

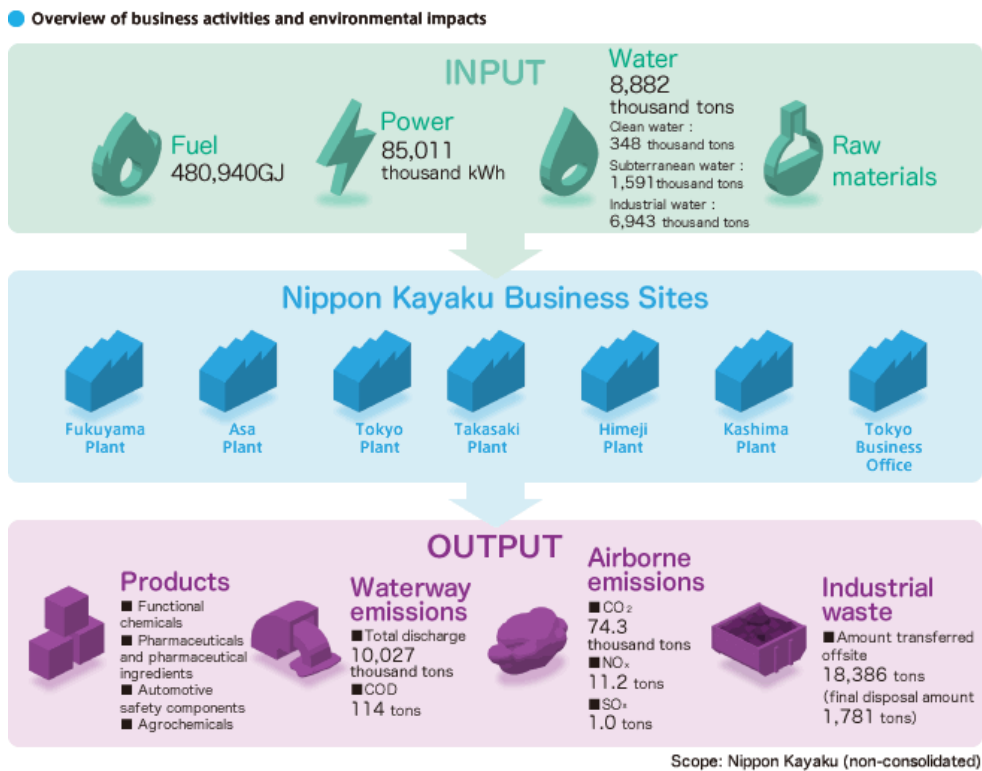
# CSR



## Reducing Our Environmental Impact

### Energy and Material Balance

We are currently implementing initiatives that will help us achieve our mid-term environmental targets for fiscal 2020. The scope of the reporting covers Nippon Kayaku (non-consolidated).



### Results of the Mid-term Corporate Plan for the Environment

Nippon Kayaku has established a mid-term corporate plan for the environment for the period running from fiscal 2011 to fiscal 2020 that consists of six items covering three areas. Fiscal 2015 was the fifth year of this plan.

● Mid-term Corporate Master Plan for the Environment (FY 2011 - FY 2020)

		Target value	Fiscal 2014 results	
Reducing Our Chemical Substance Footprint	VOC <sup>*1</sup> Emissions	Under 45 tons	77.8 tons	Increased 58% compared to fiscal 2014. This was caused by temporary increase in production at the Kashima Plant of products responsible for large amounts of VOC emissions.
	COD <sup>*2</sup> Emissions	Under 180 tons	114.2 tons	Reduced by 26.7% compared to fiscal 2014.
Prevention of Global Warming	Energy Derived CO <sub>2</sub> Emission <sup>*3</sup> (Production Divisions+ Operation Divisions)	More than 3.8% reduction	69,900 tons	Reduced by 5.9% compared to fiscal 2014. This represents 15.4% reduction compared to fiscal 2005.
Reduction of Waste	Total Waste Produced	Under 30,000 tons	19,879 tons	Reduced by 8.9% compared to fiscal 2014.
	Recycling Rate	More than 70%	71.9%	Reduced by 2.5% compared to fiscal 2014. Going forward, the amount outsourced to waste processors with high recycling rate will be increased.
	Zero Emission Rate <sup>*4</sup>	Under 3%	9.0%	Reduced by 3.2% compared to fiscal 2014. Efforts will be made to reduce landfill waste produced given the large gap with the target value that still remains.

\*1 VOC: Volatile Organic Compounds (VOCs). This tally includes all chemical substances emitted into the atmosphere, including those derived from reactions involving chemical substances not subject to reporting regulations.

\*2 COD: Chemical Oxygen Demand. An indication of the amount of oxygen needed to oxidize a subject compound under a predetermined condition using oxidizing agents.

\*3 Energy-derived CO<sub>2</sub> emissions: Fiscal 2005 has been set as the benchmark (82,600 tons)

\*4 Zero emission rate: The amount of internal and external landfill waste produced as a percentage of total waste produced.

## Results of Our Efforts to Reduce Environmental Impacts

As part of its effort to reduce environmental impacts, Nippon Kayaku focuses on preventing air, water and noise and odor pollution as well as stopping global warming and reducing waste.

