



# **TCFD**

## **REPORT**

Task Force on Climate-related  
Financial Disclosures Report

# **2025**



**NIPPON FINE CHEMICAL CO., LTD.**

## Initiatives in Line with TCFD Recommendations

The Nippon Fine Chemical Group manufactures a wide variety of products, and uses raw materials derived from fossils and fossil fuels, as well as naturally derived raw materials, in the manufacture of our products. For this reason, we recognize that climate change risks and opportunities are important management issues, and in December 2021, we expressed our support for the recommendations of the Task Force on Climate-related Financial Disclosure (TCFD). We use scenario analysis to assess the risks and opportunities of the impact of climate change on our business. Going forward, we will strengthen the resilience of our strategies by recognizing the

significance of such risks and opportunities and reflecting such significant in our management measures. We had initially set a goal of reducing our Scope 1 and 2 carbon dioxide emissions by 38% in FY2030 compared to FY2013. However, in order to expand this initiative across the entire group, we have newly included Nissei Bilis in our scope and we are now promoting the reduction of greenhouse gas emissions with a new goal of reducing our carbon dioxide emissions by 41.5% in FY2030 compared to FY2018. By publicizing our efforts and increasing corporate transparency, we will work to strengthen relationships of trust with our stakeholders.

## Governance

Nippon Fine Chemical has established a Sustainability Promotion Committee, chaired by the Senior Corporate Officer and Senior General Manager of the Administration Division and composed of members selected from each division and our Group companies.

The Sustainability Promotion Committee assesses the significance of risks and opportunities identified based on scenario analysis of issues related to climate change. The Promotion Committee also formulates promotion action plans for issues and manages their progress.

Promotion action plans for sustainability-related materialities and risk management are discussed once a year by the Sustainability Promotion Committee. They are then deliberated by the Sustainable Management Committee, which is chaired by our President and CEO and composed of Full-time Directors and Corporate Officers, before being approved by the Board of Directors.

To strengthen our corporate governance framework, we established the Sustainable Management Committee in FY2024. The Committee aims to clarify the roles of our existing committees and promotion committees and enhance their business execution functions. It is responsible for overseeing and guiding four of our promotion committees, including the Sustainability Promotion Committee and the Risk Management System Promotion Committee, in order to promote our response to increasingly important sustainability issues.

The progress of activities is checked by the Sustainability Promotion Committee each quarter, in principle, and the results of such checks are reported to the Sustainable Management Committee, and to the Board of Directors on a semiannual basis. The Board of Directors is responsible for overseeing such activities.



Nippon Fine Chemical obtains information on external trends related to climate change from sources such as the TCFD Consortium and the websites of relevant ministries and agencies. This information is shared with the Sustainability Promotion Committee, the Sustainable Management Committee and the Board of Directors.

## FY2024 Climate Change-Related Meetings

Timing of Meeting	Main Agenda Items
<b>Board of Directors</b>	
<b>Materiality-related items</b>	
May 2024	Report on results of activities relating to FY2023 numerical goal achievement plan Approval of numerical goals for FY2024
November 2024	Report on semiannual progress of FY2024 numerical goal achievement plan
December 2024	Approval of proposed numerical goals for FY2025
March 2025	Approval of FY2025 numerical goal achievement promotion action plan
<b>TCFD-related items</b>	
May 2024	Report on the draft TCFD Report 2024
<b>Sustainable Management Committee</b>	
<b>Materiality-related items</b>	
May 2024	Report on the results of activities relating to FY2023 numerical goal achievement plan Deliberation on proposed numerical goals for FY2024
July 2024	Disclosure of progress of FY2023 numerical goal achievement plan Disclosure of numerical goals for FY2024
August 2024	Report on first quarter progress of FY2024 numerical goal achievement plan
November 2024	Report on semiannual progress of FY2024 numerical goal achievement plan
December 2024	Deliberation on proposed numerical goals for FY2025
February 2025	Report on third quarter progress of FY2024 numerical goal achievement plan Deliberation of FY2025 numerical goal achievement promotion action plan
<b>TCFD-related items</b>	
May 2024	Report on the draft TCFD Report 2024
June 2024	Disclosure of TCFD Report 2024
<b>Sustainability Promotion Committee</b>	
<b>Materiality-related items</b>	
April 2024	Confirmation of the results of activities relating to FY2023 numerical goal achievement plan Discussion on proposed numerical goals for FY2024
May 2024	Discussion on FY2024 numerical goal achievement plan
July 2024	Confirmation of first quarter progress of FY2024 numerical goal achievement plan
October 2024	Confirmation of semiannual progress of FY2024 numerical goal achievement plan Discussion on proposed numerical goals for FY2025
January 2025	Confirmation of third quarter progress of FY2024 numerical goal achievement plan Discussion on FY2025 numerical goal achievement promotion action plan
<b>TCFD-related items</b>	
December 2024	Discussion on policies and parameters for Nippon Fine Chemical and Nissei Bilis
February 2025	Discussion on business impact assessments and response measures for Nippon Fine Chemical and Nissei Bilis
March 2025	Discussion on the draft TCFD Report 2025

