

# Environmental Commitment

To realize a sustainable society, based on the Basic Environmental Policy cited below, Sakai Chemical Industry pays full consideration to the natural environment, works to reduce the environmental impact of all stages of its business activities, and implements environmental conservation activities.

## Environmental Management

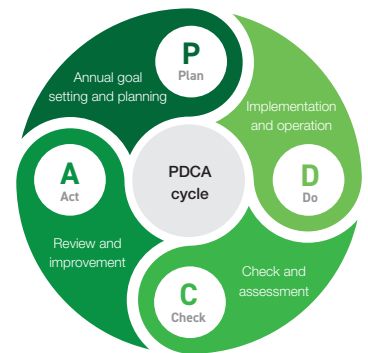
### Basic Environmental Policy

1. We comply with laws and regulations related to the environment as well as other requirements to which we have agreed.
2. In consideration of our business activities, we will focus on the following items.
  - 1) We will develop and manufacture environmentally friendly products and procure environmentally friendly raw materials.
  - 2) We will improve our environment-related technologies and know-how.
  - 3) We will sell products that help our customers reduce their environmental impact and prevent pollution.
3. We will strive to conserve resources and energy and reduce industrial waste from a life cycle perspective at all stages of our business activities.
4. We will establish an environmental management system and plan for continuous improvement and pollution prevention.
5. We will set environmental targets and review them regularly.
6. We will ensure that all employees and related parties are made aware of this Basic Environmental Policy and promote education and dissemination activities to ensure that everyone can understand and act on it.
7. This Basic Environmental Policy will be made available to the general public as necessary.

### Environmental management activities

To conduct environmental conservation activities effectively, Sakai Chemical Industry has established an environmental management system (EMS) in line with the ISO 14001 standard. We strive to accurately monitor and assess the environmental impact of our business activities and the effects of measures to address that impact by ensuring the good functioning of the PDCA (plan-do-check-act) cycle with the aim of continuing to reduce and improve the environmental impact.

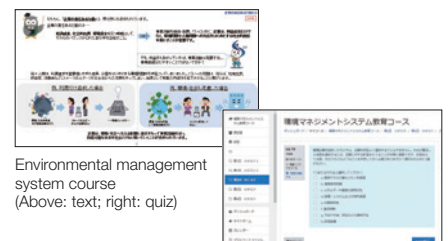
Each department identifies and assesses environmental risks entailed by its business activities and incorporates high-priority environmental risk issues into its environmental targets to prevent the leakage of environmentally harmful substances and environmental accidents. Challenges and progress in efforts to achieve targets at each site are discussed by the Company-wide EMS Committee and incorporated into Company-wide environmental targets for the following fiscal year. We therefore devote Company-wide efforts to environmental conservation.



### Initiatives to raise employees' awareness of environmental compliance

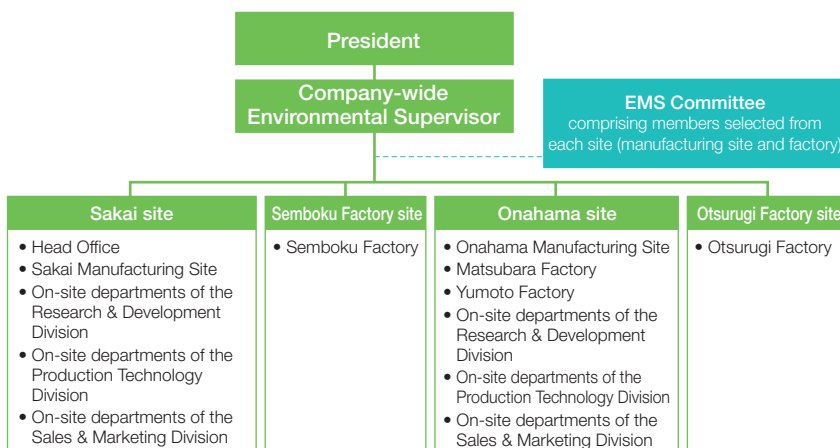
In our business activities, it is important to not only comply with laws and regulations but also pay due consideration to the environment. We provide all relevant employees with various education programs to spread environmental conservation activities across the entire Company and upgrade those activities.

