

ENVIRONMENTAL REPORT 2023
(2022.4~2023.3)



Contents

Editorial Statement...p.2

Management...p.3

- Message from the President
- Environmental Philosophy
- Environmental Policies
- Environmental Management Structure
- Environmental Targets and Achievements
- Overview of Environmental Impact in the Value Chain
- Environmental Accounting
- Environmental risk management

Eco-Friendly Products...p.11

- Developing Products with High Environmental Performance
- Conservation of biodiversity and ecosystem

Environmental Consciousness in the Product Life Cycle...p.14

- After-Sales Service Initiatives

Eco-Friendly Production ...p.17

- Global Warming Prevention
- Formation of a Recycling-based Society
- Managing Chemicals

Environmental conservation & community contribution activities...p.23

- Environmental conservation activities
- Community contribution activities

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】



【HP】

<https://www.denyco.jp>



Reporting Period

Fiscal 2023 (April 2022 to March 2023) and for some content, the periods before and after.

Publication Date

October 2023

Contact



Denyo Co., Ltd.

2-8-5, Nihonbashi-Horidomecho, Chuo-ku,
Tokyo 103-8566

Website: <https://www.denyco.jp/english/>

Planning & Coordination Office:

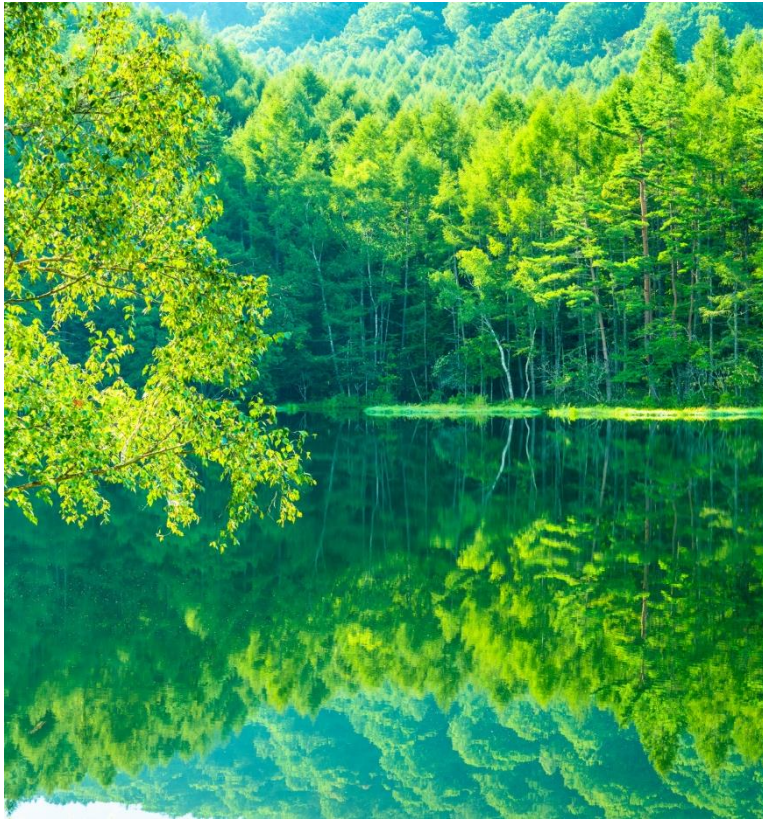
Phone: +81-3-6861-1111

Facsimile: +81-3-6861-1185

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



Contents

Message from the President	…p. 4
Environmental Philosophy	…p. 5
Environmental Policies	…p. 5
Environmental Management Structure	…p. 6
Promotion System	
ISO14001 Certification	
Environmental Targets and Achievements	…p. 7
Overview of Environmental Impact in the Value Chain	…p. 8
Environmental Accounting	…p. 9
Environmental risk management	…p. 10
The Emergency Response Education and Training	

Message from the President



Thank you very much for reading our Environmental Report. With the recategorization of COVID-19 as a Class 5 infectious disease in May this year, people's lives and corporate activity are returning to normal.

On the other hand, due to the Russia-Ukraine issues and other issues, the energy situation has been unstable, which, coupled with worldwide initiatives for carbon neutrality, is increasing the focus on renewable energy.

In this situation, we have reviewed the scope of the applicability of CO2 emissions reduction initiatives for FY2030 as well as the targets for these initiatives while successful working on the development and commercialization of hydrogen co-firing generators to promote the initiatives for the realization of carbon neutrality and a hydrogen-based society.

With a view toward the creation of new added value for the establishment of a sustainable society through the provision of power sources, we will continue to engage in ecologically responsible activities and develop eco-friendly products. We appreciate your continued understanding and support.

