Denyo

ENVIRONMENTAL REPORT

2019

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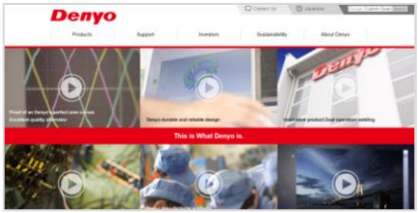
EDITORIAL STATEMENT

Information Disclosure

Denyo Co., Ltd. will use the media shown below to disclose information to all stakeholders, including customers and shareholders about its environmental initiatives aimed at delivering a sustainable society.

【Annual Environmental Report】 http://www.denyo.co.jp/english/



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Reporting Period

Fiscal 2019 (April 2018 to March 2019) and for some content, the periods before and after.

Disclaimer

This Environmental Report may contain predictions or forecasts about the future. Actual results may vary from forecasts due to a variety of factors.

Publication Date

October 2019

MANAGEMENT

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MANAGEMENT

Message from the President

Thank you very much for reading our Environmental Report.
In fiscal year 2019, we had weather that can be argued to have been abnormal, including typhoons, heavy rains, extreme heat, and heavy snow. Such abnormal weather events have not only happened in Japan, but are occurring globally, drawing the attention of the world. To solve these environmental issues, demands for companies, who are members of society, to advance eco-friendly business activities are increasing. In such an environment, as a company operating a global business, we, the Denyo Group, are striving to improve the worsening environmental conditions by actively carrying out eco-friendly activities and product development. More specifically, we have been conducting environmental activities based on the ISO 14001 environmental management system, as well as implementing CO_2 and waste reduction activities such as the introduction of energy conscious facilities and implementation of the 3Rs and greening.

We will continue to contribute to achieving a sustainable society. We would greatly appreciate your continued understanding and support.

October 2019

Shoichi Shiratori,
President
Denyo Co., Ltd.

MANAGEMENT

Environmental Philosophy

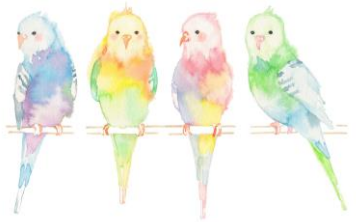
As well as contributing to social infrastructure upgrades worldwide through our power source products, Denyo is profoundly aware of its corporate social responsibility to conserve the environment, and tirelessly promotes environmentally sound business activities.

Fukui Plant of Denyo Co., Ltd.

Environmental Policies

1. In our business activities, we strive to prevent pollution and to promote eco-friendly products while seeking ways to maintain a healthy environment by conserving materials and energy, cutting back on solid waste, and reducing odors and noise.
2. We comply with environmental regulations and other agreed requirements, and we respect related demands from society.
3. As well as building a system of management which is based on the ISO14001:2015 to engage with environmental conservation and finding ways to make continual improvements, we set environmental goals and targets, and improve environmental performance by carrying out reviews.
4. As well as documenting the environmental policies to inform employees and everyone who works on behalf of the company, including the requirements of stakeholders, we disclose the information in the public domain on our homepage.
5. We strive to achieve environmental targets by continually improving the effectiveness and efficiency of the process.