The in-house education program comprises the environmental management system course, the environmental law (101) course, and the chemicals management (101) course. These courses are designed to enable attendees to review the subjects again and again through quizzes. We also offer an ISO 14001 internal auditor training course, which is taught by an outside organization.



Environmental management system course (Above: text; right: quiz)

### Organizational chart of the EMS functions (as of the end of March 2022)



### Acquisition of ISO 14001 certification



The Otsurugi Factory has been certified to comply with the ISO 14001:2015 standard. (Result of the 5th renewal review on August 1, 2020: Pass)

# Environmental Commitment

## FY2021 targets and results

Sakai Chemical Industry endorses the Responsible Care initiative and strives to achieve Company-wide environmental targets set in its Responsible Care Implementation Plan. The table below shows the FY2021 targets and results. Each intensity value below is calculated based on the value of the production volume used in the periodical report that the Company has submitted in line with the provisions of the Act on Rationalizing Energy Use.

○: Target achieved △: Target not achieved but regulation limit value eclipsed ×: Target not achieved

Category	FY2021 Company-wide target	FY2021 result	Self-assessment
Water discharge management	<b>Health-related metrics</b> Equal to or below the environmental standard values <sup>*1</sup>	The values for all substances surveyed were below the standard values. (target achievement rate: 100%)	○
	<b>General metrics</b> 50% lower than the regulation limit values <sup>*2</sup>	The targets for three substances among all 14 substances surveyed were not achieved, but the actual values for them were below the regulation limit values. (target achievement rate: 79%)	△
Air management	<b>NOx emissions</b> 80% lower than the regulation limit value <sup>*3</sup>	The target was achieved at all the facilities surveyed. (target achievement rate: 100%)	○
Conservation of resources and energy	<b>Energy use intensity<sup>*4</sup></b> 1% or higher reduction year on year (target: 996 liters/ton)	1,016 liters/ton (deteriorated by 1%)	×
	<b>CO<sub>2</sub> emission intensity<sup>*5</sup></b> 1% or higher reduction year on year (target: 2.01 tons/ton)	1.92 tons/ton (improved by 5%)	○
Reduction of industrial waste Promotion of reuse and recycling	<b>Industrial waste intensity</b> 1% or higher reduction year on year (target: 0.71 tons/ton)	0.73 tons/ton (deteriorated by 2%)	×

\*1: The major health-related metrics include those for cadmium, lead, arsenic, mercury and polychlorinated biphenyl (PCB).

\*2: The major general metrics include chemical oxygen demand (COD), pH and metrics for suspended solids (SS), zinc, chromium, nitrogen, phosphorus and colon bacilli.

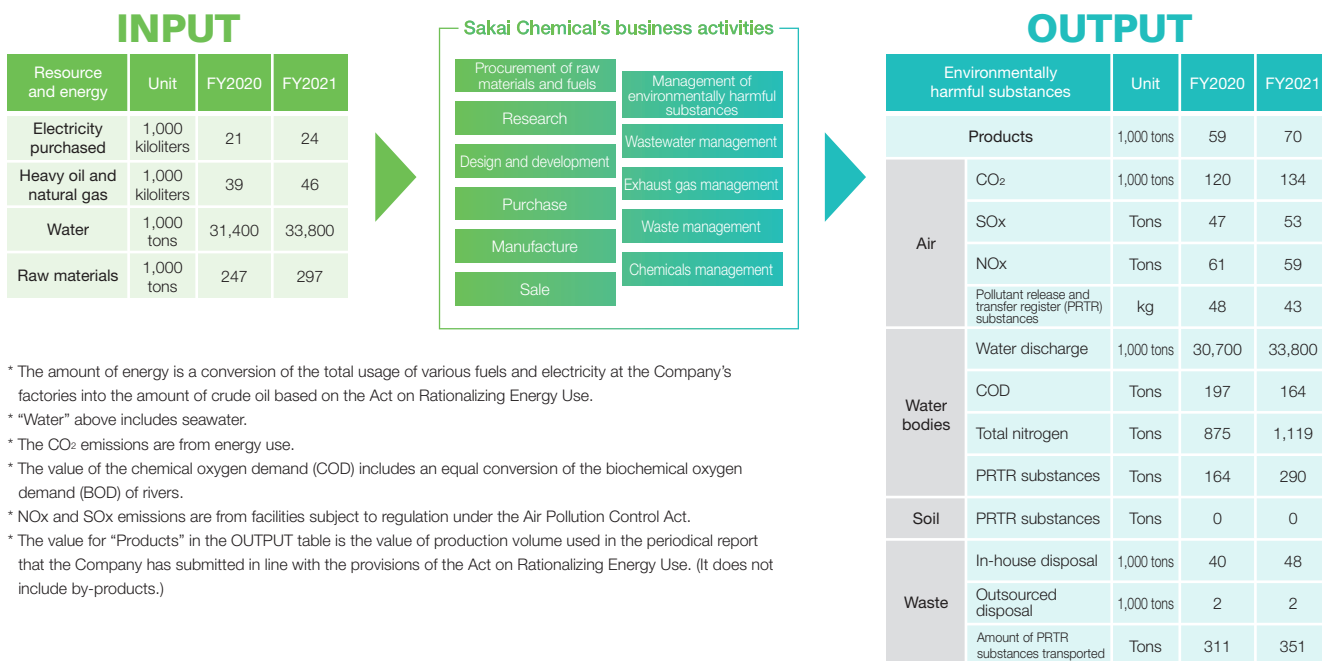
\*3: The surveyed facilities are "units generating soot or smoke" subject to regulation under the Air Pollution Control Act.

