

# Environment

Astellas understands that maintaining a healthy global environment is an essential theme for maintaining sound business activities and building a sustainable society.

Going forward, Astellas will strive to realize its vision for being a responsible corporation based on a long-term timeframe that keeps future generations in mind and a global perspective. At the same time, we will continue efforts to address regional social issues and pursue corporate activities in harmony with the global environment.

## Environmental Action Plan

Having determined its basic policy on the environment and identified aspirational guidelines, Astellas formulated its Environmental Action Plan, which outlines short- to medium-term activity targets, and has continued pursuing initiatives to achieve its numerical targets. Going forward, we will review the plan based on various factors including progress status and social circumstances, and add new

initiatives and/or set more challenging targets.

Among the numerical targets of the Environmental Action Plan, Astellas has achieved all the items with a final target year of fiscal 2015. Accordingly, we have set new targets for water resources productivity and waste generated per unit of sales, and have begun working towards these targets from fiscal 2016.

### New Targets Added to the Environmental Action Plan

Water resources productivity:

Increase water resources productivity by around 2.5 times the fiscal 2005 result by the end of fiscal 2020

(Indicator: Net sales (¥ billion)/Water resources withdrawn (m<sup>3</sup>))

Waste generated per unit of sales:

Reduce the waste generated per unit of sales to around 1/5 of the fiscal 2005 result by the end of fiscal 2020

(Indicator: Volume of waste generated (tons)/Sales (¥ billion))

## Environmental Action Plan Performance in Fiscal 2015 (Summary)

Numerical Targets for Environmental Action Plan	Fiscal 2015 Performance
<b>1. Measures to Address Climate Change</b> (Base year: Fiscal 2005) 1) Reduce greenhouse gas emissions by 35% or more by the end of fiscal 2020 (Global) - Japan: Reduce greenhouse gas emissions by 30% or more - Overseas plants: Reduce greenhouse gas emissions by 45% or more 2) Reduce CO <sub>2</sub> emissions generated through sales activities by 30% or more by the end of fiscal 2015 (Japan) 3) Reduce electricity usage at our offices to 80% or less by the end of fiscal 2015 (Japan)	1) Ratio to the base year level: 30.8% reduction Japan: 28.5% reduction Overseas: 37.7% reduction 2) Ratio to the base year level: 39.6% reduction 3) Ratio to the base year level: 65.3%
<b>2. Measures for the Conservation of Natural Resources</b> (Base year: Fiscal 2005) Reduce water withdrawal to 80% or less by the end of fiscal 2015 (Global)	Ratio to the base year level: 76.3%
<b>3. Waste Management</b> Reduce the final volume of landfill waste to less than 2% of the total discharged (Japan)	Ratio of landfill waste to the total discharged: 0.99%
<b>4. Management of Chemical Substances</b> (Base year: Fiscal 2006) Reduce the amount of volatile organic compounds (VOCs) discharged by 25% or more by the end of fiscal 2015 (Japan)	Ratio to the base year level: 36.8% reduction
<b>5. Biodiversity</b> (Base year: Fiscal 2005) Triple the biodiversity index by fiscal 2020 (Global)	Ratio to the base year level: 3.18 times

Note: Among the greenhouse gas emissions in Japan, CO<sub>2</sub> emissions generated through electricity usage are calculated using the following two types of coefficients:

- (1) A coefficient of 0.330 kg-CO<sub>2</sub>/kWh is used to calculate results needed to evaluate progress against the Environmental Action Plan and make investment decisions and implement countermeasures to bridge the gap between results and targets. The figures shown in the table above represent the results calculated using this coefficient.
- (2) Greenhouse gas emissions (actual emissions) for each fiscal year presented in series are calculated using the Federation of Electric Power Companies of Japan (FEPC)'s actual end-use greenhouse gas emissions coefficient (hereinafter, "the electricity CO<sub>2</sub> emissions coefficient") for the previous fiscal year. The figures for the greenhouse gas emissions shown in this report represent results calculated using this coefficient. (A coefficient of 0.554 kg-CO<sub>2</sub>/kWh was used in fiscal 2015.)

## Initiatives for Realizing a Low-Carbon Society

### Reducing Astellas' Greenhouse Gas Emissions

Astellas endeavors to reduce the greenhouse gas emissions accompanying its own activities in order to help realize a low-carbon society.

Global greenhouse gas (GHG) emissions accompanying Astellas' business activities (actual emissions) totaled 226 kilotons, with activities generating approximately 80% of those emissions covered by the Environmental Action Plan.

