

# **Environment Report 2021**

## Shionogi & Co., Ltd.





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### Message from the Leadership Team

#### EHS Policy and Shionogi's Approach to the Supply Chain

#### Shionogi Group EHS Policy

In support of Shionogi's mission to supply the best possible medicine to protect the health and well-being of the patients we serve and for "Engagement in environmental issues" and "Optimization of work practices and enhancement of the workplace environment" in the Shionogi Group Code of Conduct, Shionogi strives to conduct business activities in a manner that gives consideration to protection of the global environment, prevention of pollution, and support of the health and safety of our employees and the local communities in which Shionogi Group companies operate. In our activities, we will identify material issues related to EHS (materiality\*) and focus on them. Specifically, Shionogi is committed to:

- 1 Confirming the organization's commitment to building a high-quality EHS management system.
- 2 Complying with all relevant laws and regulations related to environmental health and safety and strive to maintain and improve the EHS level.
- 3 Striving to continuously reduce environmental impact and hazardous factors of Shionogi Group business activities through collaborating with stakeholders, including impacts caused by research and development, production, distribution, and sale of Shionogi products.
- 4 Raising employees' awareness of EHS-related policies and topics through the prompt provision of information and regular training and practice.
- 5 Supporting the environmental protection and health and safety activities of the communities in which Shionogi Group companies are located, by acting in an environmentally-compatible way and by building a partnership of trust and accountability with the local community.

Established on October 5,2015 Revised on January 1,2022

Isao Teshirogi, Ph.D.

President and CEO

Shionogi & Co., Ltd.

EHS: Environment, Health and Safety \* Materiality: https://www.shionogi.com/global/en/company/strategy/important-issues.html

Commitment by the EHS Corporate Officer



Noriyuki Kishida

Senior Executive Officer, Senior Vice President of Administration Division in charge of EHS

#### $\sim$ To create a sustainable society $\sim$

The Sustainable Development Goals (SDGs), which have been adopted as international goals aiming for a sustainable and better world by 2030, have been drawing an increasing amount of attention. In the environment surrounding corporations, expectation is growing stronger for corporations to adequately address challenges related to the environment ("E"), society ("S"), and governance ("G"). In April 2020, we at Shionogi established the Sustainability Management Office as the section comprehensively charged with ESG-related affairs. Since then, we have strengthened our efforts to address ESG issues. In July 2021, to meet the further demands of society, we expanded the section and reorganized it into the Sustainability Management Department with the aim of promoting fair corporate activities and further enhancing our governance and compliance functions. We will continue to work to realize our own corporate growth and contribute to a sustainable society through business activities and to take responsibility for enhancing our efforts to work on environmental and other challenges. We believe that by doing so we can be and remain a business group that all our stakeholders find valuable and indispensable.

As a medium-term business goal, in June 2020, we announced our New Medium-Term Business Plan, "Shionogi Transformation Strategy 2030 (STS2030)," to realize the vision of "Building Innovation Platforms to Shape the Future of Healthcare" by 2030. Toward this goal, we have set "Contribute to society" as one of our essential values and have been determined to begin our own innovation and transform ourselves into a business group that continues to enjoy society's trust and the privilege of working with our many valued partners.

Message from the Leadership Team	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy

#### Shionogi Group EHS Action Targets (Environment)



Specifically, to realize our contribution to a sustainable society, we have identified "Protecting the environment" as one of the Shionogi Group's material issues (Materiality) that we should prioritize and have extracted environmental materiality in consideration of its impact on the sustainability of global ecosystems and on stakeholders based on the Environmental Reporting Guidelines. We have also adopted EHS action targets, including medium- and long-term environmental targets (2020–2024/2030/2050), with regard to the four global challenges of AMR,\*<sup>1</sup> climate change, resource conservation and circulation, and water, and we have focused on priority initiatives aimed at achieving the targets.

In particular, in response to climate change, companies are urgently required to take measures to support the goal of achieving net zero greenhouse gas (GHG) emissions by 2050, which was announced by the Japanese government, and to reduce GHG emissions worldwide. We have set medium- and long-term GHG emissions reduction plans, for which we obtained approval from the SBT\*<sup>2</sup> Initiative, an international environment initiative, in June 2021.

#### See "Topics" for details. https://www.shionogi.com/global/en/sustainability/environment/topics.html

We are working to enhance information disclosure to gain understanding from our stakeholders about our efforts for the environment. Through our activities relating to the environment, we will continue to strive to further reinforce our engagement with our stakeholders and sustainably improve our corporate value.

\*1 AMR: Antimicrobial Resistance

\*2 SBT: Science-based targets, that is, CO<sub>2</sub> emissions reduction targets based on scientific data

#### Shionogi's Approach to the Supply Chain

We are keenly aware that our collaborations with suppliers, our valued business partners, are as essential as the Shionogi Group's actions in fulfilling our social responsibilities. We therefore join the Pharmaceutical Supply Chain Initiative (PSCI)\*<sup>1</sup> and require our suppliers to endorse the PSCI Principles for Responsible Supply Chain Management, a set of action principles established by the PSCI.

Building responsible supply chains

\*1 The Pharmaceutical Supply Chain Initiative (PSCI) is a global non-profit organization that advocates CSR procurement in the pharmaceutical industry and requires pharmaceutical companies to have their business partners engage in CSR initiatives. https://pscinitiative.org/home

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#### Medium-Term Business Plan "Shionogi Transformation Strategy 2030 (STS2030)"



#### Shionogi Group EHS Action Targets (Environmental Category)

As a drug discovery-based pharmaceutical company, our business activities incorporate initiatives dealing with environmental issues, and we are working to protect the global environment and biodiversity in order to create a sustainable society.



Environmental Materiality Ac

Action Targets

Results

## Topics

Shionogi Has Been Recognized for Leadership in Corporate Sustainability by CDP -Rated as A- for "Climate Change" and as A for "Water security" for two straight years

## Shionogi has been recognized for "Leaderboard" in the "Supplier Engagement Leaderboard (Climate Change)"by CDP

In the Climate Change Report 2020 of the CDP,\*<sup>1</sup> an international NPO promoting environmental information disclosure, Shionogi was rated "A – ," the same as last year, in recognition of its excellent efforts for fighting climate change and related information disclosure. In CDP Water Security 2020, Shionogi was rated "A" (the highest evaluation), the same as last year, as a company that contributes to sustainable water resource management through initiatives regarding water resources and water risk management and related information disclosure In addition, Shionogi was selected for the first time for the Supplier Engagement Leaderboard, which is the highest rating in the CDP's Supplier Engagement Rating (SER), in the category of Climate Change.

In receiving an A rating in the category of Water Security, Shionogi was invited to attend the awards ceremony of Japan's A List companies held online on Thursday, January 14, 2021, at which President and CEO Isao Teshirogi delivered a speech.

In his speech, he identified "Protect people worldwide from the threat of infectious diseases" as a material issue that Shionogi should tackle and introduced its various efforts. Specifically, we are promoting our initiatives for total care for infectious diseases, including research and development of therapeutic drugs, promotion of disease awareness, prevention, and diagnosis, and suppression of exacerbation in patients. We are also focusing on securing sound water resources by saving water and preventing water pollution and on managing the release of antimicrobials. We believe that the CDP's favorable evaluation has resulted from our steady efforts to protect water resources as well as our continued and high-level efforts to adequately manage wastewater within the framework of our AMR (antimicrobial resistance) management aimed at reducing antimicrobials release into the environment.

Awards ceremony of Japan's A List companies (Japanese version only) https://japan.cdp.net/events/scores-release

Speech [4 min 5 sec for about 2 min) (Japanese version only) https://vimeo.com/504965091

#### \*1: What is CDP?

CDP is a non-profit organization whose main activities involve requesting corporations and municipalities to disclose information on their actions for climate change control, water resources protection, forest conservation, and other environmental issues, based on the request of institutional investors and major corporate clients particularly interested in environmental issues. Such information disclosure is expected to further prompt actions for the environment by the entities concerned.

Making CDP's platform one of the richest sources of information globally on how companies and governments are driving environmental change. CDP is a founding member of the We Mean Business Coalition.

For more detailed information, visit the CDP website https://www.cdp.net/en





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## Shionogi's Greenhouse Gas Reduction Target Approved by "Science Based Targets (SBT) Initiative"

Shionogi has set medium- and long-term greenhouse gas (GHG) emissions reduction plans following the Japanese government's goal of achieving net zero GHG emissions by 2050 and the worldwide movement toward GHG emissions reduction.

Regarding the targets of these plans, we obtained approval from the SBT\*1 Initiative, an international environment initiative, in June 2021. We have set the target of limiting global warming to  $1.5^{\circ}$  C\*<sup>2</sup> as our GHG emissions reduction target for Scope 1 and 2 emissions.



DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

\*1 SBT:Science-based targets, that is, CO2 emissions reduction targets based on scientific data \*2 The target for Scope 3 emissions is to limit global warming to 2.0° C.



Company's emissions (Scopes 1+2)

#### \*3 Target approved by SBT

#### Supply chain emissions (Scope3 Category1)



Results

## Shionogi wins the "Environmental Report Excellence Award" for its Integrated Report/Environment Report at the "Environmental Communication Awards"

The Environmental Communication Awards, sponsored by the Ministry of the Environment, Japan, and the Global Environmental Forum, by commending excellent environmental reports, aim to promote environmental management and environmental communication efforts by businesses and improve the quality of environmental information disclosure.

The Environmental Report Excellence Award is given to reports that have received the highest evaluation after the grand prize, which is considered to be the best report. It is evaluated from the perspective of whether the company is actively working, as its own corporate strategy, on international trends, such as the SDGs and the Paris Agreement, the formation of a sustainable society, and the response to climate change.

In the 24th Environmental Communication Awards, Shionogi received high marks for the following key initiatives: - Conducting materiality assessments based on the development of a New Medium-Term Business Plan and formulating new medium- and long-term targets for 2030 and 2050 to challenge itself to innovate the Company's business model

- Setting a goal of "net-zero CO<sub>2</sub> emissions by 2050" as part of the Company's climate change measures and launching initiatives for SBT and TCFD

- Conducting audits on environmental release control and management for both the Shionogi Group and its suppliers with a focus on AMR (antimicrobial resistance)





#### Kelp forest regeneration project

In July 2021 in Hokkaido's Hakodate City, Shionogi Healthcare Co., Ltd. launched the Kelp Forest Regeneration Project, an industry-government partnership with Hakodate City, which aims to preserve natural Kjellmaniella crassifolia kelp, which is in danger of extinction, and to propagate the use of farmed Kjellmaniella crassifolia kelp. Shionogi Healthcare is the developer of Fucoidan, which uses Kjellmaniella crassifolia kelp. Realizing that the areas producing natural Kjellmaniella crassifolia kelp are in danger of disappearing, the company launched this regeneration project in fiscal 2019 and is attempting to shift from natural kelp to farmed kelp as the ingredient for Fucoidan. Going



forward, we will make even greater efforts to protect natural Kjellmaniella crassifolia kelp and promote regional revitalization through accumulated knowhow. We also plan to collaborate with academic institutions on improving the quality of farmed Kjellmaniella crassifolia kelp. See the press release below for details.

