

Environment

Environmental management

Basic approach

As expressed by “act proactively to address environmental problems, with the understanding that efforts toward solving them are a common issue for humanity and an essential requirement of companies’ existence and activities,” the INOAC Group contributes to environmental conservation with the spirit of practical activities that benefit society as we aim to build a sustainable society. Based on our environmental vision, we “respect the natural environment of our irreplaceable earth and contribute to realizing a prosperous society that is comfortable to live in through technology harmonized with our environment and environment-friendly business activities.” We give tangible form to our environmental vision by striving to mitigate the environmental impact and risks of our business activities while actively pursuing the development of eco-friendly products and technologies that comply with environmental regulations, based on our environmental management system.

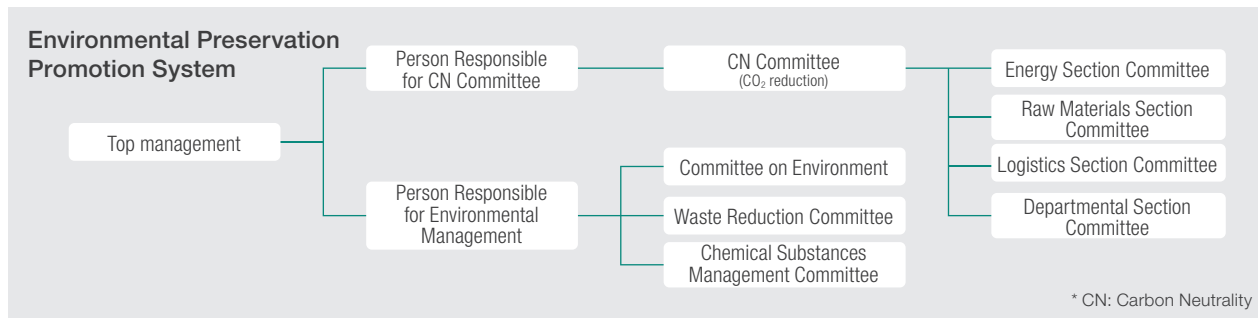
Environmental vision

The INOAC Group respects the natural environment of our irreplaceable earth and contributes to realizing a prosperous society that is comfortable to live in through technology harmonized with our environment and environment-friendly business activities.

Environmental policy

1. We observe environmental laws and regulations, thoroughly ensure compliance, and engage in business activities that society can trust.
2. We work to reduce CO₂ emissions such as by saving energy, to help achieve a carbon neutral society and prevent global warming.
3. We actively work on resource conservation, waste reduction and recycling to contribute to a recycling-oriented society.
4. We properly manage chemicals that could impact the environment and seek to preserve our environment by reducing risk.
5. We actively develop products with less environmental impact, contributing to the conservation of nature throughout the life cycles of the products.
6. We work to reduce our water usage through initiatives such as circular water usage to use water resources sustainably.
7. We engage in environmental management, educate employees about the environment, implement environmental audits, and continue to improve.
8. We contribute to establishing a sustainable society through efforts in local environmental preservation as good corporate citizens.

Environmental Preservation Promotion System



To engage in environmental activities in an organized fashion, we have established our Environmental Preservation Promotion System under the direct control of top management as shown in the figure above. The Person Responsible for CN Committee handles overall management related to reducing CO₂ emissions, and we have established four section committees subordinate to the CN Committee. The Person Responsible for Environmental Management handles the overall management of other environmental activities. For that, we have established three committees for environment, waste reduction, and chemical substances respectively. Each committee and section committee engages in activities with clear missions and KPIs. The committees and section committees also coordinate with each other to implement environmental management for INOAC as a whole.