\*4: The amount of energy used is a conversion of the total usage of various fuels and electricity at the Company's factories into the amount of crude oil based on the Act on Rationalizing Energy Use.

\*5: The CO<sub>2</sub> emissions are from energy use.

## FY2021 material balance

The Company's business activities involve the use of a lot of energy, chemicals, water, etc., which has various impacts on the environment. Therefore, we strive to reduce the environmental impact of all stages of our business activities. The Company's FY2021 material balance was as follows.



\* The amount of energy is a conversion of the total usage of various fuels and electricity at the Company's factories into the amount of crude oil based on the Act on Rationalizing Energy Use.

\* "Water" above includes seawater.

\* The CO<sub>2</sub> emissions are from energy use.

\* The value of the chemical oxygen demand (COD) includes an equal conversion of the biochemical oxygen demand (BOD) of rivers.

\* NOx and SOx emissions are from facilities subject to regulation under the Air Pollution Control Act.

\* The value for "Products" in the OUTPUT table is the value of production volume used in the periodical report that the Company has submitted in line with the provisions of the Act on Rationalizing Energy Use. (It does not include by-products.)

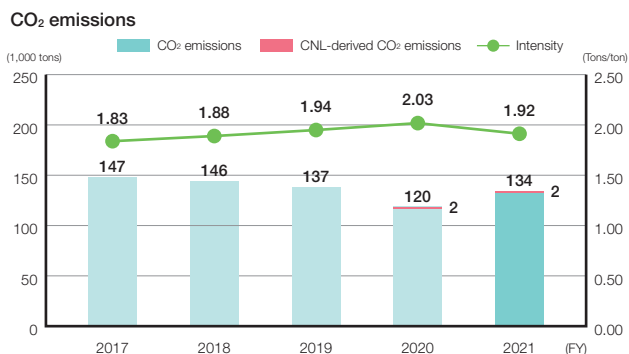
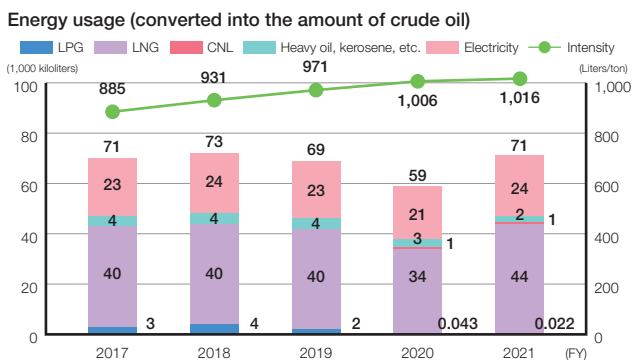
## Initiatives to reduce environmental impact

### Efforts to prevent climate change

Sakai Chemical Industry has set a target of reducing both energy use intensity and CO<sub>2</sub> emissions intensity by 1% or more year on year, and has worked to conserve energy and reduce CO<sub>2</sub> emissions. Based on the policy on responses to climate change (in conformity with the Task Force on Climate-Related Financial Disclosures [TCFD] recommendations), the Company has also recently set a medium- to long-term target of reducing CO<sub>2</sub> emissions by 30% from the FY2013 level by 2030. To achieve these targets, we will consider the introduction of renewable energy sources, strongly promote energy conservation activities, and tackle the challenge of achieving carbon neutrality by 2050. (For our vision for a shift to carbon neutrality, see page 7.)