Goals for promoting the reduction of greenhouse gas emissions are approved by the Board of Directors and announced by the Company. In addition, the state of achievement of materialities, including the reduction of carbon dioxide emissions, is reflected in performance-linked remuneration paid to Directors and Corporate Officers.



## Risk Management

In FY2024, Nippon Fine Chemical reorganized our Risk Management System (RMS), shifting from a system in which the company-wide RMS Committee discussed and made decisions on basic risk management policies, planning, implementation, improvements and other related matters, to a system in which discussions on risk management are held by the RMS Promotion Committee, deliberated by the Sustainable Management Committee, chaired by our President and CEO, and approved by the Board of Directors. Based on the priority risks identified by each department, the RMS Secretariat prepares a risk map, using the “impact on business activities” and “frequency of occurrence” as evaluation axes to propose major risks, which are discussed by the RMS Promotion Committee before being reported to the Sustainable Management Committee. Company-wide major risks deliberated by the Sustainable Management Committee are approved by the Board of Directors.

Risk management for sustainability-related matters is referred to the Sustainability Promotion Committee, which identifies materialities based on the degree of importance to stakeholders and the degree of importance to our group. The Sustainability Promotion Committee considers climate change-related risks to be one of our environmental materialities, and identifies and evaluates risks and opportunities based on the following evaluation axes to determine the level of importance. The Promotion Committee formulates measures that should be taken as a Group and creates promotion action plans for items that are assessed as having a significant impact on risks and opportunities. The Promotion Committee also manages the progress of the formulated plans and activities and reports such progress to the Sustainable Management Committee. The Sustainable Management Committee deliberates management plans and business strategies based on the state of current initiatives and other factors, and such plans and strategies are then approved by the Board of Directors.

### ●Assessment Axis for Climate Change Risks and Opportunities

- 1 Identify risks and opportunities related to climate change that may affect the Group with reference to the TCFD Final Report
- 2 Evaluate identified risks and opportunities from the perspective of their impact on the Group's business activities, customers, suppliers, etc., and the likelihood of their occurrence
- 3 Evaluate the impact of each item from both a qualitative and a quantitative perspective using scenario analysis to determine relative importance

## Strategies

With regard to the impact of climate change on Nippon Fine Chemical (Functional Products business) and our Group companies, ARBOS (Environmental Hygiene Products business) and Nissei Bilis (Pharmacological and Safety Testing business), we set 2030 and 2050 as the time frame for our considerations, and analyzed scenarios for “risks and opportunities associated with the transition to a low-carbon economy” and “risks and opportunities associated with the physical impact of climate change” in a “1.5°C world” in which climate change measures have progressed and the Paris Agreement targets have been realized and in a “4°C world” in which no new climate change measures are taken and greenhouse gases have increased.

We found that under the 1.5°C scenario, there will be significant business risks due to policies and regulations aimed at emission reductions, such as carbon taxes and concerns about the procurement of naturally derived raw materials, while there will also be opportunities to sell materials for perovskite solar cells. We found that under the 4°C scenario, there will be significant business risk concerns regarding the procurement of naturally derived raw materials, while there will also be opportunities to sell materials for perovskite solar cells, as in the 1.5°C scenario. Although the scenario analysis results for the current fiscal year show that the risk of the impact of crude oil

price fluctuations on raw material prices has reduced in size, we will continue to consider the impact on our business and closely monitor the trend.

