# Environment | Environmental management

## Basic approach

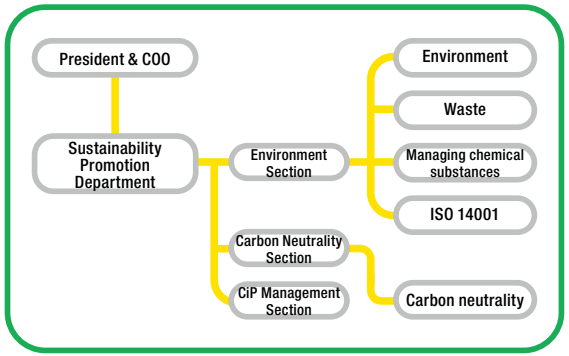
Advocating our eight basic policies (diagram at right), the INOAC Group will be actively engaged in various environmental efforts based on our environmental vision, “Respect the natural environment of our irreplaceable earth and contribute to realizing a prosperous society that is comfortable to live in through technology harmonized with our environment and environmentally responsible business activities.”

## Environmental Preservation Promotion System

In March 2025, we established our Sustainability Promotion Department to engage in environmental activities in a more organized fashion. Under the direct control of the president, this office handles various environmental conservation activities.

Within this office are the Environment Section, Carbon Neutrality Section, and CiP Management Section, under which the activities of various committees until now are linked (chart below). INOAC is now better organized to be able to tackle environmental challenges faster and in a more company-wide manner.

### Organizational chart




**Environmental vision**

The INOAC Group respects the natural environment of our irreplaceable earth and contributes to realizing a prosperous, comfortable society through technology harmonized with our environment and environmentally responsible 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 $CO_2$ emissions such as by saving energy, to help achieve a carbon neutral society and prevent global warming.
3. We actively engage in resource conservation, waste reduction, and recycling activities, and reduce our emissions of air pollutants to contribute to a circular society.
4. We properly manage chemicals that could impact the environment and seek to preserve our environment by reducing risk.
5. We actively develop environmentally responsible products and services, contributing to the conservation of nature throughout the entire life cycle.
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.

## Missions of each section and committee

### Sustainability Promotion Department

- Recommend Head Office environmental targets
- Implement environmental activities aligned with targets
- Give management reports on environmental activities

### Environment Section

- Environmental compliance monitoring
- Implement ISO 14001-related activities
- Implement environmental, waste, and chemical substance management activities

### Carbon Neutrality Section

- Facilitate activities to reduce Scope 1, 2 & 3 (Categories 1/4) emissions

### CiP Management Section

- Handle customers’ environmental surveys

### 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.

### ISO 14001 Committee

- Facilitate environmental activities throughout the company

### Carbon Neutrality (CN) Committee

- Implements measures to reduce business-related $CO_2$ emissions and pursue carbon neutrality.

< Energy Section Committee >

- Implements measures to reduce energy usage at production sites 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 CO2 reduction measures related to shipping and logistics for which we are the cargo owner.

< Departmental Section Committee >

- Implements comprehensive measures to reduce the carbon footprint of our main products and components

* EMS: Short for Environmental Management System

## Goals & results of activities

| Initiative | | Targets in FY 2024 | Achieved in FY 2024 | Targets in FY 2025 | Targets in FY 2030 |
|---|---|---|---|---|---|
| Reducing energy consumption (in plants) | $CO_2$ emissions (tons) | 68,631 | **76,182** | 70,010 | 45,887 |
| Reducing waste (in plants) | Amount treated (tons) | 9,500 | **9,885** | 9,027 | 8,400 |
| Reducing emissions of VOC substances | Amount emitted (kg) / monetary sum of production (million yen) | 1.81 or less | **1.93** | 1.55 or less | 1.32 or less |
| Reducing amounts of PRTR substances emitted & transferred | Amount emitted + amount transferred (kg) / monetary sum of production (million yen) | 2.09 or less | **2.26** | 2.19 or less | Not specified |
| Reducing water intake | Water intake (thousand $m^3$) | 2,236 | **2,155** | 2,112 | 2,153 |
| Managing chemical substances | Green procurement rules revisions | Continue addressing new regulations | **Revised May 14, 2024** | Continue addressing new regulations | Continue addressing new regulations |
| Preventing environmental incidents | Major accidents, legal violations, complaints (total) | 0 | **0** | 0 | 0 |

## Observing environmental laws and regulations

The INOAC Group strives to thoroughly observe environmental laws and regulations. In FY 2024 we had zero law violations at locations in Japan and other countries. We will continue striving to preemptively prevent the occurrence of environment-related major incidents and legal violations.

