

ENVIRONMENT

Feature 01 | Response to Climate Change

Initiatives to reduce greenhouse gas emission volume towards “Realization of a decarbonized society”

While global environmental issues are worsening year after year and various menaces are threatening people’s lives, ONO established a medium- and long-term vision, the “Environment Challenging Ono Vision (ECO VISION 2050),” and engages in resolving environmental issues for our future in 2050.

Concerning one of our priority items, “Realization of a decarbonized society,” our entire company is engaging in various activities based on the medium- and long-term greenhouse gas emission volume reduction target that was established in FY2020.



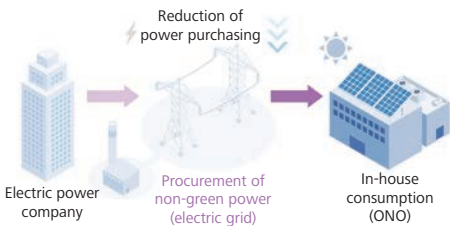
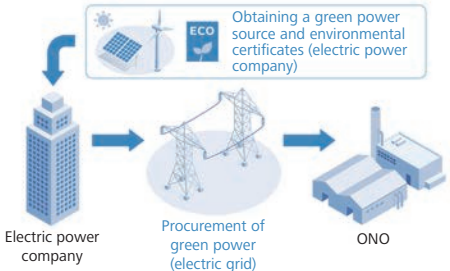
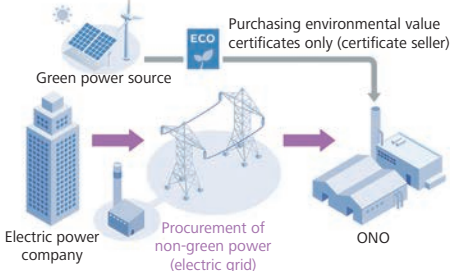
Established Ambitious Targets to Achieve a Decarbonized Society

Our goal towards realization of a decarbonized society, “Reduction of greenhouse gas emission (Scope 1 + Scope 2) to zero by FY2050” is categorized as the most aggressive goal for the “1.5°C target” by the international initiative “Science Based Targets initiative (SBTi).” Only 30 companies in Japan are categorized as having the “1.5°C target” of SBTi (as of the end of March 2021). In order to achieve this challenging target, ONO participated in the “Fiscal 2019 Model Project for Supporting the Development of CO₂ Emission Reduction Plans to Achieve SBT” (hosted by the Ministry of the Environment) and created a highly achievable greenhouse gas emission volume reduction plan in consideration of future new technologies based on the investigations and advice of specialists.

Revised Priority of Measures in Consideration of the Latest Market Trends and Future Outlook

In FY2020, we again examined our greenhouse gas emission volume reduction policy based on the current energy market trends, costs, emission factor predictions, and other factors. In concrete terms, in reference to IEMA’s greenhouse gas (GHG) management hierarchy, we determined the priority order of our measures we determined the priority order of our measures (“Promotion of Energy Conservation Activities” > “Incorporating Renewable Energy Facilities” > “Procurement of Carbon-Free Energy” > “Use of Credit”) and then revised it to increase the procurement rate of carbon-free energy rather than use of credits. We will implement these revisions based on changes to the business environment and the progress of our activities as needed. We will accelerate our activities to become “a leading environmental company in the pharmaceutical industry” and to achieve a decarbonized society in addition to promoting “the realization of a healthy and sound society” through the discovery and development of innovative pharmaceutical products for our future in 2050.