October 2023

Takanori Yoshinaga,
President

A handwritten signature in black ink that reads "T. Yoshinaga". 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

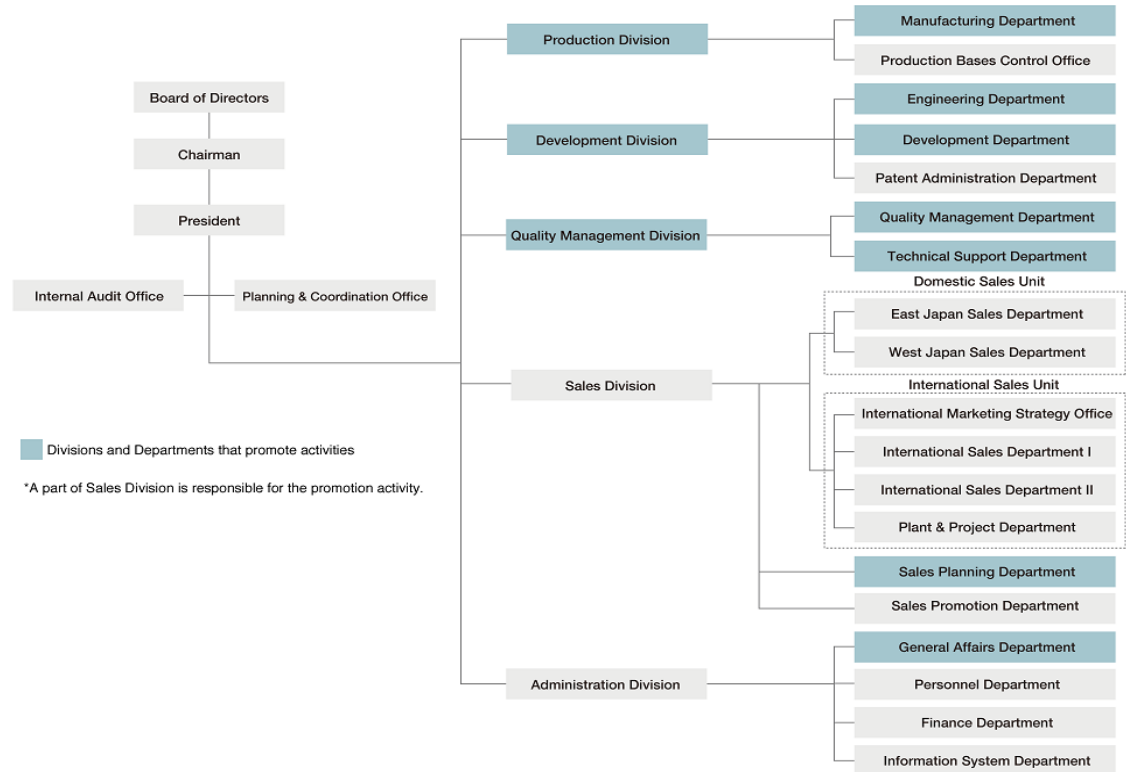
1. In our business activities, we strive to prevent pollution and to promote eco-friendly products while seeking ways to maintain a healthy environment by conserving materials and energy, cutting back on solid waste, and reducing odors and noise.
2. We comply with environmental regulations and other 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.

	FY2023 Target	FY2023 Achievements	FY2024 Target
Develop products with high environmental performance	Develop carbon neutral products (Develop at least one line of environmentally friendly products)	Develop a welding machine that complies with China's fourth restriction of exhaust gas emissions which includes stricter emissions restriction conditions.	Develop carbon neutral products (Develop at least one line of environmentally friendly products)
Formation of a recycling-based society	Cut the volume of crude oil equivalent energy consumption per output by 1.28 l/million yen or more compared to FY2022 levels	10.8L/million yen reduction* * The amount of LPG decreased due to the improved production efficiency of new coating equipment and energy-saving measures.	Cut the volume of crude oil equivalent energy consumption per output by 1.28 l/million yen or more compared to FY2023 levels
	Cut the volume of industrial waste per output by at least 0.13kg/million yen or more compared to FY2022 levels	0.34kg/million yen reduction	Cut the volume of industrial waste per output by at least 0.13kg/million yen or more compared to FY2023 levels
Contribute to society	Enhance maintenance in green belts adjoining the areas around our business facilities.	<ul style="list-style-type: none"> Planted trees and increased planters Pruned trees and managed area with weeds Engaged in the cleaning of the areas surrounding our offices. 	<ul style="list-style-type: none"> Carry out cleaning on a regular basis at each business facility and schedule maintenance in green belts Community contribution activities

Overview of Environmental Impact in the Value Chain

Eco-Friendly Production

Denyo strives to reduce its environmental impact by understanding the input and output of materials in its production and other business activities.

Environmental Consciousness in the Product Life Cycle

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.

INPUT

Energy (Electricity, Fuel oil, LPG, Diesel, Kerosene, Gasoline)

Main Raw Materials (Iron, Copper)
Water Resources (Water supply, Ground water)

Develop/Design

Procure materials

Produce

Distribute

Sell

Service

Chemicals (Chemicals Subject to PRTR)
Waste water

Main Products
(Generators, Welders, Compressors)

Solid Waste

Greenhouse Gas (CO2)

OUTPUT

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.)	4,259
	Global environmental conservation cost	CFC equipment disposal cost	5,198
	Resource circulation cost	Waste disposal cost	18,311
Upstream/downstream cost			0
Environmental activities cost		Green maintenance and management costs, environment-related equipment inspection and maintenance costs	8,818
Social activities cost			0
Environmental remediation cost			0
Total			36,586

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



(Fukui Plant)

Checked mitigation materials for emergency situations and explained how to use them.



