Sustainability Business

As the division in charge of and promoting sustainability at our Company, the Sustainability Division is working toward actively utilizing renewable energy, achieving a hydrogen society to reach carbon neutrality, and striving to achieve a safe and reliable supply of food. The division is also reducing the Toagosei Group's GHG emissions and addressing the transition to a circular economy. It is responsible for the disclosure of climate change-related information.

Executive Officer
General Manager, Sustainability Division
Ryuji Takano

Renewable Energy

We are expanding the introduction of renewable energy in and around our own plants. The mega solar power generation facilities installed at our Nagoya Logistics Center began generating power in 2024. We are also constructing mega solar power generation facilities at our Nagoya Plant and Takaoka Plant, and we plan to bring these online in 2025.

We are engaged in the solar power and wind power generation business with the Tahara Solar-Wind Joint Project.

We are also installing small-scale hydroelectric power generation facilities. We are currently constructing our first small-scale hydroelectric power plant in Nagano Prefecture, aiming for completion in 2026. The plan is to continue to increase the number of small-scale hydroelectric power plants in the future.

Nagoya Logistics Center

Utilizing Hydrogen

Our own hydrogen produced from the brine electrolysis facilities at the Tokushima Plant is sold at hydrogen stations.

With one stationary hydrogen station and two mobile hydrogen stations, the hydrogen is used to refuel FCVs and FC buses. We will continue contributing to the development of a hydrogen society in Tokushima Prefecture.

We are also participating in a feasibility study for a low-carbon hydrogen model town in Chita City, Aichi Prefecture, addressing a wide range of hydrogen applications, not only in automobiles but also fuel cells for public facilities and homes, and hydrogen water heaters.

Toagosei Hydrogen Station Tokushima

Plant Factory

We are engaged in hydroponics for lettuce at our plant factory located in Takaoka City, Toyama Prefecture. Our plant factory does not require pesticides and is not affected by climate, because the plants are grown in a clean indoor environment. It provides safe lettuce consistently throughout the year. Going forward, we will consider cultivating other plants in addition to lettuce.

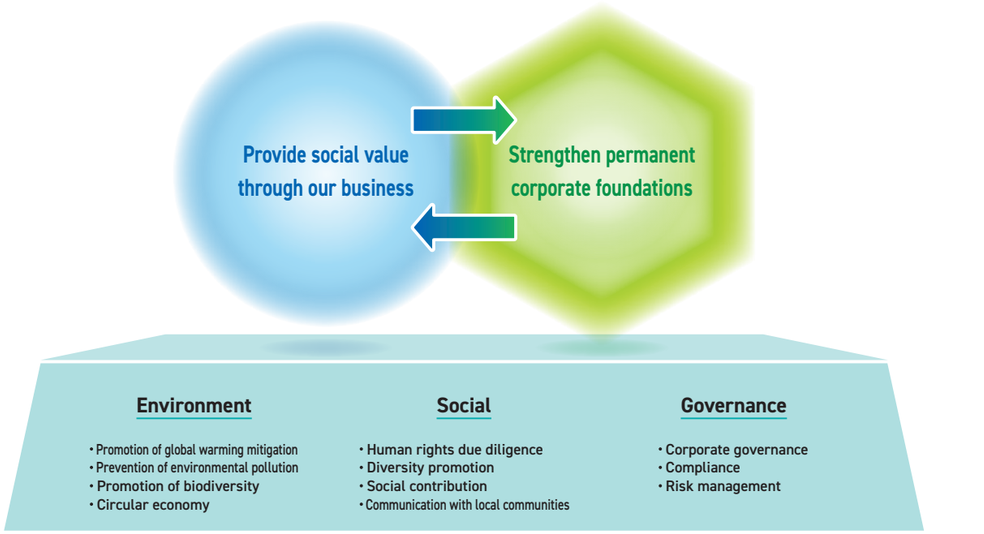
Plant Factory

Sustainability Management

All Toagosei Sustainability Policy

We take up a challenge to create new value to deliver happiness to future generations.