► Priority of ONO's Measures for Greenhouse Gas Emission Volume Reduction and Major Activities

Priority	IEMA's Greenhouse Gas (GHG) Management Hierarchy	Priority of ONO's measures	Major activities
High	Eliminate		
	Reduce	Promotion of Energy Conservation Activities	► Introduction of Advanced Technologies ◎ Updated heat source facilities to module-type heat pump chiller ◎ Introduced super-high-efficient amorphous transformer, for which standby power is extremely low ◎ Introduced low-air volume-type (push/pull type) ultra-high-speed VAV (variable air volume) local exhaust device ◎ Introduced aseptic isolator system that can limit high cleanliness areas ◎ Updated lights from fluorescent to LED  Module-type heat pump chillers (Minase Research Institute)
	Substitute	Incorporating Renewable Energy Facilities	
		In-house generated green energy (no GHG emissions)	
		 Procurement of Carbon-Free Energy Procurement of carbon-free energy from a power company (no GHG emissions) 	► Operation Improvement ◎ Collected heat from hot water discharge and used it as a heat source ◎ Revised facility operation hours and temperature settings ► Environment-friendly Office Design ◎ U.S.A.: Selected a building that obtained a LEED Gold certificate for a new office ◎ Tokyo building: Obtained CASBEE® S class ► Implementation of Cool-biz and Warm-biz
Low	Compensate	Use of Credit	
		Offsetting with credit (certificates, etc.) (Offsetting GHG emissions with credits)	
		 Power Purchase based on a Green Power Menu Agreement ◎ Minase Research Institute (since FY2019): Changed to a quantitative agreement that provides tracking and can procure power more stably in FY2020 ► Purchased Green Energy Certificates (since FY2018) and J-credit Scheme (since FY2019)	► Introduction and Operation of Solar Installation ◎ Headquarters building (FY2003) ◎ Minase Research Institute (FY2015) ◎ Tokyo building (FY2017)  Solar panel (Minase Research Institute)

Source: Prepared by ONO based on materials from ENECHANGE Ltd.

Environmental Management

Global Environment Policy/Environmental Vision

ONO has established the Global Environment Policy as guidelines for our environmental activities. We formulated our medium- and long-term environmental vision towards 2050, the "Environment Challenging Ono Vision (ECO VISION 2050)," based on the Policy. We recognize our corporate social responsibility for the environment and engage in activities towards the realization of an abundant global environment by prioritizing the environment in all business areas.

Global Environment Policy / Environmental Vision

<https://sustainability.ono-pharma.com/en/themes/106#943>

Medium- and Long-term Targets and Fiscal Year Targets

To achieve "ECO VISION 2050," we have set three priority items, "Realization of a decarbonized society," "Realization of a water recycling society," and "Realization of a resource recycling society," and have set specific medium- and long-term targets for greenhouse gas, water, and waste in 2019. We have also set annual targets. Our medium- and long-term greenhouse gas reduction targets are classified as the most ambitious "1.5°C target" by the international initiative "Science Based Targets initiative (SBTi)." As for energy, we will increase the use of green energy in line with the RE100 target that we joined in June 2020.



Promotion of Environmental Management

We have established an environmental management system in which the President and Representative Director is in charge of environmental management. Under the President and Representative Director, the environmental management promotion system has been developed where the Corporate Executive Officer / Head of Corporate Communications, who is the chairperson of the CSR Committee, oversees company-wide environmental management as the corporate officer in charge of the environment; the CSR Promotion Section manages the company-wide environmental management; and the Environmental Management Committee, which consists of Committee members from each department, engages in identifying the tangible current situation and in management and promotion of the system. In particular, regarding the three priority items of "Realization of a decarbonized society," "Realization of a water recycling society," and "Realization of a resource recycling society," subcommittees (climate change subcommittee, water recycling subcommittee, and resource recycling subcommittee) established under the Environmental Management Committee investigate initiatives to reduce the environmental burden and break them down as targets for each site to achieve for the fiscal year. Each of the manufacturing and research sites with a large environmental burden has established a subcommittee. The manufacturing sites have continuously acquired ISO 14001 certification and worked to reduce their environmental impact. The progress of these efforts is to be reported at least once a year at the Executive Committee chaired by the President. In addition, to reduce environmental risks, employees involved in operations that could have an impact on the environment receive necessary educational training on environmental management. We also have a structure to minimize environmental impact by conducting drills and providing on-site training for emergency response against accidents and by formulating various manuals.