(Fukui Plant)

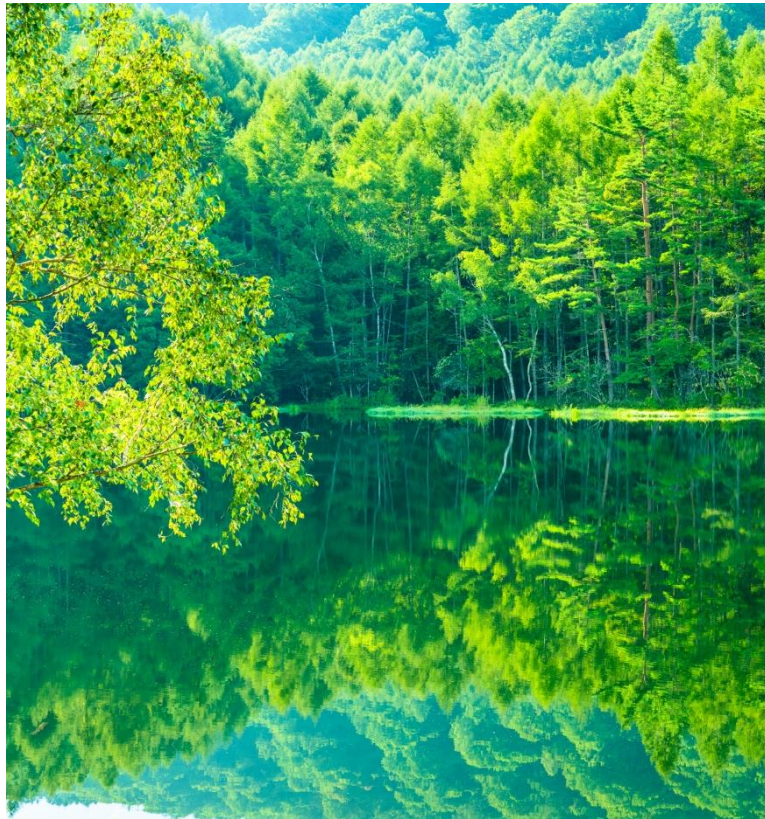
Emergency response training for hazardous substances (Absorbing leaked oil using an oil absorption mat)



(Laboratory & Training Center)

Fire extinguisher training

Eco-Friendly Products



Contents

Developing Products with High Environmental Performance ...p. 12

250 kW hydrogen co-firing power generator

Start of the development of a 100% hydrogen-fueled power generator

Conservation of biodiversity and ecosystem ...p. 13

Developing Products with High Environmental Performance

◆ 250 kW hydrogen co-firing power generator

Hydrogen co-firing power generation is a technology that reduces the generation of carbon dioxide (CO₂) by mixing hydrogen with fuel.

The 250 kW hydrogen co-firing power generator recently developed using technology licensing from Komatsu and Hitachi, Ltd. is able to, by raising the hydrogen co-firing ratio to 50%, reduce CO₂ emissions by 50% compared to when using only diesel oil as fuel.

By promoting the sale of this product going forward, Denyo will contribute to the realization of a hydrogen-based society with an eye toward carbon neutrality.



A hydrogen co-firing power generator introduced by Komatsu's Oyama Plant.

◆ Start of the development of a 100% hydrogen-fueled power generator

Denyo started developing a dedicated hydrogen generator equipped with an industrial hydrogen engine pioneered by the Kubota Corporation, which eliminates CO₂ emissions by using only hydrogen as a fuel. The development is making progress in a high-volume zone for portable generators by using a 45kVA diesel generator as a base. Denyo aims to release this dedicated hydrogen generator in or after 2025.



Denyo 45kVA Dedicated Hydrogen Generator*



Kubota 3.8L Hydrogen Engine*

※These two images are for illustrative purposes only.

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.