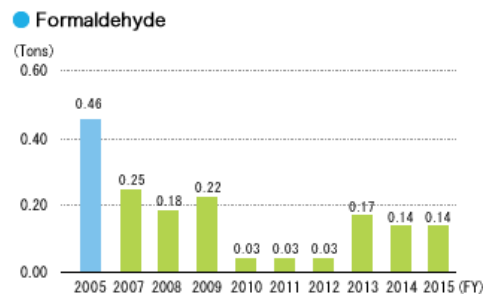
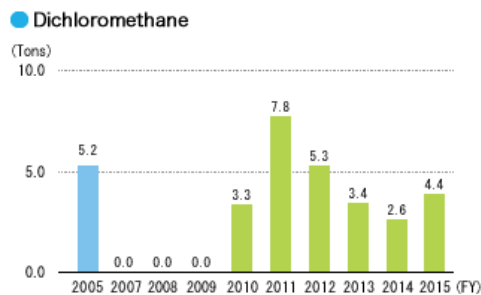
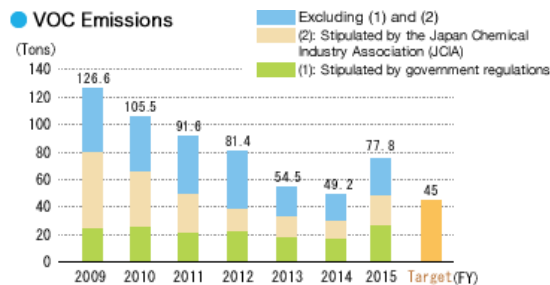
### Preventing Air Pollution

To help prevent air pollution, we carefully manage substances subject to Japan's Air Pollution Control Act, hazardous substances released into the air and other air pollutants.

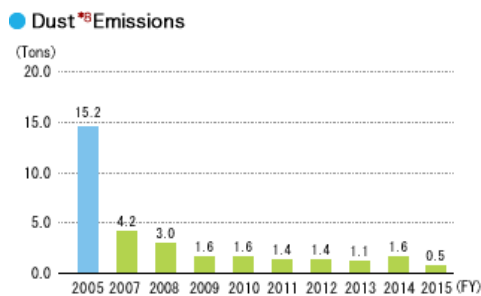
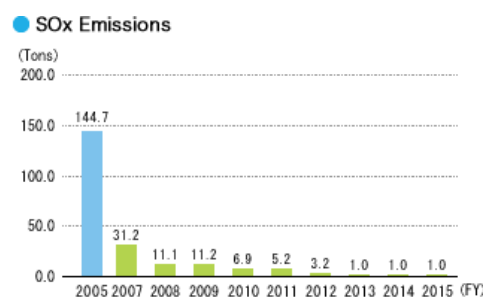
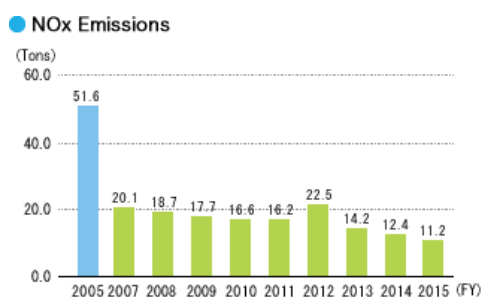
As for our VOC emissions reduction efforts, our new medium-term environmental targets established in fiscal 2011 expand the scope of data compilation to include all chemical substances discharged into the atmosphere. The new scope includes chemical substances that are produced through reactions as well as the chemical substances conventionally subject to government ordinances and the Japan Chemical Industry Association voluntary standards. The target for VOCs is to reduce emissions into the atmosphere to less than 45 tons by fiscal 2020. The Nippon Kayaku Group stands committed to making the self-initiated efforts needed to achieve this target.

Under the initiative of the Japan Chemical Industry Association, the industry is taking action to voluntarily manage and reduce emissions of 12 control substances<sup>\*5</sup> that are deemed to be harmful air pollutants. Of these 12 control substances, we used five substances after 1995, but stopped the use of benzene in 1995. Emissions of chloroform and ethylene oxide have been cut to zero since fiscal 2007. About dichloromethane emissions there were few times of zero since fiscal 2007, but have risen slightly since fiscal 2010 because of their minor use in products. Formaldehyde emissions continue to occur, albeit in small amounts, because of its use in products and in sterilization and fumigation. Going forward we will focus particularly on reducing the use and emissions of dichloromethane and formaldehyde through production process improvements and other means.

Air pollutants sulfur oxide (SOx)<sup>\*6</sup> and nitrogen oxide (NOx)<sup>\*7</sup> are emitted during boiler operations. To date, the Nippon Kayaku Group has gradually shifted the fuel for its boilers from Bunker C heavy oil with high sulfur content to other lower sulfur content fuels such as Bunker A, in addition to LPG and natural gas, which are sulfur free. We continued this transition in fiscal 2015 as well. As a result, since fiscal 2008, we maintain to reduce SOx emissions about, we made further reductions. The Nippon Kayaku Group will continue to make efforts. to properly maintain air pollution prevention equipment, carry out regular inspections and upkeep, and reduce overall emission of air pollutants into the atmosphere.



