

***Denyo***

Environmental Report 2022  
(2021.4-2022.3)



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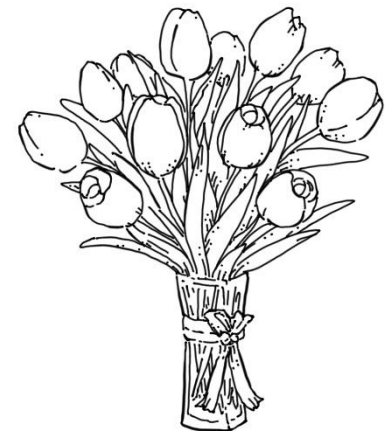
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# Editorial Statement



## 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】

<https://www.denyo.co.jp/english/>



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## Reporting Period

Fiscal 2022 (April 2021 to March 2022) and for some content, the periods before and after.

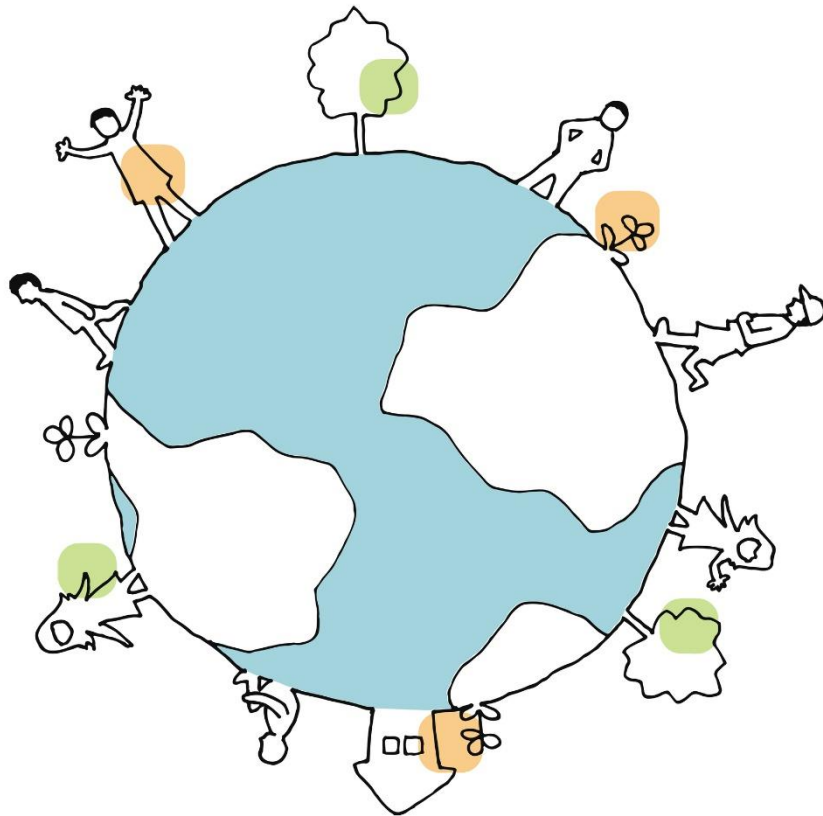
## Publication Date

October 2022

## Disclaimer

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

# Management



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# Management



## Message from the President



Thank you very much for reading our Environmental Report. COP26 was held in Glasgow, UK, in the fall of 2021. Prime Minister Kishida attending from Japan set a new Greenhouse Gas Emissions Reduction Target for FY2030, and all countries agreed on more ambitious targets than those set by the 2015 Paris Agreement. The international community as a whole is expected to remain actively engaged in discussions in order to achieve these goals.

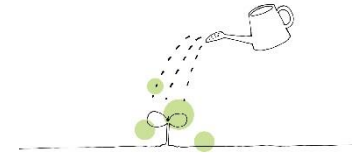
In addition, Russia's invasion of Ukraine in February 2022, and the decision of the G7 nations, including Japan, to work toward phasing out or prohibiting imports of Russian oil has brought into stark relief geopolitical energy concerns. This has resulted in a greater focus around the world on renewable energy. Given this situation, we have established a new Sustainability Promotion Committee, positioning climate change mitigation as one of our key priorities and setting a CO2 emissions reduction target to reach by FY2030. To enable us to contribute to achieving a sustainable society through the provision of power source products, we will continue to engage in ecologically responsible activities and develop eco-friendly products, including the introduction of fuel cell vehicles and research and development of hydrogen-related products. We appreciate your continued understanding and support.

October 2022

Shoichi Shiratori,  
President

A handwritten signature in black ink that reads "S. Shiratori". The signature is written in a cursive, flowing style.