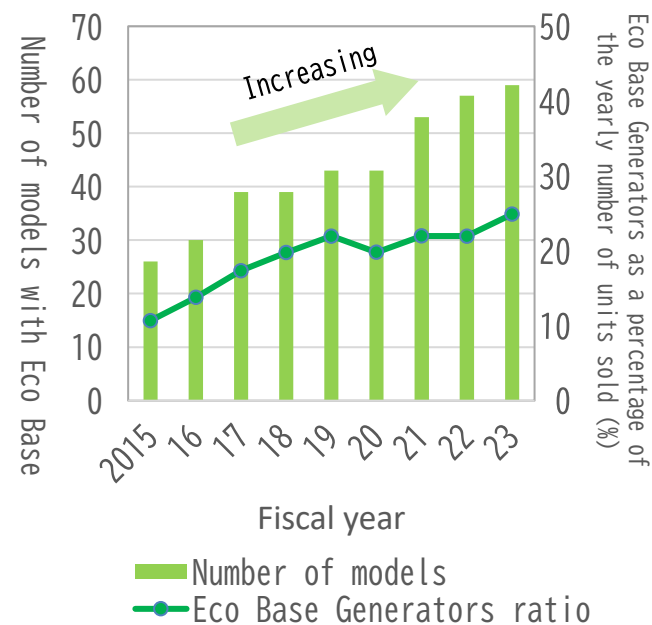
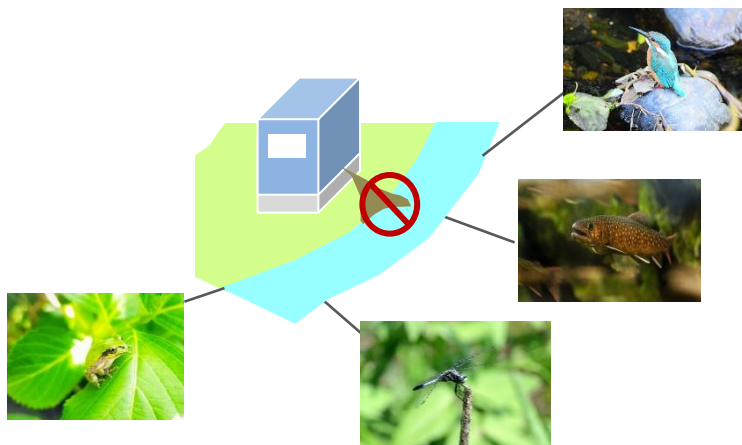


「Eco Base」

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



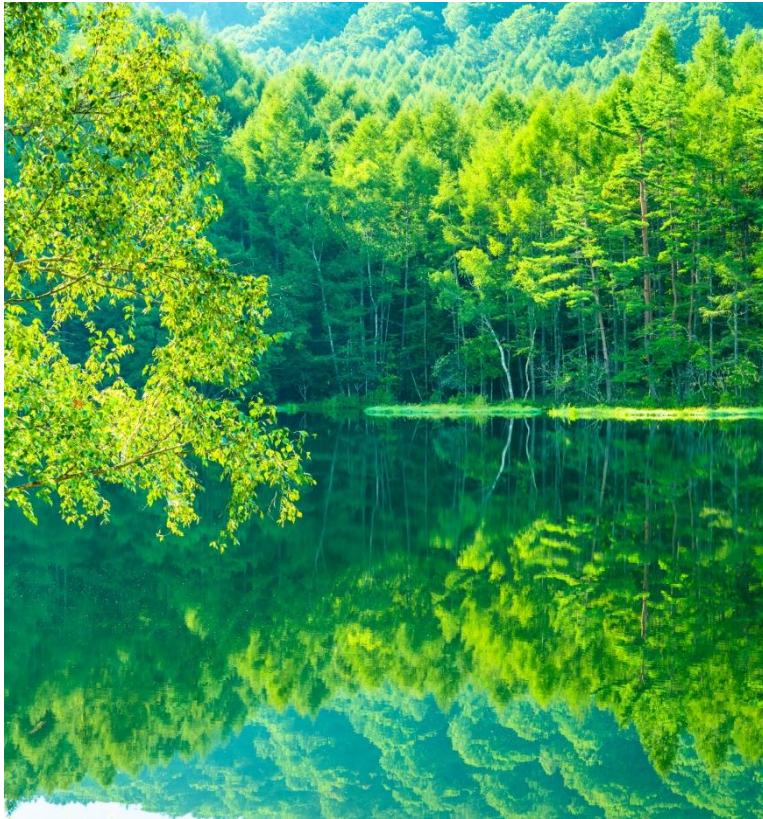
If an oil or other leak of oil from the machine is prevented, it will reduce the burden on the environment and conserve biodiversity and ecosystems.



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

Contents



After-Sales Service Initiatives ...p.15

Training for the service staff of domestic group companies and rental companies

Training sessions for the service staffs of overseas subsidiaries and overseas rental companies

Environmental Consciousness in the Product Life Cycle

After-Sales Service Initiatives

Approximately 90% of CO2 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.



Training in product knowledge
(special arc welding training session)



Guidance on product maintenance
and use after delivery

◆ Training for the service staff of domestic group companies and rental companies

Providing after-sales services requires a variety of skills and knowledge.

We have been working to establish a robust service network that consists of not only our service staff but the staffs of our group companies and rental companies.