\*5 12 control substances subject to voluntary controls: acrylonitrile, acetaldehyde, vinyl chloride monomer, chloroform, 1,2-dichloroethane, dichloromethane, tetrachloroethylene, trichloroethylene, 1,3-butadiene, benzene, formaldehyde, and ethylene oxide.



\*6 SOx (sulfur oxide): SOx is emitted when fossil fuels that contain sulfur are burned. SOx reacts with water in the atmosphere to form sulfuric acid and sulfurous acid, which are causes of air pollution and acid rain.

\*7 NOx (nitrogen oxide): NOx is produced when burned chemical substances react to nitrogen in the air and when fuels and chemical substances that contain nitrogen compounds such as coal are burned. Not only is it a major cause of air pollution including photochemical smog and acid rain, but NOx also has a harmful effect on the human respiratory system. In addition, NOx is also known to include the greenhouse gas dinitrogen monoxide.

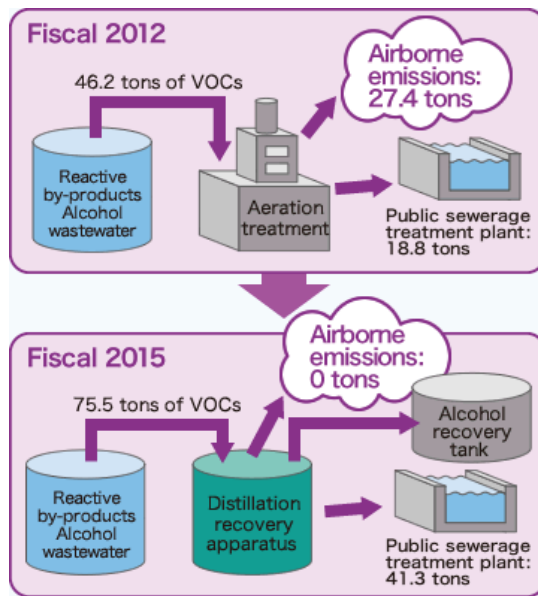
\*8 Dust: Dust mainly refers to fine particulate soot found in dust smoke produced when burning fossil fuels. In addition to a major cause of air pollution, humans can contract pneumoconiosis or other harmful health conditions when breathing dust in high concentrations.

### Initiatives to Reduce VOCs at the Kashima Plant

The Kashima Plant released alcohol produced in large quantities from the agrichemical manufacturing processes into the air, but in order to become an eco-friendlier plant, it decided to launch an initiative to examine ways to recover alcohol produced during the manufacturing process based on theme reducing the amount of VOCs released into the air. Specifically, existing facilities were switched for use as alcohol distillation recovery apparatuses, which involves transforming alcohol in a gaseous state into a liquid for recovery in a tank. This method greatly reduces the amount of alcohol released into the air.

In fiscal 2012 we released 27.4 tons into the atmosphere. As a result of the above-mentioned, we completely eliminated our emissions of alcohol gas into the atmosphere since fiscal 2013.

We stand firmly committed to actively helping improve the environment with the goal of reduced impacts on the environment in the future.



### Preventing Water Pollution

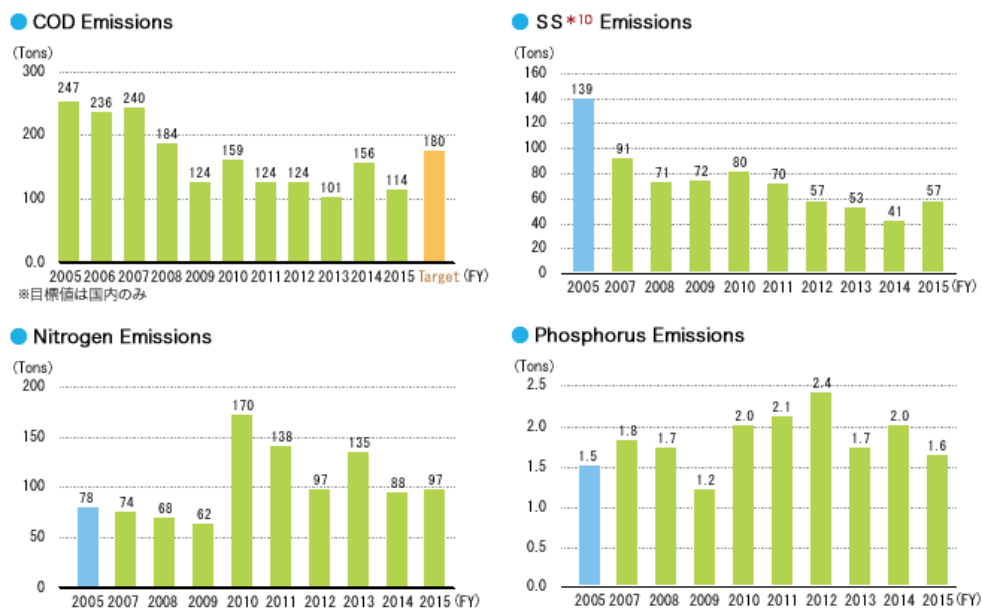
The Nippon Kayaku Group has set voluntary wastewater discharge control standards that are tougher than requirements laid out in national laws and local ordinances.