The amount of greenhouse gas emissions accompanying electricity use at overseas production sites was revised in line with the GHG Protocol, an international guideline for the calculation of greenhouse gas emissions. As a result, global greenhouse gas emissions (actual emissions) covered by the Environmental Action Plan were 185 kilotons in fiscal 2015. This was 21.1% (49 kilotons) lower than in the base year level of fiscal 2005.

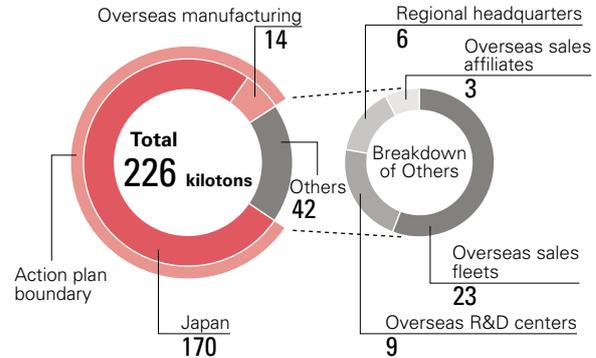
In Japan, there was a reduction of 25 kilotons due to improvement in the electricity CO<sub>2</sub> emissions coefficient compared to the previous fiscal year, along with a decrease of 2 kilotons mainly due to effective ways of mitigating climate change. However, there was an increase of 3 kilotons due to an increase in business activities such as the operation of new facilities. The difference between the coefficients for actual emissions and for use in evaluating progress against the Environmental Action Plan was 0.224 kg-CO<sub>2</sub>/kWh. As a result of the difference between these coefficients, actual emissions were 44 kilotons greater than emissions in the Environmental Action Plan.

Greenhouse gas emissions at overseas production sites decreased 22 kilotons as a result of assuming the greenhouse gas emissions accompanying electricity use derived from purchased renewable energy, were zero.

In accordance with GHG Protocol Scope 2 Guidance, Astellas has similarly adopted the market-based method as the calculation method for Scope 2 emissions (indirect emissions) in the CDP Climate Change 2016 questionnaire.

### Breakdown of Greenhouse Gas Emissions (Actual Emissions)

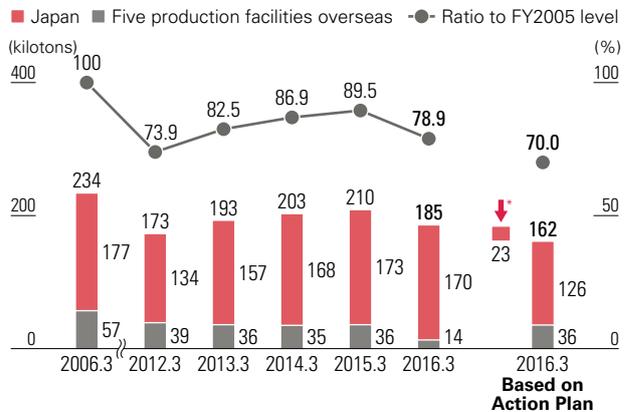
(kilotons)



Note: The above graph is based on the following energy consumption data. "Others" represents items outside the scope of the Environmental Action Plan, and includes principal office buildings, R&D centers, and office buildings of sales affiliates and sales fleets outside Japan.

### Greenhouse Gas Emissions (Actual Emissions)

Japan: All Japanese facilities and sales fleets /  
 Overseas: All five production facilities



\* The difference between the actual emissions and emissions evaluated in the Environmental Action Plan reflects differences in coefficients used in Japan (see the note on page 71) and changes in calculation methods used at overseas production sites.

### Energy Consumption in Fiscal 2015 by Energy Type

Scope Japan: All business bases and sales fleets

Overseas: All production bases

Outside scope Overseas: Principal office buildings, R&D centers, office buildings of sales affiliates and sales fleets

(Terajoules)

