemicals Co., Ltd. [Moriyama, Matsuyama, Tokai, Chiba] • Toray Carbon Magic Co., Ltd. • Suido Kiko Kaisha, Ltd. • Toray Engineering Co., Ltd. [Numazu] • Toray Building Materials Co., Ltd. [Fukushima] • Toray Medical Co., Ltd. • Toray International, Inc. • Chori Co., Ltd. 	
Group companies outside Japan: 68 plants at 50 companies	
America : 9 plants at 7 companies	
United States	<ul style="list-style-type: none"> • Toray Fluorofibers (America), Inc. • Toray Resin Co. • Toray Plastics (America), Inc. [Rhode Island, Virginia] • Toray Composite Materials America, Inc. [Decatur, Tacoma] • Toray Membrane USA, Inc.

Mexico	<ul style="list-style-type: none"> • Toray Advanced Textile Mexico, S.A. de C.V. • Toray Resin Mexico, S.A. de C.V.
Europe : 12 plants at 11 companies	
United Kingdom	<ul style="list-style-type: none"> • Toray Textiles Europe Ltd. • Toray Advanced Composites UK Ltd.
Germany	<ul style="list-style-type: none"> • Euro Advanced Carbon Fiber Composites GmbH • Greenerity GmbH
France	<ul style="list-style-type: none"> • Toray Films Europe S.A.S. • Toray Carbon Fibers Europe S.A. [Abidos, Lacq]
Italy	<ul style="list-style-type: none"> • Alcantara S.p.A. • Composite Materials (Italy) s.r.l.³ • Delta-Tech S.p.A.
Czech Republic	<ul style="list-style-type: none"> • Toray Textiles Central Europe s.r.o.
Hungary	<ul style="list-style-type: none"> • Zoltek Zrt. (ZHU)
MiddleAsia_Africa : 1 plant at 1 company	
Saudi Arabia	<ul style="list-style-type: none"> • Toray Membrane Middle East LLC
Asia : 46 plants at 31 companies	
East Asia	<ul style="list-style-type: none"> • Toray Fibers (Nantong) Co., Ltd. • Toray Fibers & Textiles Research Laboratories (China) Co., Ltd. • Toray Polytech (Nantong) Co., Ltd. • Toray Sakai Weaving & Dyeing (Nantong) Co., Ltd. • Toray Plastics (Chengdu) Co., Ltd. • Toray Plastics (Suzhou) Co., Ltd. • Toray Plastics Precision (Zhongshan) Ltd. • Toray Plastics (Shenzhen) Ltd. • Toray Film Products (Zhongshan) Ltd. • Toray BlueStar Membrane Co., Ltd. • Toray Medical (Qingdao) Co., Ltd. • Toray Advanced Materials Research Laboratories (China) Co., Ltd. • Toray Advanced Film Kaohsiung Co., Ltd. • Cangzhou Toray Fine Chemicals Co., Ltd. • Toray Advanced Materials Korea Inc. [M1, M2, M3, M4, M5, Anseong, Yugu, Gunsan, Advanced Materials Research Center] • Toray BSF Coating Korea Limited • Toray Battery Separator Film Korea, Limited • STEMCO, Ltd.
Southeast Asia	<ul style="list-style-type: none"> • P.T. Acryl Textile Mills • P.T. Century Textile Industry Tbk • P.T. Easterntex • P.T. Indonesia Synthetic Textile Mills • P.T. Indonesia Toray Synthetics • P.T. Toray Polytech Jakarta • Toray Textiles (Thailand) Public Company Limited [NPT, M1, M2, M3] • Thai Toray Synthetics Co., Ltd. [Bangkok, Ayutthaya, Nakhonpathom] • Toray BASF PBT Resin Sdn. Berhad • Toray Plastics (Malaysia) Sdn. Berhad • Penfabric Sdn. Berhad [M2, M4] • Penfibre Sdn. Berhad [Fiber, film]
South Asia	<ul style="list-style-type: none"> • Toray Industries (India) Private Limited

¹ In addition, 12 plants at 10 companies received certification as affiliated companies on Toray Industries' sites.

² Information in brackets refers to the names of the plants.

³ A company that newly acquired ISO 14001 certification in fiscal 2023.

CSR Activity Report (CSR Guideline Activity Reports) - Safety, Accident Prevention, and Environmental Preservation

Environmental Data for Toray Industries and Principal Group Companies

Environmental Data for 13 Toray Industries' Plants and Principal Group Companies

	Emission Volume														Principal manufactured products
	GHG emissions	PRTR				Gas emissions			Water emissions			Waste			
		Emissions			Waste transfers	SOx	NOx	Dust	BOD	COD	Effluent	Recycled	Simple incineration	Landfill disposal	
		Air	Water	Soil & landfill	Waste										
10,000 tons CO ₂ /year	tons/year	tons/year	tons/year	tons/year	tons/year	tons/year	tons/year	tons/year	tons/year	million m ³ /year	tons/year	tons/year	tons/year		
Shiga Plant	6.3	0.8	0.0	0.0	140.3	0.0	20.4	1.0	28.9	31.0	11.3	3,265.6	5.4	0.0	<ul style="list-style-type: none"> • Base material of Ultrasuede™ man-made suede • TOPTICAL™ color filter • TORAYVINO™ home water purifier
Seta Plant	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	100.3	0.0	0.0	<ul style="list-style-type: none"> • TORAYLON™ acrylic fiber • Medical devices (Inoue Balloon catheters, ANTHRON™ P-U catheters)
Ehime Plant	60.9	41.0	5.7	0.0	500.1	221.0	702.0	77.7	96.9	88.5	30.5	4,697.1	0.0	0.0	<ul style="list-style-type: none"> • TORAY TETORON™ polyester staple fiber • TORAYCA™ carbon fiber • ROMEMBRA™ reverse osmosis membrane module • TORAYCON™ PBT resin