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. We also strive to ensure that violations do not occur, as the Environment Section regularly conducts legal compliance inspections at locations in Japan based on ISO 14001 within our Environmental Management System.

## Implementing environmental audits

### 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. They check if the environmental management system is being properly operated, maintained, and improved. We create implementation guidance and revise checklists 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 on what was pointed out in those findings.

## Education & training

### CN-related training sessions

As an awareness-raising activity, the CN Committee's administrative office conducted training for newly hired employees in 2024. Webinars were taught by in-house instructors three times and by an outside instructor once, with roughly 160 attendees in total. The Energy Section Committee and Logistics Section Committee also collaboratively organized the CN Exhibition. Clients were also invited, and the exhibition had approximately 250 attendees.

### Training for emergencies

We identify risks of 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.

For the Yana Plant (in Aichi) we hold disaster prevention training (evacuation & extinguishing fires) every March and November. Meanwhile, in manufacturing sections we conduct raw material spill/runoff prevention training at a different location each year. We also prepare for emergencies in other facilities by conducting regular training for emergencies and urgent circumstances.

# Environment | 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 + 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 $CO_2$ 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 $CO_2$ 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.

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 disparities on a per-activity level, 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 taking place in Japan.

### Scope 1

$CO_2$ emissions from consumption of fuels such as heavy oil and natural gas at our manufacturing locations corresponds to Scope 1.

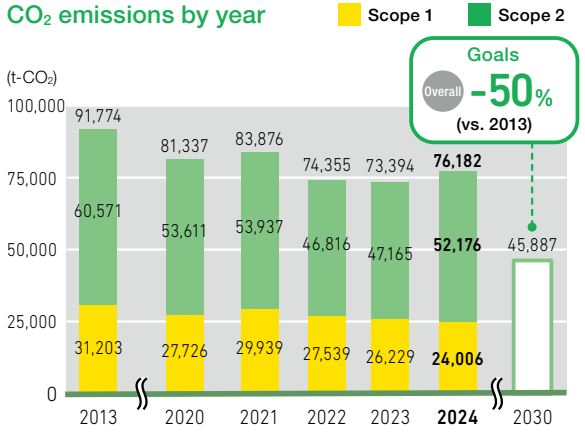
We are finding ways to reduce our emissions through means such as improving efficiency in manufacturing processes via fuel conversion and systematic equipment updates.

In FY 2024, we reduced fuel consumption by transitioning to heat pumps for some of our LPG boilers, reduced wasteful fuel consumption through extensive thermal insulation on steam piping, and reduced our Scope 1 $CO_2$ emissions.

### Scope 2

This corresponds to $CO_2$ emissions attributable to purchased electric power. We are dedicatedly engaging in energy-saving activities and improving energy efficiency in manufacturing processes among other efforts to reduce energy usage at all locations. Additionally, we are cutting our emissions through efforts such as internal usage of solar power generation and implementing renewable energies. In FY 2024, solar power generation for in-house consumption went into full-scale operation at two of our locations, which contributed to lower Scope 2 $CO_2$ emissions.

### $CO_2$ emissions by year




**Example 1** **Switching from LPG boilers to heat pumps**
Anjo Plant

We switched to use of heat pumps instead of steam from LPG boilers as the heat source in raw material thermal chambers.

Carrier Japan
**CAONS 140J**

$CO_2$ reduction: **18** tons/year

**Example 2** **Implementing solar power generation for in-house consumption**
I-Sheet Industries

We installed solar panels on the roofs of buildings.

Generation capacity: **230** kw

Annual energy production: **210,000** kWh

$CO_2$ reduction: **96** tons/year

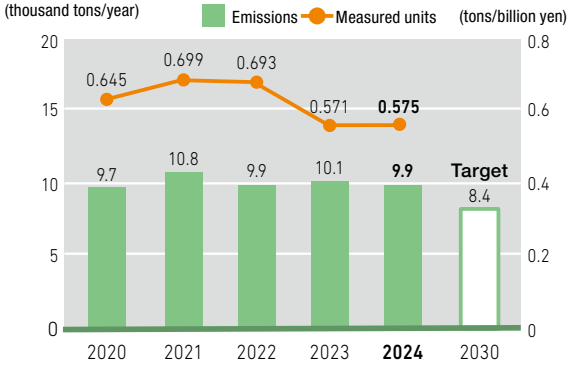
# Environment | Contributing to a circular economy

## Basic approach

The INOAC Group uses raw materials derived from petroleum which is a finite resource in addition to various chemical substances. For that reason, we work toward reducing waste emitted from our production activities as much as possible and manage proper treatment of these materials and substances according to laws and regulations.