Environmental Consciousness in the Product Life Cycle

After-Sales Service Initiatives



Operation of an installed welding machine
(Singapore)



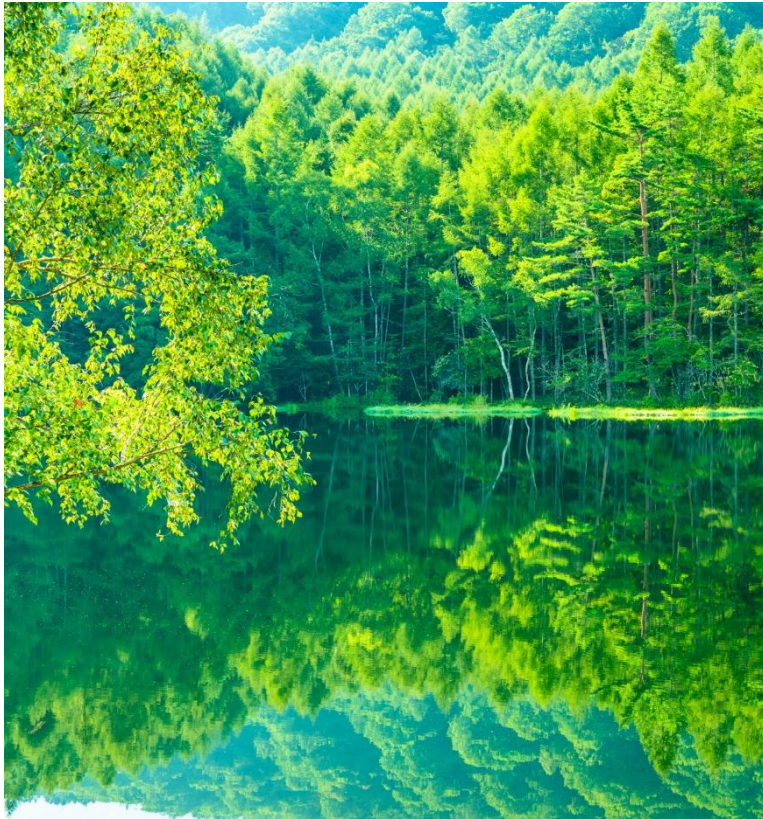
Introducing a customer to a power generator
(Singapore)

◆ Training sessions for the service staffs of overseas subsidiaries and overseas rental companies

Since our products are used in more than 150 countries worldwide, we have been working to enhance after-sales service programs overseas.

We will continue to provide training to the service staffs of overseas subsidiaries and rental companies while also seeking to build trust-based relationships to increase sales.

Eco-Friendly Production



Contents

Global Warming Prevention	...p. 18
Reduce CO ₂ Emissions	
Formation of a Recycling-based Society	...p. 19
Energy Consumption reduction	
Reduce Solid Waste	
3Rs Activities	
Managing Chemicals	...p. 22
Managing Chemicals Subject to PRTR	
Environmental awareness in the material procurement process	

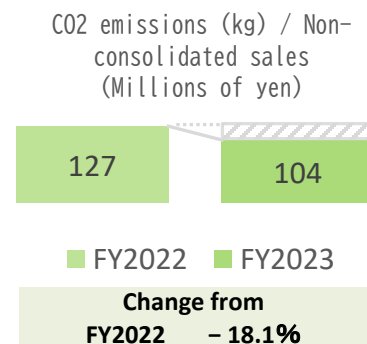
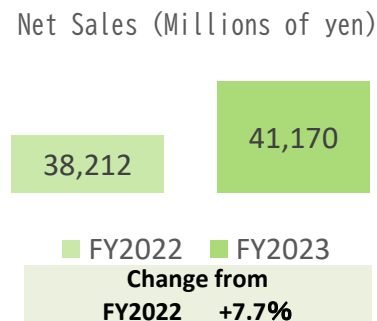
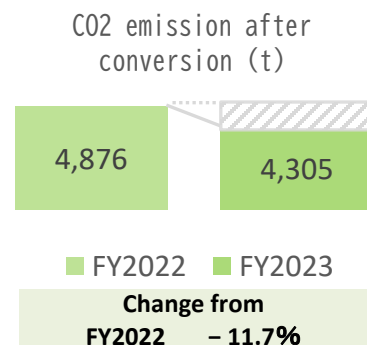
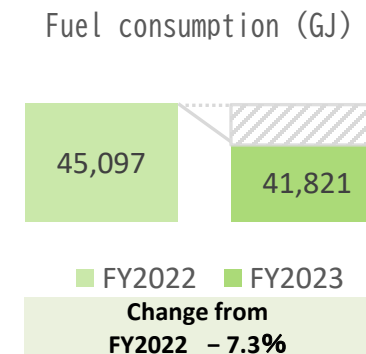
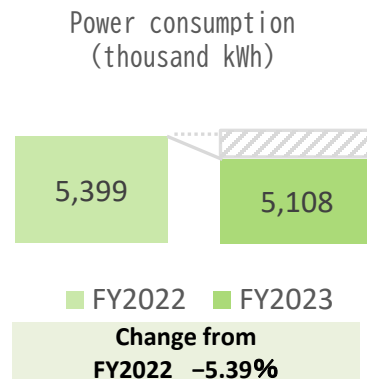
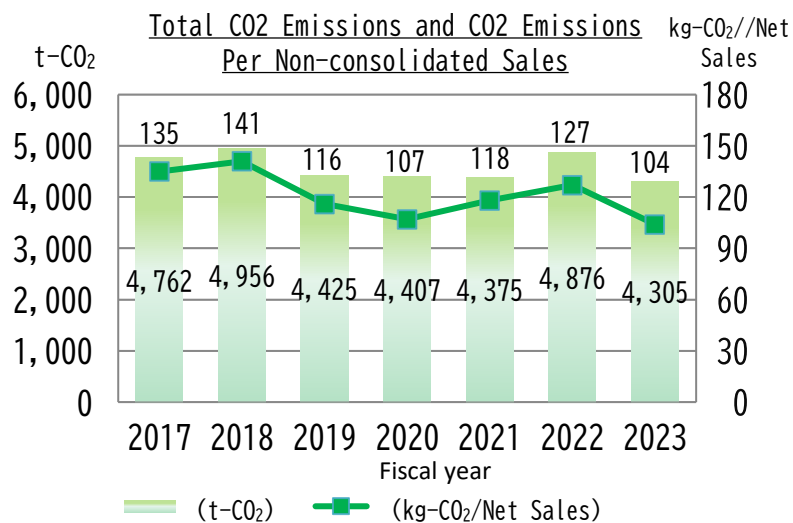
Eco-Friendly Production