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Kelp forest regeneration project (Japanese version only)

https://www.shionogi.com/content/dam/shc/jp/news/2021/07/20210713.pdf

### **Environmental management**

#### Governance

#### Environmental Management System

In the Shionogi Group, a system is in place that allows the Corporate Executive Management Meeting to deliberate on its initiatives for the environment ("E"), health ("H"), and safety ("S") before the Board of Directors makes final decisions about them. We have appointed the Senior Executive Officer in charge of EHS as a Corporate Officer who supervises overall EHS management in an integrated manner.

The Corporate Officer in Charge of EHS heads the Shionogi Group Companywide EHS Committee, which is comprised of representatives of Shionogi's respective divisions and Group companies, who are responsible for EHS at the respective organizations. The Companywide EHS Committee sets targets for EHS, identifies future environmental challenges of importance, and conducts management reviews, thereby promoting EHS activities.

In addition, the Energy Conservation Committee, chaired by the Corporate Officer in Charge of EHS and placed under the Shionogi Group Companywide EHS Committee, assumes duties such as setting medium- and long-term targets, managing progress, and assessing the status of legal and regulatory compliance regarding measures for energy conservation and global warming control.



**EHS Management System** 

**Corporate Executive** 

Management Meeting

President and CEO

**Senior Executive** 

Officer in Charge of EHS

#### Environmental Management Systems

The Shionogi Group uses environmental management systems established in-house in conformity with ISO 14001. The Shionogi Group's EHS activities, including risk management, are reviewed as a whole once a year by the Shionogi Group Companywide EHS Committee to verify the efficacy and suitability of its EHS initiatives. Matters that have a major impact on management are deliberated on by the Corporate Executive Management Meeting before final decisions are made by the Board of Directors.

The acquisition status of certification of our management systems is summarized in the table below. We expect new certifications for all plants of Shionogi Pharma Co., Ltd., a manufacturing group company, by FY 2022.

	Settsu Plant	Kanegasaki Plant	Tokushima Plant
ISO14001	0	Acquisition expected (within FY 2022)	0
ISO45001	0	0	Acquisition expected (within FY 2021)

○:Acquired

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#### Audits

Shionogi conducts audits of each operating site of the Group and its suppliers using multiple approaches to check their EHS promotion status, as shown in the table below.

External audits	Conducted by external accreditation organizations to verify that Shionogi's ISO 14001- and ISO 45001-certified management systems are operated in conformity with the standards
Internal audits	In-house self-inspection required under ISO 14001 and ISO 45001 conducted to confirm system suitability and status of conformity
EHS audits	Conducted by the division that supervises the Shionogi Group's EHS initiatives, as directed by the management team, separately from internal audits, to check whether EHS activities at Shionogi's operating sites and Group companies are appropriately implemented and maintained in compliance with the management systems while pursing continuous improvement
EHS audits of suppliers	Audits of Shionogi's suppliers of raw materials, intermediates, products, etc. conducted in compliance with the PSCI Principles

In addition, as part of AMR Industry Alliance activities, we inspect our antimicrobial release control and management.

See the AMR section of	
the "Results" part.	https://www.shionogi.com/global/en/sustainability/environment/results/amr.html

To enable a more fair and objective CSR assessment, we implement "EcoVadis," a rating platform for assessing corporate social responsibility and sustainable procurement, and sequentially make an assessment of our business partners in the order of priority.

See the Supply Chain Management section.

https://www.shionogi.com/global/en/sustainability/society/supply-chain-management.html

#### Emergency Preparedness

Shionogi's response to emergencies, including earthquakes, pandemics and corporate scandals, is based on its risk management policy, which places utmost importance on respect for human lives, consideration for and contribution to local communities, and business continuity. Shionogi has emergency response guidelines and manuals also based on the risk management policy. In anticipation of earthquakes, floods, fires, the leakage of toxic substances, and other eventualities, we have established communication and reporting systems and regularly carry out emergency responsiveness training and review response procedures. In FY 2019, a disaster mitigation drill was conducted at the respective operating sites, following a simulated scenario of an earthquake-triggered fire or tsunami.



Comprehensive disaster prevention drill (Kanegasaki Plant)

#### Education

Shionogi believes it essential that each and every employee be fully aware of the challenges of EHS initiatives in connection with his or her respective work and actively participate in them. Accordingly, Shionogi provides employees with training programs on environment-related subjects, as well as preliminary education for those involved in operations with high environmental impacts, such as the management of waste materials and the handling of chemical substances. At each operating site, personnel are clearly informed of the target and actual figures of CO<sub>2</sub> emissions and the quantities of waste materials generated so as to effectively motivate employee involvement.

In FY 2020, e-learning program was organized for the entire body of employees, numbering some 5,000. The program themes and attendance rates are indicated in the table below.

Theme	SDGs, ESG investment
Attendance rate	97.0 %
Period	Monday, March 1 – Wednesday, March 31, 2021



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#### **Risk Management**

In corporate activities, risk management is essential for corporations to prevent risks from developing into incidents, and in the case of an incident, to handle it so as to minimize damage.

A fundamental of the Shionogi Group is to have each organization take the initiative to manage and deal with business risks. Based on this, we take appropriate measures, including creating new business opportunities and taking risk avoidance and risk reduction actions. In particular, the Board of Director's Meeting and the Corporate Executive Management Meeting deliberate and make decisions on policies for responding to significant risks that could have a major impact on management, and based on the response policy, the supervising department works with the related organizations to implement these measures.

Shionogi's risk management. https://www.shionogi.com/global/en/sustainability/governance/risk-management.html

In terms of the environment, we consider coexistence with the global environment as an important theme and extract environmental challenges. We also report how we assess business risks and opportunities concerning these challenges from the perspective of business continuity and corporate value enhancement, identify environmental materiality, and make relevant decisions.



Message from the	Topics	Environmental	Environmental	Action Targets	Results	Editorial Policy
Leadership Team		Management	Materiality	Action Talgets		Luitonat Folicy

#### Identification, assessment results, and responses

Materiality	Impact	Frequency of occurrence				
(risks and opportunities)	On the Company	Actual	Predicted	Assessment	Measures	
AMR • Lowered reputation due to pollution caused by wastewater	Large	Small	Large	O	<ul> <li>Pollution control during production at Shionogi and suppliers</li> <li>Publication of AMR actions and measures</li> </ul>	
Climate change Discontinued operation due to extreme meteorological phenomena Increased capital investment in response to regulatory reinforcement Change in the market for tropical-infectious-disease-related products	Large	Small	Medium	0	<ul> <li>Information gathering from governmental agencies, trade organizations, etc.</li> <li>Setting of CO2 emission reduction plans by the Energy Conservation Committee</li> <li>Setting of measures for stable supply</li> </ul>	
Resources conservation and circulation • Lowered reputation due to increased plastic waste • Elevated reputation due to resources conservation initiatives	Medium	Small	Medium		Promotion of 3R initiatives     Restricted use for products	
Water • Discontinued operation due to droughts, floods, and water quality deterioration	Large	Small	Medium	0	<ul> <li>Information gathering from governmental agencies, trade organizations, etc.</li> <li>Monitoring of waste water</li> <li>Water consumption control</li> </ul>	

#### Assessment criteria

Assessment criteria are provided in the table below; deliberations by the Shionogi Group Companywide EHS Committee are also included.

Level	Impact	Frequency of occurrence
Large	Discontinued operation	Frequent in the area/industry
Medium	Capital investment	Past incidents
Small	_	No past incidents

## **Environmental Materiality**

At Shionogi, we draw up a Materiality Map regarding our business activities in consideration of their relevance to our business and their importance in society. As a result, we identified "Protect the environment" as one of Shionogi Group's material issues (Materiality).

In preparation for designing our activities for the environment, we extracted and identified issues of materiality in consideration of their impact on the sustainability of global ecosystems and on stakeholders based on the Environmental Reporting Guidelines. For the identification of materiality, we extracted and assessed issues in meetings among related divisions within the Company and through dialogues with ESG institutional investors, external experts, and other stakeholders. The Shionogi Group Companywide EHS Committee and the Corporate Executive Management Meeting deliberated on the material issues thus identified before the Board of Directors made final decisions on relevant matters.

We hope to further deepen our activities by clarifying concrete steps toward handling material issues in the future and key performance indicators (KPI) to offer value to society and meet our stakeholders' expectations.

#### Identification of environmental materiality

#### Extract issues from global frameworks such as the SDGs and the World Economic Forum, principal items of external assessment, and external environmental changes as reflected in trade organization policies. Assess issues in terms of their impact on the sustainability of global ecosystems and on Shionogi's business and in terms of stakeholders' interest in the issues in connection with Shionogi's business.

Draw up a materiality map, and identify materiality.

step4 Action

Step 1

Extraction

Step2

Assessment

Make final decisions (the Board of Directors) regarding concrete measures, incorporate them into Action Targets, and take action.

#### **Environmental Materiality Map**



Message from the	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy
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## Summary of identification of environmental materiality

Material issues	Summary of identification
AMR	This is a global issue that a pharmaceutical company manufacturing antimicrobials cannot ignore. The emergence of AMR impacts global ecosystems enormously.
Climate change 7 dimension 13 cm	Responding to climate change is essential for the sustainability of global ecosystems. Meanwhile, stakeholders' demand for action in this regard is growing increasingly strong.
Resources conservation and circulation	Reducing waste and circulating resources mean effectively utilizing limited resources and are essential for the sustainability of global ecosystems. This is a part of the problem of marine plastic, and stakeholders' interest in this international issue has been growing in recent years.
Water	With the growing probability of occurrence of torrential rainfalls and floods, water risks (particularly physical risks) must be closely watched from the perspective of BCP. Water is an indispensable factor for the business continuity of pharmaceutical companies and essential for the sustainability of global ecosystems.