We investigated the impact of direct operational risks such as flooding caused by sea level rise and increasingly severe torrential rains at each facility location. Under current analysis conditions, we found that the risks remain small in both the 1.5°C and 4°C scenarios. However, we will continue to monitor future developments.

The Nippon Fine Chemical Group is working to reduce Scope 1 greenhouse gas emissions by switching to fuels with lower carbon dioxide emission coefficients, upgrading aging equipment to improve energy efficiency, replacing company vehicles with hybrids and EVs, and reviewing manufacturing processes. We will continue to explore additional measures going forward. In addition, Nippon Fine Chemical and ARBOS reduced their Scope 2 emissions by switching all purchased electricity to renewable energy by FY2023. In the future, we will promote Scope 2 reductions by expanding and continuing this switch at other Group companies. With regard to Scope 3, we are working to reduce carbon dioxide emissions by, for example, switching from fossil-derived raw materials to naturally derived raw materials, using rail transportation with lower emissions, and adopting biomass bottles.

### ●Main Scenarios Referenced

	1.5°C Scenario	4°C Scenario
Transition-related Risks and Opportunities	International Energy Agency (IEA) IEA NZE2050	International Energy Agency (IEA) IEA STEPS*
Physical impact-related Risks and Opportunities	Intergovernmental Panel on Climate Change (IPCC) SSP1-1.9	Intergovernmental Panel on Climate Change (IPCC) SSP5-8.5

\*Substitute due to there being no 4°C scenario

## Results of 1.5°C and 4°C Scenario Analysis (affected items)

		Risk/Opportunity Category	1.5°C World	4°C World
Transition Risks and Opportunities	Policies / Regulations	Carbon price and carbon tax	Carbon taxes will be introduced to achieve the 1.5° C target, carbon prices will rise, and global emission credits and other initiatives will expand. Procurement, manufacturing, sales, and transportation costs will increase as a result.	Efforts related to carbon pricing will not have progressed and remain largely unchanged from the current situation.
		Carbon emission targets/ policies in each country (Introduction of plastics regulations) (Palm oil production volume and price)	<ul style="list-style-type: none"> <li>- Global trend of imposing tax on virgin plastics will continue. As a result, the use of additional recycled materials will be necessary and research and development costs, procurement, and manufacturing costs will increase. The development of resource-saving containers, the use of bioplastics as an alternative raw material, and recycling efforts will also increase.</li> <li>- Global regulations on palm plantation development will be strengthened, palm oil supplies will be restricted, supply-demand balance will be tighten, and procurement price will rise.</li> </ul>	<ul style="list-style-type: none"> <li>- Plastic taxation is not introduced and the utilization rate of recycled plastic does not increase.</li> <li>- Palm oil supplies from newly developing countries will grow and supply and demand is stable.</li> </ul>
	Industry / Market	Fluctuations in the price of raw materials (Petrochemical raw materials)	Crude oil prices will decline in both 2030 and 2050 as a result of a significant drop in demand due to low-carbon technology innovation and policies to reduce carbon dioxide emissions.	While oil demand will increase mainly in the petrochemical, aviation, and shipping sectors due to the lack of restrictions on fossil fuels, overall the demand for oil will peak before 2030 and gradually decline thereafter, largely due to the fall in demand in the road transportation sector following the shift to electric vehicles.
		Development of new products and services through R&D and innovation (Expansion of earnings through development of solar cells and other raw materials)	Globally, solar power generation facility capacity is expected to be 4.1 times the current level in 2030 and 13.4 times in 2050, which will increase the demand for raw materials.	Globally, solar power generation facility capacity is expected to be 3.6 times the current level in 2030 and 10.2 times in 2050, which will increase the demand for raw materials.
Physical Risks and Opportunities	Chronic	Increase in average temperature/ changes in precipitation and temperature patterns (Wool grease production volume and price) (Rapeseed oil production volume and price)	Reduced demand for wool and raw wool production as a result of rising average temperatures. As a result, the amount of wool grease available for purchase will decrease and procurement prices will increase.	Reduced demand for wool as a result of rising average temperatures. Reduced demand for wool as a result of rising average temperatures. The production of raw wool will fall due to factors such as feed shortages and higher feed prices caused by frequent and prolonged droughts, and lower sheep birth rates due to the heat. As a result, the amount of wool grease available for purchase will decrease significantly and procurement prices will increase.
			There will be no change in the supply of rapeseed oil due to higher average temperatures, and procurement prices will remain virtually unchanged.	There will be a decrease in rapeseed oil production and lower labor productivity due to higher average temperature and procurement prices will increase.