Environmental Management System / Status of Acquisition of ISO 14001 Certification

<https://sustainability.ono-pharma.com/en/themes/107#957>

► Targets (Medium- and Long-term Targets and Annual Target) and Results

Key priority	Indicators	Medium- and long-term targets	Target in FY2020	FY2020 results
Realization of a decarbonized society	Greenhouse gas emissions (Scopes 1+2) (Market-based CO ₂ emissions ^{*1})	55% reduction by FY2030 and reduction to zero by FY2050 <Compared to FY2017>	Reduce by 12.6% or more from FY2017	Reduce by 12.6% from FY2017
	Greenhouse gas emissions (Scope 3)	30% reduction by FY2030 and 60% reduction by FY2050 <Compared to FY2017>	Reduce by 4.6% from FY2017 ^{*2}	Reduce by 27.6% from FY2017 ^{*2}
	Green energy use rate in all electricity consumption	Increase to 55% or more by FY2030 and increase to 100% by FY2050	12.6% or more	13.2%
Realization of a water recycling society	Water resource consumption (water intake)	15% reduction per production volume unit by FY2030 <Compared to FY2017>	Less than or equal to the previous year's level (FY2019: 296,700 m ³)	245,600 m ³ (Increase by 4.6% per production volume unit from FY2017)
Realization of a resource recycling society	Final landfill rate of industrial waste	1% or less every year ^{*3}	1% or less	0.2%
	Industrial waste volume	15% reduction per production volume unit by FY2030 <Compared to FY2017>	Less than or equal to the previous year's level (FY2019: 430.8 t)	502.7 t (Increase by 13.2% per production volume unit from FY2017)
	—	Promote reductions in the environmental burden in business activities	—	Reduce environmental burden by changing product package materials and packaging form, etc.

^{*1} Market-based greenhouse gas emission volumes are calculated based on emissions coefficients published by each electric power company.

^{*2} Scope 3 is calculated based on the emissions in FY2019 since the data of our major suppliers and pharmaceutical wholesalers in FY2020 has not been published as of the calculation time.

^{*3} ONO's ZERO Emission standard is defined so that the ratio of non-recycling (landfill and simple incineration) is 1% or less of the total amount.

Disclosure of Climate Change-Related Information

(Disclosure based on TCFD)

ONO has expressed its support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) in October 2019. The TCFD is a task force established by the Financial Stability Board (FSB) with the aims of understanding and disclosing the financial impact of climate change and publishing recommendations on methods of information disclosure in June 2017. Based on the recommendations, we will evaluate and manage climate change-related risks and opportunities and promote appropriate information disclosure.



Governance

We appoint a corporate officer in charge of the environment as the officer responsible for climate change issues. The corporate officer serves as the chairperson of the Environmental Management Committee, which meets at least once a quarter to discuss climate change issues. The corporate officer, who also serves as the Chairperson of the CSR Committee and a member of the Management Meeting, presents a report at least once a half year on the results of the Environmental Management Committee's activities to the CSR Committee and the Management Meeting for discussion. The results of discussions at the CSR Committee and the Management Meeting are reported at the Board of Directors' meeting and shared with all members of the Board of Directors more than once a year. In FY2019, the TCFD Study Working Group was established, and it considered issues related to the identification and evaluation of climate change-related risks/opportunities and the countermeasures against them. The identified risks and opportunities are reviewed by the TCFD Working Group on a yearly basis. The TCFD Working Group, which is headed by the corporate officer in charge of the environment, is joined by the heads of major relevant departments (Finance and Corporate Strategy & Planning) and the head of Risk Management Office in order

to integrate climate-related issues into our business strategy.

We also joined the TCFD Consortium, which is a platform for companies, financial institutions, etc. expressing support for the TCFD recommendations to discuss initiatives for effective disclosure of information and utilization of disclosed information for appropriate investment decisions by financial institutions. In FY2020, we participated in small-scale round table dialogue sessions with institutional investors hosted by the TCFD Consortium.

