



We are progressing in environment areas with a medium- to long-term perspective to tackle issues on a global scale and create sustainable value as a global enterprise.

Takeda has identified priority issues and medium- to long-term targets and is engaged in environmental protection activities based on global targets such as the Sustainable Development Goals (SDGs) and the Paris Agreement.

Environmental Management

Takeda formulated the Global Policy on EHS in April 2017 to provide a systematic basis for company-wide initiatives on global-scale issues. We also established the Corporate EHS Council, made up of representatives from all Takeda business functions, and we are now expanding existing activities on a global level and making further progress on environmental protection throughout the company.

See >

P.52 Environmental Management



Biodiversity Conservation Initiatives

Takeda recognizes the importance of biodiversity conservation and undertakes various activities around the world. We have been helping to conserve endangered species since 1933 through ongoing research on plants with medicinal properties at Takeda Garden for Medicinal Plant Conservation (Kyoto), as well as by promoting initiatives to cultivate medicinal plants in-house.

See >

P.57 Biodiversity Conservation Initiatives

Fiscal 2020 Group Targets

Takeda is working through an action plan with targets for fiscal 2020. The plan sets out numerical targets for items including CO₂ emissions, fresh water used, NO_x emissions, SO_x emissions, and volumes of final waste disposal (in Japan), as part of Takeda's ongoing efforts to address global environmental issues.

See >

P.52 Takeda Group Environmental Action Plan

Fiscal 2030 Long-Term Group Targets for CO₂ Emissions Reduction

Takeda is strongly aware of the importance of engaging in environmental protection activities with the international community. We have signed the Paris Pledge for Action, declaring our commitment to achieving the Paris Agreement to uphold our responsibility as a global pharmaceutical company. Limiting the rise in temperature to 2°C or less will require a major reduction in CO₂ emissions, which calls for long-term targets and initiatives. In addition to setting Group targets for 2020 in 2010, we have formulated new milestone targets for reducing CO₂ emissions by fiscal 2030 and will accelerate our initiatives going forward.

See >

P.18/P.56 Initiatives Addressing Climate Change

Future Outlook

Issues and Initiatives
Going Forward

Takeda supports the Paris Agreement and is actively responding to the global community's concern about climate change. Through calculating Scope 3 emissions and independent assurance, we continue to measure our environmental impact and disclose highly transparent and reliable information. We will execute EHS management with a medium- to long-term perspective, including the implementation of Group targets for fiscal 2020 and the formulation of new CO₂ reduction targets for fiscal 2030.



Related SDGs

6: Clean Water and Sanitation 7: Affordable and Clean Energy
 11: Sustainable Cities and Communities 12: Responsible Consumption and Production
 13: Climate Action 14: Life below Water 15: Life on Land

Key Figures

**Fiscal 2030 Long-Term Group Targets
 (from fiscal 2015 level)**

C₂

**30%
 Reduction**

CO₂ emissions

Fiscal 2020 Group Targets (from fiscal 2005 level)

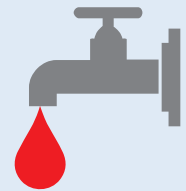
25% Reduction

CO₂ emissions



30% Reduction

Volume of fresh water used



20% Reduction

NO_x emissions



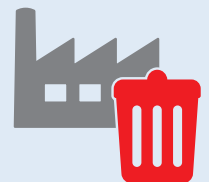
75% Reduction

SO_x emissions



60% Reduction

Volume of final waste disposal
 (Japan)



Environment

Takeda strengthened its environmental management structure in response to the Global Policy on EHS as part of a united effort to address global issues.

Environmental Management

Reorganizing the Company-Wide Management Structure

Since establishing the Environmental Protection Committee in 1970, Takeda has engaged in environmental protection activities from a long-term perspective. Under the Takeda Group Environmental Action Plan, Takeda has set targets for measures to combat global warming, reduce waste, and other initiatives. We actively work forward these targets and monitor our progress.

In April 2017, we established the Global Policy on EHS and also established the Corporate EHS Council as a company-wide organization in order to unify our initiatives on EHS issues as a global company. Takeda has also strengthened its EHS management structure for actively addressing priority issues required by the international community. For example, we have established the Global EHS Guideline for executing our policies and added product stewardship as a primary responsibility.

Takeda recognizes that it has an important part to play as a global pharmaceutical company in working with the international community to protect the environment. We support the Paris Agreement adopted by COP21 and we have signed the Paris Pledge for Action to commit ourselves to working to achieve the agreement's targets. We are participating in Caring for Climate, the world's largest corporate-led initiative on climate change. Based on Takeda's history of manufacturing and supplying pharmaceuticals with integrity for over 230 years and the unchanging values of Takeda-ism, all Takeda employees are actively engaged in EHS activities from a global perspective.

[See >](#) P.36 Product Stewardship

Corporate EHS Council

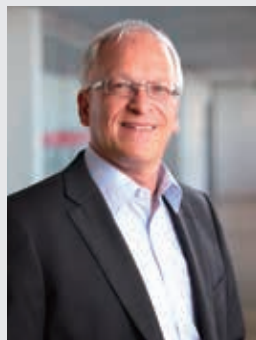
Takeda is constructing a new framework for promoting all of its EHS activities globally. We have established the Corporate EHS Council, chaired by the Global Manufacturing and Supply Officer (GMSO), who is also a member of the Takeda Executive Team, and consisting of representatives from all Takeda business functions.

The Corporate EHS Council sets out corporate strategies and activities regarding EHS and decides on company-wide targets and important measures. The council also monitors Takeda's progress and continuously implements improvements for EHS activities. Details of the activities are reported to the Business Review Committee by the President & CEO and the Takeda Executive Team.