MANAGEMENT

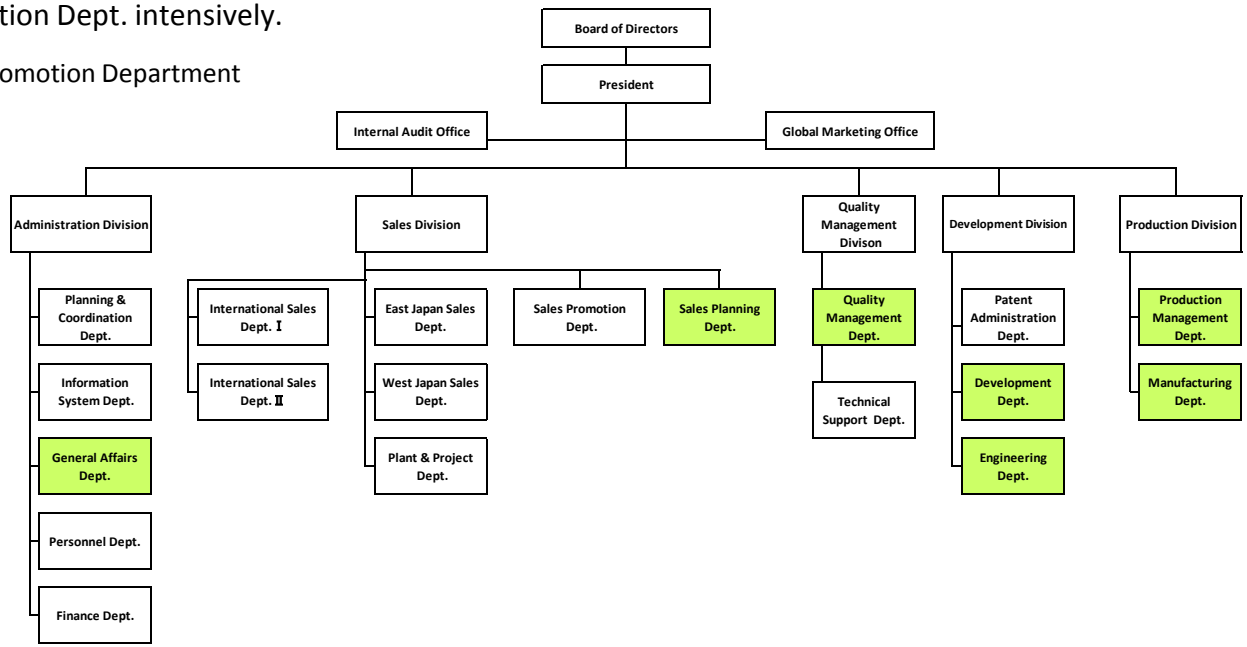


Environmental Management Structure

◎ Promotion System

Denyo is carrying out promotion activities aimed at reducing the total environmental impact by the following promotion Dept. intensively.

■ ･･･ Promotion Department



◎ ISO14001 Certification

Denyo has established an environment management system (EMS) with the president as the system manager and obtained ISO14001:2015 certification. While ensuring smooth operation of the EMS, we evaluate the environmental impact of our business activities, set concrete targets and an annual plan for important issues, and perform environmental load reduction and environmental risk prevention activities through the promotion of resource and energy saving.

MANAGEMENT

Environmental Targets and Achievements

To implement environmental management, we set targets for each fiscal year and carry out evaluations from time to time.

Item	FY2019 Target	FY2019 Achievements	FY2020 Target
Develop products with high environmental performance	We will develop eco-friendly products.	・Development of low fuel consumption「rotation control gasoline TIG welding machine」 ・Development of「Natural Gas Generator with Environmentally friendly base」	We will develop eco-friendly products.
Formation of a recycling-based society	By the end of FY2019, we will cut the volume of industrial waste per output by at least 9% compared to FY2017 levels.	18.0% year-on-year reduction per output compared to FY2017 levels	By the end of FY2020, we will cut the volume of industrial waste per output by at least 12% compared to FY2017 levels
	By the end of FY2019, we will cut the volume of crude oil equivalent energy used per output by at least 3% compared to FY2017 levels	6.5% year-on-year reduction per output compared to FY2017	By the end of FY2020, we will cut the volume of crude oil equivalent energy used per output by at least 6% compared to FY2017 levels.
Contribute to society	Enhance maintenance in green belts adjoining the areas around our business facilities.	・In Fukui Plant, a planter is placed at the front entrance, and azaleas are planted on the south slope. ・The maintenance and management of Green Belt and routine cleaning activities in the surrounding areas are conducted at the Laboratory & Training Center.	Enhance maintenance in green belts adjoining the areas around our business facilities.

MANAGEMENT

Environmental Impact Overview

At Denyo, we understand the material input for our business activities and we endeavor to reduce the environmental impact.

INPUT

【Fuel】

Kerosene	55.5kl
Fuel oil A	401.1kl
LPG	214.0t
Gasoline	10.2kl
Diesel	121.2kl
Purchased electricity	4,997.0MWh

【Water Resources】 (1)

Water supply	7,886.0㎥
Ground water	38,833.0㎥

【Main Raw Materials】

Iron	1,973.7t
Copper	521.8t

Business Activities

Develop/Design

↓

Procure materials

↓

Produce

↓

Distribute

↓

Sell

OUTPUT

【Atmospheric Discharge】

Greenhouse Gas (CO_2)		4,425t
Chemicals	・Xylene	11.8t
	・Toluene	14.4t
	・Ethyl benzene	2.4t
	・Methylene chloride	2.4t
	・Tetrahydromethylphthalicanhydride	0.3t
	・Styrene	7.5t
	・1,2,4-trimethyl benzene	1.0t

【Water Discharge】 (2)

Waste water	46,719.0㎥

* The figure indicates waste water that is not recycled.