Strategy

<Analysis and evaluation of risks and opportunities related to climate change>

Analysis and evaluation of climate change-related risks and opportunities were performed using the 1.5°C and 4°C scenarios, under the leadership of the TCFD Working Group. In FY2020, we reviewed the amount of financial impact of physical risks^{*1} based on changes in our product structure, suppliers, etc. Meanwhile, the amount of financial impact of transition risks^{*2} was not revised since there were no specific changes in assumptions of calculation. Our analysis revealed no financially significant risks in both the 1.5°C and 4°C scenarios. We will continue to check trends in the international community and closely monitor the impact of risks and opportunities that may have a relatively material financial impact.

^{*1} Physical risks: Acute or chronic damage due to decarbonization policy that has not been clearly defined and due to disasters, etc. caused by climate change.

^{*2} Transition risks: Risks resulting from enhancement of decarbonization policy on a global scale (e.g. climate change policy/regulation, technology development, market trends, changes in evaluation of the market).

► Risks Related to Climate Change

Factor	Value chain	Risk and impact		Financial impact*	Management approach
Society aiming for below 1.5°C	Regulatory risk	ONO	Increased carbon tax burden Our burden of carbon tax levied on greenhouse gas emissions may increase due to the possible tightening of climate change-related regulations.	¥1.9 billion	Mitigation ■ Achieve the greenhouse gas emissions reduction target (Scope 1+2) in line with the 1.5°C target ■ Implement energy saving and green energy investment plans to achieve the target
		Suppliers	Suppliers' burden of the carbon tax levied on greenhouse gas emissions may increase due to the possible tightening of climate change-related regulations, and suppliers may pass on the carbon tax burden to us through higher procurement prices, potentially resulting in an increase in our materials costs.	¥0.6 billion	Mitigation ■ Achieve greenhouse gas emissions reduction target (Scope 3) ■ Strengthen engagement with suppliers to achieve the target
If the temperature rises by 4°C	Physical risk	ONO, manufacturing contractors, suppliers	Flood risk (acute) Acute damage (flood) risk from typhoons, etc. may increase, and an interruption of operations caused by damage to production facilities or damage to storage facilities may potentially result in a decrease in revenue.	¥3.4 billion	Adaptation ■ Introduce emergency power generators at main bases and conduct periodic maintenance ■ Integrate climate risks into enterprise risk management (ERM) ■ Maintain a cooperation system with business partners (review of waterproofing measures by product storage service provider and business partners, etc.) ■ Secure multiple suppliers ■ Consider the impact of flood due to climate change in the business partner selection process
			Water shortage risk (chronic) Since sufficient inventory is maintained, it is not likely at present that water-use restrictions due to long-term depletion of water resources will cause an interruption of our operations, resulting in a decrease in revenue.	¥0 billion	Adaptation ■ Secure proper inventory to avoid loss of opportunities ■ Maintain a cooperation system with business partners

* Financial impact: The maximum value during the period from 2020 to 2030 in the 1.5°C or 4°C scenario (showing cumulative value to regulatory risk)

Mitigation Measures to reduce emissions of greenhouse gases that cause climate change

Adaptation Measures to prevent or mitigate damage caused by the effects of climate change that have already occurred (or are expected to occur in the future)