# 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.

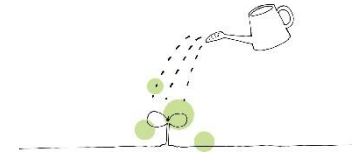


Fukui Plant

## 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.

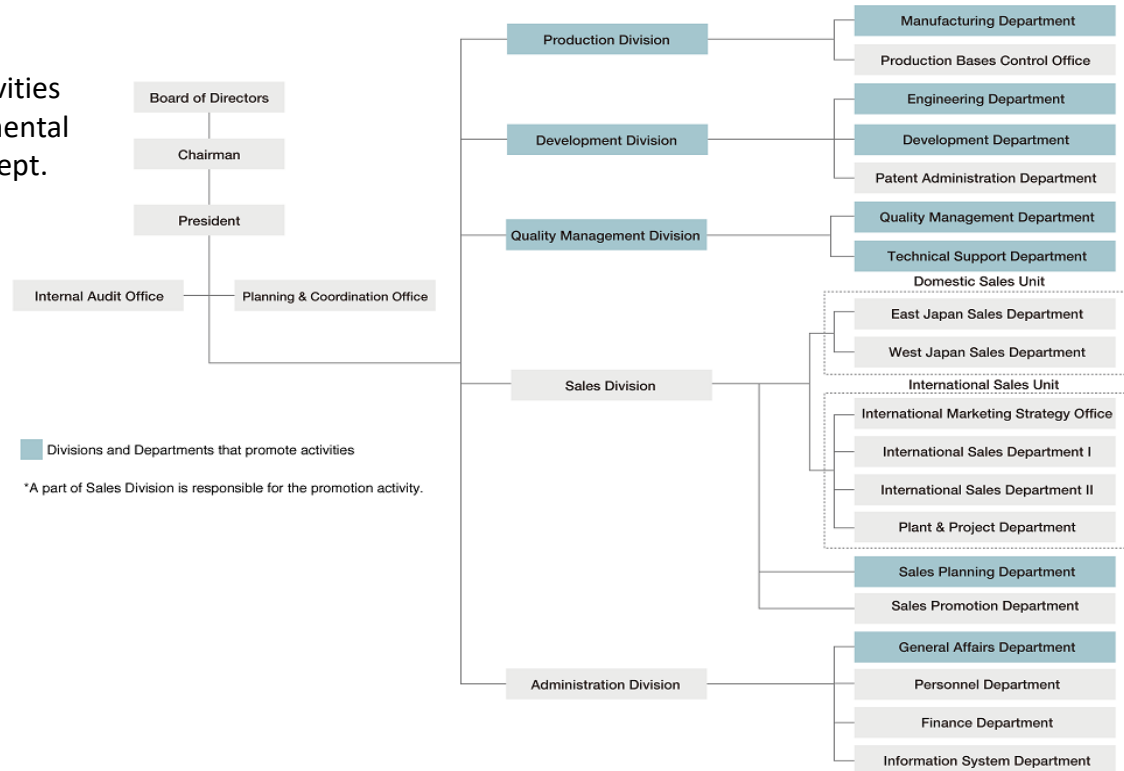
# Management



## Environmental Management Structure

### ◆ Promotion System

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



### ◆ 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



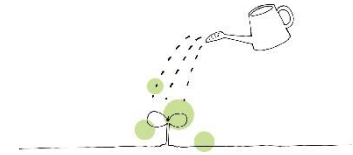
## Environmental Targets and Achievements

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

Item	FY2022 Target	FY2022 Achievements	FY2023 Target
Develop products with high environmental performance	Develop eco-friendly products based on new proprietary technologies	Developed 3 models in 1 series, including an LED floodlight with lithium-ion battery	Develop carbon neutral products
Formation of a recycling-based society	By the end of FY2022, we will cut the volume of industrial waste per output by at least 15% compared to FY2017 levels.	23.0% year-on-year reduction compared to FY2017 levels	Cut the volume of industrial waste per output by at least 0.13 kg/million yen or more compared to FY2022 levels
	By the end of FY2022, we will cut the volume of crude oil equivalent energy used per output by at least 7.5% compared to FY2017 levels.	17.5% more than in FY2017*  *Internal production volume increased as a result of bringing outsourced processes in-house after installing new coating equipment.	Cut the volume of crude oil equivalent energy consumption per output by 1.28 l/million yen or more compared to FY2022 levels
Contribute to society	Enhance maintenance in green belts adjoining the areas around our business facilities.	<ul style="list-style-type: none"> <li>Planted trees and increased planters</li> <li>Pruned trees and managed area with weeds</li> <li>Collected garbage</li> </ul>	<ul style="list-style-type: none"> <li>Carry out cleaning on a regular basis at each business facility and schedule maintenance in green belts</li> <li>Community contribution activities</li> </ul>



