

Environment

Feature 01

Towards the “Realization of a decarbonized society”

We have witnessed the increasing impact of global warming, and battling this threat has become one of our most important collective challenges in the international society. Resolving environmental issues is essential for creating a better society and for ONO's company activities. We set “Realization of a decarbonized society” as one of the major environmental activities and we are addressing the company-wide reduction of greenhouse gas emission volume that is emitted in association with business activities.

Medium- and long-term targets through back-casting based on ONO's ideal situation in 2050

The Paris Agreement from COP 21 sets out a global action plan to limit global warming to less than 2°C compared to temperatures before the Industrial Revolution, with the target, for all intents and purposes, of decreasing human-generated greenhouse gases substantially to zero. In this social context, ONO ascertains its ideal situation in 2050 and considers what is necessary for us today by back-casting, and we established our medium- and long-term vision towards 2050, ECO VISION 2050, based on our Global Environment Policy. We set “Realization of a decarbonized society” as one of the major items and established the goal to “Reduction of greenhouse gas emission (Scope 1 + Scope 2) to zero by 2050.” This target has been approved by the international initiative “Science Based Targets initiative (SBTi)” as a target for the reduction of greenhouse gas emission volume based on a scientific foundation and it is categorized as the strictest “1.5°C target.”

Roadmap for achievement of the targets based on the investigations and advice of specialists

Only 7 companies in Japan are categorized as having the “1.5°C target” of SBTi (as of March 2020). In order to achieve this challenging target, ONO participated in the “Fiscal 2019 Model Project for Supporting Development of CO₂ Emission Reduction Plans to Achieve SBT” (hosted by the Ministry of the Environment) and created a highly possible greenhouse gas emission volume reduction roadmap in consideration of future new technologies based on the investigations and advice of specialists.

In order to promote the “creation of a healthy and sound society” through the discovery and development of innovative pharmaceutical products in the future, 2050, we aim to become an “environmental leader in the pharmaceutical industry” and address the realization of a decarbonized society.



Roadmap for Achieving the ECO VISION 2050 (Greenhouse gas)

	Medium- and Long-term Targets		2019 Targets
	2030 (milestone)	2050 (Ultimate goal)	
Greenhouse gas emissions ONO's emissions (Scopes 1+2)	FY2017 comparison 55% reduction	0	FY2017 comparison 8.4% or more reduction
Renewable energy usage rate Renewable energy usage / Overall electricity consumption	55% or more	100%	8.4% or more

Major Activities

Promoting Energy Conservation

- Updating current facilities to energy saving facilities (updating lighting from fluorescent lamps to LEDs, updating heat source equipment to module-type heat pump chillers)
- Adopting Top Runner Equipment at renewal of equipment
- Reviewing equipment operation hours
- Conducting Cool Biz and Warm Biz



Module-type heat pump chillers
(Minase Research Institute)

Incorporating Renewable Energy

- Introduction and operation of solar power system: HQ building (FY2003), Minase Research Institute (FY2015), New Tokyo Building (FY2017)
- Use of hydropower-derived electricity: Minase Research Institute (since FY2019)
- Purchase of green electricity certificate (since FY2018) and the J-Credit Scheme (since FY2019)

Renewable energy utilization rate:

Achieved FY2019 target, **8.4% or more**



Solar panels (Minase Research Institute)

Fuel-Related Initiatives

- Completed fuel switch from heavy oil and kerosene to utility gas and natural gas

Power Load Leveling

- Implementing a peak shift from daytime electricity use with a cogeneration system (CGS) in addition to a nighttime heat storage system
- Modifying the production method of heating water for air conditioning (switching from air-cooled chillers to steam boilers)
- Introducing a large-capacity electricity storage system (NAS battery system) at Yamaguchi Plant



Large-capacity electricity storage system
(Yamaguchi Plant)

Energy Management

- Development of the energy management system, in view of introducing a comprehensive FEMS (factory energy management system) and BEMS (building energy management system)

Joined an international initiative, RE100

In June 2020, ONO joined an international initiative, RE100, aiming to source 100% of the renewable electricity consumed in its business activities. Joining the RE100 initiative is an important step for us to achieve our medium- and long-term targets. We will further strengthen our efforts as an ONO group to procure and expand the use of renewable energy.



What is RE100?