【Solid Waste】

Industrial waste	227.4t

【Main Products】

Generators, Welders, Compressors

N.B. (1) and (2) are totals for the Fukui and Shiga Plants.

MANAGEMENT

Environmental risk management

Denyo assumes the environmental risks of a sudden accident or disaster, etc. that may occur during our business activities and implements regular education and training for the purposes of the prevention of, early action against, and mitigation of such situations.
We evaluate appropriate action procedures and continually improve activities.

【The Emergency Response Education and Training】	
Date	2018/7/26
Place	Shiga Plant
Participants	63 persons
Detail	Actions to take when fuel, oil, or chemicals flow out from a plant and how to use mitigation materials

MANAGEMENT

Environmental risk management

【Fire Drill】

Denyo regularly conducts fire drill in case a fire occurs during its operations.

Fire Drill in
Fukui Plant

Fire Drill
in Laboratory &
Training Center

ECO-FRIENDLY PRODUCTS

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ECO-FRIENDLY PRODUCTS

Developing Products with High Environmental Performance

◎ Aftercooler Compressors with Environmentally friendly base

Compressors with an aftercooler generate water when cooling compressed air, and this drain water had to be treated as waste.

The DIS-80LBE-C employs a new design that treats the generated drain water in the unit (patent pending), which will eliminate the discrete drain water treatment.

DIS-80LBE-C

◎ Battery powered electrical supply systems

Battery powered electrical supply systems do not generate exhaust gases and thus, can be used as power supplies on sites where engine generators cannot be installed, for example, in tunnels or indoor worksites. They also do not generate engine noise and are environmentally friendly products that do not stress the surroundings.

Additionally, they employ lithium-ion batteries. This realizes size and weight reduction, and an increase of capacity, and extends their service life, compared to traditional lead batteries, eliminating battery replacement during that period. Therefore, they are eco-friendly products that not only reduce replacement tasks but also reduce waste.

LIBP-2000

ECO-FRIENDLY PRODUCTION

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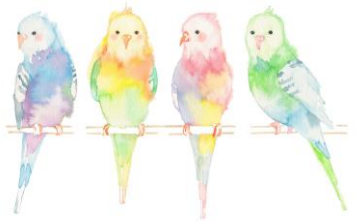
ECO-FRIENDLY PRODUCTION



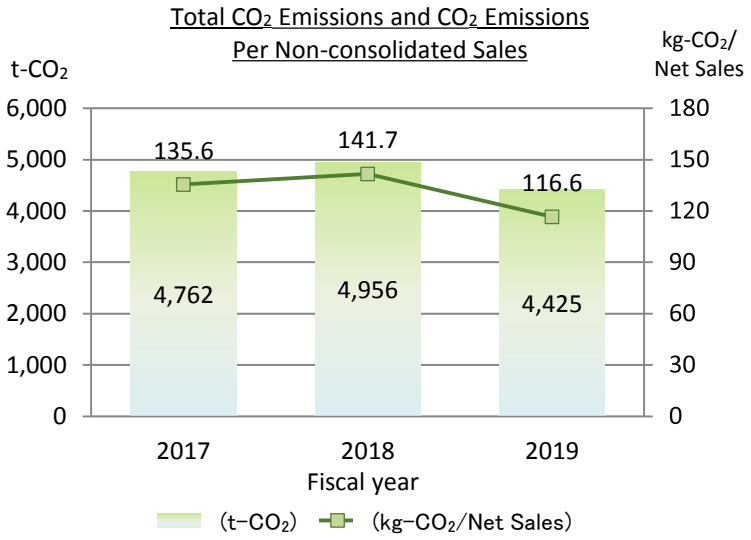
Global Warming Prevention

◎ Reduce CO_2 Emissions

Denyo endeavors to prevent global warming through initiatives to reduce CO_2 emissions due to business activities.
CO_2 emissions in FY2019 were 4,425 tons, an increase of 7.1% from the FY2017 levels.
We will continue to implement initiatives aimed at reducing CO_2 emissions.