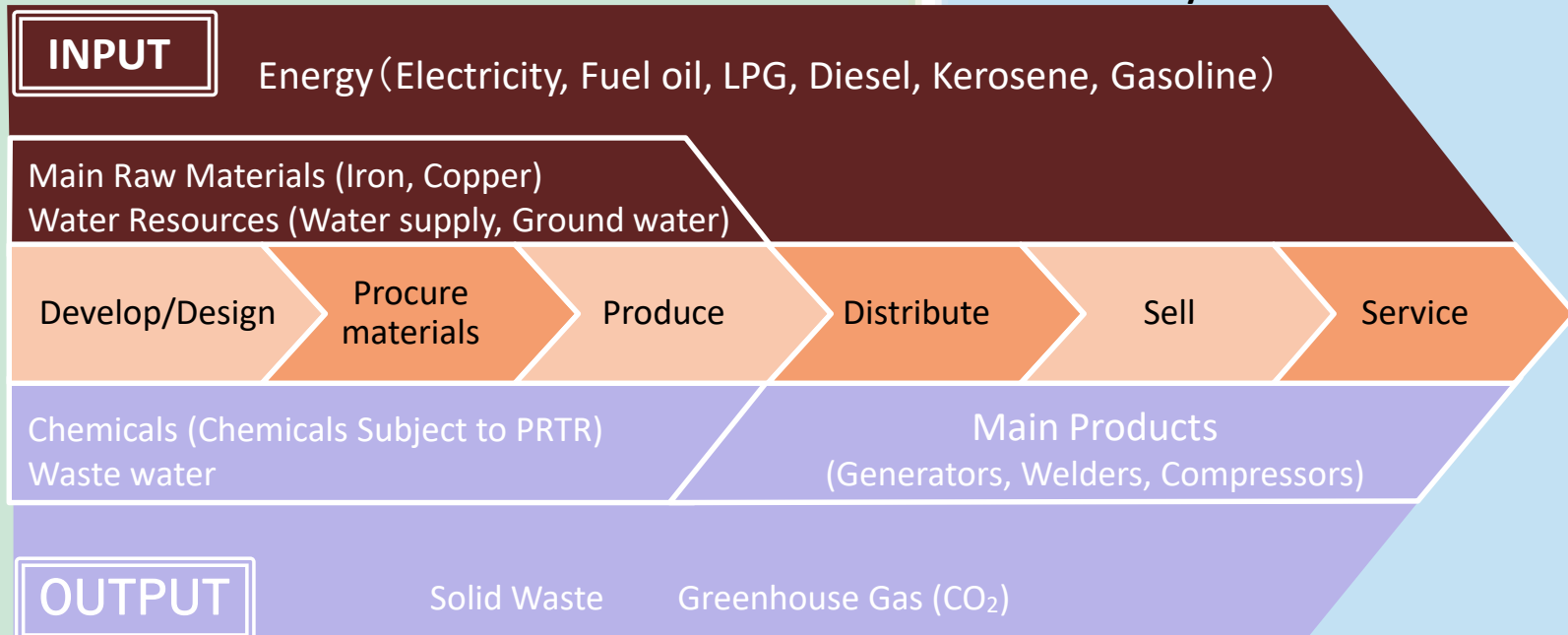
# Management



## Overview of Environmental Impact in the Value Chain

### Eco-Friendly Production

### Environmental Consciousness in the Product Life Cycle



Denyo strives to reduce its environmental impact by understanding the input and output of materials in its production and other business activities (P.17~P.22)

Through product knowledge lectures and services including inspections performed upon delivery and regular inspections, Denyo strives to reduce its environmental impact through the proper use of our products. (P.14~P.16)

# Management



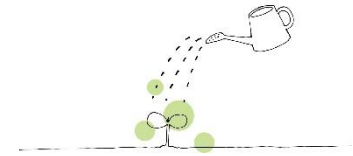
## Environmental Accounting

We quantitatively manage the implementation of our environmental conservation activities through environmental accounting and use the results to ensure efficient and effective environmental conservation activities.

(We use a unique tabulation system for environmental accounting developed while referencing the Environmental Accounting Guidelines 2005 from the Ministry of the Environment.)

Category		Contents	Expenses (thousands of yen)
Business area cost	Pollution prevention cost	Cost of environmental measurements (water quality, odor, vibration, noise, smoke, etc.)	5,469
	Global environmental conservation cost	CFC equipment disposal cost	5,588
	Resource circulation cost	Waste disposal cost	19,700
Upstream/downstream cost			0
Environmental activities cost		Green maintenance and management costs, environment-related equipment inspection and maintenance costs	9,264
Social activities cost			0
Environmental remediation cost			0
Total			40,021

# 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 are confirming the appropriate response and making continuous improvements while looking back on past cases.

### ◆ The Emergency Response Education and Training



Explaining how to use mitigation materials for emergency situations  
(Fukui Plant)