Takeda Group Environmental Action Plan

In fiscal 2010, Takeda formulated the Takeda Group Environmental Action Plan to specify environmental issues and targets for the medium and long term. To fulfill our social responsibilities as a global pharmaceutical company, we have set concrete numerical targets to combat global warming and reduce waste. We review our progress toward these targets annually and continuously promote activities for achieving the targets. We have formulated an action plan with targets for fiscal 2020, and we have established CO₂ emission reduction targets for fiscal 2030.

Message



During the last year Takeda has made significant progress in all of our key performance indicators to achieve our corporate Environment, Health and Safety targets for 2020 and beyond. These improvements are our contribution to the Sustainable Value creation for our patients, our trust, our reputation and our business. Takeda is supporting the Paris Pledge for Action, which aims to limit global temperature rises to under-two-degrees Celsius by reducing greenhouse gas emissions. Based on our 2017 performance we are well on track to reduce our CO₂ emissions by 30% by 2030 (baseline 2015). Our "Safe Takeda" initiative has resulted in a very strong reduction of 50% in the number of lost time incidents from 2014 to 2017. We will continue to raise the awareness of all Takeda employees to further improve the safety of our workplaces and the well-being of our workforce. Takeda's product stewardship initiative is to manage the environmental impact of our products throughout their life-cycle, from research to disposal. This program is cross-functionally aligned with sustainable procurement and supplier risk management. For the upcoming years we are fully committed to gain further momentum in our EHS-performance applying external benchmarking and internal best practice sharing across all of our Takeda functions building on the successful results of 2017 and the strong support and motivation of our employees.

Thomas Wozniewski
Global Manufacturing and Supply Officer (GMSO)
Chairperson of the Corporate EHS Council

Index-Led Activities Assessment

Takeda recognizes the importance of quantitative assessments of the impact of business activities on the environment. In fiscal 2012, we undertook environmental impact assessments for our operations by LIME.* Based on the results of these assessments, we identified material issues to be addressed to reduce our environmental impact globally.

Recognizing that business growth tends to increase the environmental impact, Takeda has defined an internal “environmental efficiency index,” equal to revenue divided by the total environmental impact cost as measured by the LIME assessment. The index has been level in Japan in recent years, but for Takeda overall it has been increasing, mainly reflecting a decrease in environmental impact costs. Takeda will continue to use the index to help assess the relationship between Takeda’s business activities and the environment.

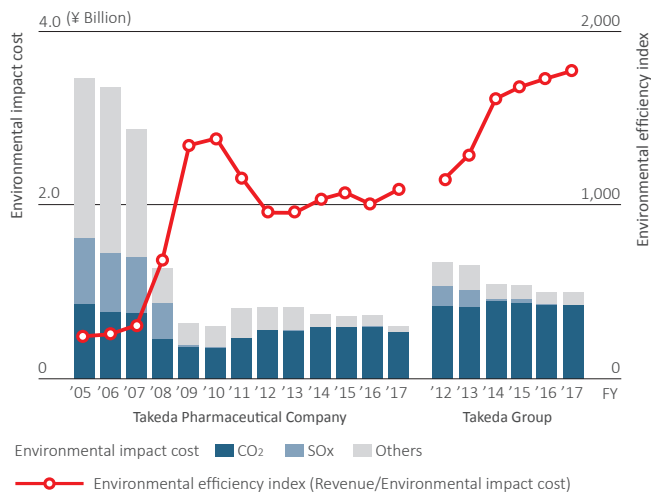
* LIME (Life-cycle Impact assessment Method based on Endpoint modeling) was developed as a national project in Japan for making a quantitative overall assessment of various environmental impacts, including CO₂, waste, and chemical substances.



Examples of activities are introduced in the SDGs Industry Matrix (issued by United Nations Global Compact/KPMG)

<https://www.unglobalcompact.org/library/3111>

Trends in Environmental Impacts Due to Business Operations



Data collection sites: Takeda Pharmaceutical Company’s production and research sites ('05-'17), including indirect emissions associated with purchased electricity. All production and research sites ('12-'17), including indirect emissions associated with purchased electricity.

Environmental Management System

All five Takeda production sites in Japan have acquired ISO 14001 certification, as have the production sites of Guangdong Techpool Bio-Pharma Co., Ltd. (China), Tianjin Takeda Pharmaceuticals Co., Ltd. (China), Zydus Takeda Healthcare Pvt. Ltd. (India), Takeda GmbH (Germany) (three sites), Takeda Austria GmbH (Austria), and Takeda Pharma Ltda. (Brazil).

Environmental Accounting

Takeda has been monitoring and supervising environmental protection investments and expenditures since fiscal 1980. In fiscal 2017, environmental protection investments totaled ¥583 million and expenditures were ¥2,365 million. Upgrading environmental protection equipment accounted for the majority of the investments. In addition, there were about ¥3,200 million in investments to prevent accidents, such as renewing aging facilities and making facilities resistant to earthquakes. The economic benefits of energy-saving measures for Takeda Pharmaceutical Company totaled approximately ¥84 million. Takeda will now look at expanding this supervision globally.