#### Energy usage (converted into the amount of crude oil) and CO<sub>2</sub> emissions

With an increase of 1% year on year in energy use intensity, we failed to achieve the target for the metric. We recognize that the major cause of the increase was an increase in the number of products with a high energy use intensity. Meanwhile, we achieved an improvement of 5% year on year in CO<sub>2</sub> emissions intensity. Each of our factories has striven to conserve energy by installing energy use monitoring equipment and replacing conventional machines and lights with energy-efficient machines (such as large compressors) and lights (LED lights), to make progress in energy conservation activities by enhancing the efficiency of machinery operations. We believe that the improvement in CO<sub>2</sub> emissions intensity in FY2021 can be attributed largely to the decline in the CO<sub>2</sub> emission factor concerning electricity supply. To achieve the new long-term target of reducing CO<sub>2</sub> emissions by 30% from the FY2013 level by 2030, we will reduce CO<sub>2</sub> emissions by promoting energy conservation activities, improving our processes, and shifting to low-carbon fuels. We will therefore contribute to the realization of a carbon neutral society.



### Products alternative to microplastic beads (MPB)



Microplastics with a diameter of 5 mm or less, which are hardly biodegradable in the natural environment, have caused a social issue. There is general concern that, once discharged into the sea, they severely affect marine ecosystems.

Therefore, as one of the global initiatives to achieve the Sustainable Development Goals (SDGs), the cosmetics industry has begun to work to tighten regulations on microplastic beads (MPB). As a result, there is growing demand for materials that can replace MPB.

Sakai Chemical Industry's proprietary inorganic powder control technology can conglomerate various materials. We will expand the appeal of this technology for producing alternatives to MPB on which regulations are increasingly being tightened worldwide, and thereby contribute to protecting the fertile sea.



#### Product lineup

- Sciqas spherical silica series
- Large-particle spherical zinc oxide LPZINC-S
- Spherical calcium carbonate Calmaru
- Spherical composite powder of barium sulfate Barimaru

### Voice New sustainable material for people and environment

In recent years, the cosmetics industry has been rapidly replacing MPB with environmentally friendly particles.

Barimaru is a product we developed by uniting our technologies for optimizing, purifying and compounding materials, and controlling their shape. Based on barium sulfate without aqueous toxicity, this new material has only a slight environmental impact and meets standards for ingredients for quasi-drugs. Featuring a good texture and the effect of making the skin look more youthful, Barimaru has attracted the attention of cosmetics manufacturers as an MPB alternative that is friendly to both people and the environment.



Manabu Sueda  
Onahama  
Development Department

# Environmental Commitment

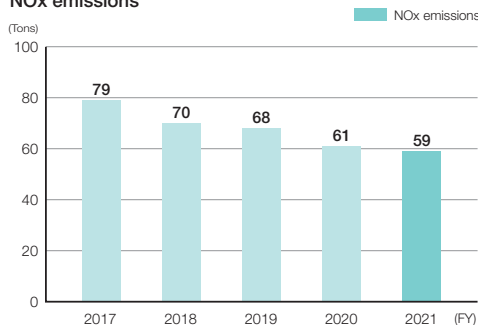
## Initiatives to reduce environmentally harmful substances and waste

Environmentally harmful substances must not be discharged into the external environment. Sakai Chemical Industry strives to reduce environmentally harmful substances, for example, by setting targets that are more ambitious than regulation limit values.