### Environmental materiality and the value chain

	Purchase	R&D	Manufacturing	Distribution and sales	Use and disposal
AMR	Antimicrobial release management		Antimicrobial release management		Promotion of responsible antimicrobial use
Climate change	Introduction of energy-saving equipment Introduction of renewable energy	Introduction of energy-saving equipment Introduction of renewable energy	Introduction of energy-saving equipment Introduction of renewable energy	Introduction of hybrid vehicles Improvement of transportation efficiency	Change in or recycling of containers and packaging materials
Resources conservation and circulation	Green purchasing	Design of environmentally responsible products	3R's of waste materials		Reuse and recycling of containers and packaging materials, responsible disposal
Water and water risks	Water risk assessment	Water risk assessment, water conservation, wastewater management	Water risk assessment, water conservation, wastewater management		

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## **Action Targets**

#### Shionogi Group EHS Action Targets (Environment) (2020-2024/2030/2050)

To contribute to global sustainability through biodiversity conservation and other initiatives, we work on AMR, climate change, resource conservation and circulation, and water, which are four of the most important environmental challenges, formulating medium- and long-term targets for them.

For items other than these, the Shionogi Group and each business site / Group company set single-year targets and promote activities to achieve the targets.

Scope: Shionogi Group companies in Japan (Global Shionogi Group for [GHG (CO2) emissions reduction] and [Water risk mitigation])

Item	Medium- and long-term targets (2020–2024/2030/2050)	FY2020 targets	FY2020 results	Achievement	FY2021 targets
AMR	<ul> <li>[Reduction of the impact of antimicrobials manufacturing on the environment]</li> <li>Maintain the management system at the Kanegasaki Plant.</li> <li>Complete initial audits of 100% of relevant suppliers.</li> <li>By 2030, establish a responsible AMR management system, including the supply chain (complete post-audit follow-up).</li> </ul>	<ul> <li>[AMR control]</li> <li>Maintain the management system at the Kanegasaki Plant.</li> <li>Complete audits of 50% of relevant suppliers.</li> </ul>	<ul> <li>[AMR control]</li> <li>The management system at the Kanegasaki Plant was maintained.</li> <li>Audits of 86% of relevant suppliers were completed.</li> </ul>	0	<ul> <li>[AMR control]</li> <li>Maintain the management system at the Kanegasaki Plant.</li> <li>Complete audits of all relevant suppliers.</li> </ul>
Climate change	<ul> <li>[GHG (CO2) emissions reduction] (FY2018 benchmark)</li> <li>Reduce Scopes 1+2 by 15% and Scope 3 by 15%.</li> <li>Improve specific energy efficiencies by an annual average of 1%.</li> <li>Promote the introduction of highly energy-efficient equipment and the electrification of equipment.</li> <li>By 2030, reduce Scopes 1+2 by 46.2% and Scope 3 by 20%.</li> <li>By 2050, achieve zero emissions.</li> </ul>	<ul> <li>[GHG (CO2) emissions reduction] (FY2018 benchmark)</li> <li>Reduce Scopes 1+2 by 2%.</li> </ul>	<ul> <li>[GHG (CO2) emissions reduction] (FY2018 benchmark)</li> <li>Scopes 1+2 emissions were reduced by 8.9%.</li> </ul>	0	<ul> <li>[GHG (CO2) emissions reduction] (FY2019 benchmark)*</li> <li>Reduce Scopes 1+2 by 5%.</li> <li>Scope 3: Reduce Category 1 by 5%.</li> <li>Improve specific energy efficiencies by an annual average of 1%.</li> <li>Promote the introduction of highly energy-efficient equipment and the electrification of equipment.</li> </ul>
	[Responsible management of Fluorocarbons] • Manage Fluorocarbons-using equipment responsibly, and promote the introduction of Fluorocarbons-free or low-GWP equipment.	[Responsible management of Fluorocarbons] • Manage Fluorocarbons-using equipment responsibly, and promote the introduction of Fluorocarbons-free or low-GWP equipment.	[Responsible management of Fluorocarbons] • Fluorocarbons-using equipment was managed responsibly, and the introduction of Fluorocarbons-free or low-GWP equipment was promoted.	0	[Responsible management of Fluorocarbons] • Manage Fluorocarbons-using equipment responsibly, and promote the introduction of Fluorocarbons-free or low-GWP equipment.

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Item	Medium- and long-term targets (2020–2024/2030/2050)	FY2020 targets	FY2020 results	Achievement	FY2021 targets
	<ul> <li>[Waste and plastics]</li> <li>Reduce the amount of waste generated by 25% from the FY2018 benchmark.</li> </ul>	<ul> <li>[Waste and plastics]</li> <li>Reduce the amount of waste generated by 15% from the FY2018 benchmark.</li> </ul>	[Waste and plastics] • Waste generated: The amount of waste generated increased by 9% from the FY2018 benchmark. (due to increased production)	×	[Waste and plastics] • Waste generated: Increase the amount of waste generated by 9% from the FY2018 benchmark. (because production is expected to increase)
	<ul> <li>Reuse/recycle 80% of waste generated.</li> </ul>	<ul> <li>Reuse/recycle 80% of waste generated.</li> </ul>	<ul> <li>Reuse/recycle of waste generated: 87%</li> </ul>	0	<ul> <li>Reuse/recycle of waste generated: 80% or higher</li> </ul>
Resource conservation and circulation	<ul> <li>Reuse/recycle 30% of waste plastics.</li> <li>By 2030, reuse/recycle 65% of waste plastics.</li> </ul>	<ul> <li>Reuse/recycle 15% of waste plastics.</li> </ul>	Reuse/recycle of waste plastics: 22%	0	Reuse/recycle of waste plastics: 20% or higher
	Restrict plastic use in products.     Order Restrict plastic use in products.     Order Restrict plastic use in products was promoted.		0	<ul> <li>Restrict plastic use in products.</li> </ul>	
	[Responsible management of PCB] • Reinvestigate PCB-containing waste, and complete responsible disposal/treatment (FY2022 target).	<ul> <li>[Responsible management of PCB]</li> <li>Execute 100% disposal/treatment of currently known PCB-containing equipment.</li> </ul>	<ul> <li>[Responsible management of PCB]</li> <li>The plan was changed and it was decided to execute 100% disposal/treatment of currently known PCB-containing equipment by the 2nd Quarter of FY2021.</li> </ul>	×	<ul> <li>[Responsible management of PCB]</li> <li>Execute 100% disposal/treatment of currently known PCB-containing equipment.</li> </ul>
Water .	<ul> <li>[Water risk mitigation]</li> <li>Identify, in precise and thorough manner possible, water risks facing research centers, plants, and other major operating sites.</li> </ul>	[Water risk mitigation] • Conduct water risk assessment using WRI Aqueduct, WWF Water Risk Filter, and in-house assessment about major operating sites in Japan.	[Water risk mitigation] • Water risk assessment using WRI Aqueduct, WWF Water Risk Filter, and in-house assessment about major operating sites in Japan was conducted.	0	[Water risk mitigation] • Conduct water risk assessment using WRI Aqueduct, WWF Water Risk Filter, and in-house assessment about major operating sites in Japan.
	<ul> <li>[Water consumption reduction]</li> <li>Keep water consumption at or less than 1,340 thousand m<sup>3</sup>. (keeping at the level of FY2018 consumption)</li> </ul>	<ul> <li>[Water consumption reduction]</li> <li>Keep water consumption at or less than 1,570 thousand m<sup>3</sup>.</li> </ul>	[Water consumption reduction] • Water consumption: 1,217, thousand m <sup>3</sup>	0	<ul> <li>[Water consumption reduction]</li> <li>Keep water consumption at or less than 1,570 thousand m<sup>3</sup> (because production is expected to increase).</li> </ul>

The underlined targets are long-term targets for FY 2030 and FY 2050.

\* Since we obtained SBT certification in June 2021, the FY2024 and FY2030 targets were modified to aim for science-based targets.

Message from the Leadership Team	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy
AMR	Climate Change	Resource Conservation and Circulation	Water	Chemical Substances	Pollution Prevention	Biodiversity

### Results

#### AMR

#### Approach to AMR

AMR stands for "antimicrobial resistance," that is, resistance to antimicrobials. AMR is believed to be principally caused by inappropriate or excessive administration of antimicrobials. It is also attributed to release from manufacturing plants as another factor. Therefore, approaches from various aspects are essential for effective AMR control.

In its many years of developing, manufacturing and selling antimicrobials, Shionogi has always responsibly handled their release into the environment. As a manufacturer of antimicrobials, we believe that AMR control is a natural responsibility of company and are firmly committed to tackling this global challenge, also involving our suppliers in this endeavor.

#### Shionogi's medium- and long-term AMR control targets

#### FY2020

Maintain the management system at the Kanegasaki Plant.

Complete audits of 50% of relevant suppliers.



#### FY2030

Responsible management in practice, including the supply chain (complete post-audit follow-up).

#### On AMR Benchmark 2021\*1

Shionogi has been selected to be on AMR Benchmark 2021\*1 in recognition of its excellent overall AMR control activities. In the manufacturing category, in particular, Shionogi obtained 93, the highest score.

\*1 AMR Benchmark 2021 is the world's first report in which companies' AMR control efforts are analyzed and evaluated by the NGO Access to Medicine Foundation, based in the Netherlands.

https://accesstomedicinefoundation.org/publications/2021-antimicrobial-resistance-benchmark



Message from the Leadership Team	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy
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\*2 The Kanegasaki Plant is the only site that manufactures antimicrobials within the Shionogi Group.

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As part of AMR Industry Alliance activities, we at the Shionogi Group control and manage the release of antimicrobials in compliance with the Common Antibiotic Manufacturing Framework (hereinafter called "Guidelines")\*<sup>3</sup> and conduct audits of all of owned antimicrobial-manufacturing plants as well as all of our suppliers in Japan. Since FY2019, we have conducted audits of our suppliers outside Japan (See Tables).

As an antimicrobial release control and management initiative, at the Kanegasaki Plant, which manufactures the Shionogi Group's antimicrobials, antimicrobials contained in wastewater are deactivated in each manufacturing building before the wastewater is discharged outside via in-house treatment facilities. According to the Guidelines, we analyze the concentration of antimicrobials in actual wastewater from the plant to confirm whether the wastewater is harmless when discharged into the natural environment.