Environmental Protection Costs

Category	Investments		Expenditures	
	Investments	Expenditures	Investments	Expenditures
Business area costs	Pollution prevention	414	1,287	
	Environmental protection	56	106	
	Resources recycling	113	709	
Upstream and downstream costs	—	—	4	
Administrative costs	—	—	259	
Total	583	—	2,365	

• Data collection period: April 1, 2017 to March 31, 2018
 • Data collection sites: Takeda’s production and research sites in Japan
 • Reference guidelines: The Ministry of the Environment’s 2005 Environmental Accounting Guidelines, The Japan Chemical Industry Association’s Environmental Accounting Guidelines for Chemical Companies

External Evaluation of Environmental Initiatives

Takeda uses the results from external evaluations of its environmental initiatives as a starting point to identify areas for improvement and enhancing its activities even further.

We achieved a score of A- (Leadership level) in CDP-Water and B (Management level) in CDP-Climate Change for 2017, a scoring system that evaluate the water resource and climate change response of companies based on a questionnaire jointly issued by global financial institutions.

In the 21th Environmental Management Survey of Japanese companies conducted by Nikkei Inc. (announced in January 2018), Takeda came first in Japan’s pharmaceutical industry category, scoring 460 points out of a maximum of 500. Moreover, our environmental activities are evaluated by external organizations, and we continue to be selected for investment by socially responsible investment (SRI) funds such as the Sampo Japan Nipponkoa Asset Management (SNAM) Sustainable Investment Fund.

In 2018, Takeda was selected for the third year running for inclusion in the Global 100 Most Sustainable Corporations in the World Index published by Corporate Knights Inc. of Canada. Takeda achieved this distinction based on 14 key performance indicators, including energy productivity and safety performance.

See > P.18/P.56 Initiatives Addressing Climate Change
 P.24 Strategic Engagement

Environment

Takeda is committed to excellence to EHS through the implementation of EHS management system and development of a preventive and participative EHS culture at all levels of the organization.

Continuous Improvement in the Management of EHS Impacts

Takeda EHS Risk Management Strategy

Because Takeda handles a variety of chemicals, including pharmaceuticals, we are committed to systematic risk management and to a continuous improvement approach, aligned with the Plan-Do-Check-Act cycle. This requires the each site to assess their risks and prioritize actions to eliminate or mitigate the total risk level, with special focus on those more critical risks.. The establishment of goals and prioritized actions for main critical risks and opportunities, the execution of e action plan for attaining the goals, the monitoring of the performance and the review for continuous improvement.

All of our manufacturing and research sites establish and operate an EHS management system based on Global EHS Guideline.

Takeda Corporate EHS continues enhancing the EHS standards and technical guidance which provide the framework of the management system elements or which set the expectations of control for the specific EHS risks.

Centralized EHS Auditing

EHS audits are an important mechanism in reinforcing EHS management system at our sites.

Our global EHS Audit program includes management system audits and EHS legal compliance audits. The EHS management system audits are led by the centralized internal EHS auditing function while independent external auditors who have regulatory expertise in the national and regional regulations of the audited site work with internal auditors for the EHS legal compliance audits.

The audits confirm the site's continuous improvement of EHS performance through the site EHS management system in line with the Global EHS Guideline and verify regulatory compliance with EHS laws and regulations.

Findings are provided by the audit leader and corresponding corrective and preventative action plans (CAPAs) are developed by the audited sites. CAPAs are approved and tracked to closure by the audit leader and regional EHS teams.

We analyze audit trends and review them to identify areas of focus for the coming year and supports required as a part of our Corporate EHS governance process. The audit results and CAPA progress are reported to the Audit, Risk and Compliance Committee.

The audit frequency is determined on the basis of risk. Manufacturing and research facilities are audited every two to three years, depending on the type of operations, complexity, size and other factors.

In fiscal 2017, we performed 8 EHS audits for our facilities.

We also value feedback from neighboring residents. One of Takeda's original initiatives was to invite residents living near the Hikari plant, Osaka plant, and Shonan Research Center in Japan to become Environmental Monitors, conducting surveys to find any noise or nuisance odors coming from the sites. We respond meticulously to any feedback from our Environmental Monitors or other neighbors, and we also hold plant tours and other events for Environmental Monitors.

Safety Initiatives for Manufacturing Processes

Initiatives to reduce the risk to people and the environment from fires, explosions, and leaks in the manufacturing process are also important. All sites establish EHS targets based on a risk assessment for ascertaining latent hazards and pursue EHS measures that address both tangible and intangible outcomes.

On the tangible side, for facilities, we have a rigorous management program that includes a maintenance plan for aging equipment. To prevent fires and other accidents, we have safety measures to address risks associated with static electricity and flammable substances. When static electricity builds up and discharges, it can create major accidents by igniting flammable gases and dust in facilities. We therefore focus on countermeasures for risks posed by static electricity in all production processes and machinery. On the intangible side, we take initiatives such as creating manuals and conducting education and training. We also established response procedures in the event of a disaster or emergency, and conduct evacuation and emergency response drills, among other measures.

Preventing fires and explosions during manufacturing processes is a particularly important goal. To improve safety, we identify the physicochemical characteristics of the chemical substances we use and the pharmaceuticals we manufacture and use manufacturing processes appropriate to those properties. Takeda implements safety assessments of processes for manufacturing both drug candidates and its production processes from the early stages of research and development to ensure safety. We also conduct thorough accident and disaster prevention measures for large-scale construction work at sites. This includes detailed safety management and the sharing of safety information with support companies.

See > P.48 Occupational Health and Safety

Takeda is working to reduce the environmental impact of its offices at business sites around the world.

Initiatives at Offices

Takeda prioritizes controlling environmental impacts during research and production and promotes environmental preservation activities. To fulfill our responsibility as a global pharmaceutical company, we are continuously improving initiatives at our offices.