# Addressing Climate Change Risks and Opportunities

## Financial Impact

Degree of Impact	Financial Impact	Risks	Opportunities
Small	Less than 100 million yen		
Medium	100 million yen to less than 500 million yen		
Large	500 million yen or more		

## Period Setting

Term	Timing	Reason for Adoption
Medium-term	Until FY2030	Measure in line with FY2030 41.5% reduction target for carbon dioxide emissions.
Long-term	Until FY2050	Measure in line with FY2050 carbon neutrality goal.

## Target Business

F: Functional Products business  
E: Environmental Hygiene Products business  
P: Pharmacology and Safety Testing business

Scenario	Risk/Opportunity	Target Business	Impact on Business	Financial Impact	Countermeasures	Term
1.5°C	Carbon tax and carbon price	E/F/P	The introduction of a carbon tax may increase carbon and electricity prices, expand emission credits and other initiatives globally, and increase response costs in terms of procurement, manufacturing, sales, and transportation.	 Large	<ul style="list-style-type: none"> <li>- Nippon Fine Chemical and ARBOS reduced their carbon dioxide emissions by switching all purchased electricity to renewable energy by 2023.</li> <li>- Reduce carbon dioxide emissions by switching boiler fuel from heavy oil to city gas.</li> </ul> <p><b>Currently being implemented</b></p> <ul style="list-style-type: none"> <li>- Promote the switch to renewable energy sources for purchased electricity at Group companies.</li> <li>- Systematically replace lights with LED lighting.</li> <li>- Promote energy conservation by upgrading aging equipment.</li> <li>- Promote product production by introducing flow reactors and using enzymes, improvements to existing product production processes, and the development of new products.</li> <li>- Reduce carbon dioxide emissions by replacing company vehicles with hybrid vehicles and EVs.</li> <li>- Reduce costs and carbon dioxide emissions by streamlining transportation and using rail transportation.</li> </ul> <p><b>Scheduled to be implemented</b></p> <ul style="list-style-type: none"> <li>- Use a carbon neutral natural gas or e-methane heat source.</li> <li>- Introduce heat source equipment that uses energy that does not emit carbon dioxide.</li> <li>- Introduce carbon dioxide capture and separation technology.</li> </ul>	Already implemented
	Carbon emission targets/policies in each country	E	Taxes on virgin plastics may activate the use of recycled plastics, bioplastics, and resource-saving containers, and recycling efforts and increase research and development, procurement and manufacturing costs.	 Small	<ul style="list-style-type: none"> <li>- Use concentrated products to reduce the number of containers.</li> <li>- Transition from reduced size bottles to pouches.</li> <li>- Introduce bioplastic containers.</li> <li>- Reduce the quantity of virgin plastic purchased and promote the purchase of recycled plastic.</li> </ul>	Long-term
1.5°C 4.0°C	Development of new products and services through R&D and innovation	F	Demand for raw materials may increase following an increase in global solar power generation facility capacity.	 Large	<ul style="list-style-type: none"> <li>- Develop materials for perovskite solar cells and establish production and sales expansion systems.</li> </ul>	Medium-term
	Increase in average temperature/ changes in precipitation and temperature patterns	F	Reduced demand for wool as a result of rising average temperatures. The production of raw wool will fall due to factors such as feed shortages and higher feed prices caused by frequent and prolonged droughts, and lower sheep birth rates due to the heat. As a result, the amount of wool grease available for purchase will decrease and procurement prices may increase.	 Large	<ul style="list-style-type: none"> <li>- Consider using algae-derived oils and fats and unused biomass.</li> <li>- Expand recycling of by-products of products</li> <li>- Reduce the amount of wool grease that needs to be purchased by reducing the quantity of product sold.</li> </ul>	Long-term
4.0°C		F	A decrease in production and labor productivity could result in higher rapeseed oil prices	 Medium	<ul style="list-style-type: none"> <li>- Consider using algae-derived oils and fats and unused biomass.</li> <li>- Multiple supply sources</li> </ul>	Long-term

## Develop Materials for Perovskite Solar Cells

The films for perovskite solar cells, which are expected to form the next generation of solar cells and which are currently being developed, can be manufactured at low cost. In addition, their lightweight and flexible nature enables them to be installed in places where conventional solar cells cannot. Moreover, since power can be generated not only outdoors but also using indoor light, they are expected to be used in a wide variety of applications.