► Opportunities Related to Climate Change

Factor		Value chain	Opportunity and impact		Financial impact ^{*1}	Management approach
Society aiming for below 1.5°C	Opportunity from resource efficiency	ONO	High-efficiency pharmaceutical manufacturing process	Introduction of high-efficiency pharmaceutical process (green sustainable chemistry ^{*2} , etc.) technology can be an opportunity to reduce raw material costs.	¥2.3 billion	- Define indicators for assessing resource efficiency - Develop systems
If the temperature rises by 4°C	Business opportunity	Customers	Preventive/treatment products	If disease trends change due to global warming, demand for existing drugs (for melanoma, etc.) may increase, or the development and sales of new drugs may have a favorable impact on revenue.	¥0.5 billion	- Additional indications for existing pharmaceuticals - Enhance the new compound library - Make use of open innovation, etc.
Society aiming for below 1.5°C	Reputation opportunity	Investors, customers, recruitment market	Corporate value improvement	It is possible that our efforts to tackle climate change will help us earn customer trust, retain employees, improve our reputation in the recruitment market, and improve ESG investors' evaluation of our performance, thus contributing to the creation of corporate value.	(Contributing to the creation of corporate value)	Appropriately disclose the results of activities undertaken to the public

^{*1} Financial impact: The maximum value during the period from 2020 to 2030 in the 1.5°C or 4°C scenario (showing cumulative value to regulatory risk)

^{*2} Green Sustainable Chemistry: A concept that aims to reduce environmental impacts throughout the life cycle of chemical substances in order to realize a sustainable society

Risk and Opportunity Management

When identifying risk and opportunity, the timing, probability of occurrence and the extent of the consequences are analyzed for each risk and opportunity, details of measures against them are evaluated, and then priorities are determined comprehensively. We prioritize and identify risks with high impact on our business or high probability of occurrence, as well as with measures that have high cost effectiveness, and the Environmental Management Committee manages the risks. Measures against the identified risks are examined by the Company-Wide Risk Management Committee, and proposed to the Management Meeting for approval. The measures approved by the Management Meeting are implemented by the responsible persons at production sites and research institutes and the risks are thus managed in a comprehensive manner. The impacts of risks and opportunities are reviewed each year, and the risk and opportunity management status is reported to the Environmental Management Committee, CSR Committee and the Management Meeting.

Indicators and Targets

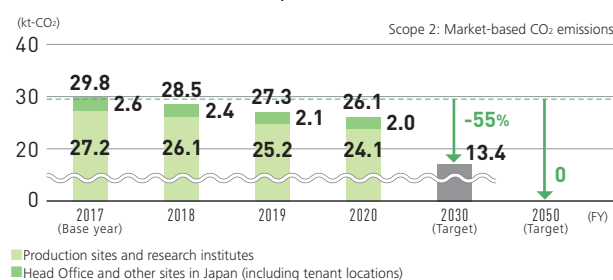
We have created a roadmap (see p. 43) to achieve the greenhouse gas emission reduction targets based on our medium- and long-term environmental vision. We discuss measures to be taken to achieve the targets and estimate the costs. To achieve our medium- and long-term targets, we set a single-year target and evaluate the results (progress) against the target (see p. 45). We also calculate greenhouse gas emissions across the entire value chain (Scope 3) for our business sites in Japan by dividing Scope 3 emissions into 15 categories, in accordance with the guidelines of the Ministry of the Environment since FY2014.

As for water risks, we conduct risk analysis once a year. Recognizing water risks as “disaster/climate change risks” among the company-wide risks, we implement measures based on our business continuity plan (BCP), including maintaining a proper stock. In the future, we will also work to establish a collaborative relationship with our business partners, to secure multiple suppliers, and to consider the impact of flood/shortage of water due to climate change in our business partner selection process.

Details on risks/opportunities regarding climate change, as well as greenhouse gas emissions are described in our CDP Climate Change response (Japanese only). These can be confirmed at the CDP website (CDP ID required).