Carbon Neutrality (CN) Committee	Implements measures to reduce business-related carbon dioxide emissions and pursue carbon neutrality.
Committee on Environment	Implements measures involving the environment such as ISO and EMS based on environment-related laws and regulations.
Waste Reduction Committee	Manages various types of waste arising from our business activities.
Chemical Substances Management Committee	Manages chemical substances based on international regulatory trends.
Energy Section Committee	Implements measures to reduce energy usage primarily at manufacturing locations in Japan and other countries with the aim of reducing Scope 1 & 2 emissions.
Raw Materials Section Committee	Makes efforts to reduce CO ₂ emissions primarily in raw materials with the aim of reducing Scope 3 (Category 1) emissions.
Logistics Section Committee	Implements CO ₂ reduction measures related to shipping and logistics for which we are the cargo owner.
Departmental Section Committee	Implements comprehensive measures on a per-department basis to reduce carbon footprint related to products.

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Environmental management

▶ Goals & results of activities

Each committee takes the leading role and engages in activities for the main initiatives after setting quantitative goals. Due to factors such as increases in production volume, we were unable to achieve our goal for reducing energy consumption related to CO₂ in FY 2023. However, we are continuing our CO₂ reduction activities to achieve our goals for FY 2024 and beyond.

Steady progress was also made in reducing environmental impact from waste, VOC, PRTR, and water intake. We had zero environmental incidents, including violations of laws and regulations.

▶ Observing environmental laws and regulations

The INOAC Group strives to thoroughly observe environmental laws and regulations. In FY 2023 we had zero law violations at locations in Japan and other countries. We will continue striving to have zero environmental incidents.

To thoroughly ensure compliance with environmental laws, in Japan the person in charge of environmental efforts at each location participates in Committee on Environment meetings four times per year to touch base about revisions to environmental laws and report on self-directed inspections at each location. Our Quality Division also regularly inspects the observance of ISO14001 EMS at our locations in Japan, verifies the status of their legal compliance, and strives to ensure that violations do not occur.

Initiative		Targets in FY 2023	Achieved in FY 2023	Targets in FY 2024	Targets in FY 2030
Reducing energy consumption (in plants)	CO ₂ emissions (tons)	70,637 or less	73,394	68,631	45,887
Reducing waste (in plants)	Amount treated (tons)	10,440 or less	10,055	9,500	8,400
Reducing emissions of VOC substances	Amount emitted (tons) / monetary sum of production (million yen)	Not specified	1.82	1.81 or less	1.30 or less
Reducing amounts of PRTR substances emitted & transferred	Amount emitted + amount transferred (tons) / monetary sum of production (million yen)	2.14 or less	2.15	2.09 or less	Not specified
Reducing water intake	Water intake (thousand m ³)	2,319 or less	2,284	2,236	2,153
Managing chemical substances	Green procurement rules revisions	Continued new efforts	No revision	Continued new efforts	Continued new efforts
Environmental incidents	Major accidents, legal violations, number of complaints	0	0	0	0

Major environment-related laws and regulations pertaining to business activities

Air	Air Pollution Control Act, Automobile NOx PM Law, Act on Special Measures against Dioxins
Water quality & soil	Water Pollution Prevention Act, Purification Tank Act, Sewerage Act, Soil Contamination Countermeasures Act
Noise, vibration & odor	Noise Regulation Act, Vibration Regulation Act, Offensive Odor Control Act
Chemical substances	Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof, Poisonous and Deleterious Substances Control Act
Resource conservation & recycling	Act on the Rational Use of Energy, Act on the Promotion of Sorted Collection and Recycling of Containers and Packaging, Act on Rational Use and Appropriate Management of Fluorocarbons, Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes, Waste Management and Public Cleansing Act
Disaster prevention	Fire Service Act, High Pressure Gas Safety Act
General & others	Factory Location Act, Act on Improvement of Pollution Prevention Systems in Specified Factories, Radio Act

* Legal orders such as local government ordinances are omitted

* Some of the above are abbreviated

Environment

Environmental management

▶ Internal environmental audits

We implement internal environmental audits to check the operational state of our environmental management system. The audit team consists of two to three employees who have completed the internal auditor training prescribed by the company. The team checks if the environmental management system is being properly operated, maintained, and improved. We create implementation guidance and revise checklists whenever necessary to emphasize efforts toward goal achievement and legal compliance, among other efforts to audit at a higher level.