Recently, it has been confirmed that wastewater from the manufacturing process of all five items at the Kanegasaki Plant complies with the discharge limits in the receiving environment<sup>\*4</sup>. Solid waste materials, generated from antimicrobial manufacturing at the Kanegasaki Plant, are entirely entrusted to an external service provider (Eco-system Akita Co., Ltd.) for disposal by incineration, with no antimicrobial release into the environment via solid waste materials.

As for suppliers, we have confirmed that three of the four drug products, whose manufacturing is commissioned to four suppliers in Japan (one drug product per supplier), conform to the discharge limits in the receiving environment. For the remaining drug product, for which conformity has not been confirmed, we are currently taking corrective measures. We also commission the manufacturing of two types of active pharmaceutical ingradients (APIs) to three suppliers outside Japan, and we have confirmed that two of them comply with the discharge limits in the receiving environment. For the remaining supplier, for which compliance with the discharge limits in the receiving environment has not been confirmed, we continue to conduct surveillance and take necessary remedial measures. In the future, we intend to conduct audits of our suppliers outside Japan with regard to compliance with the discharge limits in the receiving environment, choosing approximately one to two suppliers each year.

\*3 Common Antibiotic Manufacturing Framework for antimicrobial release control published by the AMR Industry Alliance https://www.amrindustryalliance.org/wp-content/uploads/2018/02/AMR\_Industry\_Alliance\_Manufacturing\_Framework.pdf

- \*4 As discharge limits in the receiving environment, Shionogi adopts "Predicted No-Effect Concentration (PNEC)" mentioned in the document \*5 published by the AMR Industry Alliance or the action limits (0.01 μg/L) stated in the European Medicines Agency (EMA) Guidelines.
- \*5 https://setac.onlinelibrary.wiley.com/doi/pdf/10.1002/ieam.4141

## Discharge limits in the receiving environment for active pharmaceutical ingredients (APIs) of antimicrobials handled by Shionogi and audited items (Those in color have been audited by FY2020)\*6

APIs of antimicrobials	Discharge limits in the	Shiono	Shionogi		Suppliers
handled by Shionogi	receiving environment( $\mu$ g/L)	Drug products	APIs	Drug products	APIs
Flomoxef	0.01	0	0	Company A	
Cefcapene pivoxil hydrochloride	0.01	0	0		
Latamoxef	0.01	0	0		
Doripenem	0.11	0	0	Company B	
Cefiderocol	0.01	0	0		
Sulfamethoxazole/trimethoprim	0.60/0.50			Company C	Company F Company G
Metronidazole	0.13			Company D	Company H

Companies F, G, and H (suppliers outside Japan): An audit is scheduled in the future for Company G, which has not yet been audited. \*6 Since the business succession of vancomycin hydrochloride was carried out in FY2020, the relevant suppliers (Companies E and I) were excluded from the audits.

#### Supplier auditing results (by FY2020)

Supplier	Country of location	Management system	Wastewater management	Solid waste material management	Conformity to discharge limits
Company A	Japan	0	0	0	0
Company B	Japan	0	0	0	0
Company C	Japan	0	0	0	0
Company D	Japan	$\bigtriangleup$	0	0	$\bigtriangleup$
Company F	India	0	0	$\bigtriangleup$	0
Company H	Italy	0	0	0	0

 $\bigcirc$ : Conforming to the AMR Industry Alliance guidelines criteria

△: Conforming to the AMR Industry Alliance guidelines criteria, except in a small number of aspects; remedial measures being implemented

× : Not fully conforming to the AMR Industry Alliance guidelines criteria; remedial measures being implemented

Message from the Leadership Team	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy
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#### **Climate Change**

#### Approach to Climate Change

In October 2020, the Japanese government declared its goal to achieve carbon neutrality by 2050, and the movement toward decarbonization is accelerating. It is considered important by institutional investors and financial institutions which make ESG investments and loans that companies recognize the risks and opportunities of climate change and take countermeasures. Its importance is also mentioned in the Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). Thus, companies are required to incorporate environmental factors, such as climate change, into their business strategies, aiming for decarbonization. This is essential for companies to contribute to the achievement of the SDGs and continue to grow together with society.

To assess the impact of climate change while responding to societal demand for related information disclosure, we are working to improve and expand our information disclosure relating to climate change based on the framework of the Task Force on Climate-related Financial Disclosures (TCFD).

#### Governance

The Shionogi Group Companywide EHS Committee operates as the organization that deliberates on important EHS subjects for eventual decision making, such as environmental policies, medium- and long-term targets, performance review, identification of environmental challenges, and environmental risk assessment. The Energy Conservation Committee is more narrowly specialized in issues relating to climate change and energy conservation. The Corporate Executive Management Meeting deliberates on risks and opportunities relating to climate change, before the Board of Directors makes final decisions about them.

#### Strategies

At Shionogi, we view global warming and other climate change-related issues as management challenges that we should tackle in earnest and incorporate our understanding of climate change risks and opportunities into our business strategies. Using the scenarios of RCP2.6 and RCP8.5<sup>\*1</sup> of the IPCC<sup>\*2</sup> Fifth Assessment Synthesis Report (AR5) as reference, we measure the financial impact of climate change risks and assess Shionogi's resilience.

\*1 RCP: Representative Concentration Pathways

\*2 IPCC: Intergovernmental Panel on Climate Change

#### Summary of climate change risk and opportunity assessment

	Description	Financial impact	Probability of occurrence	Remarks
Transitional risk (regulatory reinforcement)	Additional investment for energy conservation	Medium (capital investment)	Intermediate	Supposing regulatory reinforcement to the level of SBT* <sup>3</sup>
Physical risk (extreme meteorological phenomena)	Discontinued operation due to damage to plants	Large (discontinued operation)	Low	Supposing damage to plants due to an extreme meteorological phenomenon equivalent to the July 2018 torrential downpours
Physical risk (extreme meteorological phenomena)	Discontinued operation due to damage to the supply chain	Large (discontinued operation)	Low	Supposing an increase in extreme meteorological phenomena in Asia affecting the supply chain
Opportunity (Energy cost reduction)	Increased investment by investors	Medium (investment opportunity)	Intermediate	Supposing improvement in ESG assessment resulting from active information disclosure via Integrated/Environment Reports
Opportunity (Energy cost reduction)	Reduced electricity cost through further energy conservation	Medium (lower operating cost)	Intermediate	Supposing power consumption upon attaining conformity to SBT criteria
Opportunity (new market entry)	Profit increase from climate change-related drug discovery	Medium (profit)	Low	Supposing change in the market for tropical infectious disease (malaria) drugs

 $\ast$ 3 SBT: Science-based targets, that is, CO<sub>2</sub> emissions reduction targets based on scientific data

Message from the Leadership Team	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy
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#### Risk management

Shionogi's risk management is systematized in the following manner: The Shionogi Group Companywide EHS Committee and the Energy Conservation Committee assess the timing of emergence, financial impact, and other factors of climate change, adopting and implementing measures to respond to climate change risks in the order of priority. Risks extracted from the agenda of each committee (setting targets for climate-change-related issues, checking progress in achieving the targets, assessing compliance with laws and regulations, etc.) are integrated into an enterprise risk management system before the Corporate Executive Management Meeting deliberates on them, and then the Board of Directors makes relevant final decisions.

#### Indexes and targets



Shionogi has set medium- and long-term greenhouse gas (GHG) emissions reduction plans following the Japanese government's goal of achieving net zero GHG emissions by 2050 and the worldwide movement toward GHG emissions reduction.

We set the science-based targets (SBT) as the FY 2030 target and obtained approval from the SBT Initiative in June 2021. We will work on reducing CO<sub>2</sub> emissions to achieve the SBT.

We have also participated in "the Fiscal Year 2021 Model Project for Supporting Achievement of the Decarbonization targets of the Entire Supply Chains", which is the Ministry of the Environment's project to help achieve the GHG emissions reduction targets for the entire supply chain.



#### [Medium- and long-term CO<sub>2</sub> emissions targets]

Supply chain emissions (Scope3 Category 1)



21)

Message from the Leadership Team	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy
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#### Participation in the Japan Climate Initiative (JCI) and support for the JCI message

In April 2021, Shionogi participated in the Japan Climate Initiative (JCI) and expressed its support for the JCI message. The JCI is a network aimed at realizing a decarbonized society by enhancing information dissemination from and exchange of views between companies, local governments, and NGOs that are actively involved in climate change initiatives in Japan.

The JCI message calls on the Japanese government to raise its 2030 CO<sub>2</sub> emissions reduction target to 45% and over (compared to 2013 levels) and to increase its FY2030 renewable energy target from 22–24% to 40–50%, like European countries, to achieve the raised target for CO<sub>2</sub> emissions cut.

Based on the JCI message, the Japanese government has announced a new target, setting the 2030 CO<sub>2</sub> emissions reduction target at 46% (compared to 2013 levels), and we at Shionogi will set an SBT that exceeds this new target and work to reduce CO<sub>2</sub> emissions.

JCI's Statement to Call for an Ambitious 2030 Target for Japan to Realize the Paris Agreement Goal | Japan Climate Initiative – JCI https://japanclimate.org/english/news-topics/call-for-ambitious-2030-target/

#### Participation in a panel session held as part of the Japan Climate Action Summit (JCAS) 2021

In October 2021, Head of the Sustainability Management Department participated in Panel Session 2, titled "New challenges of addressing the climate crisis," at the Japan Climate Action Summit (JCAS), which was hosted by the Japan Climate Initiative (JCI).

As an adaptation measure for climate change, she introduced how Shionogi would prepare for the next pandemic as a leading company concerning infectious diseases, for which it promotes initiatives for relieving the threat of infectious diseases, recognizing this as one of its material issues. She also explained its medium- and long-term targets for reducing GHG emissions and the acquisition of approval from the SBT Initiative for the targets.



"Japan Climate Action Summit 2021" – Japan Climate Initiative – JCI https://japanclimate.org/english/news-topics/jcas2021/

#### Shionogi's tackle against AMR, which could further spread due to climate change

Shionogi's tackle against AMR (antimicrobial resistance) is presented on the website "Climate Change Adaptation Information Platform (A-PLAT)" operated by the National Institute for Environmental Studies, Japan.



#### Carbon pricing

Internal carbon pricing will be applied to our medium- and long-term CO<sub>2</sub> emissions reduction plans and be used as criteria for investment decision making.

