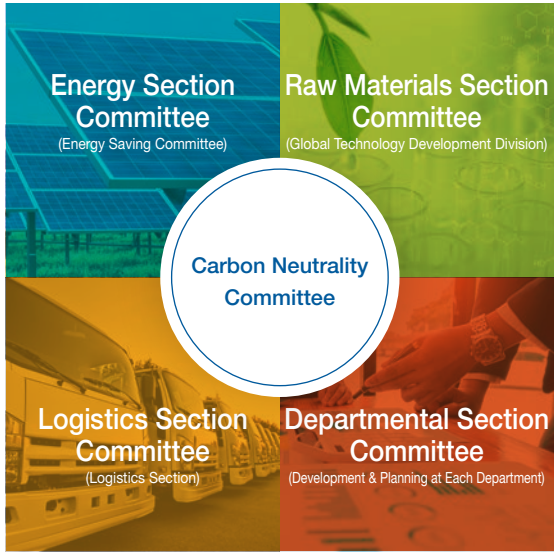
Building the Core Organization for Initiatives to Tackle Environmental Problems

Carbon Neutrality Committee
Back row, from left: Hisao Tsuge, Naoki Tanaka, Nobuyasu Torii
Front row, from left: Nobuo Kondo, Takefumi Miura



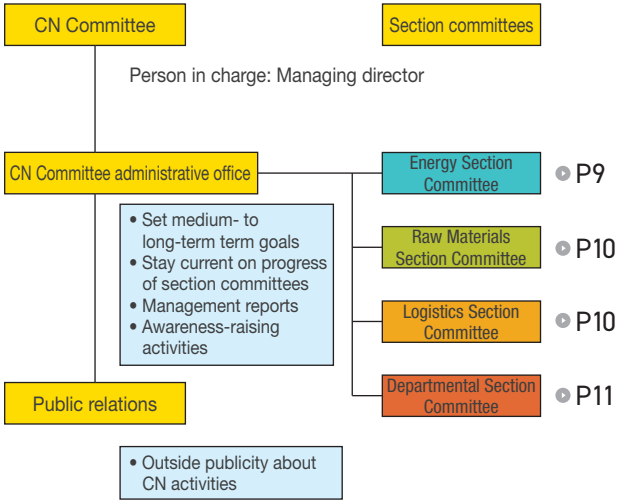
Background behind establishment

The dangers of climate change are now very real. One example is frequent heavy rain damage caused by abnormal weather patterns brought about by global warming. In response, in 2015 the COP21 set out the goal of “Holding the increase in the global average temperature to well below 2°C compared to pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C.” In 2021, the Government of Japan also announced its goals of reducing CO_2 emissions by 46% (compared to 2013) in 2030 and achieving carbon neutrality in 2050. Concurrently with this movement, automotive manufacturers and many of our other clients now also heavily insist on CO_2 emissions reductions. For that reason, we established our Carbon Neutrality (CN) Committee in September 2021 to strengthen our governance toward reducing CO_2 and achieving carbon neutrality. Thus began the committee’s cross-divisional coordination function to engineer environmental activities throughout the INOAC Group.

Organizational structure

The CN Committee is headed by a managing director. The administrative office working directly under the committee sets numerical targets and handles related tasks such as management reports and awareness-raising activities. Specific activities are coordinated by four section committees (Energy, Raw Materials, Logistics, and Departmental), each of which has its own mission and will set (medium-term) goals for 2030, three-year goals, single-year goals, and action plans, then execute them.

CN Committee Organizational chart



* Scope of activities is 14 facilities in Japan and 27 related locations (including affiliates)

Initiatives of the four section committees

Energy Section Committee

Mission	Reduce scope 1 & 2 emissions by 50% in 2030 (vs. 2013: total overall emissions)
Action Plan	● Activities to reduce scope 1 & 2 CO_2 emissions at each plant (case examples 01 & 02 below) ● Promote implementation of eco-friendly parts and materials at INOAC Group companies (INOAC Housing & Construction Materials Co., Ltd.) ● Considerations for usage of solar power ● Drafting the recommended equipment for energy saving (guidelines) and promoting its implementation