The Toagosei Group aims to provide social value through our business and strengthen our enduring corporate foundation as initiatives to realize a sustainable society and sustainable growth of the Group.

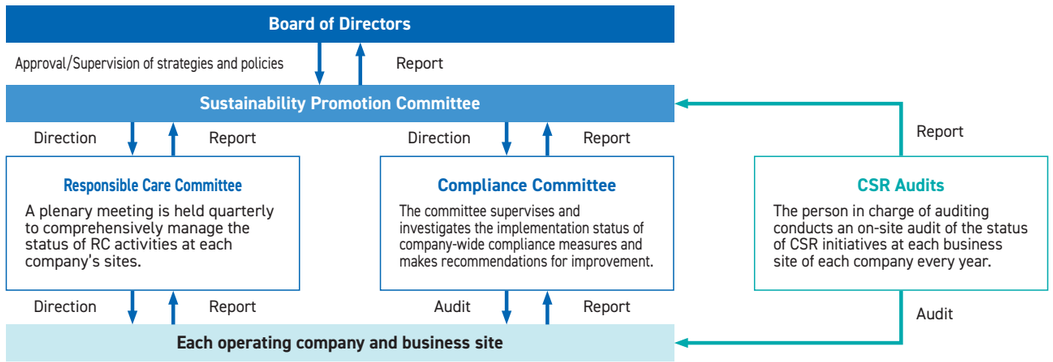


Sustainability Management System

Issues related to sustainability, including the challenges brought about by climate change, are studied as priority topics by the "Sustainability Promotion Committee." Chaired by the President and Representative Director, the "Sustainability Promotion Committee" members are made up of directors (including outside directors), presidents of each group company, and representatives of subordinate organizations or those in charge of auditing organizations.

The Committee reports the results of deliberations to the Board of Directors, which discusses, decides on and supervises response measures and objectives of business strategy formulation and management decisions as well as issues to combat climate change.

Business sites of each our Group's companies formulate action plans and promote and review activities based on the policies of the "Sustainability Promotion Committee." Committees have also been established to discuss individual matters like responsible care (RC), risk management and compliance.



Climate Change-Related Information Disclosure Based on the TCFD Recommendations

In the process of manufacturing various chemical products, we use large amounts of electric power and fuel, and emit greenhouse gases (GHG).

On the other hand, we also offer many products that are making a contribution with respect to climate change in fields such as mobility, electronics and critical infrastructure. Responding to climate change is an important aspect of management, both in terms of reducing GHG emissions and making a difference with our products, and in June 2019, we endorsed the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD).

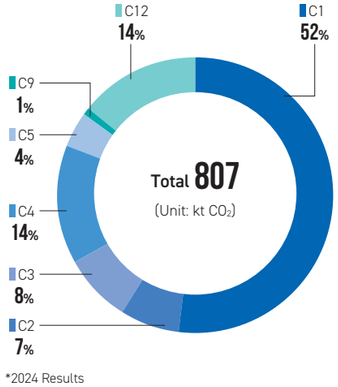
In accordance with TCFD guidelines, we manage GHG emissions, including those in our supply chain, in three categories (Scope 1 to 3).

◆ Scope 3 categories

Upstream	Toagosei	Downstream
Scope 3 C1: Purchased goods and services **417 kt-CO_2** C2: Capital goods **59 kt-CO_2** C3: Energy activities not included in Scope 1 or Scope 2 **60 kt-CO_2** C4: Transport and distribution (upstream) **115 kt-CO_2** C5: Waste generated in operations **32 kt-CO_2** C8: Leased assets (upstream) **Not applicable**	**Scope 1** **36 kt-CO_2** **Emission from use of fuel** **Scope 2** **283 kt-CO_2** **Emission from use of purchased electricity and heat** **Scope 3** C6: Business trips **0.4 kt-CO_2** C7: Commuting **0.4 kt-CO_2**	**Scope 3** C9 : Transport and distribution (downstream) **10 kt-CO_2** C10: Processing of sold products **Not applicable** C11: Use of sold products **Not applicable** C12: End-of-life treatment of sold products **114 kt-CO_2** C13: Leased assets (downstream) **Less than 0.1 kt-CO_2** C14: Franchise **Not applicable** C15: Investment **Not applicable**