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#### Accolades

## - Received the 2020 Iwate Prefectural Governor's Award for Environmental Conservation Activities -

In November 2020, the Kanegasaki Plant received the Iwate Prefectural Governor's Award for Environmental Conservation Activities in the category of global warming prevention at the 2020 Iwate Exchange Forum on Water and Greenery. The Kanegasaki Plant started full-scale operation of gas turbine cogeneration equipment in FY2014, achieving a significant reduction in CO<sub>2</sub> emissions of 11,000 tons per year. It was highly evaluated for its efforts to control GHG emissions and promote energy conservation by promoting the use of LED lighting, introducing highly energy-efficient motors and freezers to achieve higher equipment efficiency, and reusing and recycling waste.



#### Fluorocarbons

In compliance with the "Act on Rational Use and Proper Management of Fluorocarbons", Shionogi identifies refrigeration, air-conditioning and other types of applicable equipment that it possesses and operates, carries out simplified and periodic inspections, keeps related records, and calculates the amount of leakage. In FY2020, Shionogi's calculated Fluorocarbons leakage was 444 tons-CO2. In compliance with the Kigali Amendment to the Montreal Protocol\*<sup>4</sup>, we are promoting a switch to Fluorocarbons-free or low-GWP\*<sup>5</sup> equipment on the occasion of renewal.

\*4 The Montreal Protocol on Substances that Deplete the Ozone Layer, based on the Vienna Convention for the Protection of the Ozone Layer, restricts substances likely to destroy the ozone layer, namely chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs). The Kigali Amendment to the Montreal Protocol includes the restriction of production and consumption of hydrofluorocarbons (HFCs), a non-ozone-depleting Fluorocarbons alternative with a high greenhouse effect.

\*5 GWP: Global Warming Potential

#### Vehicles for sales activities

Shionogi is striving to reduce CO2 and gas emissions by improving fuel efficiency through promoting the introduction of more fuel-efficient hybrid vehicles (HVs) to be rented by our medical representatives (MRs). All vehicles for use by our MRs in Japan are now HVs, except in cold regions. Starting from 2020, we are gradually introducing HVs also in cold regions toward a complete replacement by 2024.

In FY2020, fuel consumption decreased due to the effect of curbing face-to-face medical information provision activities and shifting to online activities in association with the spread of the COVID-19 pandemic.



## Fuel consumption by and CO<sub>2</sub> emissions from vehicles for sales activities

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#### CO2 emissions

The Shionogi Group is actively working to reduce CO<sub>2</sub> emissions to contribute to global warming mitigation. The Federation of Pharmaceutical Manufacturers' Associations of Japan (FPMAJ) has adopted, as part of its action plan to realize a low-carbon society, the goal of reducing CO<sub>2</sub> emissions by pharmaceutical companies by 23% in FY2020 from the FY2005 benchmark (Phase I) and by 25% in FY2030 from the FY2013 benchmark (Phase II). As an FPMAJ member, the Shionogi Group has set targets above these criteria and the goal of improving specific energy efficiencies by 1% per year. Moreover, we are also promoting the introduction of highly energy-efficient equipment to reduce energy consumption while continuously reviewing our operational modes.

Furthermore, we will promote the introduction of electricity derived from renewable energy to promote initiatives to reduce CO<sub>2</sub> emissions.





CO<sub>2</sub> emissions by Scope

#### Energy consumption

Total energy and productivity (sales/total energy)



#### Consumption by energy



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#### Scope 3 (Greenhouse gas emissions throughout the supply chain)

A company's business activities form a supply chain of its partners through purchasing, sales and so forth. For truly effective CO<sub>2</sub> emission control, it is essential to measure and regulate CO<sub>2</sub> emissions not only from the company's own activities but also throughout the supply chain.

At Shionogi, we measure our CO2 emissions throughout the supply chain of purchase/procurement, manufacturing, distribution and sales in accordance with the "Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain" published by the Ministry of the Environment and the Ministry of Economy, Trade and Industry of Japan.



Scope1 : Direct emissions from the company's fuel use and industrial processes

Scope2 : Indirect emissions accompanying the consumption of electricity and thermal energy purchased by the companyScope3 : Indirect emissions from the supply chain other than those under Scope 1 or 2

					(Unit: tons-CO2)
	Category	FY2018 results	FY2019 results	FY2020 results	Calculation methods (based on the Guidelines)
Scope1	Fuel used	37,665	34,340	35,755	Amount of fuel used as defined under the Energy Conservation Act
	Vehicles for sales activities	3,684	3,178	1,782	Amount of fuel used for vehicles for sales activities
Scope2	Energy-derived indirect emissions	41,362	39,421	37,802	Amount of electricity purchased as defined under the Energy Conservation Act
	Purchased goods and services	100,659	98,894	86,432	Purchase price of raw materials and merchandise purchased
	Capital goods	10,627	29,343	17,449	Acquisition price of fixed assets newly acquired in the year
	Fuel- and energy-related activities not included in Scope 1 or 2	2,798	5,732	5,710	Amount of electricity purchased
	Upstream Transportation and Distribution				<ul> <li>Upstream Transportation and Distribution of raw materials not included</li> <li>Downstream transportation and delivery of products (weight and distance)</li> </ul>
Scope 3	- Plant to warehouse	122	98	96	-Plant to warehouse
	-Warehouse storage	534	574	512	-Warehouse storage
	-Warehouse to wholesalers	357	377	348	-Warehouse to wholesalers
	Waste generated in operations	4,092	3,905	5,468	Weight of waste materials classified by type
	Business travel	684	814	820	Number of employees
	Employee commuting	780	1,398	1,449	Travel expenses calculated for each means of transportation
	End-of-Life Treatment of Sold Products	669	540	507	Amount used by type as classified under the Containers and Packaging Recycling Act

The calculation methods are as indicated in the "Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver. 2.3)" of the Ministry of the Environment and the Ministry of Economy, Trade and Industry of Japan.

In FY2018, the calculations only concerned Shionogi & Co., Ltd.

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#### **Resource Conservation and Circulation**

#### Approach to Resource Conservation and Circulation

The problem of environmental pollution has been growing on a global scale. A report by the World Economic Forum stated that by 2050 there could be more plastic in the ocean than fish. We at the Shionogi Group are striving to restrict waste generation and reuse and recycle resources.

We are also promoting the responsible disposal of plastics and implementing measures to reduce the amount of plastics used for our products.

#### Biomass bottles

In 2020, we adopted the use of biomass bottles (plant-derived polyethylene bottles) for the new product Cinal EX Pro chewable tablets.

We have already been using biomass bottles f or Cymbalta, Irbetan, and Pirespa. Biomass bottles are packaging containers made of polyethylene derived from materials left over in sugarcane processing. By switching from conventional petroleum-derived polyethylene bottles to biomass bottles, we can reduce CO<sub>2</sub> emissions, also conserving fossil fuel resources (6.3 tons-CO<sub>2</sub> reduced in FY2020).

Since our biomass bottles are more than 90% made of sugar cane-derived polyethylene, they conform to the standards established by the Japan BioPlastics Association for biomass plastic identification labeling (the corresponding product containers bear the label).

We are currently conducting a technical study to expand the use of biomass polyethylene to other product containers.

#### Biomass plastic identification labeling

Biomass plastic products are those that contain organic (such as plant-derived) materials in excess of a specified percentage as their plastic component. The Japan BioPlastics Association certifies products that meet the criteria and permits them to bear the label.

#### Strategies for the reuse and recycling of plastic waste

#### 3R (Reduce, Reuse and Recycle) initiative concerning containers and packaging materials

By FY2019, we completed the measures summarized in the table below. For "Reduce," the volume of plastic we used dropped by 3.3 tons in FY2020.

Measures	Description	Products concerned
	Change of packaging materials used for delivery of products in mail order business (from plastic to paper)	All healthcare goods through Shionogi Healthcare Mail-order Service
	DescriptionChange of packaging materials used for delivery of products in mail order business (from plastic to paper)Change of material of trays (from plastic to paper)Change of thickness of eye drop containers (made thinner)Change of thickness of PTP packaging materials (made thinner)Discontinuation of use of plastic cushioning materials for bottlesInscription of plastic container/packaging material 	All drugs provided in ampoules, vials and tubes
Reduce	Change of thickness of eye drop containers (made thinner)	All eye drops
	Change of thickness of PTP packaging materials (made thinner)	Flomox etc.
	Discontinuation of use of plastic cushioning materials for bottles	Irbetan etc.
Reuse	Inscription of plastic container/packaging material identification marks	All products
Recycle	Adoption of mechanically recycled PET film	Intuniv
Renewable	Adoption of biomass bottles (plant-derived polyethylene bottles)	Cymbalta, Irbetan, Pirespa, Cinal EX Pro chewable tablets.



Message from the Leadership Team	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy
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#### Initiatives by Shionogi Healthcare Co., Ltd.

In FY2019, Shionogi Healthcare Co., Ltd. began reviewing and modifying the materials used for the delivery of goods in mail order business. Through a thorough switch from plastic to paper, we have become even more environment-friendly. This also frees customers from the chore of separating the packaging materials into different types for reuse and recycling.

We will further promote efforts to remove plastic by using pulp molds (paper) as packaging materials for new products scheduled to be released this term.



#### Mechanically recycled PET film

Shionogi uses mechanically recycled PET (polyethylene terephthalate) film in the packaging (aluminum bags) of Intuniv.

Mechanically recycled PET film derives from used PET bottles that undergo several steps: selection, crushing, cleansing, and high-temperature decompression.

The replacement of virgin PET film in the outermost layer of the aluminum bags with mechanically recycled PET film results in reduced CO<sub>2</sub> emissions and fossil fuel conservation while maintaining the quality of the packaged products (0.1 tons-CO<sub>2</sub> reduced in FY2020).

We are currently conducting a technical study to gradually expand the use of mechanically recycled PET film for other product packaging materials.



#### Garbage bag "FUROSHIKI" made from 99% recycled materials

At the Shionogi Group, we use "FUROSHIKI," a garbage bag made from used stretch film as a raw material (0.6 tons-CO2 reduced in FY 2020). Since FUROSHIKI is made using plastic used and discarded in Japan as a raw material, the use of FUROSHIKI contributes to the control of waste generation.

Please see the website of K.K. Satisfactory for details. (Japanese version only) https://www.sfinter.com/information/post-1891/



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Waste-related indexes and targets



#### Waste Generation, Reuse and Recycling, and Disposal by Landfill

As part of its voluntary action plan to realize a reuse- and recycling-oriented society, the FPMAJ has adopted the goals of reducing the amount of industrial waste disposed of as landfill in FY 2025 by about 75% from the FY 2000 actual amount, of reusing or recycling at least 60% of industrial waste in FY 2025, and of reusing or recycling at least 65% of plastic waste by FY 2030. As an FPMAJ member, the Shionogi Group has also set the same or higher level targets to work on waste reduction, reuse and recycling.