Takeda Global Headquarters

The grand opening of the Takeda Global Headquarters took place in July 2018. The facility will serve as a base to further accelerate Takeda's transformation into a global, values-based, R&D-driven biopharmaceutical leader. To pass Takeda's unwavering corporate identity and values as a company on to the next generation, we have launched a number of initiatives to achieve high-level environmental performance as well as to maintain the comfort of our employees.

- A construction layout plan that reduces the air conditioning load (offices are positioned on the north side, while the building design has made the east and west sides shorter, since they have high sunlight exposure)
- Use of Low-E double glazing with high heat insulation performance
- High efficiency operation of turbo chiller for chilled water tank during night time and radiate it during day time
- Daylight and motion sensors to control lighting
- Central monitoring system to support efficient building operation



Acquisition of LEED Certification in the U.S.

LEED is an environmental performance evaluation system for built environments developed by the U.S. Green Building Council, a non-profit organization. To receive LEED certification, projects must meet the necessary conditions for green buildings and select and acquire points for elective items. The level of the certification is determined by points acquired. Takeda has acquired LEED Gold certification at its U.S. offices in Deerfield, Illinois and Boston, Massachusetts. Furthermore, the employee childcare facility at Deerfield, the Takeda Center for Child Development, has also acquired LEED Silver certification.

Initiatives in Japan and Switzerland

Takeda is taking steps to reduce the environmental impact of its offices at business sites all over the world. In Japan, we launched the Green Office Plan in fiscal 2008, with every department setting KPIs and promoting efforts to save electricity, reduce CO₂ emissions, sort waste for recycling, and engaging in green procurement, among other initiatives. In Zurich, Switzerland, we conducted various initiatives on Earth Day, April 22, 2018, to promote energy saving and recycling at our offices to raise employee awareness.

Environment

Takeda continually promotes measures to address climate change and biodiversity conservation over the long term.

Initiatives Addressing Climate Change

Basic Stance and Results in 2017

Takeda has set CO₂ emission reduction targets through to fiscal year 2030 and continue to accelerating our environmental activities. Our efforts have received global recognition – for example, Zydus Takeda (India) was awarded first prize in the Food & Drugs Sector of the State Level Awards for Excellence in Energy Conservation and Management, given on an annual basis to recognize sub-sectors that have made extra efforts at Efficient Utilization, Management, and Conservation of Energy.



For Takeda worldwide, CO₂ emissions in fiscal 2017 were 363 kilotons (Scope 1: 160 kilotons , Scope 2: 203 kilotons) , down 25% from fiscal 2005.

Takeda is taking steps to reduce energy usage and produce cost savings through energy conservation measures such as changing the settings of air conditioners at all business sites and optimizing how we operate freezers. At office buildings, we are pushing ahead with conservation measures, including converting to LED lighting. At the Hikari plant, we are introducing a co-generation system to reduce our use of purchased electricity, which is the main driver of CO₂ emission increases. Takeda’s energy consumption has risen as our global activities have expanded. We are curbing this rise as much as possible by urging all employees to participate in energy-saving measures.

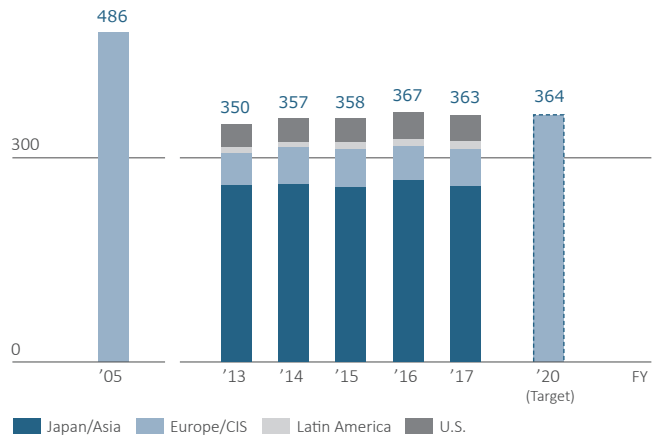


Related SDGs

7: Affordable and Clean Energy 13: Climate Action

CO₂ Emissions

600 (Kilotons of CO₂)



Data collection sites: All production and research sites (Takeda Pharmaceutical Company Limited includes its headquarters and sales offices.)
Due to divestments, past data has been restated.

Calculation Method

- Emissions included in the calculation
CO₂ emissions refer to direct emissions generated by combustion of fossil fuels and indirect emissions from energy sources.
- CO₂ emission factor
Emissions of Takeda in Japan are calculated based on the “Law Concerning the Rational Use of Energy,” and the CO₂ emission factor for purchased electricity is the emission factor for each electric power provider in fiscal 2005. The CO₂ emission factors for electricity purchased outside Japan are based on the emission factors for each electric power provider, or the emission factors provided by the International Energy Agency (IEA) for each country.

Data assured by a third party

See > P.18 Initiatives Addressing Climate Change
P.86 Independent Assurance of Environmental and Social Performance Indicators

Fiscal 2017 Results (from fiscal 2005 level)

CO₂ emissions

CO₂ **25%**
Reduction

Group Target (from fiscal 2005 level)

CO₂ emissions by fiscal 2020

25%
Reduction

Biodiversity Conservation Initiatives

Basic Stance on Biodiversity Conservation

Takeda recognizes the importance of biodiversity conservation, and its Global Policy on EHS incorporates appropriate guidelines. Each business site promotes initiatives in line with the objectives of the Convention on Biological Diversity.