The RE100 is an international initiative operated by The Climate Group, an international environmental NGO promoting climate change countermeasures; it encourages companies to disclose and manage environmental impact information. It consists of companies aiming to procure the electricity for their business operations with 100% renewable energy.

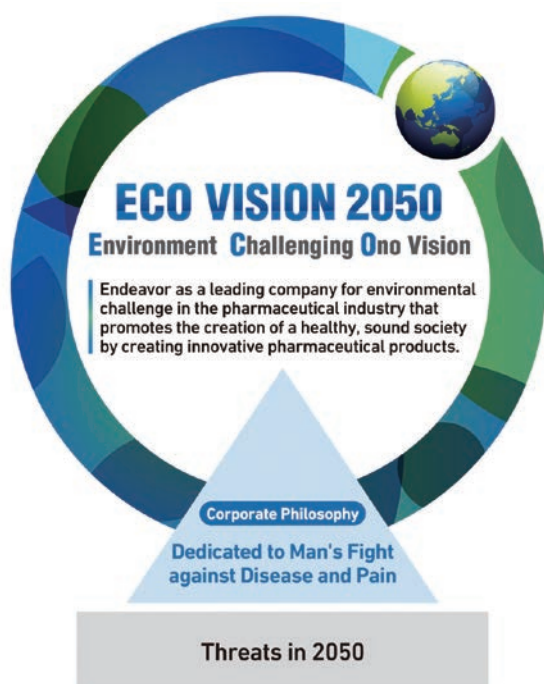
Global Environment Policy/Environmental Vision

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

Global Environment Policy

1. Recognizing corporate social responsibility for the environment, we conduct environmentally friendly activities at entire stages of product research, development, procurement, production, distribution, sales, use, and disposal.
2. We comply with environmental laws and agreements in each country and region, and our voluntary standards.
3. Under the environmental management system, we set goals and action plans, monitor regularly, and disclose necessary information.
4. We actively introduce the latest science and technology to reduce environmental impacts.
5. To conserve the natural environment and biodiversity, we pursue efficient use of resources and energy, efficient use of water and appropriate wastewater management, reduction of waste, promotion of recycling, and prevention of pollution.
6. We communicate with internal and external stakeholders and produce eco-friendly products in cooperation.
7. We build all employees' environmentally sensitive minds through education to promote environmentally friendly initiatives.

● Environmental Vision



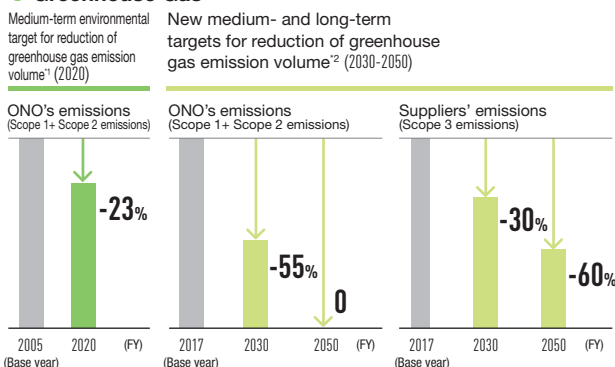
Promotion of Environmental Management –

ONO has appointed the Member of the Board of Directors in charge of the Environment as the person responsible for environmental issues. The Member of the Board of Directors in charge of the Environment assumes the role of Chairperson of the Environment Committee consisting of committee members from each department and those who examine climate change issues quarterly or more often. Each of the production and research sites with environmentally major impact has a subcommittee. Each production site makes continuous efforts to reduce environmental burden under an ISO 14000-compliant environmental management system in place. The Member of the Board of Directors in charge of the Environment also assumes the role of Chairperson of the CSR Committee and a member of Management Meeting. Activity results of the Environment Committee were placed on the agenda at the CSR Committee meeting and Management Meeting and they were reported and discussed semi-annually or more often. The review results by the CSR Committee and Management Meeting are reported annually or more often at the Board of Directors meeting by the Member of the Board of Directors in charge of the Environment and shared with all directors.

Medium- and Long-term Targets

In order to achieve “ECO VISION 2050,” we have defined three important items as “Realization of a decarbonized society,” “Realization of a water recycling society,” and “Realization of a resource recycling society,” and have set up specific medium- and long-term targets related to greenhouse gases, water consumption, and waste.

● Greenhouse Gas



*1 Greenhouse gases derived from energy emitted by production and research sites in Japan are subject to this target.