We are also expanding our existing 3R's (reduce, reuse, recycle) activities as we work to create an advanced recycling-oriented (circular economy) society.

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




## Future challenges and actions

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

Specifically, we will aim to 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 work to improve our structural design and production processes, which includes selecting renewable materials and making products that are easy to recycle.

## Using biomass-based raw materials

In terms of resource usage, we are also utilizing biomass-based raw materials to cut down on our usage of raw materials from fossil resources.

## Initiatives to reduce waste generated

The INOAC Group (domestically) did not achieve its goal for total volume of waste discharged in FY 2024, but this volume did decrease slightly year on year. This was attributable to our ongoing activities to reduce defects and improve yield and to recycle rubber and resin materials and convert them into resalable waste.

Increases in launches of new mass-produced products and prototypes and test runs involved in equipment updates were the main causes for falling short of the goal.

## Recycling-oriented initiatives

At INOAC, we are developing technologies for chemical recycling of polyurethane foam, which is one of our major materials, and for material recycling including for rubber.

In addition, we are working cooperatively with venous industry—recycling and industrial waste treatment businesses—to build systems for recovering used products.

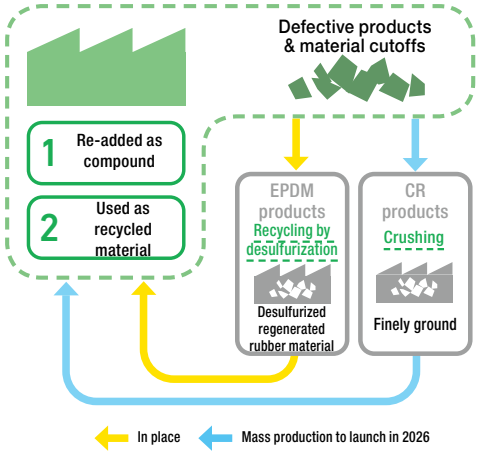
### Example 1 Polyurethane foam using biomass-based raw materials

ECOLOCEL is a polyurethane foam made from at least 50% plant-based raw materials. Raising the level of biomass content destabilized the foaming properties and caused imbalances among other properties, but improving the composition and optimizing the production conditions yielded a high biomass content ratio of 50%. INOAC also chooses non-edible plant-based raw materials out of consideration for effects on food shortages.

ECOLOCEL

### Example 2 Material recycling of rubber

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



# Environment | Managing chemical and other substances appropriately

## Managing chemical substances

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 pollute soil, waterways, and the atmosphere due to leakage, vaporization, or other emissions from products that contain them or in production processes, which could negatively impact 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 properly manage chemical substances through employee training, as we remain committed to making products that are safe and reliable.

### Descriptions of initiatives

**1. Managing harmful chemical substances**

- Compliance with laws & regulations such as RoHS Directive*1 and REACH regulation*2
- Compile SDSs (safety datasheets), conduct risk assessments, wear proper protective equipment, improve work environments
- Switch to replacement substances, consider reducing usage volume

**2. Managing chemical substance content of products**

- Manage chemical substance content of products in Green Procurement Standards
- Ascertain and manage the usage status of chemical substances throughout our supply chain
- Properly disclose chemical substance content of products

**3. Managing emissions of chemical substances**

- Ascertain PRTR/VOC emissions at each location & implement reduction measures
- Inspect & manage wastewater at each location
- Observe laws & regulations such as water pollution and air pollution prevention laws
- R&D & improvements to minimize environmental impacts

**4. Chemical substances management framework**

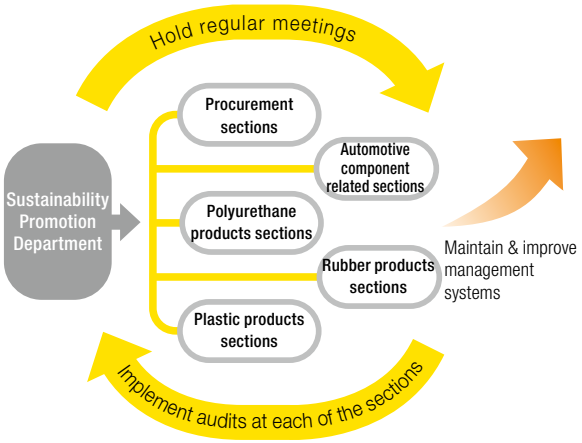
- Select managers of chemical substances
- Conduct employee training for chemical substances-related knowledge & proper handling methods
- Have those responsible for managing chemical substances in each section share information at Chemical Substance Committee meetings (3 times/year)