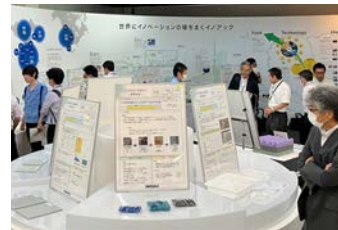
▶ External environmental examinations

The Japan Quality Assurance Organization (JQA), an external certification body, conducts examinations to check if our environmental management system is functioning properly in accordance with ISO 14001:2015. In September 2024 we underwent a renewal audit and our renewal was registered without anything being pointed out. Also, as overall findings, some issues were raised in terms of environmental aspects, compliance obligations and evaluations, and processes such as internal audits. We are working to improve what was pointed out as the opportunities arise.

▶ (Education & training) CN-related training sessions

As awareness-raising activities, the CN Administrative Office conducted training sessions for new employees and held webinars for employees in 2023, with a total of around 250 attendees.

We also held two internal & external CN exhibitions during the year, which had a total of around 400 visitors.



▶ Training for emergencies

We identify accidents and emergencies according to the characteristics of each business facility, and periodically conduct training to prevent and stop the spread of environmental pollution resulting from earthquakes, fires and leakage of oils and raw materials. At the Yana Plant (in Aichi) we hold disaster prevention training (evacuation & extinguishing fires) every March and November, and in manufacturing departments we also change scenarios and conduct raw material spill/runoff prevention training every October. In other facilities, training for emergencies and urgent circumstances is conducted on a preparatory basis.



Climate change initiatives

▶ Addressing climate change (Scope 1 + 2)

In addition to being a social issue, addressing climate change requires aggressive efforts in the course of doing business. For our management to reduce Scope 1 and 2 emissions in particular, we set the goal of a 50% reduction in 2030 (overall volume in Japan) compared to 2013, and the CN Committee is leading our efforts toward this goal.

Specifically, we are assigning CO₂ reduction targets for each department and plant, visualizing the items to be reduced, reduction effects, and amounts of related investments, and managing the progress.

Our primary measures to reduce CO₂ emissions involve thoroughly reducing energy usage. We are implementing effective measures to advance all types of energy-saving activities such as developing production engineering processes. This includes listing up the measures being carried out at production sites as “energy-saving standards” and staying informed on the progress at each site.

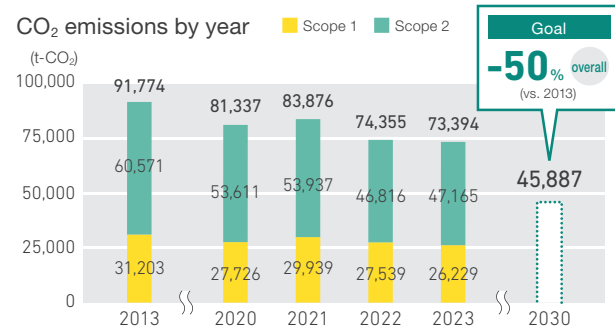
We have defined eight categories, including for thermal insulation measures and for replacing air conditioning, heating, and lighting facilities respectively, and are creating, revising, and updating lists of specific measures. In addition, we are working to share the appropriate management methods such as managing measured units and carbon offsets within our processes.

Since it is also not realistic to completely eliminate the use of energy in production, we are working on changing our energy sources and implementing renewable energies. Through all of these measures combined, we aim to achieve our 2030 goal with certainty.

Overseas, there are some inconsistencies in the levels of these activities, so we started by setting a goal of a 3% year-on-year decrease. We are requesting that energy saving activities are organized and reduction activities implemented, and we are actively sharing information about activities in Japan.

Environment

Climate change initiatives



▶ Promoting implementation of eco-friendly parts, materials, and systems at Group companies

INOAC Group company INOAC Housing & Construction Materials carries parts and materials that help to save energy, and systems that are powered by geothermal heat. We are actively adopting these in new buildings and plants to bolster thermal insulation effects and save energy.