*2 ONO's new medium- and long-term targets for reduction of greenhouse gas emission volume (Scope 1 + Scope 2 emissions) have been approved by the international initiative “Science Based Targets initiative (SBTi)” as targets based on a scientific foundation and they are categorized as the strictest “1.5°C target.”

● Water Consumption

Reduce water resource consumption (water intake) by 15% per production volume unit in FY2030 (compared to FY2017).

● Waste

1. Maintain final disposal of industrial waste at 1% or less every year (*).

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

2. Reduce industrial waste emissions by 15% per production volume unit in FY2030 (compared to FY2017).

3. Promote reductions in the environmental burden in business activities.

Disclosure of Climate Change-Related Information

(Disclosed based on TCFD)

ONO has expressed its support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). 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, ONO will evaluate and manage climate-related risks and opportunities and promote appropriate information disclosure.

Governance

In FY2019, ONO established a TCFD Review Working Group with the Member of the Board of Directors in charge of the Environment as the person responsible and conducted the identification and evaluation of climate change risks and opportunities as well as several reviews and discussions of measures. The Working Group includes persons responsible for major relevant departments (finance, management planning, and public relations) and persons responsible for the Company-wide Risk Management Committee as its members and thereby they provide links with management on climate-related issues.

Strategy

〈Analysis/Evaluation of Risks/Opportunities Associated with Climate Change〉

ONO has analyzed and assessed the risks and opportunities associated with climate change in reference to 1.5°C scenario and 4°C scenario. As a result of the analyses, there were no risks that ONO considers to be financially serious in both scenarios. We continue to check global society trends and focus on the impact of risks and opportunities that have a comparatively large financial impact.

Management of Risks and Opportunities

Concerning identification of risks and opportunities, we analyze occurrence time, probability, and scope of impact, evaluate details of measures, and other items for each risk and opportunity, and then comprehensively determine their priorities. Risks and opportunities that have a major impact on our business, high probability, and high cost performance of measures are given priority for identification and are managed by the Environment Committee. Concerning flooding and other disaster risks, measures are examined by the Company-wide Risk Management Committee and proposed to and determined by the Management Meeting. Based on the measures approved by the Management Meeting, persons responsible from plants and research sites, etc. engage in implementing the measures and managing them in a comprehensive manner. The impacts of risks and opportunities are revised every year and their management conditions are reported at the CSR Committee and Management Meeting.

Risks Associated with Climate Change

Factor	Value chain	Risk and impact	Financial impact*	Management approach
Society aiming to achieve 1.5°C of global warming	Regulatory risks	ONO Increase in burden of carbon tax Regulations related to climate change may be reinforced and the burden of the carbon tax on greenhouse gas emissions may increase.	¥1.9 billion	Achievement of greenhouse gas emission reduction targets (Scope 1 + Scope 2 emissions) in accordance with the target of 1.5°C; implementation of the energy saving and renewable energy investment plan for achieving said target.
		Suppliers Shift of carbon tax to procurement price Regulations related to climate change may be reinforced, the burden of the carbon tax on greenhouse gas emissions of suppliers may increase and it may be shifted to ONO's procurement price, and therefore costs may increase.	¥0.6 billion	Achievement of greenhouse gas emission reduction targets (Scope 3 emissions); reinforcement of engagement of suppliers for achievement of said target.
If the temperature increases by 4°C	Risks due to physical repercussions	ONO, Contract companies, Suppliers Risk of floods (acute) Risk of damage from unexpected typhoons, etc., such as flooding, may become greater and it may cause the suspension of operation due to damage to manufacturing equipment and may cause a decrease in income due to damage to storage facilities.	¥4.6 billion	Introduction of emergency power unit to major sites and their regular maintenance; integration of climate change-related risks to ERM; ensuring cooperation system with customers; and securing multiple suppliers.
		Risk of water shortage (chronic) Due to the long-term depletion of water resources, operations may be suspended because of water usage restrictions and it may cause a decrease in income.	¥2.1 billion	Reinforcement of management of water-related risks in the entire supply chain (taking into account the impact from water shortage due to climate change in the selection process of customers; securing multiple suppliers).