	Power consumption (thousand kWh)	Fuel consumption (GJ)	CO_2 emission after conversion (t)	CO_2 emissions (kg) / Non-consolidated sales (Millions of yen)
FY2019	4,997.1	33,513.2	4,425	116.6
FY2017	4,932.7	34,088.2	4,762	135.6
Change from FY2017	+ 1.3 %	△1.7%	△7.1 %	△14.0%

※Net sales is Denyo Non-consolidated Sales

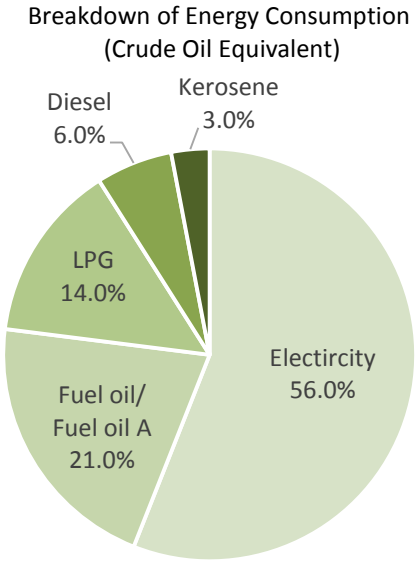


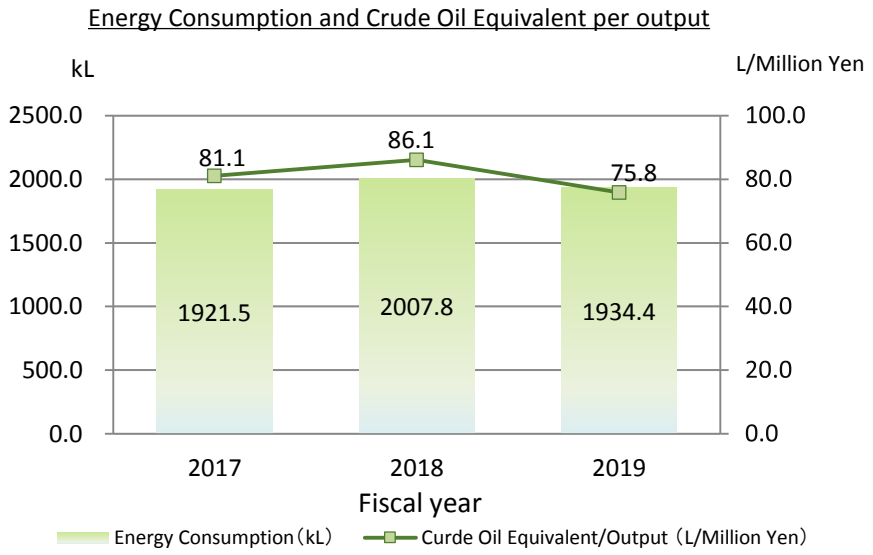
ECO-FRIENDLY PRODUCTION

Formation of a Recycling-based Society

◎ Energy Consumption reduction

The volume of crude oil equivalent energy used per output in FY2019 was 75.8L/million yen, which is a decrease of 6.5% from the FY2017 levels. Although energy consumption was almost the same as in 2016, production efficiency improved and the volume of crude oil equivalent energy used per output decreased due to the increased output and renewed facilities and equipment, etc.