Global Warming Prevention

◆ Global Warming Prevention

Denyo endeavors to prevent global warming through initiatives to reduce CO2 emissions generated by its business activities. In FY2023, 4,305 tons of CO2 was emitted. Thanks to the improvement of production efficiency achieved by new coating equipment that began fully operating in FY2023, as well as energy-saving measures, CO2 emissions decreased 11.7% from the level in the previous year and emissions in terms of sales volume declined 18.1%.

Denyo will continue to reduce CO2 emissions.



Eco-Friendly Production

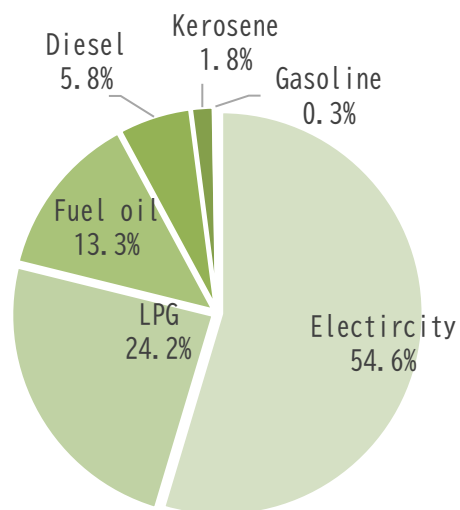
Formation of a Recycling-based Society

◆ Energy Consumption reduction

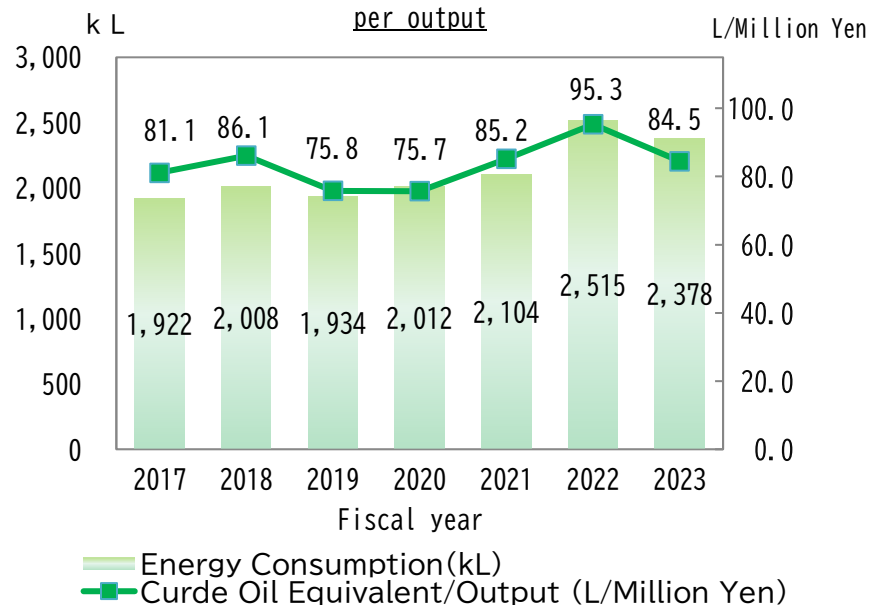
The volume of crude oil equivalent energy used per output in FY 2023 was 84.5 L/million yen, which is a decrease of 10.8 L/million yen from the level in the previous year. This reflected the improvement of production efficiency due to the new coating equipment, as well as a decrease in LPG and electricity consumption due to energy saving measures.

We will continue working to improve by increasing the efficiency of production equipment operations.