And The Nippon Kayaku Group produces color material-related products including dyes and ink jet printer ink, among others. Our Tokyo and Fukuyama plants, where color material-related products are manufactured, fully decolorize colored wastewater before it is discharged.

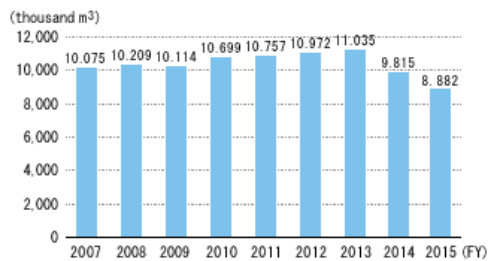
The Nippon Kayaku Group has made efforts to reduce its COD emissions by employing activated sludge treatment equipment at plants with high levels of COD emissions. In fiscal 2015, the amount was 114 tons, which was by 27% less than fiscal 2014. This was because the product mix at the Fukuyama Plant changed in fiscal 2014 to high COD load products, but since then this production had eased while wastewater impact reduction measures had taken effect.

### PRTR <sup>\*9</sup> Initiatives

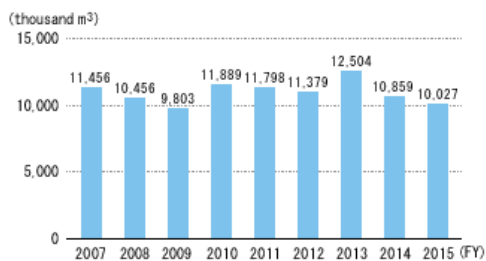
Since 1995, the Nippon Kayaku Group has participated in the Japan Chemical Industry Association led initiative to reduce compounds identified in the PRTR regulation, working to reduce its emissions of PRTR controlled compounds into the environment. In fiscal 2015, our emissions of PRTR controlled substances totaled 29.4 tons which marked about 35% increase from 21.8 tons in the previous fiscal year. This was caused by production volume at the Kashima Plant increased. Although toluene continues to represent the largest source of PRTR controlled emissions, toluene emissions totaled 16.0 tons in fiscal 2015. This was about 54% of all emissions of compounds identified in the PRTR regulation.



### Water Consumption



### Drainage



### Emissions of PRTR Controlled Substances



\*9 PRTR: Pollutant Release and Transfer Register. The PRTR regulation is designed to prevent occurrences of environmental safety incidents by encouraging businesses to improve their own chemical substance management.

\*10 SS: Suspended Solids. SS is a water-quality indicator generally referring to insoluble substances of 2 mm or less in diameter suspended in water. The organic matter and metal originating in particulate-like mineral, animals-and-plants plankton and its corpse, a sewer, factory effluent, etc. are contained. The increase in SS worsens transparency, and influences underwater photosynthesis by preventing light penetration.

### Initiatives in China to Reduce COD Emissions

Wuxi Advanced Kayaku Chemical Co., Ltd. (WAC) is a Nippon Kayaku Group company, which was established in 1996 in Wuxi City, China in order to manufacture synthetic dyes for paper and textiles.

At WAC since 2013 spring there has been sharp increase in the production of dyes with extremely large COD emissions, and as a result the company examined ways to modify the production method, greatly reducing COD emissions in the manufacturing process. However, WAC determined it would be necessary to expand its fundamental wastewater treatment capacity in order to continually expand business activities in the future in conjunction with the increase in production volume. As a result, WAC introduced a new biological treatment system in 2015

This new biological treatment system passes the treated wastewater through hollow-fiber membrane \*11 in order to separate the activated sludge from the treated wastewater. This makes it possible to have about three times the concentration of active sludge within certain quantity of water compared to conventional biological treatment systems, which enables highly efficient biological treatment in minimal space. After completion in October 2015, the facilities were gradually switched over from the old system to the new system, and now the new system is able to treat a stable amount of water that exceeds the COD elimination ratio of the old system. Also, the capacity of this new system can be expanded simply by adding hollow-fiber membranes, allowing for expansion as production volume increases in the future.

In China, environmental regulations are expected to be further tightened in the future, so going forward WAC will make changes to its facilities in a timely manner to minimize environmental impacts and become a company with highly efficient production system that makes continual improvements where needed.

\*11 Hollow-fiber membrane: A hollow-fiber that is able to filter water.

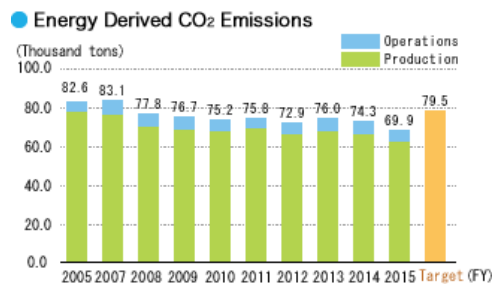


Wuxi Advanced Kayaku Chemical's wastewater treatment facility

### Preventing Global Warming

Each of our business sites has implemented various energy conservation activities that have helped to reduce our total energy consumption annually. In fiscal 2013, total energy usage declined, but as the conversion coefficient for CO<sub>2</sub> emissions revision, CO<sub>2</sub> emissions were temporarily worsening, in fiscal 2015, CO<sub>2</sub> emissions were 69,900 tons, which was 5.9% less than fiscal 2014.