Nippon Fine Chemical is working on the development and practical use of SpiroKite™-NS and other materials used as novel organic hole transport materials that offer high performance for perovskite solar cells, the most promising new renewable energy source.

## Indicators and Targets

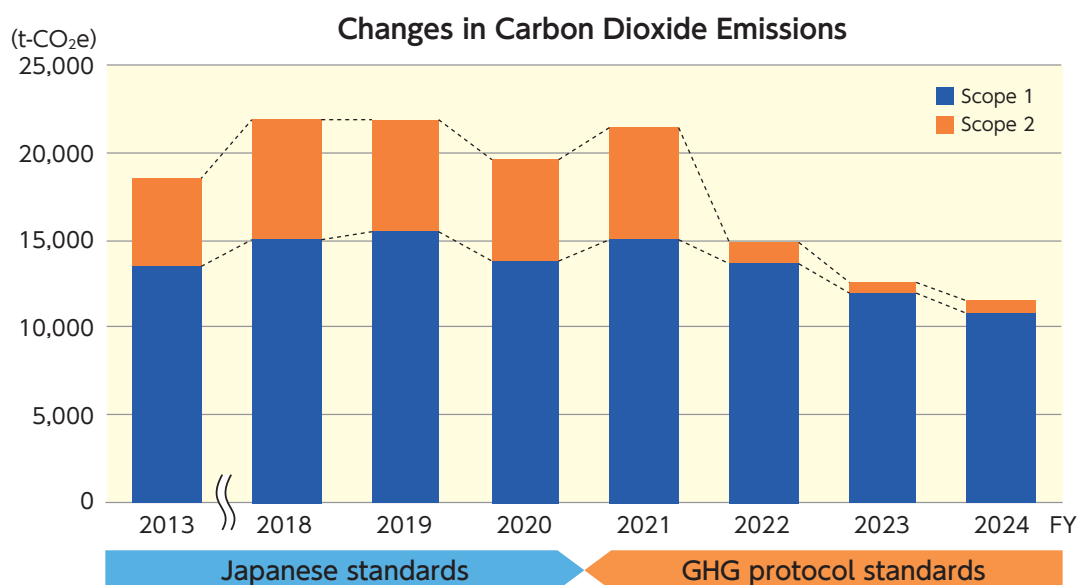
The greenhouse gas emitted by the Nippon Fine Chemical Group is mostly energy-derived carbon dioxide. In October 2021, the Japanese government published a global warming countermeasures plan which called for a 46% reduction in Japan's overall GHG (greenhouse gas) emissions by FY2030 compared to FY2013 levels. Within this overall goal, the industrial sector's target is a 38% reduction in energy-derived carbon dioxide. Nippon Fine Chemical has therefore set a target of reducing Scope 1 and 2\* carbon dioxide emissions by 38% from FY2013 levels by FY2030 and has begun initiatives to achieve this goal. Subsequently, we expanded the scope of calculation to include Group companies ARBOS and Nissei Bilis. Starting in FY2024, we adopted FY2018 as the new base year, when overall emissions could be fully calculated, and set a new target of reducing CO<sub>2</sub> emissions by 41.5% from FY2018 levels by FY2030. We are actively working to achieve this reduction. We will also work to achieve carbon neutrality by 2050. In addition, the state of achievement of materialities, including the reduction of carbon dioxide emissions, is reflected in performance-linked remuneration paid to Directors and Corporate Officers.

Our CO<sub>2</sub> reduction activities have included switching boiler fuel from heavy oil to city gas, improving manufacturing

efficiency, switching to LED lighting, and transitioning to renewable energy for purchased electricity. We will continue to explore further expansion of LED lighting and the transition to renewable energy sources. As a result of these initiatives, we have achieved year-over-year reductions in Scope 1 and 2 emissions.