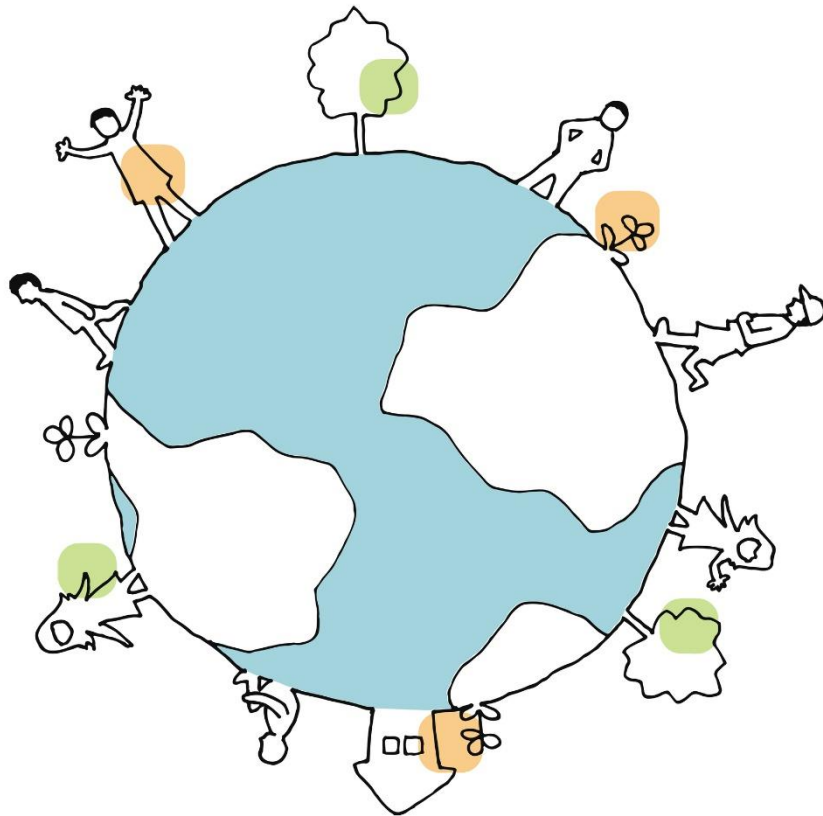


Training: checking status and extent of wastewater leaks  
(Fukui Plant)



Fire extinguisher training  
( Laboratory & Training Center )

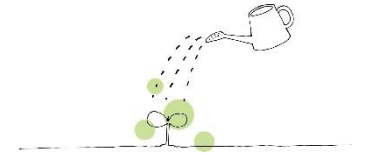
# Eco-Friendly Products



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# Eco-Friendly Products



## Developing Products with High Environmental Performance

### ◆ Battery LED floodlights PL-241SLB

PL-241SLB is an LED floodlight powered by the Honda Mobile Power Pack (below "Mobile Power Pack").

Mobile Power Pack is highly versatile, allowing it to be used in electric motorcycles and small heavy machinery. It can also be alternated with a charged battery for extended operation.\*1

LED split lights can be positioned freely to illuminate large areas, as well as in situations that require lighting without producing noise or emissions, such as during nighttime construction or at events.



PL-241SLB

\*1 Equipped with 2 batteries

### ◆ Emergency generator using city gas NEG POWER

NEG POWER is an emergency generator for domestic use that runs on city gas.\*2

City gas is regarded as the most environmentally friendly of all fossil fuels. Its CO2 emission coefficient is lower than that of LP gas or diesel oil, contributing to the reduction of greenhouse gases.

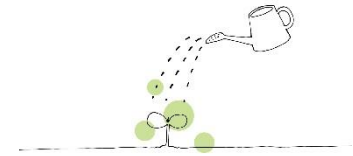
It is expected that its popularity will grow as an environmentally friendly BCP facility since it can be operated for extended periods without the need to install external fuel tanks, as is the case with power generation equipment that runs on diesel oil.



NEG-40UST

\*2 Natural gas (city gas 13A)

# Eco-Friendly Products



## Conservation of biodiversity and ecosystem

Denyo has enhanced its lineup of models incorporating Eco Base, which prevents oil and other leaks from the machine in unexpected situations.

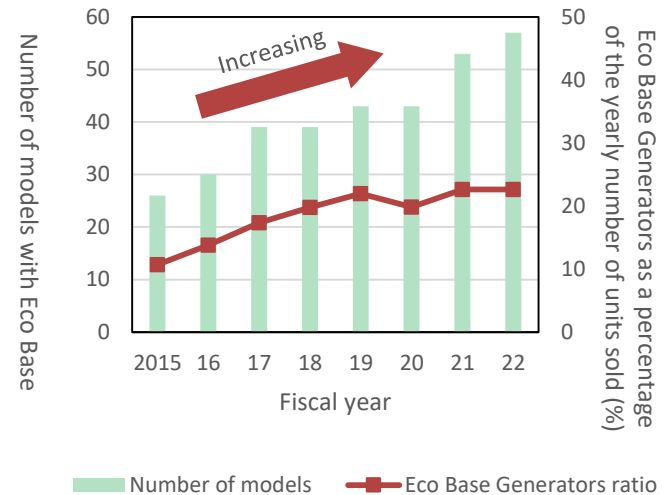
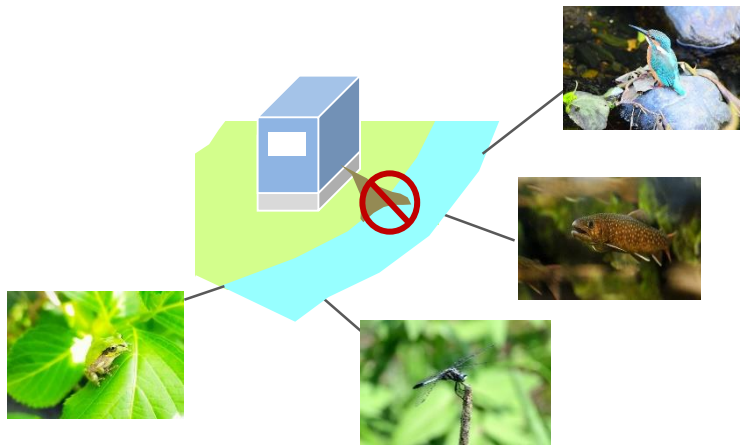


「Eco Base」

It prevents fuel, oil or coolant inside the machine from leaking, because Eco Base can receive it.