Waste materials generated within the Shionogi Group mainly include waste oils resulting from its manufacturing processes, sludge from wastewater treatment, and plastics used in product containers. We practice the "3R" approach (Reduce, Reuse, and Recycle) through various measures, such as improving the manufacturing processes, selling waste liquids, plastics and metals, and reducing the amount of waste liquids generated.

Shionogi obtains its rate of reuse and recycling by taking the amount of waste sold plus the amount reused/recycled and dividing it by the amount of waste generated (including valuable resources).

The landfill rate is defined as the amount disposed of as landfill divided by the amount of waste generated (including valuable resources).

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(tons)

5,000

2,500

C

79

3,929

2016

78

3,263

2017

#### Waste generation and productivity (sales/amount generated)



#### Waste disposed of as landfill and landfill rate



## Amount of waste generated (excluding valuable resources) by type (FY2020results)

2018



#### Prevention of illegal dumping

To prevent illegal dumping of industrial waste, Shionogi takes great care in selecting the business operators to whom we consign waste transportation and treatment/disposal, giving priority to those officially recognized for their quality services.

In addition, we verify the quality of their operation on the basis of their business licenses, treatment/disposal facilities, operational conditions, document management status, implementation of emergency drills, and so forth, using our contractor evaluation sheet.

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Upon selecting the operators, we ensure the appropriate management of contractual documents, licenses, and manifests (waste management sheets), conducting at least one on-site inspection per year for each operator.

Amount and rate of waste reused/recycled

81

3,900

Amount of waste reused/recycled Reuse/recycling rate (%)

83

3.025

2019

87

4,240

2020(FY)

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#### Reuse and recycling of product containers and packaging materials

In compliance with the Containers and Packaging Recycling Act, we put to reuse and recycling a part of the containers and packaging materials used for the products we sell. We are also striving to reduce our environmental impact by modifying container materials and packaging forms while making sure to maintain and improve product quality.

Containers and packaging materials used and amount consigned for reuse/recycling (FY2020 results) (tons)							
	Containers and packaging materials used	Amount consigned for reuse/recycling					
Plastic	591	134					
Paper	437	12					
Glass (transparent)	40	9					
Glass (brown)	8	3					

Reuse/recycling consignment fee: 6,767 thousand yen

#### In-house reuse/recycling of resources

Organic solvents used during the manufacturing process of active pharmaceutical ingredients (API) at the Kanegasaki Plant, such as dichloromethane, ethyl acetate, and methanol, are collected in-house for reuse, thereby effectively using resources and regulating waste generation.

#### Clean-up activities

Environmental pollution caused by marine plastic waste has become a major global issue. Marine plastic waste can partly be traced back to plastic waste generated overland and carried into the sea by rain and wind via rivers.

Personnel at Shionogi's respective operating sites participate in clean-ups along the surrounding roads, removal of illegal posters, and other such initiatives organized in the local communities.

Thus, we are working to raise employee awareness of the environment and resource circulation.

#### Efforts in offices: Saving paper resources

Shionogi Administration Service Co., Ltd., Shionogi Business Partner Co., Ltd. and the labor union of Shionogi & Co., Ltd. are engaged in the bulk recruitment of policyholders for Shionogi's group insurance contracts. We have abolished the group insurance guide (approximately 70 pages) and various insurance application forms, which were distributed to approximately 5,000 Shionogi Group employees every year, and have shifted to online application. This has saved the amount of paper resources by about one ton when converted to weight, which has led to the reduction of tasks, such as the creation and shipping of the guide and application forms.

Employees no longer need to submit application forms or affix a seal on them and can now apply on their PCs or smartphones. Thus, this has also led to improved convenience.



Clean-up activities (Settsu Plant)



Message from the Leadership Team	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy
AMR	Climate Change	Resource Conservation and Circulation	Water	Chemical Substances	Pollution Prevention	Biodiversity

#### Water

#### Approach to water

Water is a source of life that circulates the globe and benefits humans and diverse ecosystems through interactions with the atmosphere, soil and other elements. Further worsening water shortage and pollution and flood risk are threatening the sustainability of decent living standards in the future due to the continuing increase in the world population, economic expansion, and climate change.

At Shionogi, we carefully assess, and take appropriate measure to minimize, water risks with a focus on important challenges that can seriously impact the production of pharmaceutical products and all aspects of our corporate life. This is because we are acutely aware that water is an essential factor for the continuation of our pharmaceutical business and for the sustainability of global ecosystems.

#### Water risk assessment

Quality water is essential for the manufacturing of pharmaceutical products. Water depletion or flooding in the catchment areas where we operate can seriously impact our business continuity. Therefore, we have assessed water risks facing each operating site engaged in manufacturing and research, using the internationally recognized WRI Aqueduct\*1 and WWF Risk Filter\*2 so as to understand water supply necessary for present operations and future business continuity, clarify water risks such as the increase in the probability of floods, and draw up preventive measures.

In-house deliberations based on risk assessment results and past experience and knowledge have led us to conclude that the Shionogi Group is exposed to relatively low water risks for the moment. On the other hand, the level of our future water stress\*<sup>3</sup> has been on the rise. Accordingly, we are reinforcing our efforts for water conservation and are considering consultation with experts for future water risk assessment.

We have incorporated risk assessment based on the WRI Aqueduct into the selection of our suppliers to clarify and minimize their latent risks.

\*1 Water risk assessment tool developed and published by the World Resources Institute (WRI)

\*3 Condition of strained water supply and demand

<sup>\*2</sup> Water risk assessment tool developed and published by the World Wide Fund for Nature (WWF)

Message from the Leadership Team	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy
AMR	Climate Change	Resource Conservation and Circulation	Water	Chemical Substances	Pollution Prevention	Biodiversity

#### WRI Aqueduct Assessment Results (Baseline Water Stress)

Country	No. of	No. of Risk level/Number of operating sites					Future water stress	
(operating site location)	operating sites	High	High to medium	Medium	Medium to low	Low	change	
Japan (Iwate, Shiga, Osaka, Hyogo, and Tokushima)	6	-	-	-	5	1	Change to medium/ high level by 2040	
China (Jiangsu)	1	-	-	-	-	1	No major change until 2040	

#### WWF-Water Risk Filter Assessment (Baseline Water Stress)

Country	No. of	No. of Risk level/Number of operating s				
(operating site location)	operating sites	perating sites High		Medium	Medium to low	Low
Japan (Iwate, Shiga, Osaka, Hyogo, and Tokushima)	6	-	_	4	1	1
China (Jiangsu)	1	-	-	1	-	_

#### In-house assessment

(Shionogi's self-assessment based on hazard maps and other documents and data published by the Ministry of Land, Infrastructure, Transport and Tourism and other entities)

Water ris	k category	bry Risks and opportunities Financial impact Probability		Probability	Remarks
	Water shortage	Discontinued operation due to droughts	Large (discontinued operation)	Low	Has not occurred in at least the last 30 years
Physical risk	Water excess	Discontinued operation due to floods	Large (discontinued operation)	Low	Has not occurred in at least the last 30 years
	Water quality deterioration	Site operation suspended due to water quality deterioration	Large (discontinued operation)	Low	Has not occurred in at least the last 30 years
Regulatory ris	sk	Additional investment in wastewater treatment following reinforced wastewater quality criteria	ent in wastewater ving reinforced Medium (capital Julity criteria Investment)		Respond to applicable administrative policies in all sincerity
Reputation risk		Compromised public confidence due to environmental pollution by wastewater from the site	Large (compromised confidence)	Low	Recovering public confidence is difficult; must address this risk item with special focus

Message from the Leadership Team	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy
AMR	Climate Change	Resource Conservation and Circulation	Water	Chemical Substances	Pollution Prevention	Biodiversity

#### Water consumption

To protect water, the Shionogi Group promotes water conservation in each operating site by working to raise employee awareness of water conservation, thoroughly managing the consumption of tap water and industrial water, and reviewing manufacturing equipment operation and cleaning plans in order to control water consumption. We obtain the water we use entirely from the public water supply system, with no direct water intake from underground, rivers or the sea. We do not obtain water from areas where the level of water stress is found to be high in risk assessment.

We release wastewater into sewers or rivers, not into the sea.

Regarding the quality of wastewater, we strengthen the management of chemical substances in wastewater and constantly monitor wastewater for any abnormality at in-house treatment facilities in line with our management criteria, which are voluntarily set more stringently than those mandated by laws and regulations.

The quantity of actual water consumption by the operating sites corresponds to about 10% of the quantity of water taken in, with a large part of the water used for our activities eventually returned to the aquatic environment. We will continue to strive to reduce water consumption at each operating site, and our medium-term target for water consumption is keeping it at or less 1,340 thousand m<sup>3</sup> in FY2024 (keeping at the level of FY2018 consumption).



#### Water consumption by source and drainage by destination



Message from the Leadership Team	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy
AMR	Climate Change	Resource Conservation and Circulation	Water	Chemical Substances	Pollution Prevention	Biodiversity

#### Pharmaceuticals in the Environment

Pharmaceuticals released into the natural environment are drawing an increasing amount of attention worldwide, as attested to by the report published by the Organization for Economic Cooperation and Development (OECD) titled "Pharmaceuticals in the Environment (PiE)."\*1

At the Shionogi Group, we confirm at the outset of manufacturing each new product that drug concentration in wastewater generated from the manufacturing process does not have any impact on the natural environment, thereby responsibly handling pharmaceuticals during release from the plant as well as during the manufacturing process.

For AMR control, we confirm that the level of antimicrobial content in wastewater has no environmental impact if released into the natural environment by deactivating antimicrobials contained in wastewater in each manufacturing building before discharging the wastewater outside via in-house treatment facilities.

\*1:OECD<sup>r</sup> Pharmaceutical Residues in Freshwater」 https://www.oecd.org/publications/pharmaceutical-residues-in-freshwater-c936f42d-en.htm



Before inactivation (inhibition circle formed)

#### Testing the activity of an antimicrobial



After inactivation (inhibition circle not formed)

Message from the Leadership Team	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy
AMR	Climate Change	Resource Conservation and Circulation	Water	Chemical Substances	Pollution Prevention	Biodiversity

#### **Chemical Substances**

#### Approach to chemical substances

The research, development and manufacturing of pharmaceutical products involve the use of numerous types of chemical substances. Some of them can adversely impact human health, ecosystems, and the global environment.