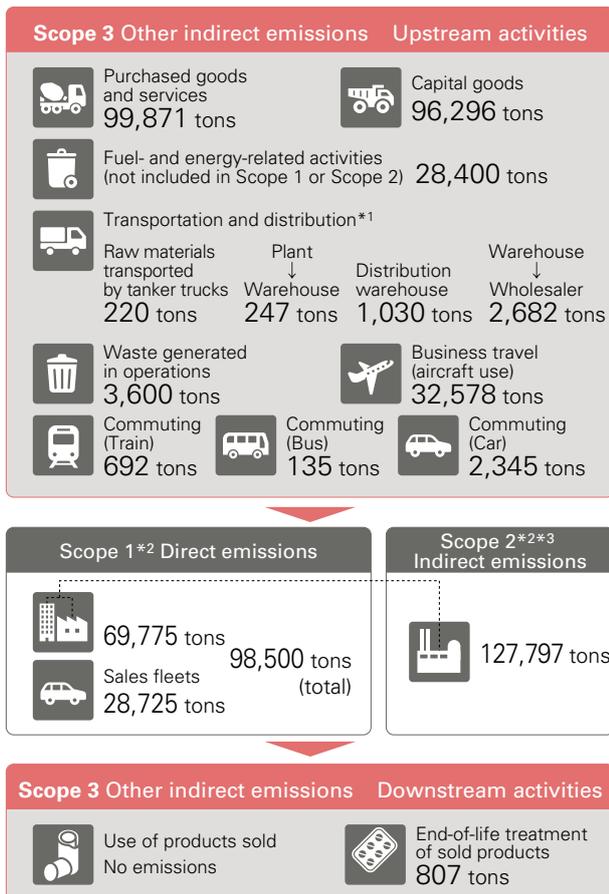
Environmental Action Plan	Total	Liquid Fuel		Gaseous Fuel		Heat Purchase	Electricity Purchase			Renewable Energy		
		Fuel Oil	Diesel Oil	City Gas	LPG/LNG		Total	Wind Power Source	Total	Wind Power Source	Woodchip Source	Photovoltaic Panels
Covered	3,917	0	83	1,083	239	24	2,443	463	43	7	36	0.3
Not Covered	729	0	353	55	0	0	322	0	0	0	0	0

## Monitoring Greenhouse Gas Emissions in the Supply Chain

In recent years, it has become increasingly important to monitor and announce not only greenhouse gas emissions by the Company, but also greenhouse gas emissions in the supply chain, including transportation of employees, raw materials purchasing, product distribution, and waste disposal.

Recognizing these social implications, we started efforts in fiscal 2011 to ascertain our greenhouse gas emissions associated with employee commuting, use of transportation systems on business trips in Japan, and transportation of products and wastes. Going forward, we intend to continue taking effective steps to expand the reporting boundary.

### Monitoring Status of Greenhouse Gas Emissions



\*1 Product shipments are handled by outside contractors.  
 \*2 Global basis (Japan: all business premises and sales fleets / Overseas: all production facilities, sales fleets, principal offices, R&D centers and sales affiliates)  
 \*3 Emissions refer to actual emissions.

## Using Renewable Energy

The direct use of renewable energy such as solar and wind power is the most effective way of mitigating climate change.

Therefore, we intend to actively incorporate technologies that can be feasibly introduced.

We operate a wind turbine system with a maximum output of 800 kW at the Kerry Plant in Ireland, which generated 1,950 MWh in 2015. Furthermore, the Kerry Plant's woodchip biomass boiler (maximum output of 1.8 MW) also used 35,927 GJ of heat. These two initiatives reduced our greenhouse gas emissions by 3,307 tons.

In Japan, we have installed photovoltaic panel systems at the Tsukuba Research Center and the Kashima R&D Center. In fiscal 2015, those systems together generated 79 MWh of electricity, reducing our greenhouse gas emissions by 44 tons.

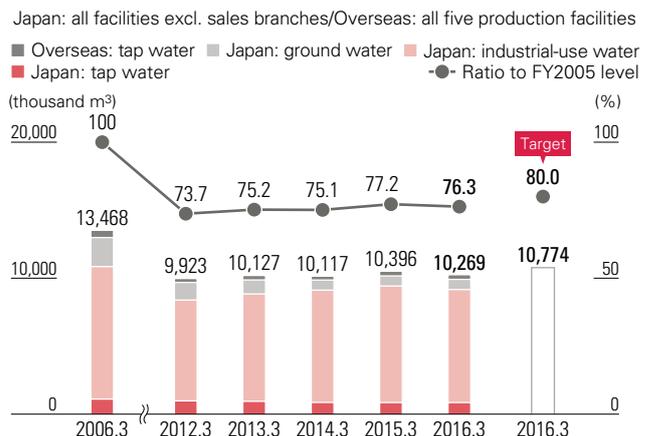
Given that Astellas' plants in Japan are not suitably located for wind power generation, we will consider introducing other forms of renewable energy in the country.