*1 Restriction on the use of certain hazardous substances in electrical and electronic equipment in Europe
*2 Regulation in Europe for registering chemical substances and controlling hazardous substances

## Communication about chemical substance management

With the Environment Section playing a central role, the sections responsible for managing chemical substances in every business division gather for internal chemical substances coordination meetings held once every three months. Activities in the meetings include revising the Green Procurement Standards, reviewing the management structure and operational rules, and sharing opinions on the latest trends in chemical substance regulations such as the REACH regulation and RoHS Directive. We also regularly audit the management structure in each business division as we strive to maintain and improve these organizational structures.

### Structure of chemical substances coordination meetings




## 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, including Europe's ELV Directive*3, RoHS Directive, and REACH regulation, laws and regulations in Japan, GADSL*4, and IEC 62474*5, and based on customers' requirements.

In tangible terms, we thoroughly establish roles and management operations within each section to provide safe, reliable products.

*3 Regulation for end-of-life vehicles in Europe (European Union member countries)
*4 List of internationally controlled substances in the automotive industry
*5 List of internationally controlled substances in the electrical and electronics industry

## 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.

| Step | Chemical substances management procedure |
|---|---|
| **Establish chemical substance regulations** | Establish and update our Green Procurement Standards based on laws, regulations, and customer requirements |
| **Check information on chemical substances when selecting materials** | Verify information with clients about prohibited and managed chemical substances listed in Green Procurement Standards for raw materials & resources to be procured |
| **Check at the time of purchasing raw materials & resources** | Obtain information on chemical substances for Green Procurement Standards via certificates of non-inclusion, IMDS, chemSHERPA, etc. |
| **Manage chemical substances within manufacturing processes** | Manage chemical substances transfers and pollution within manufacturing processes (managing pollution from phthalate compounds, etc.)<br>Conduct training for operators on handling of chemical substances<br>Store chemical substances, choose the person responsible for them, display & manage SDSs at worksites, conduct chemical substance-related risk assessments |
| **Manage chemical substances information for our products** | Manage chemical substances information for each product in databases |
| **Provide chemical substances information for products delivered to customers** | Provide chemical substances information (IMDS, chemSHERPA, etc.) to customers for products that we manufacture<br>Report chemical substance usage volumes (PRTR, VOC, etc.) to government agencies & industry groups |

# Environment | Managing chemical and other substances appropriately

## Managing chemical substances in purchased goods

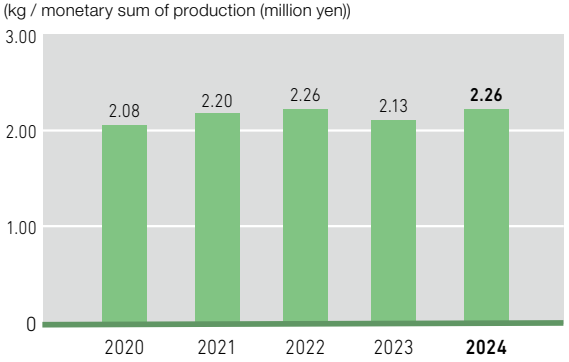
We verify the chemical substances and content amounts specified by laws, regulations, and other standards to ascertain information about chemical substance content in raw materials, and we purchase raw materials from clients after presenting them with our Green Procurement Standards which list the chemical substances and other inputs we should strive to reduce.

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

## Managing PRTR-regulated substances

We use PRTR substances that are included in raw materials for polyurethane foam, 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 used as a foaming agent in some cases, and also in both improving and taking measures against defects in its coating process. Although our total overall emissions and amount transferred of PRTR substances in FY 2024 decreased 13% vs. FY 2023, they increased by 6% in measured units.