Initiatives for Sustainable Use of Biological Resources

Takeda uses biological resources as ingredients for products and indirectly utilizes these resources in its R&D activities. They are used as ingredients in Chinese and other herbal medicines, which are over-the-counter drugs. Most of these ingredients are from cultivated plants, but some are sourced from wild plants. We are currently studying the feasibility of switching to cultivated plants in order to ensure stable procurement, which should help conserve biodiversity of natural habitats. When using genetic resources in R&D, we conduct activities with sufficient consideration given to the Convention on Biological Diversity.

Promoting In-House Cultivation of Medicinal Plants

Takeda was an early adopter of in-house cultivation of medicinal plants, which is connected to conserving biodiversity. For over 20 years from 1939 onwards, we conducted research on rhubarb cultivation, developing a new variety called "Shinshu-Daio," which is an ingredient for Kampo herbal medicine to treat constipation. As part of its efforts to ensure stable supplies of medicinal plants and to conserve the environment, Takeda has been conducting research into in-house cultivation of licorice since 1996. In 2014, we

registered the first domestically produced variety, "Miyako No. 1." Subsequently, we made improvements in cultivation, harvesting, and processing and succeeded in mass producing licorice. By 2020, we plan to start using domestic licorice in our own products, then increase the usage ratio and switch to domestic production of all licorice used in Takeda products.

Efforts to Conserve Biodiversity in Local Communities

Takeda Austria GmbH is supporting a local honey bee protection project to which it also provides funds. The company also cares for the natural environment around its business sites and strives to preserve flower meadows, trees, and biotopes.

At the Hikari plant, Takeda has teamed up with local environmental protection groups in Hikari City and made use of the rich natural local environment to provide a range of opportunities for local children to learn about the importance of biodiversity, such as stocking rivers with juvenile fish and seashore wildlife observation events.



Honey bee protection project



Seashore wildlife observation event



Related SDGs

6: Clean Water and Sanitation

14: Life below Water 15: Life on Land

Since 1933, the garden has continued to research plants with medicinal properties and helped to preserve endangered species.

Takeda Garden for Medicinal Plant Conservation (Kyoto)

For over 80 years, Takeda Garden for Medicinal Plant Conservation (Kyoto) has collected, grown and used herbal and other plants with medicinal value from around the world. Currently, the garden grows about 2,800 species of plants, of which around 2,000 are medicinal or useful. The garden strives to gather endangered plants and currently has 230 species including near-threatened species (as of August 31, 2018). The garden conducts a seed exchange program every other year with other botanical gardens around the world. In fiscal 2016 the garden contacted 198 gardens in 30 countries around the world about the program. fifty-four of these, in 19 countries, have expressed a desire to receive seeds.

The garden is more than just a facility for preserving medicinal and useful plants. It is also active as a facility for supporting education. As part of this, the garden holds symposiums for students of pharmaceutical colleges and continues to run a series of Fun with Nature Programs for students of local elementary schools and their parents.

For detailed information about the Takeda Garden for Medicinal Plant Conservation (Kyoto), refer to the following website:
<http://www.takeda.co.jp/kyoto/english>



Takeda's in-house cultivation of medicinal plants and the Takeda Garden for Medicinal Plant Conservation (Kyoto) are introduced as activity examples in the SDG Industry Matrix (issued by United Nations Global Compact/KPMG).

<https://www.unglobalcompact.org/library/3111>

Environment

Takeda is tackling the vital problem of water resource issues, with the goal of reducing chemical emissions.

Water Resources Conservation Initiatives

Reducing Water Usage

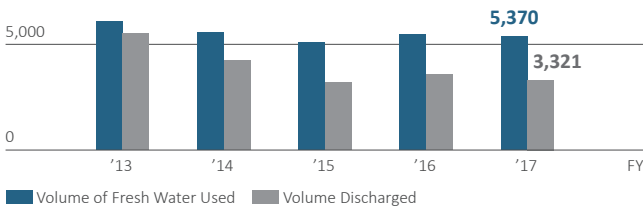
Scarcity of water is becoming a serious concern worldwide as demand for water continues to climb.

Takeda has taken steps to grasp actual water use in each of the approximately 70 countries where it has operations. Based on a Global Water Tool*¹ question sheets and water usage, we have classified our sites into three categories in terms of water risk. We are currently taking steps to address water issues and reduce water usage at each Takeda production and research site, based on their respective water risk levels.

*¹ A tool for indexing water-related risks, provided by the World Business Council for Sustainable Development

Volume of Fresh Water Used and Discharged

10,000 (thousand m³)



Data collection sites: All production and research sites
Due to divestments, past data has been restated.
The data do not include non-contact cooling water.

Data assured by a third party

See > P.86 Independent Assurance of Environmental and Social Performance Indicators

Results for Fiscal 2017

Under the Takeda Group Environmental Action Plan, Takeda has set a target of reducing its fresh water usage by 30% from fiscal 2005 levels by fiscal 2020. In fiscal 2017 we used 5,370 thousand m³ of fresh water, a reduction of 43% from fiscal 2005.

Initiatives for Waste Water Management

Takeda is managing the quality of effluent waste water in line with the following principles:

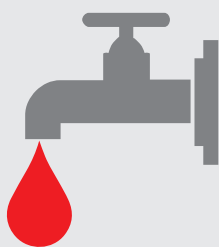
- (1) Prevent effects on people and the ecosystem due to chemical substances in waste water.
- (2) Comply with relevant laws.
- (3) Manage waste water rationally based on scientific evidence.
- (4) Utilize management systems based on both chemical substance concentrations and its environmental toxicity.

Based on these, Takeda will strive to minimize the release of toxic chemical substances into public water environments by separation and detoxification.