Astellas' overseas plants are taking initiatives to designate and purchase electricity generated from renewable energy such as wind and hydroelectric power. Of the electricity purchased in fiscal 2015, renewable energy comprised 20,590 MWh at the Norman Plant, 12,956 MWh at the Meppel Plant, 6,525 MWh at the Dublin Plant, and 6,382 MWh at the Kerry Plant.

## Initiatives for Resource Recycling

Astellas seeks to contribute solutions to the social issues involved in establishing a recycling-oriented society. We have therefore been striving to reduce water withdrawal and landfill waste. As a result, we were able to achieve our numerical targets for these items whose final target year is fiscal 2015. Looking ahead, we have set water resources productivity, which is defined as net sales divided by water resources withdrawn, as an enhancement target, and we will work to achieve this target.

### Amount of Water Withdrawal



## Initiatives for Biodiversity

Astellas works to preserve biodiversity by proactively reducing the impact of its business activities in all fields on the ecosystem. At the same time, we actively contribute to the creation of a society that coexists with the natural world, enabling the preservation of biodiversity and the sustainable use of the benefits of healthy ecosystems.

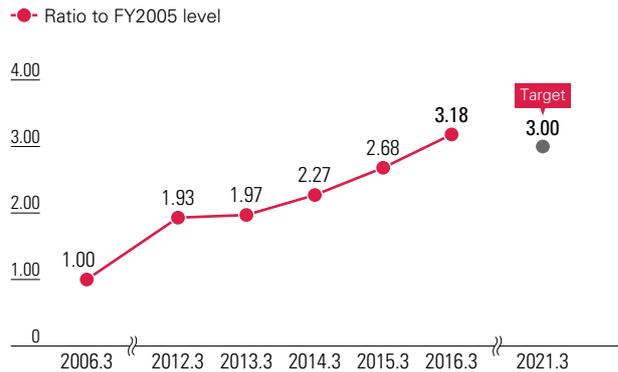
Astellas has created a Biodiversity Index\* by assessing the three main factors responsible for the deterioration of biodiversity, namely environmental pollution, resource consumption and climate change. Going forward, we will continue improving in each category while working toward achieving the target set for fiscal 2020, which is three times the fiscal 2005 level.

The Biodiversity Index for fiscal 2015 was 3.18 times that of fiscal 2005, achieving the target that was revised in the previous fiscal year. The denominator components such as pollution load and resource consumption declined, in addition to a decrease in greenhouse gas emissions due to a revision of calculation guidelines. At the same time, the numerator of net sales increased in fiscal 2015. As a result, the overall Biodiversity Index improved 0.50 points from the previous year. Since we only recently revised the

Environmental Action Plan, we have decided to continue our activities without revising the Biodiversity Index target.

\* For details on the calculation method, please visit the following website:  
[http://www.astellas.com/en/csr/environment/biodiversity\\_sub\\_02.html](http://www.astellas.com/en/csr/environment/biodiversity_sub_02.html)

### Biodiversity Index



For further information on Astellas' environmental activities, please visit the following website:

<http://www.astellas.com/en/csr/environment/>

## Message from Environmental Management

*We were included in the CDP\* Climate Disclosure Leadership Index 2015 in recognition of a perfect disclosure score for climate change information.*

Astellas has been included for the first time in the Climate Disclosure Leadership Index 2015 issued by the CDP, in recognition of its especially good score on the disclosure of information related to climate change.

Corporations operating internationally are increasingly expected to provide transparent and forthcoming disclosure of information on environment, social, and governance (ESG) policies, and Astellas is no exception. In particular, many institutional investors place great emphasis on measures taken in response to climate change, of which the evaluation offered by CDP is one of the most important.

Aiming to continuously improve disclosure quality, Astellas has worked to advance the networking of information gathering responsibilities by developing a shared awareness among members in various countries

\* CDP: An international nonprofit organization providing the only global system for corporations and municipalities to measure, disclose, manage and share vital environmental information.

regarding the value of disclosing environmental performance in a unified fashion, along with standardizing methods for consistency of calculations and organizing the systems and work-flow that actually perform the calculations. The single-minded cooperation of Astellas members in a variety of roles across more than 40 countries in all of these areas resulted in a high quality of disclosure that has earned us a high evaluation.

I believe that these proactive actions will be the motivation for facing changing environmental issues and meeting stakeholders' expectations.

Takashi Kurihara, Ph.D.

Manager  
 General Affairs