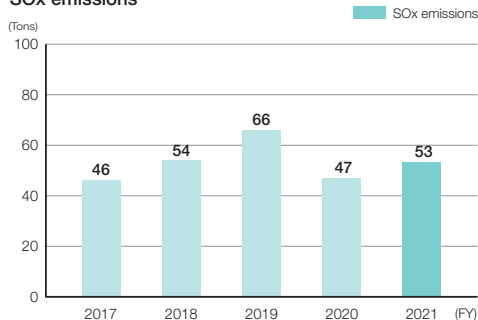
### ● Air pollutant emissions

Compared with FY2020, NOx emissions for FY2021 decreased slightly, while SOx emissions for the same year increased slightly. We will continue to tightly manage these air pollutants on our own through such measures as inspecting exhaust gas-emitting facilities to not only comply with applicable laws and regulations but also reduce pollutant emissions.

#### NOx emissions



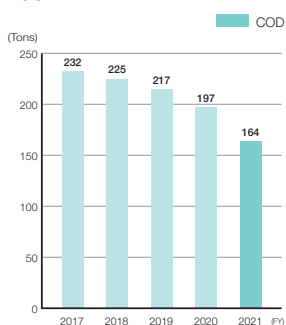
#### SOx emissions



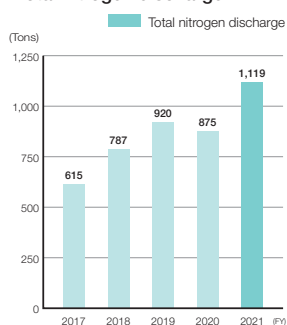
### ● Water pollutant discharges

We strive to keep our water pollutant discharges lower than the regulation limit values by establishing and enhancing our wastewater monitoring system in order to control, maintain and manage water pollutants discharged in wastewater, such as nitrogen, as well as the values of indicators for the level of water pollution, including the COD. Compared with FY2020, the COD for FY2021 declined, while the total nitrogen discharge increased due to an increase in the production volume of relevant products. We will continue our efforts to keep our water pollutant discharges lower than the regulation limit values, and reduce those discharges by enhancing our wastewater management and utilizing an ammonia recovery facility, which we introduced in FY2021. (See "Topics" on the right.)

#### COD



#### Total nitrogen discharge



### ● PRTR substances emitted into the air and discharged into water bodies

For FY2021, PRTR substance emissions into the air were at the same level as in FY2020. On the other hand, the manufacture of new products resulted in the addition of one substance to our list of PRTR substances whose discharge into water bodies must be reported, while the production volume of products using PRTR substances increased. As a result, the total PRTR substance discharge into water bodies was 290 tons, an increase of 126 tons year on year. We will continue to work to reduce PRTR substance emissions and discharges by improving our production processes and enhancing the yield.

#### Major PRTR substances emitted into the air

(Unit: kg)

Substance name	FY2019	FY2020	FY2021
Methylnaphthalene	78	48	43

#### Major PRTR substances discharged into water bodies

(Unit: tons)

Substance name	FY2019	FY2020	FY2021
Water-soluble zinc compounds	0.2	0.5	0.03
Thiourea	242.1	136.8	249.8
Boron and its compounds	2.6	0	0
Manganese and its compounds	28.3	23.6	35.1
Molybdenum and its compounds	1.8	2.7	3.9
Nickel compounds	0.1	0.2	0.7
Cobalt and its compounds	0	0	0.04

## Topics

### Initiative to reduce and effectively use environmentally harmful substances

In May 2021, a new facility at the Onahama Manufacturing Site started operating to collect ammonia emitted from production activities and recover it as ammonia water. Since recovered ammonia water is reused in the production field, this initiative contributes to not only the reduction of environmental impact but also the effective use of resources. We will continue to promote initiatives that are helpful for both society and environmental conservation.