We cannot totally exclude the possibility that unregulated or unidentified chemical substances are included in waste water, and there exist chemical substances whose environmental impacts are unknown. Takeda has performed WET*² tests at Hikari Plant, a manufacturing site directly releasing its wastewater to the ocean since fiscal 2012 to directly evaluate the combined impact of its waste water, which is a mixed substance, using a bio-response test.

*² Whole Effluent Toxicity (WET) tests are a way of evaluating the quality of effluent waste water by observing bio-response of aquatic organisms such as fish, daphnia, and algae.

Related SDGs
 6: Clean Water and Sanitation
 14: Life below Water 15: Life on Land



Fiscal 2017 Results (from fiscal 2005 level)

The volume of fresh water used

43%
Reduction

Group Target (from fiscal 2005 level)

The volume of fresh water used by fiscal 2020

30%
Reduction

Waste Reduction

Basic Stance and Results in Fiscal 2017

Takeda is striving to reduce the amount of waste for final disposal, first by curtailing the amount of waste generated, and then by promoting on-site reuse and waste reduction along with off-site recycling.

Under the Takeda Group Environmental Action Plan, Takeda has set a target of reducing the volume of final waste disposal in Japan by 60% compared with fiscal 2005 levels and is conducting ongoing activities to achieve this goal.

Takeda in Japan generated 92 tons of waste for final disposal in fiscal 2017, a decrease of 76% compared with fiscal 2005, reflecting waste reduction efforts such as promotion of zero-emission activities.

Chemical Substance Release Reduction

Basic Stance and Results in Fiscal 2017

Takeda handles a wide variety of chemical substances, including its pharmaceutical products. We are working to appropriately manage chemical substance in line with our policy of “Strive to reduce environmental emissions of chemical substances, using risk assessments to prioritize emissions reduction efforts.”

In fiscal 2017, Takeda’s atmospheric VOC emissions were 131 tons. Takeda in Japan handled 13 PRTR-designated substances, of which seven tons were released into the atmosphere.



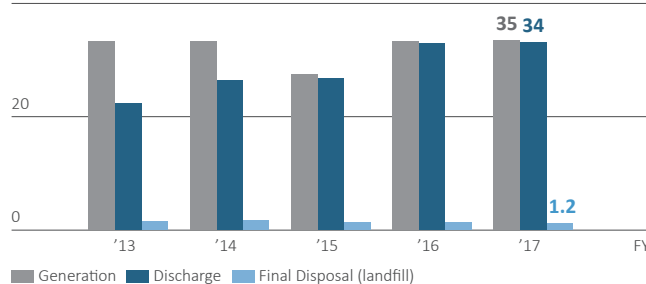
Related SDGs

6: Clean Water and Sanitation

14: Life below Water 15: Life on Land

Trends in Waste Generation, Discharge and Final Disposal

40 (Kilotons)



■ Generation ■ Discharge ■ Final Disposal (landfill)

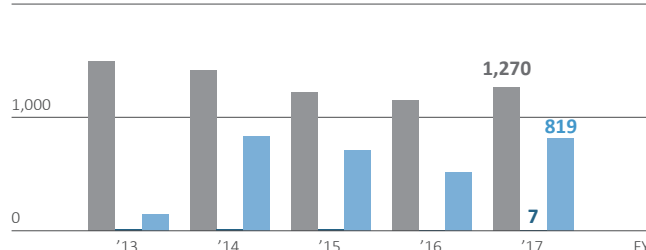
Data collection sites: All production and research sites

Waste: The total sum of hazardous and non-hazardous waste and valuable resources
Due to divestments, past data has been restated.

PRTR (Pollutant Release and Transfer Register) Substances Handled, Released and Transferred

(Handled and Released Amount)

2,000 (tons)



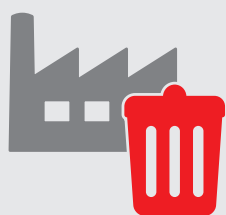
■ Handled Amount ■ Released Amount ■ Transferred Amount

Data collection sites: All production and research sites in Japan

Due to divestments, past data has been restated.

Data assured by a third party

See > P.86 Independent Assurance of Environmental and Social Performance Indicators



Fiscal 2017 Results (from fiscal 2005 level)

The volume of final waste disposal (Japan)

76%
Reduction

Group Targets (from fiscal 2005 level)

The volume of final waste disposal by fiscal 2020 (Japan)

60%
Reduction

Environment

Takeda is taking steps to preserve air, water, and soil quality with a view to realizing a sustainable society.

Air, Water, and Soil Quality Conservation

Basic Stance and Results in Fiscal 2017

At each of its operating sites, Takeda has established in-house standards more stringent than those required by laws, state government regulations, and local agreements in an effort to reduce NOx (nitrogen oxides), SOx (sulfur oxides), dust emissions and the chemical oxygen demand (COD) load. In fiscal 2014, we reduced emissions of NOx, SOx, and dust from conversion of fuel oil to gas at Zydus Takeda Healthcare Pvt. Ltd. in India.

Under the Takeda Group Environmental Action Plan, Takeda aims to reduce its NOx emissions by 20% from fiscal 2005 levels and SOx emissions by 75% by fiscal 2020. In fiscal 2017, we reduced NOx emissions by 76% from fiscal 2005 levels and SOx emissions by 99%.