As part of its efforts to help reduce CO<sub>2</sub> emissions from homes, the Nippon Kayaku Group has established the program to encourage employees to conserve energy at home called "My Home is Currently Conserving Electricity", which focuses exclusively on electricity usage. In 2015, we created new version of Kayakuma the Bear with the phrase "I'm currently conserving electricity" to raise greater awareness of this campaign.



## Aiming to be a Company that uses Less Energy

The Nippon Kayaku Group established the Energy Conservation & Global Warming Prevention Committee led by the president to roll out company-wide initiatives to help it achieve the provisional mid- to long-term environmental target of reducing greenhouse gas emissions 15% compared to 2005 by fiscal 2020. As part of this effort, we are working diligently to further reduce energy-derived greenhouse gas emissions.

Furthermore, the power supply problems caused by the Great East Japan Earthquake that struck on March 11, 2011 have inspired us to promote a company-wide project with the goal of becoming a company that uses less energy and can withstand power supply instability. &Global Warming Prevention Committee.

Themes of Initiatives

### 1. Change power systems to build a stronger foundation for energy conservation

The Takasaki Plant installed and began operating a CGS\* in June 2013 that can produce about one-third of its electricity needs from Tokyo Electric Power Company.

We completed the review process for emergency back-up generators at our other plants.

In addition, we changed electricity suppliers at certain business sites, excluding plants, to achieve a stable power supply unaffected by the operating situation of Japan's nuclear power plants.

\* CGS: Co-generation system that produces electricity using gas as well as collects and reuses resulting heat emissions

### 2. Promote existing energy conservation and global warming prevention theme

We successfully reduced the total energy consumption by 3.4% compared to the previous year in fiscal 2015 by pushing forward our objectives of energy saving.

### 3. Create energy conservation master plan to achieve ideal vision for plants

We are preparing mater plans to reduce energy usage with an eye on the future vision for our plants. Going forward, we will periodically revise these plans as part of our ongoing efforts to reduce our specific energy consumption and greenhouse gas emissions.

### 4. Formulate new energy conservation themes based on a statistical analysis of energy usage at our plants

We performed a statistical analysis on plants that have completed the collection of necessary data and verified the main factors behind their use of energy in order to begin a review into ways that we can reduce this energy usage. As for plants still collecting this data, we will perform a statistical analysis as soon as it becomes available and work to narrow the scope of this theme.

### 5. Devise evaluation method for energy usage at the time of research and development when developing new environmentally friendly products

We have created a system during the initial research and development stage where researchers perform energy usage evaluations on the manufacturing process under development. Although this system is still in its infancy, the fact that researchers are performing these evaluations has raised their awareness of energy conservation, which is expected to have positive effects on the development of energy efficient production processes. The Nippon Kayaku Group has investigated and summarized the energy-saving activities of each group company from fiscal 2011.

The Nippon Kayaku Group has investigated and summarized the energy-saving activities of each group company from fiscal 2011.

[FY2015 Energy saving activity summary sheet of Nippon Kayaku Group](#) 

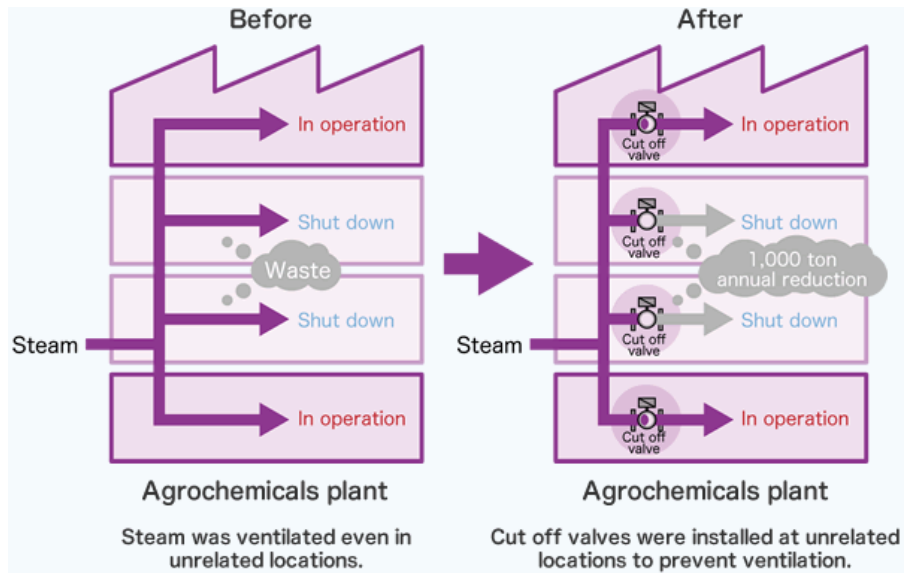
## Initiatives to Reduce Steam Usage at the Kashima Plant

The Kashima Plant is a synthesis plant that mainly produces agrochemicals using synthesis technologies. Therefore, the plant requires a huge amount of energy to power these processes. However, Nippon Kayaku is working, through its CSR activities, to aim to reduce energy consumption, and for this reason the Kashima Plant was asked to find ways to reduce its energy consumption.