Opportunities Associated with Climate Change

Factor	Value chain	Opportunity and impact	Financial impact*	Management approach
Society aiming to achieve 1.5°C of global warming	Opportunities arising from an efficient use of resources	ONO High-efficiency pharmaceutical process Introduction of high-efficiency pharmaceutical process (green sustainable chemistry, etc.) technology may create opportunities for raw material cost reduction, etc.	¥2.3 billion	Setting indices and developing systems related to the efficient use of resources.
If the temperature increases by 4°C	Opportunities arising from business	Customers Preventive and therapeutic products If disease trends change due to global warming, demand for existing drugs for said diseases (melanoma due to destruction of the ozone layer from the impact of global warming and other diseases) may increase or development and sale of new drugs may have a positive impact on income.	¥0.5 billion	Additional indications for existing pharmaceuticals, enhancement of new compound library, use of partnerships, etc.
Society aiming to achieve 1.5°C of global warming	Opportunities arising from reputation	Investors, Customers, Recruiting market Improvement of corporate value Our activities related to climate change are expected to contribute to acquiring the trust of customers, retaining employees, increasing evaluation in the recruiting market, improving the evaluation of ESG investors, and creating other corporate value.	(Contribution to creating corporate value)	Appropriate publication of results of activities conducted.

* Financial impact: The maximum amount of money during the period of 2020 to 2030 at 1.5°C or at 4°C

Indices and Targets

In order to reduce identified risks, we established a road map to achieve targets for the reduction of greenhouse gas emission volume based on our new medium- and long-term environmental vision and are examining measures and costs necessary for achieving the targets. Targets for a single fiscal year are established towards the achievement of medium- and long-term targets and we are assessing the results of the targets (progress) (in FY2019, emissions were reduced by 8.4% from FY2017). In FY2019, we engaged in activities under the medium-term environmental targets for reduction of greenhouse gas emission volume (FY2020 target) and new medium- and long-term targets for reduction of greenhouse gas emission volume. In addition, greenhouse gas emission volume in our value chain (Scope 3 emissions) is classified into 15 categories in accordance with the Guidelines of the Ministry of the Environment and has been calculated for our business sites in Japan since FY2014. Concerning water risks, we analyze the risks annually. We have also secured sufficient inventory and other measures in accordance with BCP as one of the company-wide risks and we will examine the establishment of a mutual complement system, securing multiple suppliers, and other measures.

- ▶ Greenhouse Gas Emissions in ONO's Corporate Value Chain (Scope 3 Emissions)

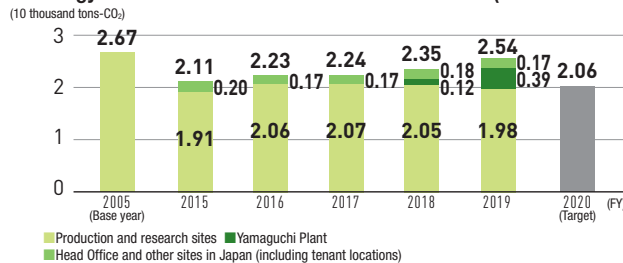
<https://ono-csr.disclosure.site/en/themes/107#966>

Progress towards a Decarbonized Society

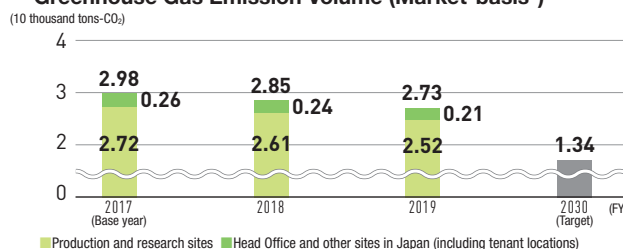
In FY2019, greenhouse gas emission volume from our production and research sites, which are the medium-term environmental target for reduction of greenhouse gas emission volume, were 23.7 thousand tons by location-basis*, and decreased by 11.2% from that in FY2005. The emissions increased by 9.2% from 21.7 thousand tons in the previous year. This is due to the start-up of operation at Yamaguchi Plant, which was newly established in FY2018. When the increase from the start-up of Yamaguchi Plant is deducted, it decreased by 25.8% from FY2005 and it achieved the target. Concerning the results of the newly established new medium- and long-term target for reduction of greenhouse gas emission volume, in Scope 1 + Scope 2 emissions, it was 27.3 thousand tons and reduced by 4.2% from 28.5 thousand tons in the previous fiscal year (reduced by 8.4% from FY2017). Concerning the medium-term environmental target for reduction of greenhouse gas emission volume, we achieved the target in FY2019. Therefore, we will accelerate our activities for emission reduction in order to achieve new medium- and long-term targets for reduction of greenhouse gas emission volume from the following fiscal year.