Measures to Prevent Pollution

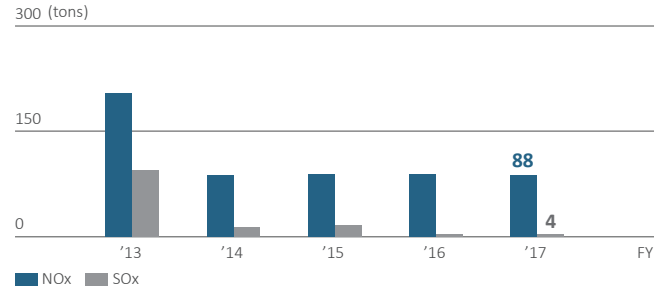
Basic Stance and Results in Fiscal 2017

Takeda is working to prevent contamination of soil and groundwater. We manage this appropriately in line with laws and regulations, including conducting periodic groundwater monitoring at all sites.

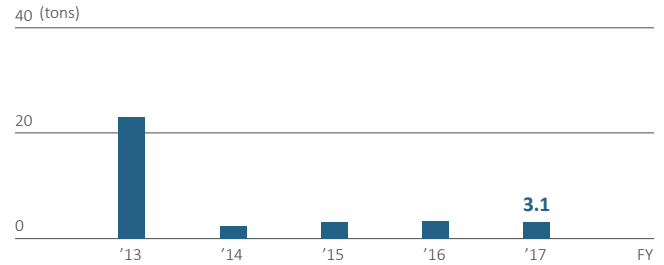
In fiscal 2017, due to a malfunction, solvent air emission values were exceeded at our Grange Castle site in Ireland, but the level was not high enough to have an impact on the environment. An action was brought up by the local regulator EPA. There was no conviction. Takeda has taken action to prevent future malfunctions and made a contribution to an environmental nonprofit as an act of good will.

Related SDGs
 6: Clean Water and Sanitation
 14: Life below Water 15: Life on Land

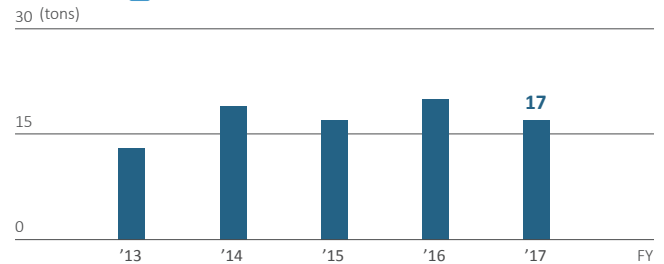
NOx and SOx Emissions



Dust Emissions



COD Load



Data collection sites: All production and research sites
 Due to investments, past data has been restated. The COD load discharged into the sea is reported.

Data assured by a third party

See > P.86 Independent Assurance of Environmental and Social Performance Indicators

NO_x

Fiscal 2017 Results (from fiscal 2005 level)

NOx emissions

76% Reduction

SO_x

SOx emissions

99% Reduction

Group Targets (from fiscal 2005 level)