Air conditioning & snow melting using geothermal heat
Tohoku INOAC Kitakami Plant
(Iwate Prefecture, 2007)



Snow melting using geothermal heat
Hokkaido INOAC
(Hokkaido, 2013 & 2019)



Air conditioning using geothermal heat
Tohoku INOAC Detached houses & housing complexes
(Miyazaki Prefecture, 2015)



Air conditioning using geothermal heat
INOAC Head Office
(Nagoya, 2017)



Air conditioning and ZEBs* using geothermal heat
INOAC Tsukidate Plant
(Miyazaki Prefecture, 2018 & 2021)

* ZEB: Abbreviation for Net Zero Energy Building. These are buildings that aim to balance the consumption of primary energy throughout the year to zero overall, while also maintaining a comfortable indoor environment.

▶ Energy conversion

Since the usage of fossil fuels at plants leads to on-site CO₂ emissions, we are updating to facilities that are capable of energy conversion on the basis of also reducing Scope 1 emissions.

We installed heat pumps to replace steam heating from LPG boilers which we had been using to heat raw material storehouses, reducing our LPG consumption at raw material storehouses to zero. Although our electricity usage increased, our CO₂ emissions fell by roughly 80%.

LPG boilers



LPG consumption

Approx. 7,000 kg/year

CO₂ emissions

Approx. 21 tons/year

Heat pumps



Electricity consumption

Approx. 7,800 kWh/year

CO₂ emissions

Approx. 3.6 tons/year

Managing chemical substances appropriately

▶ Basic approach

The INOAC Group uses various chemical substances in the secondary materials that go into the raw materials of products and our production processes.

Chemical substances can pollute soil, waterways, and the atmosphere due to leakage, vaporization, or other emissions from products that contain them or from production processes, which negatively impacts the earth's environment.

Regulations on chemical substances are being strengthened every year, primarily in western countries. We are improving our frameworks including for selecting and managing chemical substances that we use (Green Procurement Standards) and bolstering efforts to train employees on proper management of chemical substances, as we remain committed to making products that are safe and reliable.

▶ Managing chemical substances in our supply chain

In our supply chain, we manage the chemical substances that go into our products in the INOAC Group.

We manage the chemical substances that go into our products in product design, materials procurement, and production processes according to our Green Procurement Standards, in order to deliver products that meet the standards of laws, regulations, and our clients.

▶ Managing chemical substances in purchased goods

We obtain information on chemical substances contained in raw materials by presenting clients with our Green Procurement Standards when purchasing raw materials. These standards list chemical substances and other inputs which we should strive to comprehend, and we work to reduce the substances and content amounts specified by laws, regulations, and other stipulations.

We are also consistently monitoring the latest regulatory developments, based on which we revise these standards once each year.

Environment

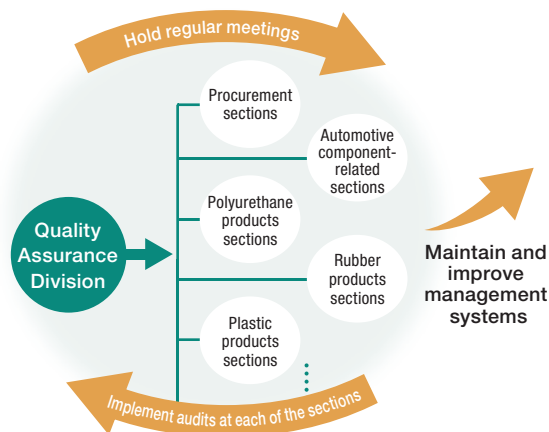
Managing chemical substances appropriately

Communication about chemical substance management

The Global Quality Assurance Division is a company-wide organization for environmental stewardship, which takes the lead in organizing internal coordination meetings for chemical substances once every two months, bringing together the sections that manage chemical substances in each department. These meetings are to revise our Green Procurement Standards, observe management systems and establish their operating rules, and exchange opinions concerning the latest trends in chemical regulations such as the REACH regulation* and RoHS Directive*. They also periodically audit the management systems in each department. We strive to maintain and improve chemical substance management systems to ensure that they are appropriate and reliable.