In addition, in FY2023 we began Scope 3\* calculations for upstream categories in order to reduce carbon dioxide emissions throughout our supply chain. However, we have not yet implemented downstream category calculations due to the difficulty involved. Scope 3 (categories 1 to 8) emissions at Nippon Fine Chemical, ARBOS and Nissei Bilis in FY2024 totaled 113 thousand t-CO<sub>2</sub>e, with category 1 (purchased products and services) accounting for the majority (88%) of Scope 3 emissions. In FY2024, the inclusion of Nissei Bilis, whose operations include a trading division, in the calculations led to an increase in the proportion of Category 1 emissions compared to FY2023. Approximately 14% of Category 1 emissions are attributable to third-party commodity transactions by the Nissei Bilis trading division.

With regard to Scope 3, we are also working to reduce carbon dioxide emissions by switching to naturally derived raw materials and changing modes of transportation.



Note: - Japanese standards: calculated based on Act on the Rational Use of Energy and Act on Promotion of Global Warming Countermeasures

- GHG emissions from FY2021 are calculated based on GHG protocol standards

### Annual carbon dioxide emissions

(t-CO<sub>2</sub>e)

Scope	Company	2013	2018	2019	2020	2021	2022	2023	2024
1	Nippon Fine Chemical	13,514	13,766	14,104	12,505	13,351	11,998	10,462	9,437
	ARBOS	-	-	-	-	335	329	311	288
	Nissei Bilis	-	1,350	1,340	1,255	1,342	1,362	1,282	1,100
2	Nippon Fine Chemical	5,071	6,049	5,890	5,402	5,866	431	25	26
	ARBOS	-	-	-	-	109	164	59	61
	Nissei Bilis	-	713	579	536	512	562	496	507
Total		18,585	21,878	21,913	19,698	21,515	14,846	12,635	11,419

\*Scope 1: Direct GHG emissions from an operator's own fuel combustion

Scope 2: Indirect GHG emissions from the use of electricity and heat supplied by other companies

Scope 3: Indirect emissions not included in Scope 1 and Scope 2 (emissions by other companies related to the company's activities)

## ● Scope 3 Emissions in FY2024

Category	Definition	FY2023 (Total for Nippon Fine Chemical and ARBOS)		FY2024 (Total for Nippon Fine Chemical, ARBOS and Nissei Bilis)	
		Emissions (t-CO <sub>2</sub> e)	Emission percentage (%)	Emissions (t-CO <sub>2</sub> e)	Emission percentage (%)
1 Purchased goods and services	Emissions from activities leading up to the production of raw materials, parts, containers and packaging, etc.	78,548	85	99,464	88
2 Construction and building of capital goods	Emissions from the construction and manufacture of our own capital goods	8,087	9	6,929	6
3 Energy and energy-related activities not included in Scope 1 and 2	Emissions associated with upstream processes of fuel procured (mining, refining, etc.) Emissions associated with upstream processes of electricity procured (mining, refining, etc. of fuels used in power generation)	2,083	2	2,317	2
4 Transportation, distribution (upstream)	(1) Emissions associated with logistics (transportation, loading, and storage) from suppliers of goods and services purchased in the reporting year to the company (2) Emissions associated with logistics services other than (1) purchased in the reporting year (transportation, loading, and storage) (emissions associated with logistics that the company pays for)	2,485	3	2,607	2
5 Waste generated in operations	Emissions associated with transportation and treatment of waste generated by the company	653	<1	687	<1
6 Business travel	Emissions associated with employees' business travel	270	<1	323	<1
7 Employees commuting	Emissions associated with employee travel to and from work	688	<1	761	<1
8 Leased assets (upstream)	Emissions associated with the operation of leased assets leased by the company (excluded due to being calculated in Scope 1 and 2)	0	0	0	0
9 } 13	Downstream categories not calculated due to the difficulty involved	-	-	-	-
14 Franchise	Not applicable	-	-	-	-
15 Investment	Not applicable	-	-	-	-
Total		92,814		113,088	

### 【Calculation method】

Calculated based on the GHG Protocol and the Ministry of the Environment and Ministry of Economy, Trade and Industry's Emission Intensity Database for Calculating Greenhouse Gas Emissions of Organization in their Supply Chains (Ver 3.4).