	Emission Volume														Principal manufactured products
	GHG emissions	PRTR				Gas emissions			Water emissions			Waste			
		Emissions			Waste transfers	SOx	NOx	Dust	BOD	COD	Effluent	Recycled	Simple incineration	Landfill disposal	
		Air Water	Water	Soil & landfill	Waste										
10,000 tons CO ₂ /year	tons/year	tons/year	tons/year	tons/year	tons/year	tons/year	tons/year	tons/year	million m ³ /year	tons/year	tons/year	tons/year			
Nagoya Plant	7.8	11.3	0.8	0.0	21.0	0.0	45.1	1.7	42.9	85.6	23.4	2,922.7	12.0	12.0	<ul style="list-style-type: none"> • AMILAN™ nylon resin • TORAYCON™ PBT resin • Various fine chemicals
Tokai Plant	53.2	44.2	7.0	0.0	150.4	5.2	245.2	3.3	203.3	214.6	19.4	4,181.1	33.3	0.0	<ul style="list-style-type: none"> • Caprolactam • Terephthalic acid • TORAY TETORON™ polyester chips • TORELINA™ PPS resin
Aichi Plant	1.7	0.0	0.0	0.0	15.0	0.0	1.1	0.1	0.0	0.0	1.5	165.8	0.2	0.0	<ul style="list-style-type: none"> • Nylon filament yarn • RAYTELA™ plastic optical fiber
Okazaki Plant	7.0	7.5	0.0	0.0	479.8	0.0	31.0	1.2	9.3	29.3	7.1	3,396.5	10.6	10.6	<ul style="list-style-type: none"> • Nylon filament yarn • TORAY WATERLESS PLATE™ printing plate • Filtryzer™ hemodialyzers • TORAYVINO™ home water purifier
Mishima Plant	9.5	2.3	0.0	0.0	18.2	0.0	52.3	0.0	17.5	15.5	31.0	864.9	1.4	0.0	<ul style="list-style-type: none"> • LUMIRROR™ polyester film • TORAY TETORON™ polyester filament yarn • DORNER™ oral administration prostacyclin PGI2 derivative • FERON™ natural interferon-β preparation
Chiba Plant	1.7	9.7	0.0	0.0	1.5	0.0	9.9	0.0	5.8	61.2	4.6	1,712.7	12.0	6.0	<ul style="list-style-type: none"> • TOYOLAC™ ABS resin
Tsuchiura Plant	1.9	0.0	0.0	0.0	0.0	0.0	3.6	0.1	1.4	1.4	0.3	374.4	0.0	0.0	<ul style="list-style-type: none"> • TORAYFAN™ BO polypropylene film

	Emission Volume														Principal manufactured products
	GHG emissions	PRTR				Gas emissions			Water emissions			Waste			
		Emissions			Waste transfers	SOx	NOx	Dust	BOD	COD	Effluent	Recycled	Simple incineration	Landfill disposal	
		Air Water	Water	Soil & landfill	Waste										
10,000 tons CO ₂ /year	tons/year	tons/year	tons/year	tons/year	tons/year	tons/year	tons/year	tons/year	million m ³ /year	tons/year	tons/year	tons/year			
Gifu Plant	6.0	1.8	0.0	0.0	27.9	0.0	20.8	0.2	8.9	6.7	10.0	1,009.5	4.7	0.5	<ul style="list-style-type: none"> • Ultrasuede™ man-made suede • LUMIRROR™ polyester film • TORELINA™ PPS film
Ishikawa Plant	4.1	0.6	0.0	0.0	42.5	0.0	0.0	0.0	0.0	0.0	0.0	838.3	4.9	3.0	<ul style="list-style-type: none"> • TORAY TETORON™ polyester filament yarn • Nylon filament yarn • TORAYCA™ prepreg
Nasu Plant	1.4	33.8	0.0	0.0	0.0	0.0	2.7	0.7	0.1	0.0	0.1	35.0	44.6	0.2	<ul style="list-style-type: none"> • Lithium-ion rechargeable battery
Toray Hybrid Cord, Inc.	1.1	2.5	0.0	0.0	0.2	0.1	1.2	0.0	2.6	3.4	0.3	682.2	2.8	1.3	<ul style="list-style-type: none"> • Tire cord • Carpet pile fiber
Toray Fine Chemicals Co., Ltd. [Chiba]	2.3	2.1	0.0	0.0	103.5	3.6	16.5	5.8	0.0	0.0	0.0	1,546.9	15.6	12.8	<ul style="list-style-type: none"> • DMSO and DMS • Functional acrylic resin
Malaysia Penfibre Sdn. Berhad [Fibers & Textiles]	2.3	0.0	0.0	0.0	0.0	0.3	26.6	2.6	0.4	6.3	0.1	85.4	51.1	49.2	<ul style="list-style-type: none"> • TORAY TETORON™ polyester staple fiber
France Toray Films Europe S.A.S.	2.5	0.0	0.0	0.0	3.1	0.0	9.0	0.0	2.4	7.7	0.8	1,685.7	601.1	447.7	<ul style="list-style-type: none"> • LUMIRROR™ polyester film