The handling of chemical substances is governed by the Pollutant Release and Transfer Register (PRTR) Act and various other laws and regulations. It goes without saying that Shionogi strictly adheres to these rules. We also make sure to appropriately manage chemical substances by regulating their release into the atmosphere, sewers and public waters in accordance with our voluntary criteria, which are stricter than those imposed by related laws and regulations. We consider these actions to be important as a company in terms of compliance and reputation.

#### PRTR

In compliance with the PRTR Act, under which it is mandatory to record, calculate and publish the status of release of chemical substances into the environment, Shionogi submits relevant data to the authorities and manages the amounts of volatile organic compounds (VOCs) we use, release, and transfer. In the future, we will continue our responsible management of VOC use, release and transfer to reduce the impact that our operations may have on the environment.

Under the PRTR Act, business operators are required to record and report to the authorities the amounts of chemical substances that are released into the atmosphere and rivers, disposed of, and recycled in their operations. The table on the following page lists the headings under which this reporting is made. The "amount transferred" to "outside operating sites" refers to the amount handled as waste.



#### Class 1 designated chemical substances under the PRTR Act

Message from the Leadership Team	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy
AMR	Climate Change	Resource Conservation and Circulation	Water	Chemical Substances	Pollution Prevention	Biodiversity

Substances to be registered under the PRTR Act (Unit: kg									
	Amount	Amou	unt released		Amount transferred				
Substance name	used	Atmosphere	Public waters	Soil	Outside operating sites	Sewers			
N,N–Dimethylacetamide	1,314	0	0	0	1,314	0			
N,N–Dimethylformamide	16,599	79	0	0	9,424	0			
Acetonitrile	138,062	1,317	0	0	132,873	0			
Chloroform	6,703	258	0	0	6,445	0			
Dichloromethane (methylene chloride)	148,977	70,427	4	22,160	35,580	0			
Tributylamine	7,319	0	0	0	0	0			
Toluene	1,756	18	0	0	1,739	0			
<i>n</i> -Hexane	6,552	494	0	0	6,058	0			
Pyridine	18,623	391	0	0	9,489	0			
Triethylamine	13,583	0	0	0	13,204	0			
Benzen	596	0	0	0	0	0			



In FY2020, the amount of chemical substances used increased due to the leakage of dichloromethane and an increase in production volume. In the future, we will continue our responsible management of use, release and transfer of chemical substances to reduce the impact that our operations may have on the environment.

Message from the Leadership Team	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy
AMR	Climate Change	Resource Conservation and Circulation	Water	Chemical Substances	Pollution Prevention	Biodiversity

#### PCB

Polychlorinated biphenyls (PCBs) are oily chemical substances made artificially. It has been reported that when they accumulate in the bodies of living organisms, they cause various symptoms.

PCBs are a cause of great concern in terms of global-scale contamination because they do not easily biodegrade in the environment but easily accumulate in the bodies of living organisms through the food chain. In the past, PCBs were used in numerous items, such as condensers, transformers and fluorescent light ballasts. It is therefore imperative that all materials containing PCBs, whether they are being replaced or are still in use, be appropriately managed to contain their impact.

At Shionogi, appropriate management of PCB-containing materials is assured by personnel specifically appointed for this task. At the same time, the treatment and disposal of PCB-containing materials are continued according to a medium-term plan.

Although Shionogi expected to complete the disposal of all currently known PCB-containing materials in FY2020, it changed the completion time to the 2nd Quarter of FY2021 to ensure thorough response and completed the disposal. This will be followed by inspection to ensure there are no oversights.

#### Environmental and safety assessment of chemical processes

Shionogi performs preliminary assessment of the safety of chemicals and the danger of reaction and incompatibility in the development stage of manufacturing and testing methods or pharmaceutical compounds and candidate compounds and in the designing stage of related equipment. We also continue to explore production processes so as to enhance efficiency in terms of waste reduction, energy conservation, and the like in the manufacturing stage.

Message from the Leadership Team	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy
AMR	Climate Change	Resource Conservation and Circulation	Water	Chemical Substances	Pollution Prevention	Biodiversity

#### **Pollution Prevention**

#### **Approach to Pollution Prevention**

Environmental pollution caused by exhaust gas, wastewater, and waste materials containing toxic substances resulting from business activities adversely impacts human health and ecosystems. Pollution can also be caused by the use of products and discarded unneeded products. In Japan, various cases of serious pollution harming human health began emerging in the second half of the 1900s due to the country's industrialization and economic development, which dramatically increased the amounts of waste materials and toxic substances contaminating the atmosphere, aquatic areas, soil, and underground water. Environmental pollution, once it occurs, poses serious impact to the local communities and biodiversity, which can only be restored to their original state – if it is possible to do so at all – with enormous time and cost. At Shionogi, we are fully aware that pollution prevention continues to be an essential social challenge today, as we endeavor to protect and enhance people's health and the daily environment.

At Shionogi, we consider legal compliance as one of the values that are essential for achieving our vision. Compliance with EHS-related laws and regulations is an integral part of our EHS policy. Our EHS management system provides a framework in which we ensure strict compliance with laws and regulations relating to air, water and soil pollution while assessing the status of compliance and implementing measures for effective pollution prevention. For example, Shionogi has long been making an effort to reduce pollution risk by operating in-house wastewater treatment facilities and conducting periodic monitoring.

#### Prevention of air, water and soil pollution

To prevent air pollution, Shionogi strictly observes the regulatory values for NOx, SOx, and particulate matter while reducing SOx generation through boiler fuel conversion. To prevent contamination in sewers and rivers, we maintain voluntary control values for pollutants that are stricter than the legal and regulatory values, carrying out round-the-clock monitoring with the use of TOC\*1 meters and oil content monitoring devices. At the Kanegasaki Plant, the Tokushima Plant, and the Aburahi Research Center, where wastewater is released into rivers from operating sites, wastewater is treated and purified at the facilities on their premises before it is released into nearby rivers.

The Kanegasaki Plant, which handles large quantities of chemicals, maintains voluntary control values for soil, taking measurements periodically. The measurements have constantly been below the applicable environmental criteria. \*1 TOC : Total Organic Carbon





Message from the Leadership Team	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy
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#### Compliance with related laws and regulations

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Group companies

Environment-related laws and regulations vary, encompassing a wide spectrum, from waste and energy management to the prevention of air and water pollution and the management of chemical substances. To ensure thorough compliance, we share information on legal and regulatory revisions at the respective operating sites, organize educational programs, and compile relevant information and knowledge in manuals. We also conduct a periodic assessment of the status of legal and regulatory compliance. As with environmental matters, we also promote legal and regulatory compliance and assessment with regard to health and safety affairs.

To date, we have never been subject to litigation or penalties f or EHS-related violations.

In January 2021, it was found that the Tokushima Plant had not submitted an application for permission to install a specific facility under the Act on Special Measures concerning Conservation of the Environment of the Seto Inland Sea. Following the guidance of the Tokushima City Government, we submitted a permit application and a written explanation and took preventive measures.

0

0

0

Number of incidents of excess emissions (exceeding legal restrictions) (Case							
FY	2016	2020					
Shionogi	0	1	0	0	0		

0

Number of complaints relating to the environment (Cas							
FY 2016 2017 2018 2019 2							
Shionogi	1	2	1	0	0		
Group companies 0 0 0 0 0							

#### Leakage of dichloromethane on the premises of the Kanegasaki Plant

In January 2021, at the Kanegasaki Plant, approximately 17 kL of dichloromethane, a solvent, leaked from an outdoor storage tank onto the premises.

The cause was that snow on the top of the tank fell as a lump of ice and pushed down the handle of the discharge valve connected to the bottom of the tank, causing the valve to open halfway. Immediately after the leakage accident, we made an emergency response to the tank from which dichloromethane was leaking, reported the accident to Iwate Prefecture and Kanegasaki Town, and held a briefing session for the surrounding community.

Currently, we are working with specialists to blockade this area and collect leaked dichloromethane while preventing it from spreading to the surrounding area, and to date no leaks have been confirmed outside the factory premises. For the risk of leakage to outside the premises, we are continuously monitoring the status of soil at observation points underground and are carrying out appropriate monitoring activities.

To prevent recurrence, we have taken structural measures to prevent the discharge valve from opening even if a block of ice falls in the same way. We are also identifying other related factors and taking measures to address them. We are applying these measures to other manufacturing processes and plants to prevent similar accidents from occurring in other areas.

We sincerely apologize for any distress this may have caused not only residents in the vicinity of the plant but also everyone involved.

Message from the Leadership Team	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy
AMR	Climate Change	Resource Conservation and Circulation	Water	Chemical Substances	Pollution Prevention	Biodiversity

#### Biodiversity

#### Approach to Biodiversity

Shionogi benefits from the ecosystem in all of its business activities, including R&D, production, and sales of pharmaceuticals. On the back of an increase in the global population and economic development, Shionogi recognizes the effect on the natural environment, such as climate change and shortage of water resources caused by resource and energy consumption, as an urgent issue.

Shionogi will contribute to the sustainability of the earth, including biodiversity protection, by working with our suppliers on important environmental issues, such as AMR (antimicrobial resistance), climate change, resource conservation and circulation, and water.

Shionogi is committed to protecting biodiversity. We endorse the "Declaration of Biodiversity by Keidanren and Action Policy," publishing our ambitious action policies f or and specific activities on biodiversity as part of the "Initiative based on the Declaration of Biodiversity by Keidanren".

Keidanren:Initiative based on the Declaration of Biodiversity http://www.keidanren-biodiversity.jp/logo\_en.php

#### Initiatives at the Aburahi Botanical Gardens

At the Botanical Gardens within the Aburahi Research Center, we preserve endangered species and rare plants. We also use the Botanical Gardens for the benefit of the local community mainly through events that we organize to support education for local children, future community leaders.

As our general education support at Aburahi Elementary School, a public school in Koka City, we organize workshops in which pupils try their hand at dyeing goods with dyes taken from indigo plants and purple gromwell cultivated in the herb garden we have created on the school grounds, and we organize classes wherein pupils learn about plants by touching and observing plant roots, leaves, seeds, and fruits in the Botanical Gardens.