* Location-basis: FPMIAJ progress management factor
Fiscal year 2010 and before: Adjusted carbon emission factor of the "carbon emission factors for electricity consumption (receiving end)" presented by Keidanren
Fiscal years 2011 and 2012: Factors which were carbon emission factors on the generating end in cases where the earthquake disaster did not occur were converted into the receiving end, they were presented by Keidanren in FY2011: 0.927 t-C/10 thousand kWh (3.4 t-CO₂/10 thousand kWh)
Fiscal year 2013 and after: Carbon emission factor target for FY2020 that the Federation of Electric Power Companies of Japan published before the Great East Japan Earthquake: 0.900 t-C/10 thousand kWh (3.3 t-CO₂/10 thousand kWh)

Energy-derived Greenhouse Gas Emission Volume (Location-basis)

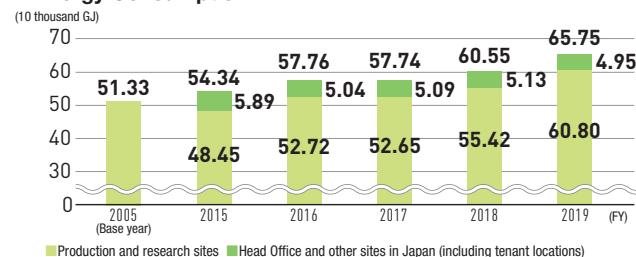


Greenhouse Gas Emission Volume (Market-basis*)



* Market-basis CO₂ emission volumes are calculated based on emissions coefficients published by each electric power company.
GHG emissions were managed on a location-basis in and before FY2016 and on both location and market-basis in and after FY2017.

Energy Consumption



* Sites where greenhouse gas emission data and energy consumption data were collected: Fujiyama Plant, Joto Plant, Yamaguchi Plant (Added from FY2018), Minase Research Institute, Fukui Research Institute, Tsukuba Research Institute, Head Office, sales offices and other offices, etc.

Details on risks/opportunities regarding Climate Change, as well as CO₂ emissions are included in CDP climate change. These can be confirmed at the CDP website (CDP ID required).

- ▶ CDP website

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

External Evaluation of Activities Related to Climate Change

In FY2019, we were selected by the CDP of Britain for inclusion in its "A List," the highest evaluation rating for two consecutive years under the climate change survey it administers. We received the 2019 Environment Minister's Award for Global Warming Prevention Activity in the "Implementation and Dissemination of Countermeasures" category from the Ministry of the Environment for its attainment of continuous activities, including practice and dissemination of activities to prevent global warming. In addition, we were introduced to the energy saving case collection created by the Kansai Bureau of Economy, Trade and Industry as a specified business showing successful results in energy saving from diversified perspectives.



Activities Towards Achievement of a Water and Resource Recycling Society

Towards Creating a Water Recycling Society —

The availability of high-quality fresh water is one of the important factors for us in conducting business activities. We are making efforts for achieving a water recycling society by establishing medium- and long-term targets (see p. 41) so as to mitigate the load on limited water resources. As for water risks and opportunities, the Environmental Committee leads and conducts surveys, and identifies/analyzes/evaluates the possible risks and opportunities that are considered to have impact on business.

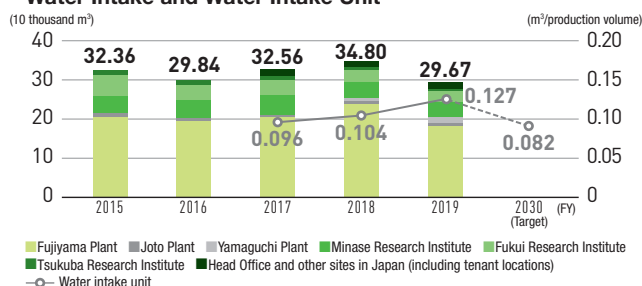
Risk evaluation at important sites that use large volumes of water is conducted using the WRI AQUEDUCT risk assessment tool of the World Resource Institute. As of the end of FY2019, none of our company's important sites operate or conduct water intake in areas categorized as being "extremely high risk" for water stress. We continue to operate 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. In FY2019, the evaluation of ONO increased from B in FY2018 to A minus by the water security survey conducted by CDP of Britain.