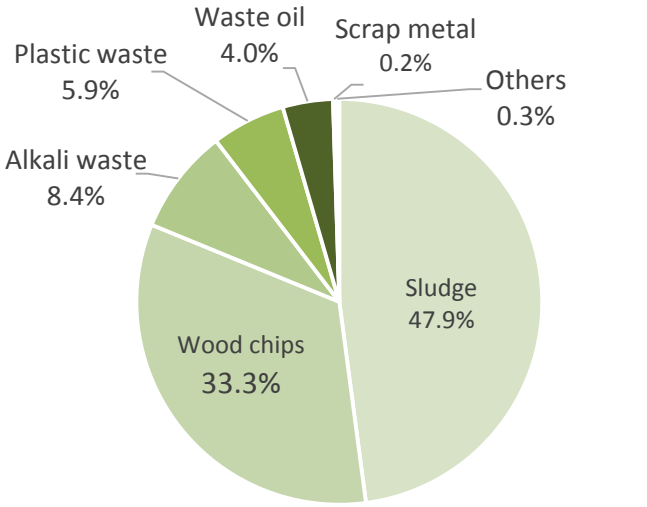


ECO-FRIENDLY PRODUCTION

Formation of a Recycling-based Society

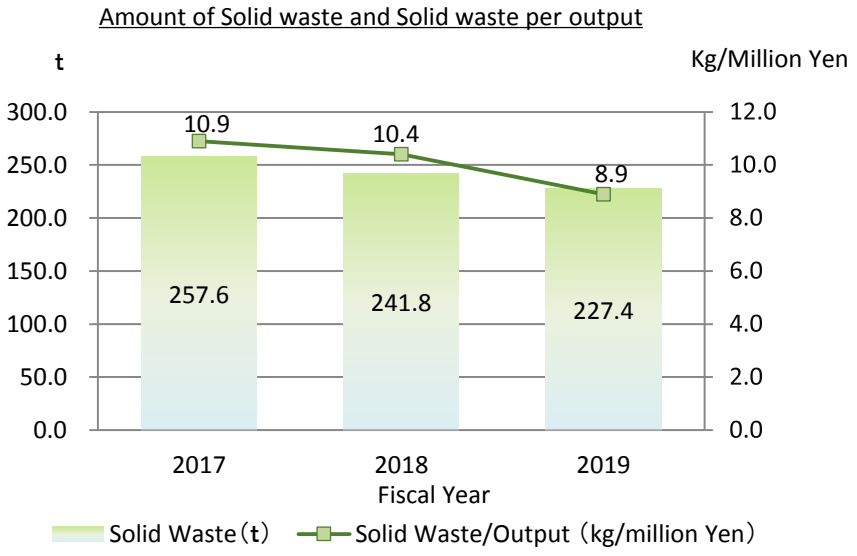
◎ Reduce Solid Waste

We manage and process solid waste appropriately and in compliance with all laws and ordinances.
In FY2019, we discharged about 227 tons of industrial waste, down by 18.0% per output compared to the FY2017 levels.
We are also working toward to implement initiatives to reduce a certain amount or more of Solid Waste stably.



Breakdown of Total Solid Waste

*Total for the Fukui and Shiga Plants



ECO-FRIENDLY PRODUCTION

Formation of a Recycling-based Society

◎ 3Rs Activities

In recent years, there have been problems with the depletion of resources such as petroleum, which are essential for our daily lives, and the shortage of final disposal sites for garbage. The importance of 3Rs (Reduce, Reuse, Recycle) has been increasing.
Denyo implements a range of initiatives to make effective use of limited resources and minimize the impact on the environment. We will now introduce some of these activities.

Reduce ／ Reuse

Denyo changed from wooden pallets to iron pallets on the loading platforms used to transport products and other goods. The disused wooden pallets were taken by companies that use wooden pallets, through which 826 wooden pallets were recycled in FY2019. This reduced waste by approximately 14 tons, which accounts for 15% of the amount of scrap wood.

Recycle

The wood chips generated in the production process were all recycled. 37% of sludge, waste plastics, and waste alkali was recycled as cement materials while 79% of waste oil was reused as recycled oil. This resulted in recycling of approximately 130 tons of waste, which is 57% of the total, 227 tons of waste, as new raw materials in FY2019.