01 Drafting “the Energy Saving Standards 2022 and rolling them out to multiple departments

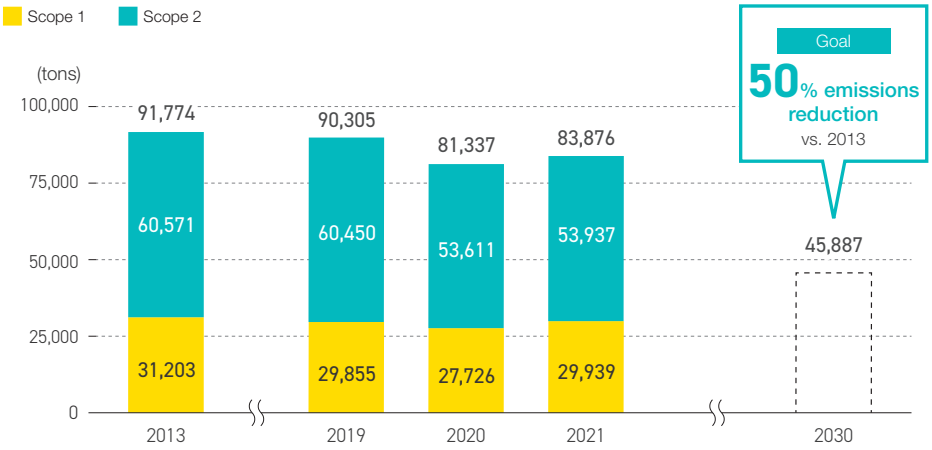
This initiative began by creating a list of energy saving standards with 15 categories and 53 items. The section committee manages score sheets for each item at 41 locations in Japan and is working to deploy them in every department to ensure the standards are exhaustively implemented.

Air leakage diagnostic

Heat insulation sheets to insulate heat

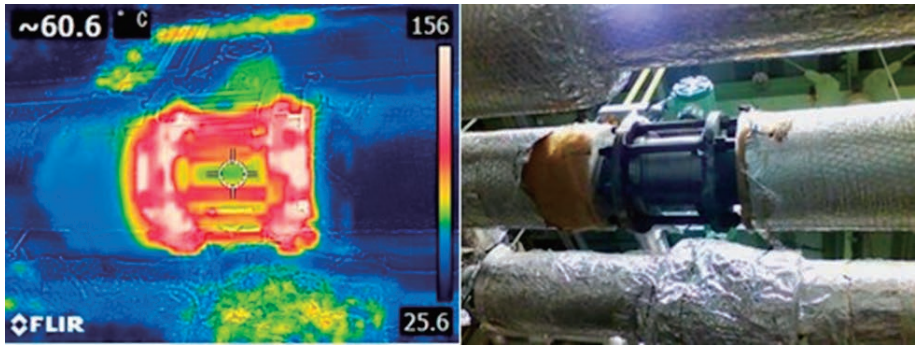
Promote usage of *Thermax* (thermal insulator made by INOAC)

CO_2 emissions by year



02 Using thermal cameras to stop heat leakage

We are working to detect heat leakages using thermal cameras. Measures to stop heat leaks are taken after identifying the locations of the leaks. Afterward, we conduct regular follow-up inspections.



Comparison of photo taken with thermal camera

Initiatives of the four section committees

Raw Materials Section Committee

Mission

Setting 2030 monitoring targets for reducing scope 3 emissions
(polyurethane, resin, rubber, and paint, which comprise a significant proportion of Category 1)

Action Plan

- Reduce usage volume (waste reduction, weight reduction, thickness reduction)
- Shift to material and chemical recycling for materials (case example 03 below)
- Replace with eco-friendly materials (shift from rubber to resin and biomaterials) (case example 04 at right)

	2030	2040	2050
Polyurethane	• Thinner sheets • Use biomaterials as raw materials • Chemical recycling	• Build cycles for recovering products from the market	• Use biomaterials as primary raw material • Release biofoam products
Resin	• Recycle material cutoffs • Implement biomass	• Bolster recycling rates and shift toward biomaterials	• Expand lineup of bioproducts and recycled products
Rubber	• Switch to low-emissions raw materials • Increase recycling rate of *Gomspor* • Implement usage of non-fossil raw materials	• Establish desulfurization recycling	• Expand lineup of desulfurization recycled products

03 Recycling business initiative

INOAC produces and offers olefin products and was successfully able to turn the material cutoffs that arise in producing such products back into raw materials using a crosslink cleavage process (name of recycled material: *Repeco*®). The section committee will reduce overall usage volume of resin by incorporating a certain proportion of *Repeco*® in our products.