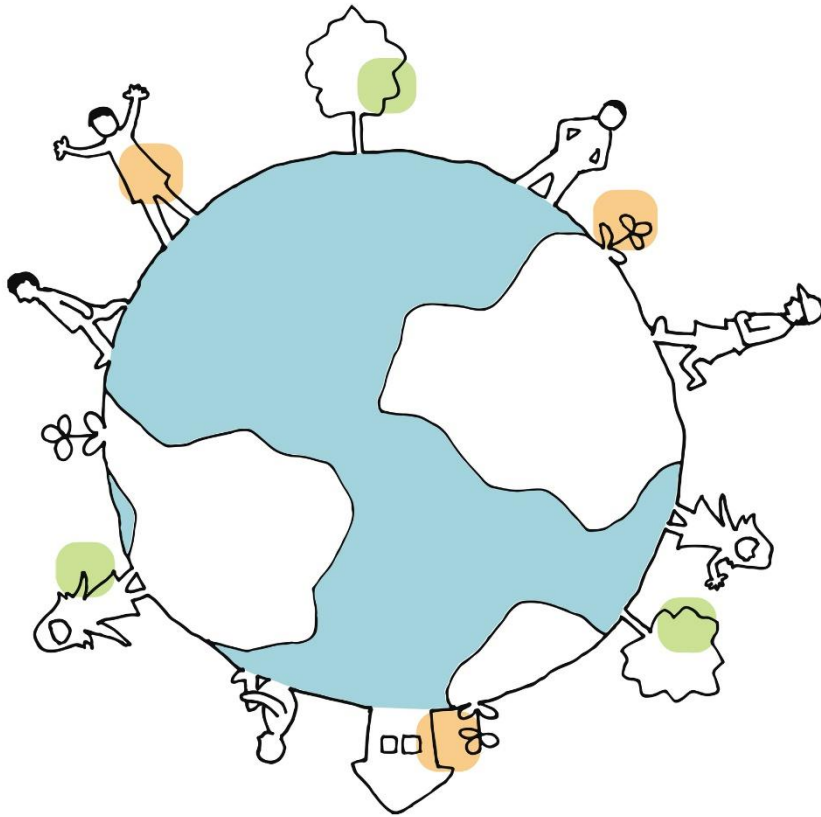


If an oil or other leak of oil from the machine is prevented, it will reduce the burden on the environment and conserve biodiversity and ecosystems.



Our customers have selected these models, appreciating the strong lineup of Eco Base models as the market becomes more aware of the environment.

# Environmental Consciousness in the Product Life Cycle

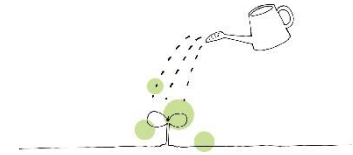


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# Environmental Consciousness in the Product Life Cycle



Approximately 90% of CO<sub>2</sub> emissions in the life cycle of construction machinery is generated while the products are being used. In addition, there is the risk that an unexpected accident during use may cause environmental pollution. Denyo believes that it is important to promote eco-friendly products and provide after-sales services to ensure users have the correct knowledge to operate our products safely.

## After-Sales Service Initiatives



Measuring insulation of generator

### ◆ Periodical inspection of generators

Emergency generators are becoming an increasingly important BCP measure for society.

Generators must undergo appropriate periodic inspections in order to ensure that generators are maintained in good working order and ready for use in the event of emergency situations. Inspections are performed via the national network of service factories\*.

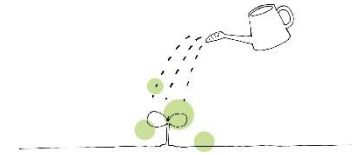
We work to maintain the products on customer sites in good condition.

\* Service factory: Subcontracting companies that perform servicing operations such as the inspection and repair of Denyo products and sales of parts



Tuning generator engine

# Environmental Consciousness in the Product Life Cycle



## After-Sales Service Initiatives



Training in the latest product knowledge



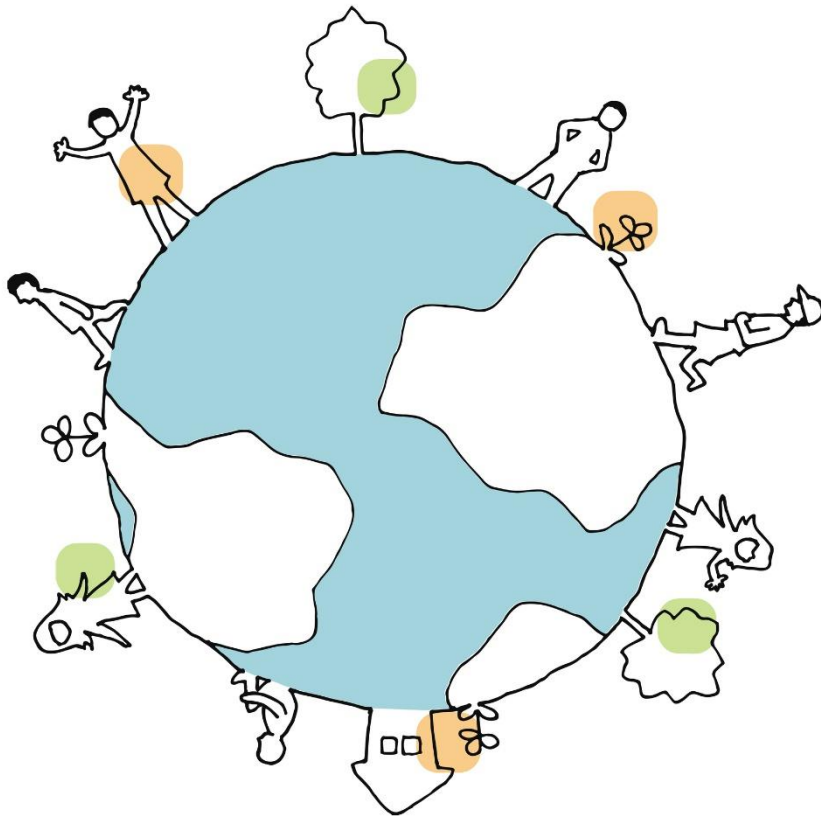
Training in using measuring instruments for inspection and maintenance