We hold these events in partnership with Kusuri Gakushukan (Pharmacological Learning Center) in Koka City and other local corporations, with experts from the botanical gardens of Kobe and Kyoto Pharmaceutical Universities serving as guest lecturers. The events are highly appreciated as initiatives that support children's learning for the future through collaboration among local government, academia and the business community.

Aburahi Elementary School was honored with the Minister of Education, Culture, Sports, Science and Technology Award, the first prize that praises excellent nature experience activities, in the school division of the 19th Tom Sawyer School Idea Contest, following the Minister of Education, Culture, Sports, Science and Technology Award at the 2019 National Schoolyard and Childcare Centre Yard Biotope Contest.



Elementary School, a public school in Koka City

Message from the Leadership Team	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy
AMR	Climate Change	Resource Conservation and Circulation	Water	Chemical Substances	Pollution Prevention	Biodiversity

At the Aburahi Botanical Gardens, we have continued ex situ conservation of wild anemones (Anemone keiskeana), which are designated as a species exposed to increased risk of extinction in Shiga Prefecture and as a rare wild plant species by the prefecture, and of Dragonheads (Dracocephalum argunense), which are classified as Vulnerable on the Red List of the Ministry of the Environment.

We have also started an attempt to breed Nymphoides indica, which is a near-threatened species on the Red List of the Ministry of the Environment and is designated as endangered species by Shiga Prefecture, in the gardens and return it to its own habitat.

The Shionogi Group intends to carry out conservation activities as described above and contribute to education in the local community.

#### "Shiga Prefecture Certificate of Biodiversity Initiatives" for the Aburahi Botanical Gardens

The Aburahi Botanical Gardens has obtained a "Shiga Prefecture Certificate of Biodiversity Initiatives (One Star)" in recognition of community activities viewed as effective initiatives for the protection of biodiversity and the sustainable use of natural resources.

#### Kelp forest regeneration project

Kelp forest regeneration project (Japanese version only) https://www.shionogi.com/content/dam/shc/jp/news/2021/07/20210713.pdf



Nymphoides indica, a near-threatened species



Message from the Leadership Team	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy

## **Editorial Policy**

#### Periods

The present Environment Report covers results achieved during the period of the fiscal year 2020 (from April 1, 2020 through March 31, 2021) in Japan and the calendar year 2020 (from January 1 through December 31, 2020) outside Japan. The report also covers our activities conducted immediately before or after these periods.

#### Organizations

The report covers the environmental activities of Shionogi & Co., Ltd. and the Shionogi Group companies in the table below. Sections of the report that concern a different set of organizations are clearly indicated as such in each instance. As a change from the previous year, UMN Pharma Inc. is included as a Shionogi Group company. With regard to the Nanjing Plant of C&O Pharmaceutical Technology (Holdings) Limited, a non-Japanese Shionogi Group company and manufacturing base, the relevant data, excluding data on climate change, are disclosed separately from those of the Shionogi Group under "Site Data."

Category	Companie	es/Operating sites		
Shionogi & Co., Ltd.	Head Office	Shionogi CMC Research Innovation Center (Hyogo Prefecture)*1		
(referred to as "Shionogi"	Tokyo Branch Office (Tokyo)	Shionogi Pharmaceutical Research Center (SPRC)		
in the report)	Pharmaceutical Commercial DivisionAburahi Research Center (Shiga Prefecture)*2(including its sales offices across Japan)			
	Shionogi Healthcare Co., Ltd.			
	Shionogi Pharma Co., Ltd.			
	Settsu Plant, Kanegasaki Plant (Iwate Prefecture) Tokushima Plant (Tokushima Prefecture)			
	Shionogi Techno Advance Research Co., Ltd.*3			
	Shionogi Administration Service Co., Ltd.			
	Shionogi Business Partner Co., Ltd.			
	Shionogi Marketing Solutions Co., Ltd.*3			
Group companies	Shionogi Career Development Center Co., Ltd. (Hyogo Prefecture)			
	Shionogi Digital Science Co., Ltd.			
	Shionogi Pharmacovigilance Center Co., Ltd.*3			
	Aburahi AgroResearch Co., Ltd. (Shiga Pre	efecture) *3		
	Shionogi Smile Heart Co., Ltd.*3			
	UMN Pharma Inc. (Akita Prefecture, Ka	nagawa Prefecture) *4		
	C&O Pharmaceutical Technology(Holdings)Limited (Nanjing Plant, China)			

The companies and operating sites with no indication of location are all situated in Osaka Prefecture.

\*1 Formerly Kuise Site, the name was changed on April 1, 2020.

\*2 Formerly Aburahi Facilities, the name was changed on April 1, 2020.

\*3 Located on the premises of Shionogi & Co., Ltd.

\*4 As of December 19, 2019, it became a consolidated subsidiary.

#### Numerical data and graphs

The numerical data provided in the report are obtained by rounding off digits smaller than the units indicated. Accordingly, the actual sums of the individual figures in the graphs and charts do not necessarily correspond to the total figures in the same graphs and charts.

#### Environmental performance data related to energy and CO2

Although the emission factors specified in-house had been used for target progress management until the FY2019 results, the data has been calculated based on the following calculation methods for FY2020 results and afterwards. At the same time, the data for the previous years have been revised.

Message from the		Environmental	Environmental			
Leadership Team	lopics	Management	Materiality	Action largets	Results	Editorial Policy

#### Calculation methods for environmental performance data

#### Boundary of calculation

Scope 1 and 2:	Shionogi Group (excluding overseas subsidiaries [administrative offices]): Shionogi Group companies in Japan (Nagase Medicals Co., Ltd. is not included in the calculation for fiscal 2020) and the Nanjing Plant of C&O Pharmaceutical Technology (Holdings) Limited
Scope 3	
Category 3:	Shionogi Group companies in Japan (Shionogi & Co., Ltd. in or before fiscal 2018) (Nagase Medicals Co., Ltd. is not included in the calculation for fiscal 2020)
Other category	Shionogi Group companies in Japan (Shionogi & Co., Ltd. in or before fiscal 2018) (UMN Pharma, Inc. and Nagase Medicals Co., Ltd. are not included in the calculation for fiscal 2020)
Energy consumption:	Shionogi Group (excluding overseas subsidiaries [administrative offices]): Shionogi Group companies in Japan (Nagase Medicals Co., Ltd. is not included in the calculation for fiscal 2020) and the Nanjing Plant of C&O Pharmaceutical Technology (Holdings) Limited

#### Calculation methods

Indicators	Calculation methods					
Scope 1	CO2 emissions resulting from fuel use Calculation methods: Based on the "Greenhouse Gas Emissions Accounting and Reporting Manual (Ver. 4.7)" of the Ministry of the Environment and the Ministry of Economy, Trade and Industry of Japan CO2 emission factors: Based on the "Greenhouse Gas Emissions Accounting and Reporting Manual (Ver. 4.7)" of the Ministry of the Environment and the Ministry of Economy, Trade and Industry of Japan					
Scope 2	CO2 emissions resulting from purchase of electricity and steam Calculation methods: Based on the "Greenhouse Gas Emissions Accounting and Reporting Manual (Ver. 4.7)" of the Ministry of the Environment and the Ministry of Economy, Trade and Industry of Japan CO2 emission factors: Electricity (Japan) (location-based): National average emission factors from "Emission Factors by Power Suppliers (for the calculation of GHG emissions by specified emitters) (FY2019 results)" published by the Ministry of the Environment and the Ministry of Economy, Trade and Industry of Japan (January 7, 2021) Electricity (Japan) (market-based): Adjusted emissions factors from "Emission Factors by Power Suppliers (for the calculation of GHG emissions by specified emitters) (FY2019 results)" published by the Ministry of the Environment and the Ministry of Economy, Trade and Industry of Japan (January 7, 2021) Electricity (overseas) (both location-based and market-based): Emissions Factors (2016) of the International Energy Agency (IEA) Steam (both location-based and market-based): Emissions factors from the "Greenhouse Gas Emissions Accounting and Reporting Manual (Ver. 4.7)" of the Ministry of the Environment and the Ministry of Economy, Trade and Industry of Japan					
Scope 3						
Category 3	CO2 emissions resulting from procurement of fuels required for the generation of electricity purchased Calculation methods: Based on the "Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver. 2.3)" of the Ministry of the Environment and the Ministry of Economy, Trade and Industry of Japan, calculated using "7. Emission Unit Values per Use of Electricity and Heat" in the "The Database on Emissions Unit Values for Calculation of Greenhouse Gas Emissions, etc., by Organizations Throughout the Supply Chain (Ver. 3.1)" of the Ministry of the Environment of Japan					
Other categories	Total of Categories 1, 2, 4, 5, 6, 7 and 12, excluding Categories 8, 9, 10, 11, 13, 14 and 15 that are not included in our own corporate activities or are reported under other categories Calculation methods: Based on the "Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver.2.3)" of the Ministry of the Environment and the Ministry of Economy, Trade and Industry of Japan					
Energy consumption						
Total energy consumption	Total calorie-converted values for purchased energy (gasoline, other fuel oils, LPG, LNG, town gas, electricity, steam) Calculation methods: Based on the Regulations for Enforcement of the Act on the Rational Use of Energy Calorie conversion factors: Based on the Regulations for Enforcement of the Act on the Rational Use of Energy					
Gasoline	Amount of gasoline purchased, including fuel for sales force vehicles					
Other fuel oils	Amount of kerosene, light oil, heavy oil A purchased					
Liquefied petroleum gas (LPG)	Amount of LPG purchased from gas suppliers					
Liquefied natural gas (LNG)	Amount of LNG purchased from gas suppliers					
Town gas	Amount of town gas purchased from gas suppliers					
Electricity	Amount of electricity purchased from power suppliers					
Steam	Amount of steam purchased from steam suppliers					

Message from the Leadership Team	Topics	Environmental Management	Environmental Materiality	Action Targets	Results	Editorial Policy
Leadership leam	· - F ·	Management	Materiality			

#### Reporting guidelines

The Environmental Reporting Guidelines of the Ministry of the Environment of Japan (edition 2018) are used as a reference.

#### Overall reporting view

A copy of this report is made available on Shionogi's official website, while excerpts from the report are included in SHIONOGI Integrated Report.

The environmental data of FY 2020 marked  $\checkmark$  on Page 94 of "SHIONOGI Integrated Report 2021," published separately from the present report, was subjected to third-party assurance by KPMG AZSA Sustainability Co., Ltd.



#### Trends of major performance assessment indicators



Calculated based on International Financial Reporting Standards (IFRS) from the FY2018 results (In and before FY2017, calculated based on Japanese GAAP)



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