<https://www.cdp.net/en/saml/new>

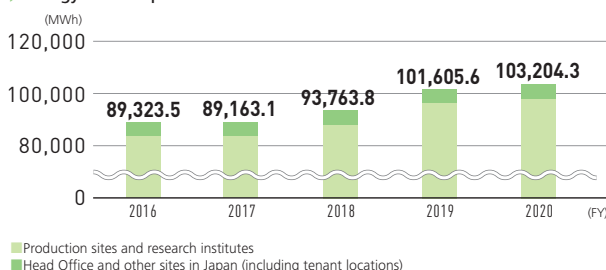
► Greenhouse Gas Emissions (Scope 1+2)



Greenhouse Gas Emissions across the Entire Value Chain (Scope 3)

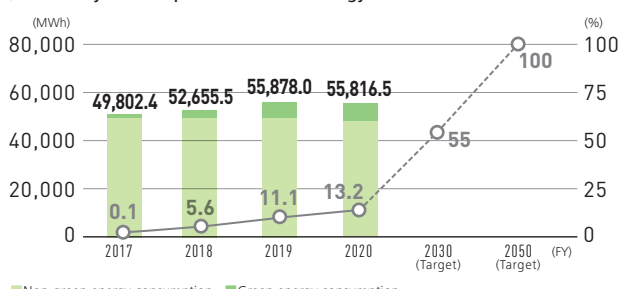
<https://sustainability.ono-pharma.com/en/themes/106#946>

► Energy Consumption



* Sites where data on greenhouse gas emissions and energy consumption were collected: Fujiyama Plant, Joto Pharmaceutical Product Development Center, Yamaguchi Plant (added from FY2018), Minase Research Institute, Fukui Research Institute, Tsukuba Research Institute, Head Office, sales offices and other offices, etc.

► Electricity Consumption and Green Energy Utilization Rate*



* Green energy use rate: Green energy consumption / All electricity consumption

Activities towards Realization of a Water and Resource Recycling Society

Towards Realization of a Water Recycling Society

We are making efforts to create a water recycling society by establishing medium- and long-term targets (see p.45) so as to mitigate the load on limited water resources. As for water risks and opportunities, the Environmental Management Committee leads and conducts surveys, and identifies, analyzes and evaluates the possible risks and opportunities that are considered to have an impact on business.

Water risk assessment at major sites that use large volumes of water (production sites and research institutes) is conducted using the WRI AQUEDUCT risk assessment tool of the World Resource Institute. As of the end of FY2020, none of our company's major sites engage in operations in areas categorized as being "extremely high risk" for water stress. We engage in operations in areas where it is possible to use good quality fresh water as needed for business operations, and our business activities are therefore not affected. ONO's rating increased from B in FY2018 to A minus in FY2019 for the water security survey conducted by CDP of Britain and we maintained an evaluation of A minus in FY2020.

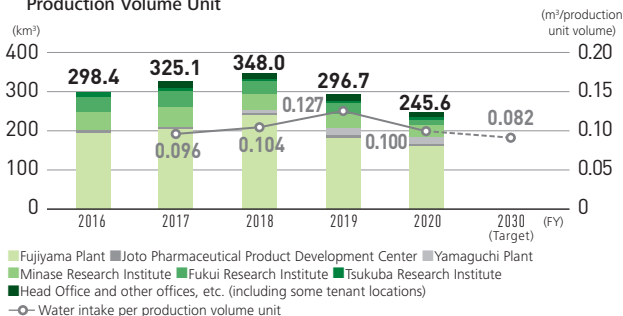
Analysis and Assessment of Water-related Risk and Opportunity

<https://sustainability.ono-pharma.com/en/themes/106#947>

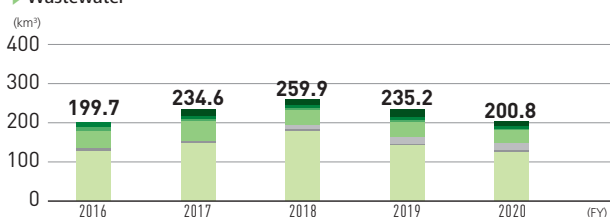
Progress towards Realization of a Water Recycling Society

The volume of water intake in FY2020 was 245.6 km³, a 17.2% reduction (51.1 km³) compared to FY2019, and we therefore achieved the target for the fiscal year. In order to reduce water consumption, we engage in reducing cooling water by adjusting the preset temperature of the heat drain tank at production sites and stopping the spraying of water on air-cooling chillers and total heat exchangers at research institutes. We also adapted water-saving sanitary equipment at sites that have been expanded or reconstructed, or had facilities renewed. In addition, Fukui Research Institute has installed a water recycling system to reduce water intake.