### ◆ Technical training for service staff

After-Sales service requires a variety of skills and knowledge.

We provide education for the servicing staff working in the service factories to ensure that high-quality services are provided.

# Eco-Friendly Production



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# Eco-Friendly Production



## Global Warming Prevention

### ◆ Reduce CO<sub>2</sub> Emissions

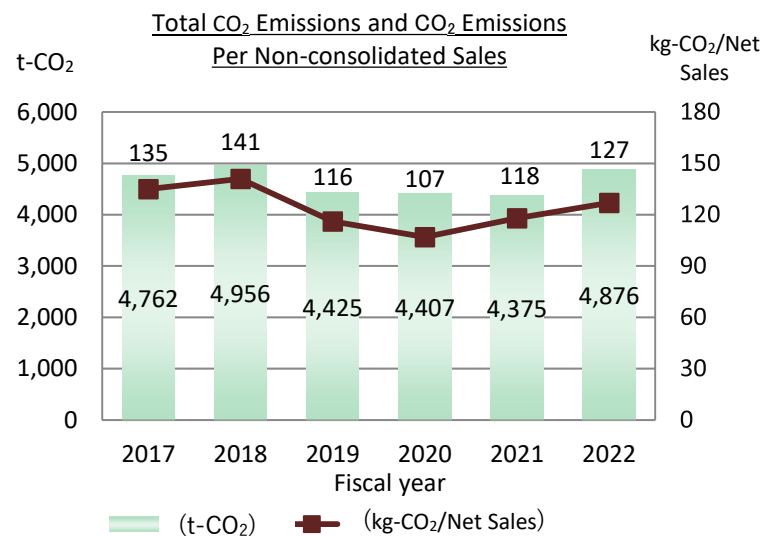
Denyo endeavors to prevent global warming through initiatives to reduce CO<sub>2</sub> emissions due to business activities. CO<sub>2</sub> emissions in FY2022 were 4,876 tons.

From FY2020 to FY2021, CO<sub>2</sub> emissions increased by 2.4% compared to FY2016 due to an increase in internal production volume as a result of bringing outsourced processes in-house after installing new coating equipment, but emissions in terms of sales volume have been kept to 5.9%.

Denyo will continue to reduce CO<sub>2</sub> emissions.

	Power consumption (thousand kWh)	Fuel consumption (GJ)	CO <sub>2</sub> emission after conversion (t)	Net Sales (Millions of yen)	CO <sub>2</sub> emissions (kg) / Non-consolidated sales (Millions of yen)
FY2022	5,399	45,097	4,876	38,212	127
FY2017	4,933	34,088	4,762	35,117	135
Change from FY2017	+ 9.4 %	+32.3 %	+ 2.4 %	+ 8.8 %	△5.9%