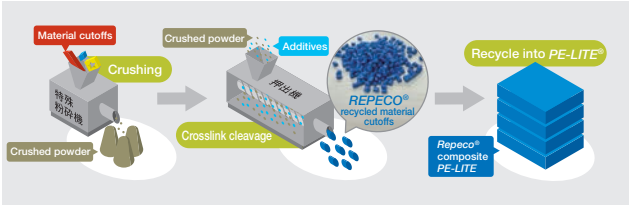
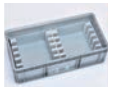


Illustration of the PE-LITE® recycling process

Application examples

Returnable box materials for automotive components



Construction material backer, joint filler

04 Case example of shifting to biomaterials

We developed a polyurethane material with 50% biomass. Also having successfully made it compliant with the Food Sanitation Act, we launched it first in sponge products. Going forward, we are considering applications and commercializations for its usage in bedding, clothing, cosmetics, and the automotive field.

■ Polyurethane (slabs)

ECOLOCEL®

BEH

バイオマスマーク 50%取得

Food Sanitation Act compliant
Similar mechanical properties as conventional products

■ Usage applications

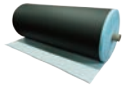
Sponges — Already launched — Coarse cell / Fine cell

Mattresses — In development — High hardness/Low hardness

Pillows — In development — High recovery / Slow recovery

Clothing products — Already launched — Texture

Cosmetics — In development — High density



Automotive — In development — Flame retardancy

Logistics Section Committee

Mission

Targeting scope 3 (category 4 upstream transportation and distribution).
With 2023 as the base year, set monitoring targets for 2030 and work to reduce CO_2 emissions in logistics

Action Plan

- Build systems to visualize CO_2 emissions in logistics
- Reduce CO_2 emissions in logistics
  (increase loading efficiency, consider modal shifts, join client milk runs, switch to low-emission vehicles)

Initiatives of the four section committees

Departmental Section Committee

Mission Plan and execute medium- to long-term strategies for major products

Action Plan
- Perform scenario analyses considering risks and opportunities on a product basis
- Execute plans that consider financial impact (sales, profit, investment) on a product basis (case example of a commercialization 05 below)
- Coordinate with other section committees to achieve targets for scope 1 & 2 and scope 3

05 Case example of a commercialization

Temperature management system solution

The logistics industry is trending away from the usage of dry ice. Based on this, the section committee is offering a temperature management system solution that combines cold storage agent and cool boxes with operational management methods as an alternative to dry ice. The system is now in use at large logistics companies and in business operations such as food transport and co-ops. Dedicated COVID-19 vaccine transport box i-Medisys was also developed to expand this solution into more markets. With the ability to transport samples and specimen while keeping them between 2 and 8 degrees Celsius for 12 hours in outside temperatures ranging between 5 and 35 degrees, orders for this box have been pouring in from local governments throughout Japan.

Thermax high performance thermal insulator

INOAC manufactures and sells isocyanurate foam thermal insulator. It has thermal conductivity of 0.020 W/mK and 2.3 times the heat resistance value of glass wool (16 kg). We also offer it in grades that have been certified as incombustible materials by the Ministry of Land, Infrastructure, Transport and Tourism, making it a formidable thermal insulator against fires. Its usage applications include housing, waterproofing roofs of buildings, and heated pools. Since it also has superior fabricability, it is being deployed for uses such as drying ovens and air conditioning ducts in production plants. Its usage is becoming more established through the actions of individuals such as automotive component salespeople in addition to dedicated sales teams. With catalogs in hand, these salespeople approach affiliated clients about including *Thermax* in the designs for their production plants.

Awareness-raising activities of the administrative office

In-house exhibitions (March, July)

As part of our internal awareness-raising activities, “panels and actual samples” of materials, products, equipment, and other items that contribute to reducing our CO_2 were exhibited in March and July of this year along with presentations on the status of CN Committee section committee activities. There were approximately 400 overall attendees from the INOAC Group throughout the six total days of the exhibitions.

New employee training (April)

Workshops were held for new employees joining us in 2022. Classroom-style lectures were given on (1) why we must pursue carbon neutrality, (2) numerical values that our customers desire, and (3) our in-house organizations and activities. Then, in “panels and actual samples,” attendees were informed about specific items at INOAC that contribute to CO2 reductions.

Message

For some time, our company has been engaged in efforts to develop eco-friendly materials and products plus reduce CO_2 emissions in our production plants. However, we did not have the governance in place for related company-wide target values or cross-divisional management. In response to the 2021 turning point in demand from society and our customers for heightened efforts toward reducing CO_2, we established our CN Committee and launched its activities. We still have a mountain of challenges to tackle, to expand these section committee activities overseas and to our suppliers, address the remaining categories in scope 3, and create scenarios for an eventual declaration on carbon neutrality. Therefore, I want to stay grounded and take steady action toward our objectives.

Motoyuki Asano Managing Director
Director of CN Committee