### PRTR (amount emitted & amount transferred)




## Initiatives to reduce air pollutants

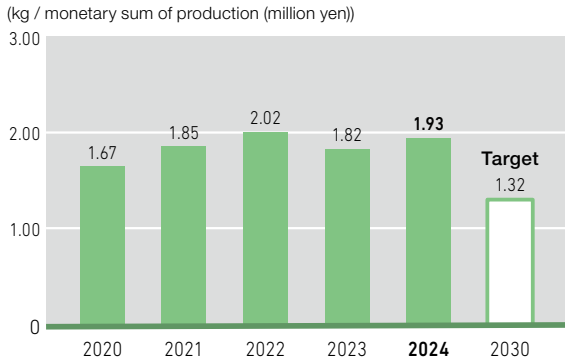
For air pollution, we observe environment-related laws and regulations including for NOx, SOx, and PM (particulate matter) while also engaging in initiatives to reduce our environmental impact.

VOCs (volatile organic compounds) emitted into the air also 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.

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

### VOC emissions




### Example 1 Reducing dichloromethane

We are working to completely eliminate dichloromethane which we use in specific polyurethane foaming processes, with some of our plants having already completed comprehensive conversions to foaming methods using $CO_2$. Polyurethane foam manufactured through carbon foaming 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.

### Example 2 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 | Addressing water-related risks

## Approach to addressing water-related risks

The INOAC Group consumes large volumes of water, including not only water used when manufacturing products (cooling manufacturing equipment, cooling rubber and resin molded products, etc.) but also for the water that our employees drink. We consider water to be a crucial resource. For that reason, we are working to reduce our water usage through improvements to production processes and recycling efforts. Since FY 2023, we have also been using the Aqueduct water risk assessment tool to conduct assessments of each manufacturing site and evaluate the main impacts.

## Understanding and mitigating water risks

We are making dedicated efforts to comprehend our water risks through the use of Aqueduct to assess water risks at manufacturing sites in Japan and other countries, and by conducting interviews at each site.

The results of our investigations in FY 2024 showed that none of our locations have 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.

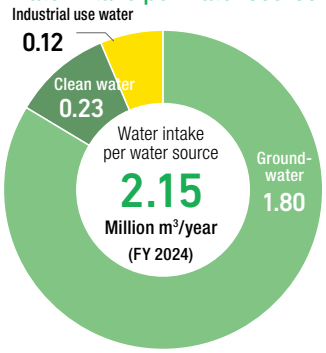
1. At domestic group companies, we are working on improvements by setting targets for water usage and intake reductions to facilitate sustainable usage of water resources that addresses water supply risks.
2. We are working on managing wastewater by monitoring the quality of wastewater from wastewater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

## Initiatives to reduce water consumption

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 Co., Ltd. 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. Implementing water recycling systems leads to reductions in water usage.

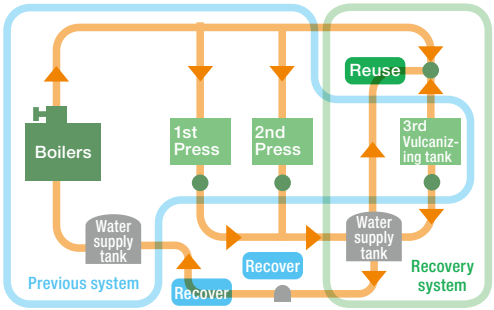
### Water intake per water source



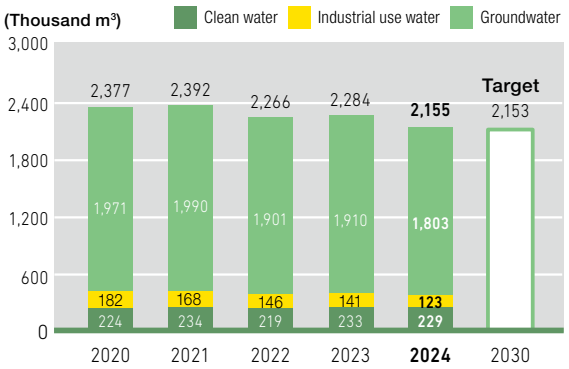

**Example 1 Steam circulation system implementation**

Seino Plant Tarui Factory

We installed systems in the drain discharges of boilers that recover and reuse hot water and efficiently utilize both water and energy.




### Water intake by year




## Future challenges 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 overseas locations, while also proactively working to understand risks and create action plans for reductions.

## Biodiversity action

Conserving ecosystems that maintain biodiversity is critical not only for the sustainability of society but also for the continued development of the INOAC Group's business.

In addition to compliance with various laws and regulations, we also consider it necessary to 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.