► Analysis and Evaluation of Water-related Risk and Opportunity
<https://ono-csr.disclosure.site/en/themes/107#967>

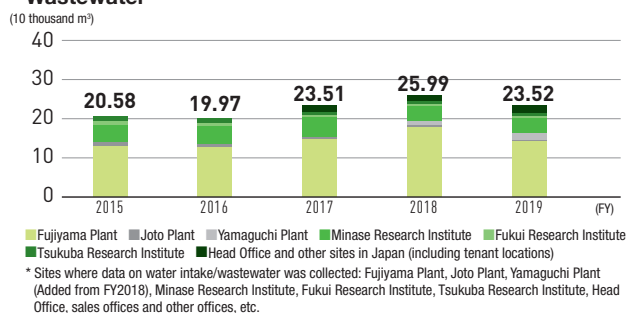
Progress towards a Realization of a Water Recycling Society

Water intake volume in FY2019 was 296.7 thousand m³. The result of medium- and long-term targets increased by 32.3% from FY2017 in production volume unit. This was due to a decrease in the number of boxes produced, which is used as a denominator for calculation. In FY2019, we engaged in a reduction of water intake volume of approx. 51.3 thousand m³ by optimizing the number of cooling towers for production equipment in operation in Yamaguchi Plant. In addition, Fukui Research Institute introduced water reuse equipment to control water intake.

Water Intake and Water Intake Unit



Wastewater



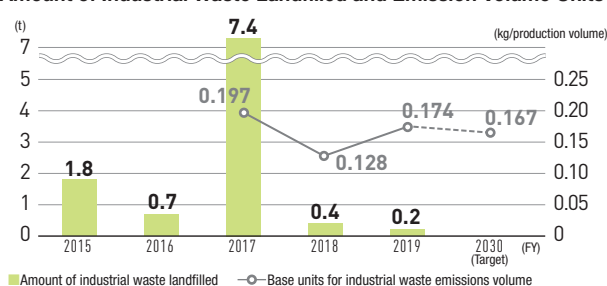
Towards Realization of a Resource Recycling Society —

ONO established three medium- and long-term targets (see p. 41) and is engaging in the realization of a resource recycling society. We are striving to recycle industrial waste and reduce landfill volume for final disposal, such as using thermal recycling by authorized heat recovery facilities and choosing final waste disposal sites that utilize the material recycling system. The production and research sites have achieved "Zero Emissions" and commit to continue the status. We are endeavoring to reduce the amount of waste generated by sorting waste appropriately based on our waste management regulations and waste sorting rules as we move forward with companywide efforts to reduce the amount of industrial waste emissions. In addition, we employed a 3R perspective in product packaging, changed packaging materials, and have taken other measures, and thereby are reducing environmental load.

Progressing towards a Resource Recycling Society —

The final disposal volume of industrial waste in FY2019 was 0.05% to the medium- and long-term targets and we achieved Zero Emissions. In addition, production volume unit of industrial waste emission volume decreased by 11.7% from FY2017. This was due to waste reduction activities, including thorough waste separation. In terms of business activities, packaging materials of some products were changed from plastics to papers and thereby the environmental burden after disposal was reduced. Products with the new packaging materials will be sold from FY2020.

Amount of Industrial Waste Landfilled and Emission Volume Units



* Sites where data on amount of waste landfilled was collected: Fujiyama Plant, Joto Plant, Yamaguchi Plant (Added from FY2018), Minase Research Institute, Fukui Research Institute, Tsukuba Research Institute
 * Amount of industrial waste landfilled in FY2017 included emission volume associated with renovation of Joto Plant (5.8 tons).
 * Emission volume units in FY2017 was calculated excluding emission volume associated with renovation of Joto Plant.

TOPICS

Reduction of Plastic Usage of Injection Packaging Box

We succeeded in changing trays (compartments) of the injection packaging boxes from plastic to paper. This resulted in decreases in plastic use volume of 4,800 kg in a year (prospect) and a reduction in volume (by 48% per box).
 (Package before change) (Package after change)



► Details of our environmental activities and environmental data are introduced on our CSR website.

<https://ono-csr.disclosure.site/en/>