※Net sales is Denyo Non-consolidated Sales



# Eco-Friendly Production

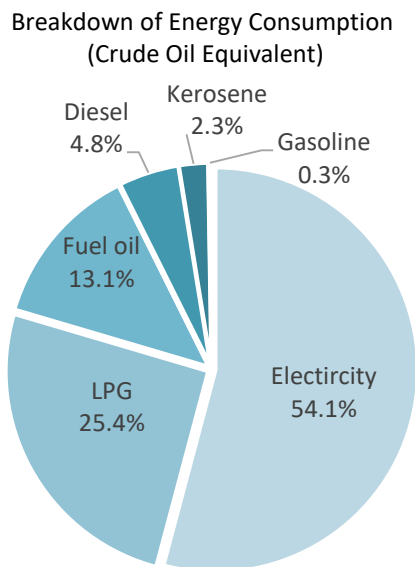


## Formation of a Recycling-based Society

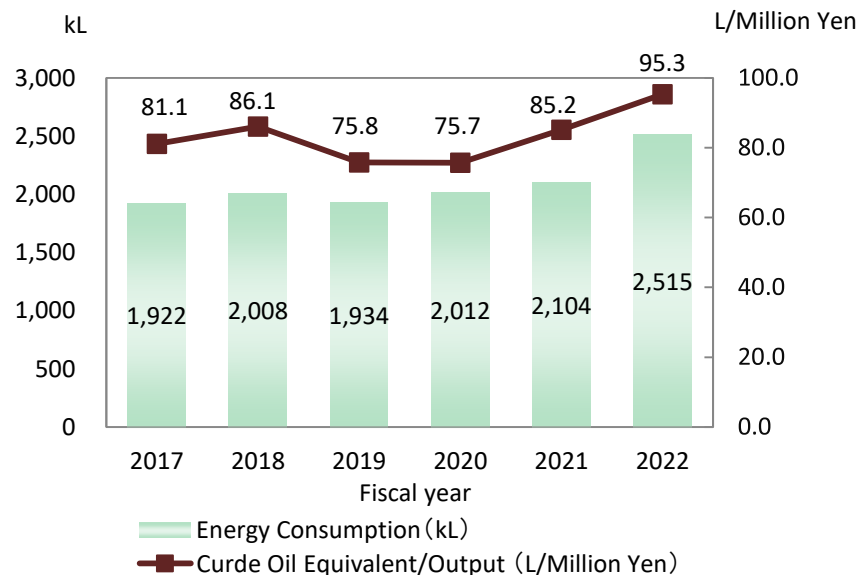
### ◆ Energy Consumption reduction

The volume of crude oil equivalent energy used per output in FY2022 was 95.3L/million yen, which is an increase of 17.5% from the FY2017 levels.

This is attributed to an increase in electricity and LPG consumption due to increased internal production volume as a result of bringing outsourced processes in-house after installing new coating equipment. We will continue working to improve the energy efficiency of the new coating equipment.



Energy Consumption and Crude Oil Equivalent per output



# Eco-Friendly Production



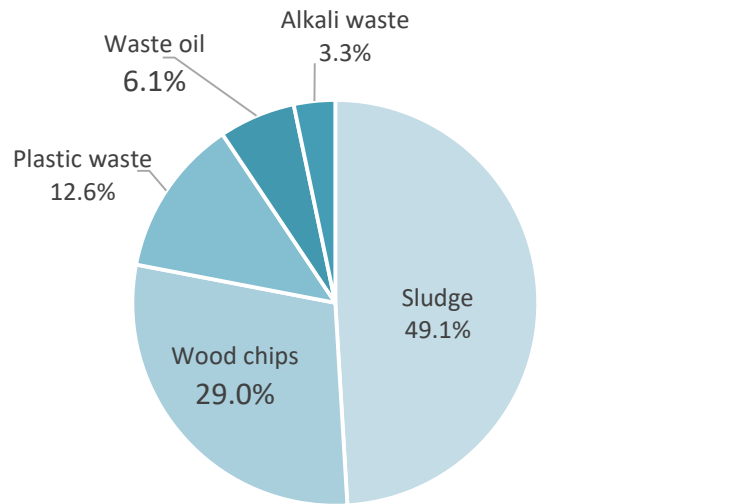
## Formation of a Recycling-based Society

### ◆ Reduce Solid Waste

We manage and process solid waste appropriately and in compliance with all laws and ordinances.

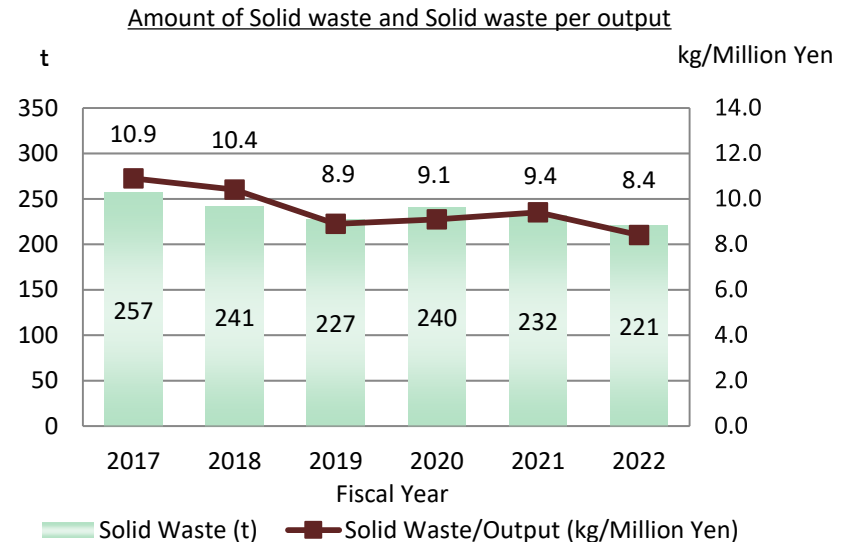
In FY2022, we discharged about 221 tons of industrial waste, down by 23.0% per output compared to the FY2017 levels.

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 1,348 wooden pallets were recycled in FY2022.

This resulted in a waste reduction of approximately 23 t.

#### Recycle

The wood chips generated in the production process were all recycled. 41% of sludge, waste plastics, and waste alkali was recycled as cement materials.

This resulted in recycling of approximately 123 tons of waste, which is 56% of the total, 221 tons of waste, as new raw materials in FY2022.