* REACH regulation: A regulation in Europe for registering chemical substances and controlling harmful substances

* RoHS Directive: Restriction on the use of certain hazardous substances in electrical and electronic equipment in Europe



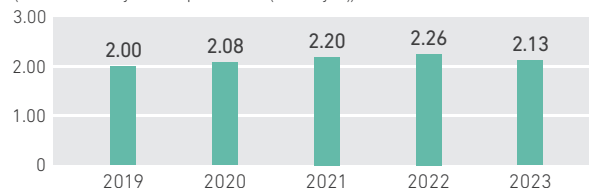
Management of PRTR-regulated substances

When manufacturing polyurethane foam, we use PRTR substances such as m-tolylene diisocyanate, as well as xylene and toluene which coatings contain. To reduce the amounts of these chemical substances that we handle, release, and transfer, we made progress in reducing

dichloromethane which is partially left over as foaming agent, and also in both improving and taking measures against defects in its coating process. Although our emissions + amount transferred of PRTR substances in FY 2023 increased 14% vs. FY 2022, they decreased by 6% vs. FY 2022 in measured units, indicating an improvement trend.

PRTR (amount emitted + amount transferred)

(tons / monetary sum of production (million yen))



Establishing and enforcing controlled substances

In order to accurately communicate information about chemical substances to customers, the INOAC Group controls chemical substances according to laws and regulations in each country, primarily Europe's ELV Directive¹, RoHS Directive, and REACH regulation, laws and regulations in Japan, GADSL², and IEC 62474³, and based on customers' requirements.

In tangible terms, we thoroughly establish roles and methods for implementing controls within each section to provide safe, reliable products.

*1 ELV Directive: Regulation for end-of-life vehicles in Europe (European Union member countries)

*2 GADSL: List of internationally controlled substances in the automotive industry

*3 IEC 62474: List of internationally controlled substances in the electrical and electronics industry

Initiatives to reduce air pollutants

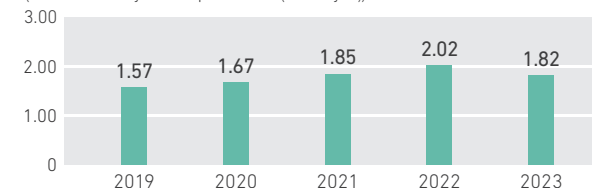
VOCs (volatile organic compounds) emitted into the air react with ultra-violet rays in sunlight, generating photochemical oxidants and airborne particulate matter.

Among the raw materials that we use, VOCs contained in materials such as coatings for automotive components and adhesives are released into the air through the action of drying.

To reduce VOCs, we strive to mitigate our VOC usage through means such as developing fabrication methods and processes geared toward coating efficiency and spreading dichloromethane-free polyurethane foam technologies as we work to reduce our airborne emissions.

VOC emissions

(tons / monetary sum of production (million yen))



Examples

Activities to completely eliminate dichloromethane

We are implementing improvements to completely eliminate dichloromethane which is used in some of our polyurethane foaming processes. To replace it, we introduced polyurethane foam technologies that use CO₂ and completed installation of related facilities at our locations throughout Japan. CO₂ polyurethane foam has lower environmental impact than conventional foaming agents and is capable of curtailing greenhouse gas emissions. Since CO₂ can be obtained at low prices, it also offers advantages in terms of costs.



Properly controlling ozone-depleting substances

To protect the ozone layer and stop global warming, we are curbing our airborne release of fluorocarbons and switching to natural refrigerants. We are controlling operations through regular inspections based on laws controlling the emissions of fluorocarbons, and are recovering waste appropriately. Going forward, we will continue updating our equipment in a structured manner as we work to properly control fluorocarbons.