NOx emissions by fiscal 2020

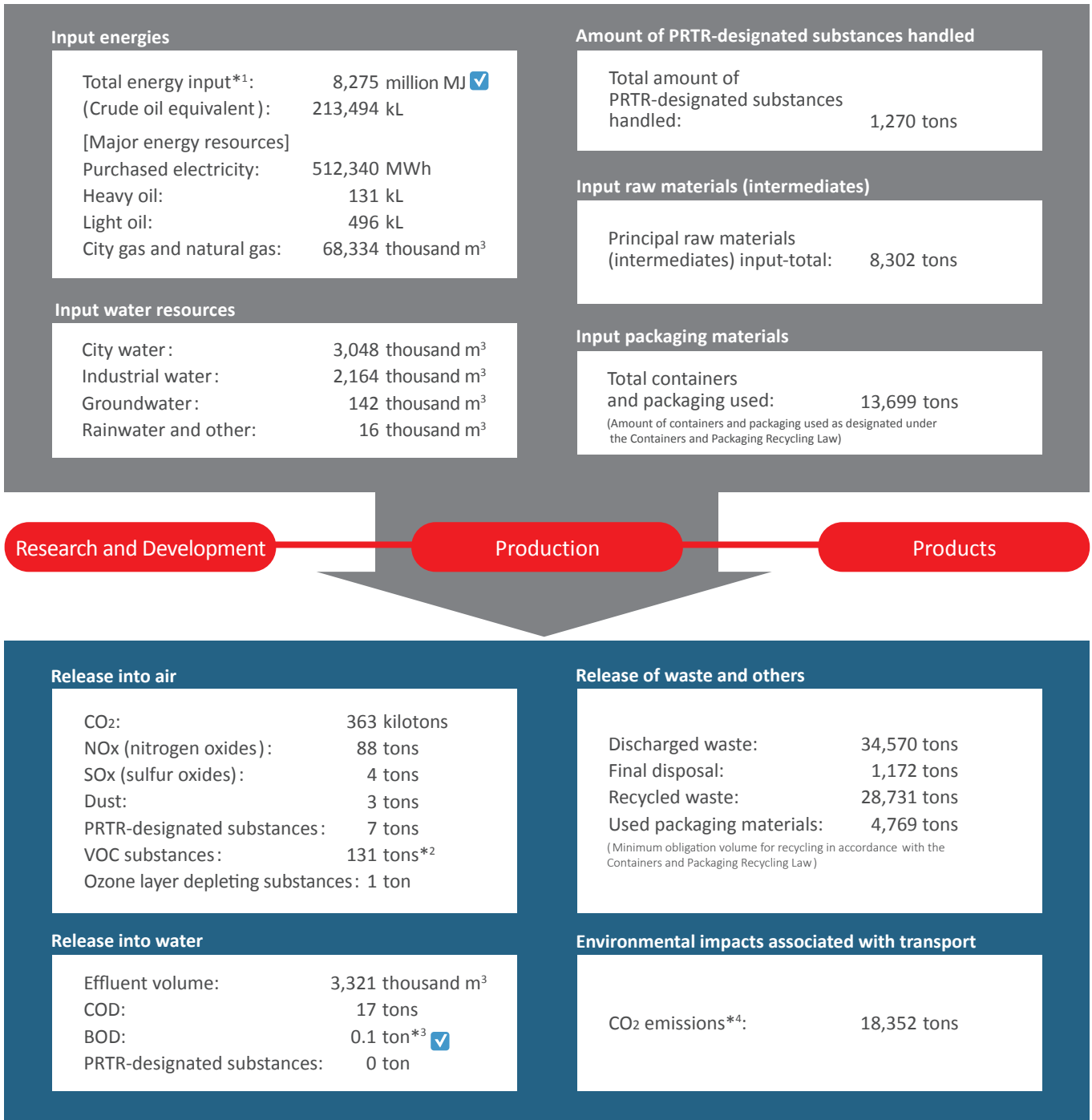
20% Reduction

SOx emissions by fiscal 2020

75% Reduction

We prioritize controlling environmental impacts during the research and production processes, and implement various measures to fulfill this goal.

Environmental Impacts Associated with Takeda's Business Activities



Compilation Method for Environmental Data

- Data collection period: From April 1, 2017 to March 31, 2018
- Data collection sites: All production and research sites. The scope of energy and CO₂ data includes Takeda Pharmaceutical Company's head offices and sales offices. However, data on PRTR-designated substances and input packaging materials come from all business sites in Japan only. Input raw materials (intermediates) data refer to Takeda Pharmaceutical Company's production sites.

*¹ Energy of purchased electricity is converted into primary energy input.

*² The figures for VOCs are for 101 substances comprising the typical 100 substances of VOC listed by the Ministry of the Environment, Japan with the addition of 1-propyl alcohol.

*³ The BOD load discharged into the river is reported. *⁴ CO₂ emissions relating to transportation of goods and products for which Takeda group companies are cargo owners.



Related SDGs

12: Responsible Consumption and Production

✓ Data assured by a third party

See > P.86 Independent Assurance of Environmental and Social Performance Indicators

Environment

A global approach to minimizing environmental impacts by monitoring data for Takeda as a whole.

Data by Region

(Unit: million MJ)

Total Energy Input	FY2013	FY2014	FY2015	FY2016	FY2017
Japan/Asia	5,256	5,148	5,068	5,270	5,096
Europe/CIS	1,484	1,491	1,560	1,678	1,827
Latin America	362	382	431	443	467
U.S.	693	681	689	837	885
Total	7,796	7,702	7,748	8,228	8,275

(Unit: tons)

CO₂ Emissions	FY2013	FY2014	FY2015	FY2016	FY2017
Japan/Asia	258,888	261,369	256,024	266,677	258,072
Europe/CIS	47,685	53,478	56,260	49,932	54,193
Latin America	8,225	7,912	10,422	10,808	11,497
U.S.	35,122	34,653	35,034	39,269	39,072
Total	349,921	357,413	357,739	366,686	362,834

(Unit: thousand m³)

Fresh Water Used	FY2013	FY2014	FY2015	FY2016	FY2017
Japan/Asia	5,073	4,532	4,123	4,385	4,194
Europe/CIS	702	726	630	679	704
Latin America	161	173	161	196	183
U.S.	139	143	172	209	290
Total	6,075	5,573	5,086	5,469	5,370

(Unit: tons)

NO_x	FY2013	FY2014	FY2015	FY2016	FY2017
Japan/Asia	133	54	47	51	46
Europe/CIS	68	28	37	30	31
Latin America	3	3	4	3	4
U.S.	1	3	3	5	6
Total	206	88	90	90	88

(Unit: tons)

SOx

	FY2013	FY2014	FY2015	FY2016	FY2017
Japan/Asia	4	2	1	1	0.6
Europe/CIS	92	10	15	2	3
Latin America	0.4	0.5	0.6	0.7	0.7
U.S.	0.03	0.04	0.02	0.05	0.06
Total	96	13	17	4	4

(Unit: tons)

Waste Generation

	FY2013	FY2014	FY2015	FY2016	FY2017
Japan/Asia	19,151	18,261	15,214	18,868	18,145
Europe/CIS	13,248	14,241	11,173	13,065	14,211
Latin America	1,215	1,200	1,136	1,133	1,127
U.S.	770	704	802	1,374	1,088
Total	34,384	34,406	28,324	34,440	34,570

(Unit: tons)

Final Waste Disposal

	FY2013	FY2014	FY2015	FY2016	FY2017
Osaka plant	5	4	4	3	2
Hikari plant	0	0	0	0	0
Shonan research center	16	18	19	19	12
Takeda's sites in Japan excluding Takeda Pharmaceutical Company Limited	109	115	85	66	78
Total	130	137	109	88	92

(Unit: tons)

**Atmospheric Release of
PRTR Substances**

	FY2013	FY2014	FY2015	FY2016	FY2017
Osaka plant	0.2	0.2	0.2	0.1	0.1
Hikari plant	11.3	11.7	11.6	6.5	6.3
Shonan research center	0.7	0.5	0.4	0.4	0.4
Takeda's sites in Japan excluding Takeda Pharmaceutical Company Limited	0.0	0.4	0.0	0.0	0.0
Total	12.2	12.8	12.3	7.0	6.8