Breakdown of Energy Consumption
(Crude Oil Equivalent)



Energy Consumption and Crude Oil Equivalent



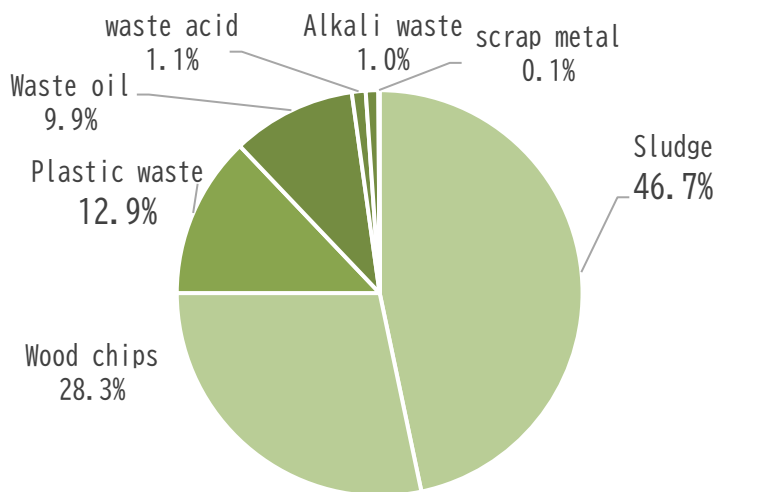
Eco-Friendly Production

Formation of a Recycling-based Society

◆ Reduce Solid Waste

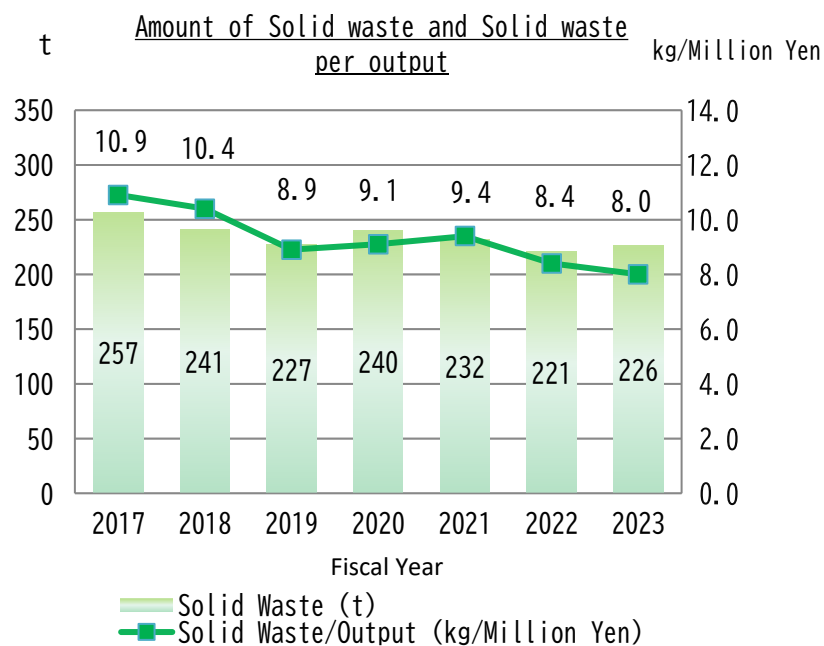
We manage and process solid waste appropriately and in compliance with all laws and ordinances. In FY2023, our solid waste per output was 8.0 kg/million yen, down by approximately 0.4 kg/million yen compared to the previous year.

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 2,035 wooden pallets were recycled in FY2023. This resulted in a waste reduction of approximately 35 t.

Recycle

The wood chips generated in the production process were all recycled. 45% of sludge, waste plastics, and waste alkali was recycled as cement materials.

This resulted in recycling of approximately 127 tons of waste, which is 57% of the total, 224 tons of waste, as new raw materials in FY2023.



wooden pallets



iron pallets

Eco-Friendly Production

Managing Chemicals

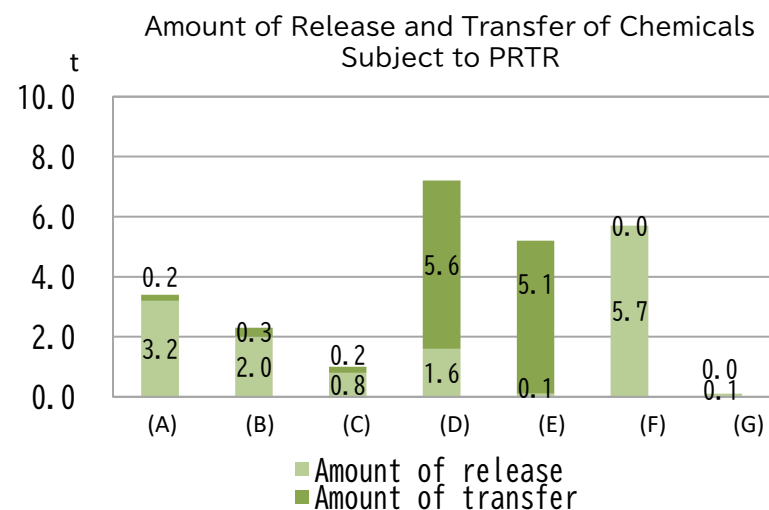
◆ Managing Chemicals Subject to PRTR

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	3.2	0.2
(B) Toluene	2.0	0.3
(C) Ethyl benzene	0.8	0.2
(D) Methylene chloride	1.6	5.6
(E) Tetrahydromethyl phthalicanhydride	0.1	5.1
(F) Syrene	5.7	0.0
(G) 1,2,4-trimethylbenzene	0.1	0.0