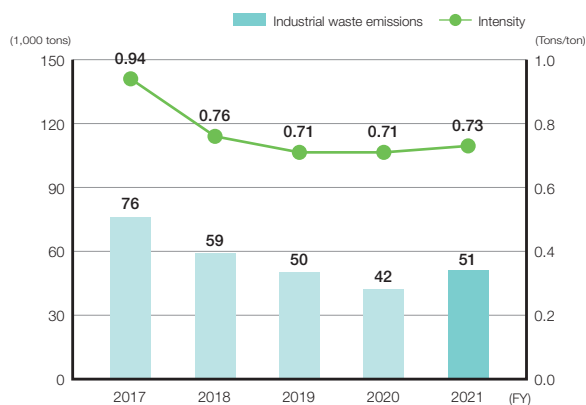
## Waste management

The Company has set a target of reducing industrial waste emissions intensity by 1% or more year on year, and has striven to reduce industrial waste. In July 2021, the Company identified reducing industrial waste emissions as one of the issues of materiality for itself, and set a new medium- to long-term target of reducing industrial waste emissions by 25% from the FY2021 level by FY2025. We will promote the 3Rs (“reduce,” “reuse” and “recycle”) and work to reduce industrial waste through overall waste management measures.

### ● Waste emissions

For FY2021, waste emissions increased by 9,000 tons year on year, while the waste emissions intensity also increased by 3%, resulting in our failure to achieve the target of achieving a decrease of 1% in industrial waste intensity. At the Onahama Manufacturing Site, which accounts for more than half of our total production volume, sustained efforts are made to improve the product yield and optimize the conditions for industrial waste treatment with the aim of reducing waste. In addition, toward the medium- to long-term reduction of industrial waste emissions, we will start considering new possibilities for recycling to further reduce industrial waste.

#### Industrial waste emissions



### ● Disposal of polychlorinated biphenyl (PCB)

In compliance with the Act on Special Measures concerning Promotion of Proper Treatment of PCB Waste, we completed the disposal of high-concentration PCB waste<sup>\*1</sup> at the Sakai site and the Semboku site in Osaka Prefecture before the deadline for disposal (March 31, 2021). At the Onahama site in Fukushima Prefecture, we have completed a survey on high-concentration PCB waste and are currently disposing of the waste according to schedule with a view to completing it by the disposal deadline (March 31, 2023). We also aim to complete the disposal of low-concentration PCB waste<sup>\*2</sup> as early as possible, and are working to recover and restore the waste appropriately while managing progress at each site.

\*1: High-concentration PCB waste: Electric devices in which PCB is used intentionally (with a PCB content of more than 5,000 mg/kg)

\*2: Low-concentration PCB waste: Electric devices contaminated with PCB without anyone's intention (with a PCB content of more than 0.5 mg/kg)

### ● Amount of waste entrusted to external parties for recycling

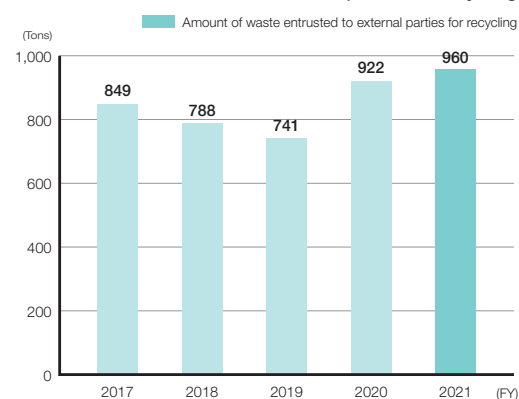
The Company not only instructs employees to thoroughly separate waste by type but also seeks waste treatment companies capable of recycling and/or heat recovery, to ensure that waste from its business activities is recycled as much as possible. In FY2021, the Company entrusted 960 tons of waste to external parties for recycling or treatment of other kinds, an increase of 38 tons year on year. We will continue to devote serious efforts to recycling and heat recovery.

## Topics

### Act on the Promotion of Plastic Recycling put into effect on April 1, 2022

For FY2021, the Company's plastic-containing-product-based industrial waste emissions were 450 tons. This figure puts the Company in the category of businesses with large plastic waste emissions (250 tons or more). From now on, we will share our targets for plastic waste reduction and recycling throughout the Company, and promote efforts to achieve those targets.

#### Amount of waste entrusted to external parties for recycling



### ● Management system for an in-house industrial waste disposal site

The manufacture of titanium dioxide, the major product of the Onahama Manufacturing Site, generates a large amount of waste from the neutralization process mainly containing iron oxide, which comprises impurities in ore as a raw material. The Company possesses a managed final disposal site in Iwaki City and operates and manages it on its own responsibility. The Company promotes activities to conserve the abundant natural environment of the area around the disposal site while deepening mutual communication with local residents.