Environment

Contributing to a recycling-oriented society

Basic approach

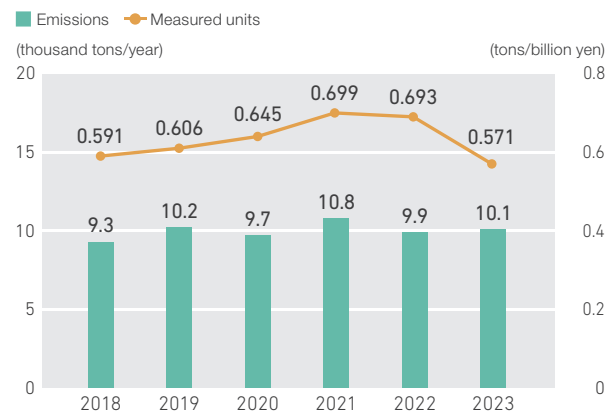
The INOAC Group uses raw materials, various chemical substances, and other materials derived from petroleum. We are engaged in activities to mitigate environmental pollution by utilizing limited resources effectively, and by reducing and properly treating waste discharged during production and after usage.

For these issues, we are expanding our existing 3R's (reduce, reuse, recycle) activities as we work to create an advanced recycling-oriented (circular economy) society with no waste.

Waste reduction initiatives

The INOAC Group (domestically) achieved its goal for total volume of waste discharged in FY 2023, but this volume did increase slightly compared to FY 2022. However, through our ongoing activities to reduce defects and improve yield and to recycle rubber and resin materials and convert them into resalable waste, we have been able to reduce emissions in measured units (volume of waste per unit monetary sum of production) by 17%.

Volume of waste (excluding resalable), measured units of sales



Recycling-oriented initiatives

Recycling has become a major issue in the circulation of resources.

At INOAC, we are finding ways to implement recycling related to our products. We are also developing technologies for chemical recycling of polyurethane foam, and for recycling materials such as rubber.

In addition, we are working cooperatively with local government agencies and other institutions to build systems for recovering used products.

Future issues and actions

The INOAC Group will continue its quest for the effective usage of resources.

Specifically, we will reduce emissions (waste) in our production processes through 3R's activities, while also reducing amounts disposed through simple incineration and as landfill.

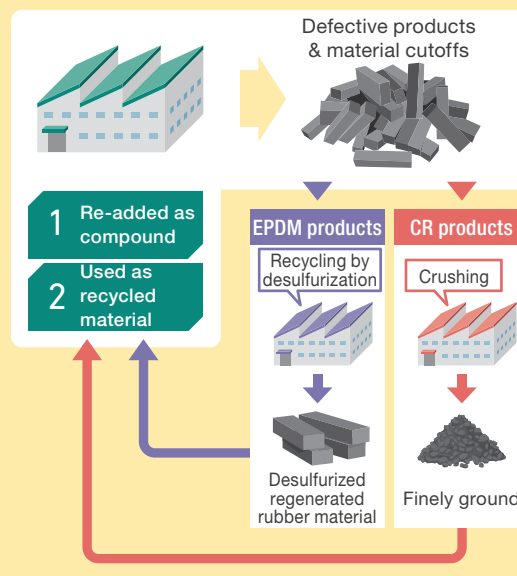
Additionally, we will develop technologies for chemical recycling, material recycling, and energy recovery from waste as we continue finding ways to use the earth's resources effectively.

To build circular economies we will improve our structural design and production processes, which includes selecting renewable materials and making products that are easy to recycle.

Examples

Material recycling of rubber

After crushing and reprocessing material cutoffs left over from our production processes, we reuse them as recycled materials.



Environment

Addressing water-related risks

Basic approach

The INOAC Group consumes large volumes of water, including not only water used when manufacturing products but also for cooling molded rubber and plastic products, and the water that our employees drink. We consider water to be a crucial resource. In addition to reducing our water usage through production process improvements and recycling, we will also utilize tools by Aqueduct to address water-related risks. Leveraging these tools, we will pursue the continuity of our business activities by anticipating the risks and conducting interviews in each area to further understand these risks.

Initiatives to reduce water usage

Water is most often chosen as the means to cool equipment and machinery such as materials kneaders and extruders that heat up during usage for processing. Since water flow is used without limitation during such cooling, tools such as G-HEXs* and cooling towers can be used to cool and recycle water that has absorbed heat. We are working on improvements that produce significant water savings using such tools.