*Scope 1 and 2: Toagosei Group; Scope 3: Toagosei Co., Ltd. (non-consolidated)

◆ Breakdown of Scope 3 emissions



*2024 Results

Revision of Climate-Related Risks and Opportunities (Scenario Analysis)

In 2021, we conducted a scenario analysis to identify the risks and opportunities of climate change on the Group's business. We developed our response based on this analysis. In 2024, we revised our scenario analysis to expand its scope and improve accuracy. We analyzed the significant risks and opportunities that could impact our business by 2050 under 1.5°C and 4°C temperature rise scenarios with reference to several existing scenarios published by the International Energy Agency (IEA) and the Intergovernmental Panel on Climate Change (IPCC).

Risk / Opportunity			Business impact	Response
Transition risks 1.5°C scenario	Stronger energy-related regulation	Risk	Increase in manufacturing and raw materials costs due to the introduction of carbon taxes, etc.	● Switch to low-carbon fuels ● Expand the introduction of renewable energy
	Spread of environmentally friendly product	Opportunity	Expansion of recycled products and biomass products	● Acquire ISCC PLUS certification ● Enhance lineup of biomass products
	Spread of CCUS and other decarbonization technologies	Opportunity	Establishment and spread of CCUS technologies	● Develop and expand sales of materials that contribute to CCUS
	Shift to electricity-powered mobility	Opportunity	Decrease in internal combustion engine vehicles Spread of EVs and FCVs	● Develop and expand sales of materials for batteries and fuel cells ● Increase in hydrogen demand (hydrogen stations)
	Change in stakeholder behavior	Risk	Penetration of corporate value assessment that focuses on climate change measures	● Continue to promote climate change measures and appropriate information disclosure ● Implement fuller dialogue with stakeholders
Physical risks 4°C scenario	Rise in average temperatures and changes in weather	Risk	Deterioration of working conditions and decline in productivity due to rising temperatures	● Automation of production facilities and labor saving
	More frequent and intense floods and storm surge disasters	Risk	Increased risks of the suspension of plant operations, equipment damage, and logistics disruption	● Diversify production bases and implement measures to protect equipment from water damage
		Opportunity		● Expand sales of ground improvement agents

Promotion of the Calculation of Carbon Footprint of product (CFP)

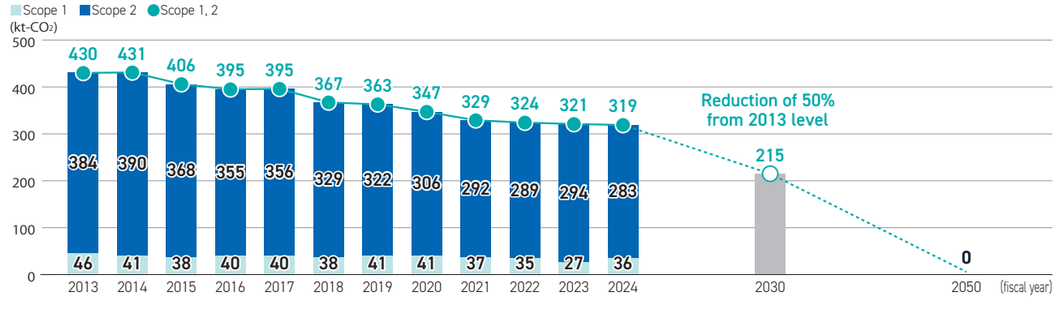
In order to respond to customer demands for us to achieve carbon neutrality, and grasp and reduce emissions across the entire supply chain, we are progressively calculating the CFP of our products. Up to 2024, we have calculated the product CFP for our commodity chemicals products. Moving forward, we will expand the range of products and will work on improving the efficiency of calculation tasks.