ECO-FRIENDLY PRODUCTION

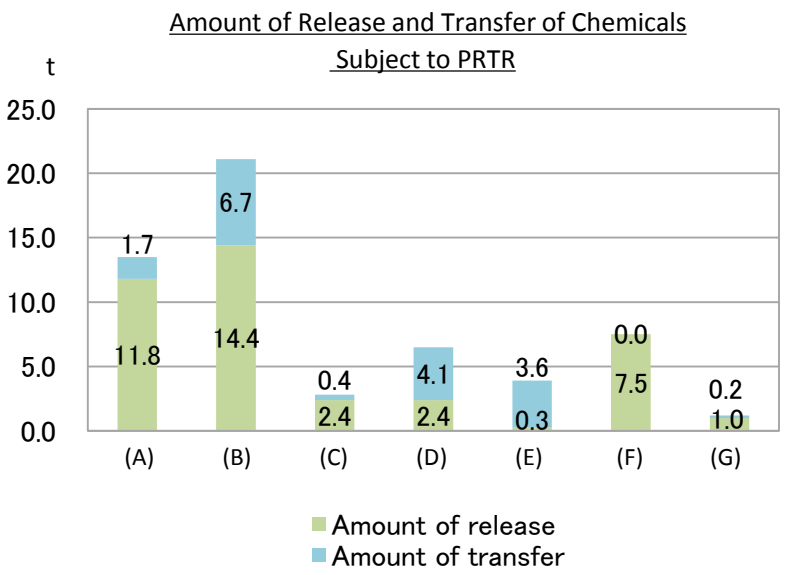
Managing Chemicals

◎ Managing Chemicals Subject to PRTR

Based on the PRTR Law, we compile and release data on chemicals subject to the PRTR including amounts released into the environment or transferred as solid waste.

*A Pollutant Release and Transfer Register (PRTR) is a system for compiling and disclosing data on hazardous chemical substances including their sources, how much is released into the environment or transferred off-site with solid waste.

Substance	Amount released to the atmosphere	Amount of transfer
(A) Xylene	11.8	1.7
(B) Toluene	14.4	6.7
(C) Ethyl benzene	2.4	0.4
(D) Methylene chloride	2.4	4.1
(E) Tetrahydromethyl phtalicanhydride	0.3	3.6
(F) Syrene	7.5	0.0
(G) 1,2,4-trimethylbenzene	1.0	0.2
		(Unit: t)



ENVIRONMENTAL CONSERVATION & COMMUNITY CONTRIBUTION ACTIVITIES

Contents

ENVIRONMENTAL CONSERVATION & COMMUNITY CONTRIBUTION ACTIVITIES

Environmental conservation activities

◎ Fuel Cell Mobile-type Generator and Power Supply Vehicle Technology Research and Development program

With the Ministry of the Environment's adoption of the Low Carbon Technology Research, Development and Demonstration Program, Denyo has determined it will be involved in the Fuel Cell Mobile-type Generator and Power Supply Vehicle Technology Research and Development program, jointly with other companies.

The general sale of fuel cell vehicles (FCV) has begun, and in this situation, where hydrogen stations that supply hydrogen as fuel are being constructed, we have decided as a leading manufacturer of mobile power generators to work on their development and demonstration, believing that the realization of fuel cells for mobile-type generators and power supply vehicle will lead to future activities that mitigate global warming.

We will contribute to CO2 reduction through development and demonstration of the fuel cell systems for mobile-type generators and power supply vehicle, which can use hydrogen manufactured using electricity generated from renewable sources, such as solar and wind, and the power conditioners that can support various types of loading apparatus.

ENVIRONMENTAL CONSERVATION & COMMUNITY CONTRIBUTION ACTIVITIES

Environmental conservation activities

◎ Roof Greening

Based on our environmental policy “promoting environmentally sound business activities,” Denyo has been implementing roof greening activities at the headquarters building since 2012. Roof greening can reduce temperature rise in a building, resulting in mitigation of the heat-island phenomenon and improved cooling efficiency.
Thirty-eight percent (40.88 m2) of the headquarters building rooftop area is part of the roof greening efforts, including green planters. The light, artificial soil used withstands the dry summer air well. In addition, approximately 20 varieties, mainly blooming plants, flourish throughout the year so that the four seasons can be sensed, and you can feel refreshed. The area is used by many employees to relax.

◎ Water Quality Monitoring

The Fukui plant employs a method that collects treated drain water in an on-premises balancing reservoir before releasing it into a river.
We monitor water quality to ensure that an environment suitable for living creatures is maintained. Even if contaminated water should escape at the primary water discharge, the risk of releasing contaminated water directly into the river is minimized.

ENVIRONMENTAL CONSERVATION & COMMUNITY CONTRIBUTION ACTIVITIES

Community contribution activities

Internship Programs

The Fukui Plant holds many kinds of events, including plant visit events for elementary and high school students and internship programs for high school students so that local residents are able to understand us and feel us closer to us. We will continue to proactively hold such events to further enhance our connections with the community.

Affixing seals to outfitting parts

Checking coating quality

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