As one solution, starting in 2012 the plant began working on ways to reduce its use of steam, which accounts for a large amount of its energy sources. The plant focused on the fact that the steam pipeline traversing the site and plant ventilated steam regardless if the plant was operating or shut down (waste), so it installed several cut off valves. By opening and closing these valves in line with operational status, the plant was able to reduce its use of steam.

As a result, the Kashima Plant successfully reduced its annual steam usage by 1,000 tons, where before it had used between 5,000 and 6,000 tons each year.

Going forward, the Kashima Plant will continue to implement CSR activities to fulfill its environmental responsibilities as a plant that uses less energy.



### Introduction of a Photovoltaic System at the Himeji Plant

The electricity situation for the Himeji Plant has changed a great deal since before the Great East Japan Earthquake as follows.

1. Electricity supply shortages are forecast every year for the Kansai Electric Power Company service area during the summer months because of lost capacity from the shutdown of nuclear power plants, and so customers have been asked to reduce their electricity usage during peak times

2. The minimum necessary electricity needed to contact customers and other related stakeholders during a major disaster is required as part of its BCP measures

The Himeji Plant began operating a power generation system combining a photovoltaic system and lithium ion batteries in April 2014 to satisfy the following three conditions.

1. Use of a system that can reduce the plant's electricity usage during time of peak demand in non-emergency situations

2. A system that can operate even when external lifelines are cut off

3. A system that can ensure the minimum operations of indirect and sales departments in case of a blackout from a major disaster

The capacity of each component of the system is as follows.

**Photovoltaic system: 54kW generating capacity**

**Lithium ion batteries: Output of 30kVa**

After putting the system into operation, the Himeji Plant has been able to reduce its use of electricity by up to 50kW during peak demand times in the summer. Additionally, the Himeji Plant was forced to initiate an emergency shutdown due to a nearby accident in December 2014. The photovoltaic system and lithium ion batteries operated as normal and supported the operations of indirect and sales departments. In the future, the Himeji Plant will increase the number of solar panels and take further steps for its BCP and energy saving activities.

### Rolling Out Eco-friendly Sales Vehicles

Information on efficacy and safety is essential to ensuring that patients use our pharmaceutical products correctly. Nippon Kayaku stations medical representatives (MR) throughout Japan in order to gather and provide information on our proprietary pharmaceuticals by visiting medical institutions in person. All of the 332 company-owned sales vehicles used by these MR in their daily visits were recently switched over to eco-friendly hybrid vehicles, with the exception of colder weather areas requiring all-wheel drive.

### Tokyo Business Center Recipient of Top Prize in Electricity Usage Rationalization

Nippon Kayaku's Tokyo Business Site has three electricity receiving contracts. All three of these areas (Tokyo Business Center and two sites of the Pharmaceutical Research Laboratories) received a Top Prize as Excellent Energy Managing Company on March 6, 2015 from the Kanto District Electricity Usage Rationalization Committee. This prize recognizes companies for the promotion of the effective utilization of electricity, improving its impact ratio, and appropriately maintaining its electrical facilities.

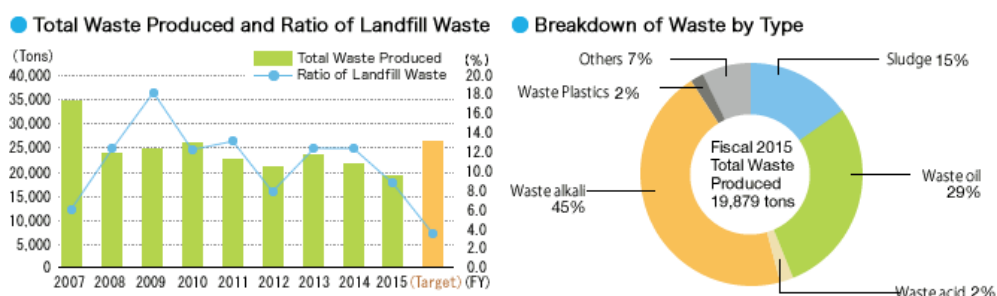




The Tokyo Business Site has introduced LED lighting and high efficiency air conditioning systems, and promoted the greater visualization of electricity usage. Going forward, the Tokyo Business Site will continue to work on rationalizing its electricity usage and maintaining its electrical facilities appropriately.

## Waste Reduction

In fiscal 2015, the Nippon Kayaku Group produced 19,879 tons of waste, which represents 8.9% reduce compared to fiscal 2014. Landfill waste fiscal 2015 amounted to 1,781 tons, and the Zero Emissions rate of 9%, which represents 3.2% reduce compared to fiscal 2014. As a result, we are still far behind the target for fiscal 2020 of 3.0%, and so going forward we will continue to implement activities that reduce landfill waste produced.



## Noise and odor Prevention

We conduct our business with a conscious effort toward minimizing noise and odor pollution in the areas surrounding our factories. We regularly measure noise levels around our factories, making every effort to be a positive members of the local community or odor-monitor-system. As such, any feedback or requests that we receive from local residents at company-sponsored events such as community round-tables are treated with the utmost priority. We also conduct regular work environment measurements in the factory to protect our employees from excessive noise and other hazardous chemicals.