Initiatives to Achieve Carbon Neutrality

We are working to reduce greenhouse gas (GHG) emissions with the goal of becoming carbon neutral (net zero) by 2050. For Scope 1 and 2, our target is a 50% reduction by 2030 compared to base year 2013, and we achieved a 25.8% reduction in 2024 compared to 2013.

To achieve carbon neutrality, in addition to energy conservation and the switch to low-carbon fuels in our existing manufacturing processes, we have also begun specific studies and deliberations on various measures to achieve our goal of owning our own renewable energy power generation.

◆ GHG Emissions and Reduction Targets (Scope 1 and 2)



Sustainability-related Initiatives in the 2025 Medium-Term Management Plan

The entire company is committed to contributing to the realization of a sustainable society, a materiality of the Medium-Term Management Plan.

Materiality Element	Key Initiatives	2024 Results	Targets for 2025
Climate change mitigation	● Basic Targets 2030 Reduction of CO_2 emissions by 50% (from 2013) 2050 Carbon Neutrality	CO_2 emission reduction 25.8% (from 2013)	CO_2 emission reduction 35% (from 2013)
	● Promotion of plant energy conservation (electrolysis facilities updates, heat use efficiency improvement, conversion to low-GHG fuels)	CO_2 emission reduction 10.8 kt (from 2022)	CO_2 emission reduction 20 kt (2023 to 2025)
	● Introduction of renewable energy (solar power, small-scale hydroelectric power, biomass power, etc.)	1MW solar power generation facility in operation, solar power and small-scale hydroelectric power facilities under construction	CO_2 emission reduction 17 kt (2023 to 2025)
	● Providing society with products that contribute to CO_2 emission reduction	Promoted ISCC PLUS certification standard	ISCC PLUS certification
	● Disclosure of CFP figures of our products to customers and strengthening of CFP management	Calculated and disclosed commodity chemical products	Information disclosure on all bulk chemical products
	● Contribution to effective use of hydrogen and building social infrastructure	89% utilization rate of electrolytic hydrogen	Over 98% utilization rate of electrolytic hydrogen
	● Consideration of CCUS and energy storage systems	Consideration of feasibility of CCUS and energy storage systems	Introduction of fuel cells and storage batteries
	● Reduction of GHG through the supply chain (promotion of lower GHG in raw material procurement and transport, product transportation, etc.)	Scope 3 reduction by 7% (from 2022)	Scope 3 reduction by 3% (from 2022)
Climate change adaptation	● Continuation of business activities in the event of a natural disaster	Revised TCFD scenarios	Complete establishment of BCP for major products
	● Operational and facilities response to chronic extreme weather events (heat, cold, drought, prolonged rainfall, etc.)	Revised TCFD scenarios	Planning and investment calculation
Promotion of biodiversity	● Promotion based on the National Biodiversity Strategy 2023-2030	—	TNFD disclosure
	Promotion of the use of ship ballast water chemicals, reducing the rate of invasive alien species introduction, and reducing impacts in high-priority sites	Net sales of ballast water chemicals +73% (from 2022)	Net sales of ballast water chemicals +10% (from 2022)
	Increase in plant factory operation, reducing the impact of pollutants, including eutrophication, biocides, and plastic waste reduction	Plant factory lettuce net sales -18% (from 2022)	Plant factory lettuce net sales +10% (from 2022)
	● Promotion of social contribution activities (expansion of the scope of participation in forest conservation activities and river/coastal cleanup activities)	Number of participants +6% (from 2022)	Number of participants +10% (from 2022)
Promotion of a circular economy	● Enhancement of the in-house sustainable products certification system and expansion of the number of products	—	Establish and operate the in-house sustainable products certification system
Expansion of sustainable products	● Development of environmentally friendly products (expansion of biomass-derived, biodegradable and recycled products)	—	