Water Intake (Water Resource Consumption) and Water Intake per Production Volume Unit



Wastewater



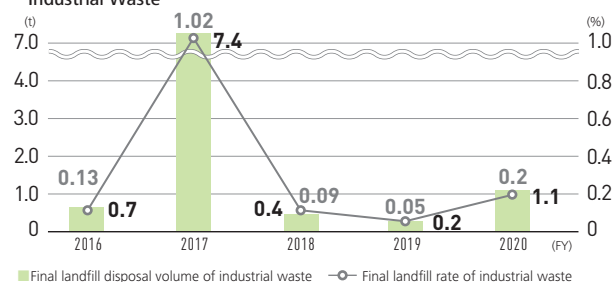
Legend: Fujiyama Plant, Joto Pharmaceutical Product Development Center, Yamaguchi Plant, Minase Research Institute, Fukui Research Institute, Tsukuba Research Institute, Head Office and other offices, etc. (including some tenant locations)

* Sites where data on water intake and wastewater were collected: Fujiyama Plant, Joto Pharmaceutical Product Development Center, Yamaguchi Plant (added from FY2018), Minase Research Institute, Fukui Research Institute, Tsukuba Research Institute, Head Office, sales offices and other offices, etc.

Towards Realization of a Resource Recycling Society

The Resource Recycling Subcommittee, which is a sub-organization of the Environmental Management Committee, has led the company-wide efforts. Based on the basic policies of "promotion of 4Rs (refuse, reduce, reuse and recycle)" and "selection of materials with reduced environmental impact," the subcommittee has investigated and analyzed the waste generation processes, and examined and evaluated policies towards realization of a resource-recycling society, and reinforced initiatives for a sustainable society through environmental conservation.

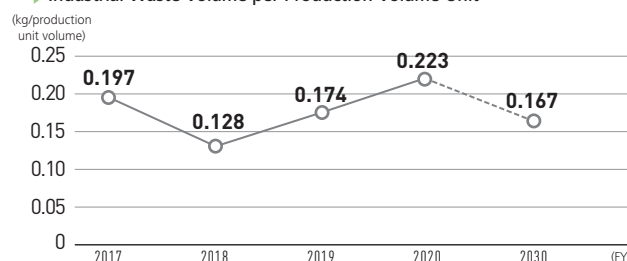
Final Landfill Disposal Volume and Final Landfill Disposal Rate of Industrial Waste



* Sites where data on final landfill disposal volume and final landfill disposal rate of industrial waste were collected: Fujiyama Plant, Joto Pharmaceutical Product Development Center, Yamaguchi Plant (added from FY2018), Minase Research Institute, Fukui Research Institute, and Tsukuba Research Institute.

* Final industrial landfill disposal volume of industrial waste in FY2017 includes the amount of waste (5.8 tons) from renovation of the Joto Pharmaceutical Product Development Center.

Industrial Waste Volume per Production Volume Unit



* The industrial waste volume in FY2017 (25.64 tons) from renovation of the Joto Pharmaceutical Product Development Center was excluded from the calculation.

Activities towards Realization of a Resource Recycling Society

We have sold waste paper and metal waste which are no longer needed at our research institutes and production sites as valuable materials, and experimental equipment that is no longer used at research institutes. In addition, for industrial waste (including specially controlled industrial waste) generated at research institutes and production sites, we have selected intermediate treatment contractors that recycle wastes without landfilling.

In terms of product packaging, we are promoting the reduction of environmental impact by changing packaging materials from plastics to paper materials, packaging forms and so on.

More details on our environmental activities and environmental data are available on our sustainability website.

<https://sustainability.ono-pharma.com/en/themes/118>