## Environmental Accounting

Nippon Kayaku has tracked and shared all cost data associated with its environmental protection initiatives since fiscal 2000. Also, from fiscal 2003, we began calculating the returns from our environmental protection initiatives. Calculation of environmental costs and returns are made according to Environmental Accounting Guidelines (2005 Version) published by the Ministry of the Environment of Japan, and Environmental Accounting Guidelines for Chemical Companies published by the Japan Chemical Industry Association.

### Environmental Protection Costs (Fiscal 2015)

(Millions of yen)

Category		Investment	Total	Main Activities	
Cost Incurred in the Workplace	Pollution Prevention Cost	Air Pollution Prevention	47.8	121.2	Installed exhaust gas treatment system, installed gas absorption system, and replaced pretreatment tower
		Water Pollution Prevention	70.1	227.2	Replaced leakage containment barrier and wastewater pit, improved oil separation tank, and replaced wastewater pump
		Underground seepage prevention	23.8	19.3	Brought drainage piping above ground, brought the walls of the drain pit, dirt floor lining
		Noise and Vibration Prevention	0.5	0.5	Installed silencer on isolation tower
		Other		256.6	Disposal costs of facilities and pollution charges
	Global Environment Cost	Global Warming Prevention and Energy Conservation	85.0	3.0	Upgraded blowers/pumps, heat insulation coating for roof, switched mercury bulbs to LED
Resource Recycling Cost	Waste treatment	8.5	455.8	In-house processing costs and processing outsourcing costs	
Up- / Down-Stream Cost	Container Recycling Outsourcing	-	0.4	Outsourcing costs for repackaging products and cleaned and recycled product containers	
	Sewerage Processing Cost	-	100.7	Sewerage treatment costs Tank dredging costs	
Management Activity Cost	System Maintenance and Operation	-	117.6	Internal auditor development cost and ISO14001 renewal costs	
	Environmental Stress Monitoring	-	45.8	Analysis costs and outsourcing costs	
	Information Disclosure	-	8.8	Outsourcing costs for preparing information disclosure documents on the environment	
	Education, Training and Other	-	55.0	Outside lectures, workplace training, etc.	
	Greening	0.3	265.9	Added plants and improved some greenery along the roadway Outsourcing costs	
R&D Cost			45.0	Environmentally friendly R&D costs and wastewater treatment technology development costs	
Social Activity Cost		-	9.0	Plant tours, community event sponsorship, responsible care, ICCA special committee, LRI research meeting costs	
Environmental Damage Cost		-	0.0		
<b>Total</b>		<b>236.0</b>	<b>1,731.8</b>		



● Return from Environmental Protection Initiatives

(Millions of yen)

Sources of Return		Cost Reduction Return	Main Activities	
Workplace	Pollution Prevention Return	Air Pollution Prevention	0.0	Installed new type of boiler, replaced activated carbon pretreatment tower, decommissioned incineration furnace, and recovered alcohol
		Water Pollution Prevention	0.0	Developed embankment and wastewater pit, reduced the amount of color pollution, and relocated underground pipes to above ground
		Pollution Load Levy Reduction	0.2	
		Noise and Vibration Prevention	0.0	
	Global Environment Return	Global Warming Prevention and Energy Conservation	88.6	Reduced cost by using gas cogeneration system, cut off steam system, and introduced energy-efficient equipment
	Resource recycling return	Reduction of Waste	8.7	Recovered valuables from waste, and recycled waste oil as auxiliary fuel
		Sale of Recycled Resources	21.7	Collected valuables, metals, sold paper products outside the group, and sold plastics outside the group
		Other	0.0	Made changes to in-house recycling and the waste processing provider
Up- / Down-Stream	Container Recycling	0.0	Reused plastic drums	
Others		0.0	Implemented greening activities	
Total		119.3		

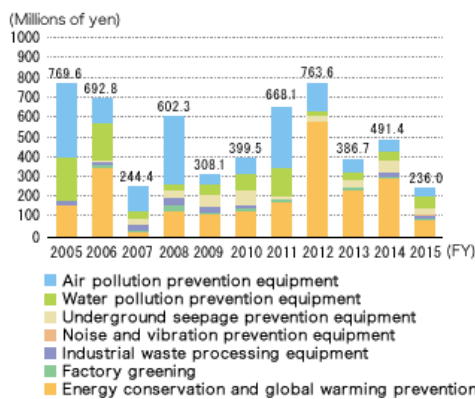
- Scope: Nippon Kayaku (non-consolidated)
- Capital expenditure: Compilation of capital appropriated for orders in April 2015 to March 2016
- Management cost: Any cost increase resulting from change in fuel type or change in waste processing method that are deemed appropriate from an environmental perspective are recorded under this category each year for a period of five years from the date the change is first administered.
- From a financial accounting standpoint, earnings realized from environmental protection initiatives are recorded in the fiscal year in which such earnings are realized.
- Earnings such as expense reduction and environmental impact reduction that are not considered from a financial accounting standpoint are reported for five years from the date it is first realized.