# Eco-Friendly Production



## Managing Chemicals

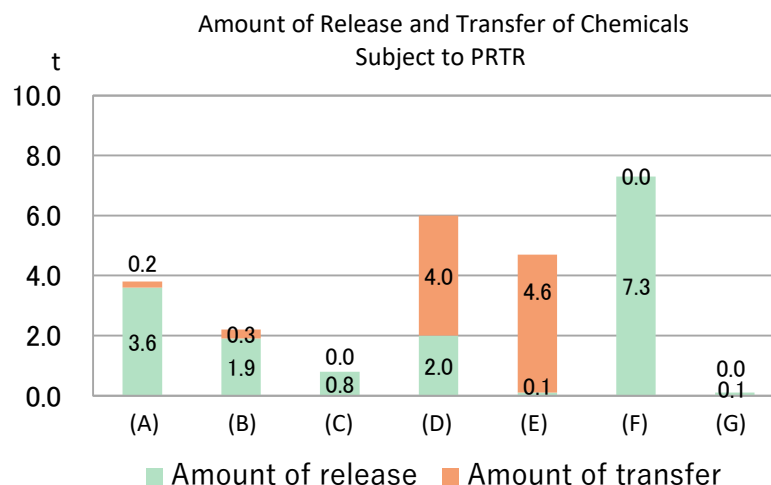
### ◆ Managing Chemicals Subject to PRTR

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	3.6	0.2
(B) Toluene	1.9	0.3
(C) Ethyl benzene	0.8	0.0
(D) Methylene chloride	2.0	4.0
(E) Tetrahydromethyl phtalicanhydride	0.1	4.6
(F) Syrene	7.3	0.0
(G) 1,2,4-trimethylbenzene	0.1	0.0

(Unit: t)

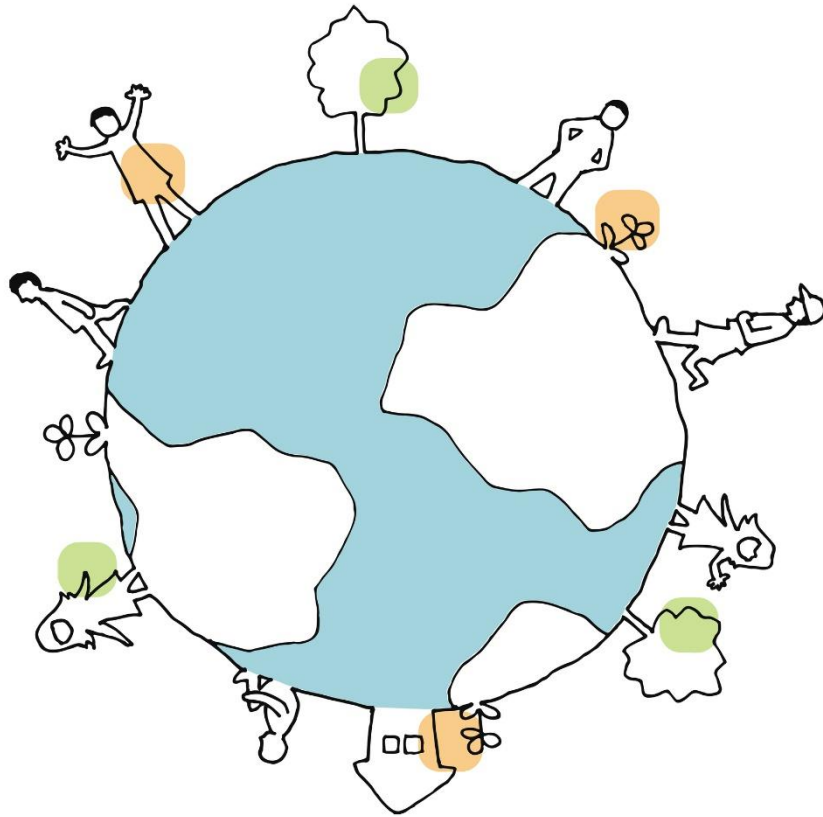


### ◆ Environmental awareness in the material procurement process

Denyo has appealed to suppliers of parts and materials and contractors and asked them to consider the environment in chemical substance management and other fields. We summarized these initiatives in the Denyo Group Green Procurement Guideline and began putting them into effect in FY2021.

We will continue to promote environmental awareness in the material procurement process.

# Environmental conservation & community contribution activities



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- Water Quality Monitoring

- Introduced LEDs in headquarters building

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- Held a plant/office tour

# 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 m<sup>2</sup>) 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



## Environmental conservation activities

### ◆ Introduced LEDs in headquarters building

In January 2022, we replaced 1,365 fluorescent lamps in our headquarters building with LED lamps.

As a result, wattage per hour has reduced from 44.7kW to 17.0kW, which is expected to reduce power consumption by approximately 64.1%.

LED lamps are not only better for the environment but also have a longer lifespan than fluorescent lamps, doing away with the need for frequent replacement. This saves both time and expense, making them more cost-effective in the long run. Employees, too, appreciate the new, brighter work environment.



# Environmental conservation & community contribution activities



## Community contribution activities

### ◆ Held a plant/office tour

In July 2021, as part of its recruitment activities, the Fukui Plant hosted a tour of the workplace for local senior high school students.

The tour began with a presentation in the conference room, where the students were provided with an overview of the company and information about the features of our products. They were then shown the product development site in the prototype area and taken on a tour of the factory floor, during which they learned about the flow of the mass production line and the operations involved in each process.

We will strive to become more familiar to our communities and strengthen local bonds by proactively holding such events as plant visits and internships for local students.







*Developing Technology Tomorrow's Power Needs.*

**Denyo<sup>®</sup>**

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