* G-HEX: Resin heat exchangers sold by our group company INOAC Housing & Construction Materials, which can recover and recycle wastewater heat at plants (heat, heated water, and cold water arising from production processes at plants). The recovered cooling and heating can also be recycled as heat sources for air conditioners and other equipment and machinery. Water usage can be reduced by creating water recycling systems.

Understanding and mitigating water risks

We investigate our water-related risks by using water risk assessment tool Aqueduct to assess water-related risks in each area where our production sites are located in Japan and around the world, and by speaking to people at all of our manufacturing locations.

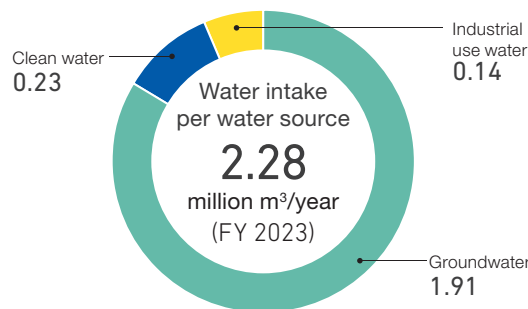
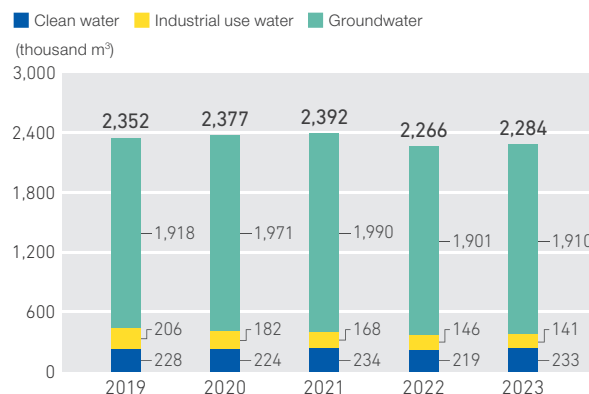
Through our investigations, we have not been able to find any locations with major water risks requiring urgent response.

We will bolster our efforts to address various water-related risks, including the depletion of aquatic resources and worsening

water quality, floods, and enhanced regulations.

- (1) At domestic group companies, we are working on improvements by setting targets for water usage and intake reductions to facilitate sustainable usage of water resources that addresses water supply risks.
- (2) We are working on managing wastewater by monitoring the quality of wastewater from wastewater treatment plants in order to address regulatory risks from water-related laws, regulations, and other ordinances, and to make our wastewater cleaner.
- (3) We are working on separate improvements at each plant from a BCP perspective to address water submersion risks posed by torrential rains and floods.

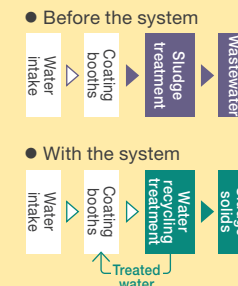
Water intake



Examples

Water recycling system at the Sakurai Plant

Coating processes consume relatively larger volumes of water. The plant reduced water intake by upwards of 99% by properly treating and recycling wastewater that contains substances such as organic solvents.



Future issues and actions

Some risks from problems associated with water risks differ by region, such as water shortages caused by growing populations and increasing risk of water damage due to global warming. Since we have locations throughout the world, these are important issues for us.

We will share information about matters such as saving water and preventing leakage in production processes with our locations operating around the globe, while also proactively working to understand risks and create action plans for reductions.

Consideration for biodiversity

Conserving ecosystems that maintain biodiversity is critical both for the sustainability of society and the continued development of the INOAC Group's business.

In addition to compliance with various laws and regulations, we also consider it necessary to thoroughly understand impacts on the surroundings caused by extraction of raw materials and business operations at manufacturing sites, and to implement all-encompassing measures to address them.

In FY 2023 we used tools such as Aqueduct to conduct assessments of our manufacturing locations and evaluated the main impacts.