■ Investments Related to the Environment, Health and Safety

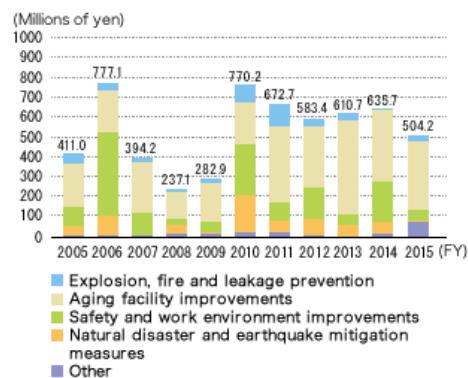
The Nippon Kayaku Group makes well planned and continual investments in environment, safety and health related projects. In fiscal 2015, investments related to the environment totaled 236 million yen, which was approximately half the figure for fiscal 2014. This was caused by investments in energy conservation and global warming prevention running their course.

Investments related to health and safety totaled 504.2 million yen in fiscal 2015, which is down 20% compared to fiscal 2014 investments in measures to address aging facilities accounted for 71% of the total.

● Environment Related Capital Investments



● Safety and Health Related Investments



# FY2015 Energy saving activity summary sheet of Nippon Kayaku Group

— : Non-applicable \* : High-load machinery: refrigerators/freezers, blowers, air compressors, steam boilers

Business site/Company name	"Green curtains" (bitter gourd plants)	Adjustments to work styles	Management of thermostat settings	electricity/water saving and conservation awareness	Reduction of fluorescent lighting ; Switch to LED lighting.	Controlled operation of high - load machinery*	Limits on refrigerator use, etc.	Heat barrier film/paint, water disperement	Solar panels
Head Office, NIPPON KAYAKU CO., LTD.	—	—	●	●	●	—	●	—	—
Fukuyama Plant/ NIPPONKAYAKU FUKUYAMA CO., LTD.	●	●	●	●	●	●	●	●	
Asa Plant	●	—	●	●	●	●	●	●	●
Tokyo Plant/ NIPPON KAYAKU TOKYO CO., LTD.	●	—	●	●	●	●	●	●	
Takasaki Plant	●	—	●	●	●	●		●	
Himeji Plant	●	●	●	●	●	●		●	●
Kashima Plant	●	—	●	●	●	●		●	
Tokyo business CENTER/ Tokyo business district	●	—	●	●	●	●	●	●	
POLATECHNO CO., LTD.		—	●	●	●	●			
MOXTEC, INC.	—	—	●		●	—		●	
WUXI POLATECHNO OPTICS CO., LTD.	—	—	●	●	●	—			
Dejima Tech B.V.	—	—	●	●	●	●			
POLATECHNO (HONG KONG) CO., LIMITED	—	—	●	●		—		●	—
NIKKA FINE TECHNO CO., LTD.	—	—	●	●		—			—
Nippon Kayaku Korea Co., Ltd.	—	—	●	●		—			—
NIPPON KAYAKU AMERICA, INC.	—	—	●	●		—		●	—
Euro Nippon Kayaku GmbH	—	—	●	●		—			—
KAYAKU CHEMICAL (WUXI) CO., LTD.	—	—	●	●		●			
MicroChem Corp.	—	—	●	●		●			
Wuxi Advanced Kayaku Chemical Co., Ltd.	—	●		●	●	●		●	
Shanghai KAYAKU International Trading Co., Ltd.	—	—	●	●		—			—
NIPPON KAYAKU FOOD TECHNO CO., LTD.		—	●	●	●	—		●	
Tumor Diagnosis Support Co., Ltd.	●	—		●	●	—		●	
NAC Co., Ltd.		—	●	●	●	—			
Taiwan Nippon Kayaku Co., Ltd.	—	—	●			—			—
INDET SAFETY SYSTEMS a.s.	—	—	●	●	●				
Kayaku Safety Systems (Huzhou) Co., Ltd.	—	—	●	●		—		●	
Kayaku Safety Systems de Mexico, S.A. de C.V.	—		●	●	●	—		●	
Kayaku Safety Systems Malaysia Sdn.Bhd.	—	—	●	●	●	—	—	●	—
Nishiminato Driving School Corporation		—	●	●	●	—		●	
Kayaky (Shanghai) Co., Ltd.	—	—	●	●		—			—
Wako Toshi Kaihatsu Co., Ltd.	—	—	●	●	●	—	—	—	—
JHMS Co., Ltd	—	—			●	—			
Okiura Golf Center Co., Ltd.	●	—	●	●	●	—		●	
Kouwa Sangyo Co., Ltd.	●	—	●	●	●	—	●	●	
Gunnan Sangyo Co., Ltd.	●	—	●	●	●	—	—	●	
Head Office, KAYAKU AKZO CORPORATION	—	—	●	●	●	—			—
Asa Plant, KAYAKU AKZO CORPORATION		—	●	●	●	—			
Head Office, Kayaku Japan Co., Ltd.	—	—	●	●	●	—			—
Asa Plant, Kayaku Japan Co., Ltd	●	—	●	●	●	●	●	●	
Sanko Kagaku Kogyo Co., Ltd.	●	—	●	●	●	●	●	●	