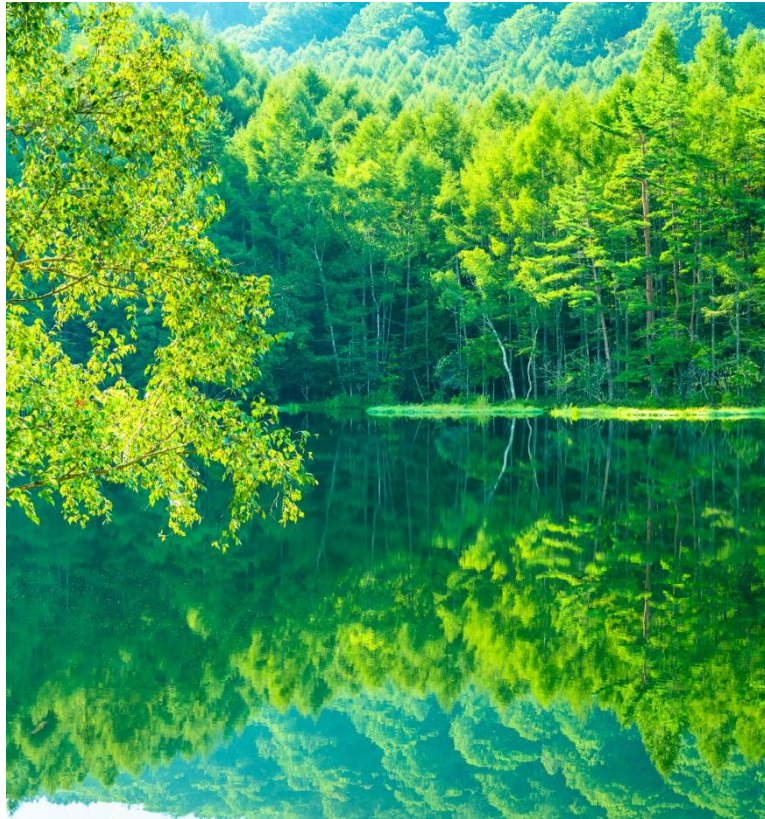
(Unit: t)



◆ Environmental awareness in the material procurement process

Denyo requested that its parts and materials suppliers and contractors consider the environment in their management of chemical substances and in other areas of their businesses. These initiatives, which are summarized in the Denyo Group Green Procurement Guidelines, are being implemented now. We will continue to promote environmental awareness in the material procurement process.

Environmental conservation & community contribution activities



Contents

Environmental conservation activities	…p.24
Roof Greening	
Water Quality Monitoring	
Introduction of the MIRAI	
Introduction of solar power generating facilities at a new service site	
Community contribution activities	…p.26
Participation in cleaning activities	
Participation in anti-crime patrols	

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

Environmental conservation activities

◆ Introduction of the MIRAI

In May 2022, we introduced the MIRAI, a hydrogen-powered fuel cell electric vehicle, to the public for the first time.

The MIRAI, which does not emit CO₂ when running, is equipped with an air cleaner featuring enhanced air purifying functionality. Specifically, it filters air that it takes in and emits purified air, a dust removing feature and a chemical filter that reduces the generation of PM 2.5 by removing chemical substances. Due to these features, it is considered an eco-friendly vehicle.

Denyo will continue to deepen its knowledge of hydrogen-related products, using these products to work towards the realization of a hydrogen society



◆ Introduction of solar power generating facilities at a new service site



We established Service Center Kanto in Sakura City, Chiba as an East Japan base for large equipment maintenance. This facility began operating in March, 2023.

To facilitate initiatives for decarbonization, we installed solar power generating equipment on the rooftop of the maintenance factory. The equipment is capable of providing all of the electricity used by the office.

We will continue to actively implement capital investments with an eye toward carbon neutrality.

Environmental conservation & community contribution activities

Community contribution activities

◆ Participation in cleaning activities



Denyo has been actively participating in cleaning and other activities organized by an association based in the Konan Industrial Complex where the Shiga Plant is located.

We will continue to participate in cleaning activities like these to make sure that each employee is always aware of the importance of environmental conservation.

◆ Participation in anti-crime patrols

An anti-crime patrol was carried out in December 2022 by the Fujimi Industrial Park Industrial Association in Saitama, where our Laboratory & Training Center is located. As part of regional contribution efforts, the association conducts the patrol at the end of every year. Two of our employees participated in the 2022 patrol. Denyo will strive to contribute to local anti-crime activities by continuing to participate in activities like this every year while simultaneously strengthening relationships with neighboring companies and residents.



Developing Technology Tomorrow's Power Needs.

Denyo[®]

 **Denyo Co.,Ltd.**

2-8-5, Nihonbashi-horidomecho, Chuo-ku, Tokyo 103-8566, Japan

Phone: +81-3-6861-1111, Facsimile: +81-3-6861-1181

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