

Information Disclosure Based on the TCFD Framework
FY2023

NH Foods Ltd.

June 2024

Information Disclosure Based on the TCFD Framework (FY2023)

The NH Foods Group's basic theme is *Joy of Eating*, and one of our corporate philosophies is to create a culture that marks an epoch and contributes to society. With Vision 2030, "unleash new potentials for protein," which was formulated in 2021, we are expressing our desire to continue working to ensure a stable supply of environmentally and socially conscious products, as well as our desire to continue providing consumers with enjoyable day-to-day diets by harnessing free and innovative ideas to expand the potential of protein, leading to the creation of diverse ways to enjoy food.

In 2020, we endorsed the proposal presented by the Task Force on Climate-related Financial Disclosures (TCFD), and in May 2022, we disclosed information such as the results of our scenario analyses.

In FY2023, we made progress on discussions and evaluations regarding the calculation and response to the financial impacts of identified risks.

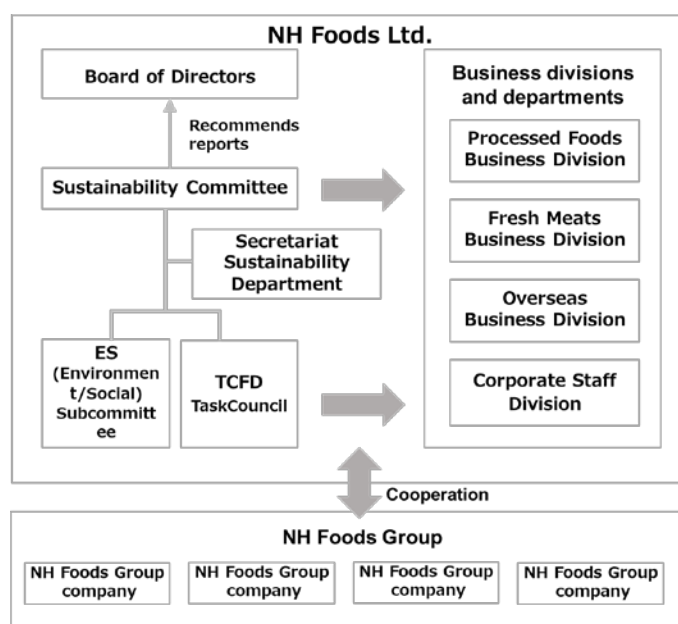
Governance

The NH Foods Group has established a Sustainability Committee with the chairperson of the Board of Directors of NH Foods Ltd. In principle, the Committee meets at least once every quarter. The Committee is responsible for formulating sustainability policies and strategies and checking the status of initiatives at each Group company. The details of these discussions are reported to the Board of Directors, which makes decisions as necessary.

The ES (Environment/Social) Subcommittee and TCFD Task Council operate under the committee and are composed of the director in charge of sustainability and the heads of major departments and divisions. They have been tasked with formulating specific strategies that correspond to discussions by the Committee and developing measures to be carried out by business divisions.

Furthermore, the director in charge of the Sustainability Department, which serves as secretariat for these committees, is responsible for overseeing the sustainability field.

Sustainability promotion framework



Activities by Organization

Organization entity	Role	Organization	Frequency of meetings
Sustainability Committee	Formulation of the Group's sustainability policies and consideration of strategies	<ul style="list-style-type: none"> Directors Outside directors General managers of business divisions Audit & Supervisory Board members/outside experts 	4 times/year
ES (Environment/Social) Subcommittee	Incorporation of strategies determined by the Board of Directors into business divisions and formulation of measures and key indicators concerning key issues	<ul style="list-style-type: none"> Director in charge of sustainability Heads of departments and sections 	4 times/year
TCFD Task Council	Evaluation of the risks and opportunities related to climate and formulation of scenarios	<ul style="list-style-type: none"> Director in charge of sustainability Director in charge of management of each business division Heads of departments and sections and relevant personnel 	2 times/year

Timing	Name of meeting body	Main points of discussion
September 2023	TCFD Task Council	Checked progress in the first half of the year, etc.
February 2024	Sustainability Committee	Reported on progress and disclosure outline
February	TCFD Task Council	Explained and agreed upon the disclosure outline
May	Sustainability Committee	Made a final report on disclosure details
June	Board of Directors	Report

Strategy

With regard to climate change, which is a particularly important aspect of our sustainability strategies, we consider the risks and opportunities posed by climate change for major businesses of the Group, based on the Paris Agreement of 2015, the IPCC's Special Report on Global Warming of 1.5°C in 2018, and the IPCC's Sixth Assessment Report in 2023, to be as follows.

Important risks and opportunities			Occurrence timeframe*1	Impact on business
Physical risks	Rising breeding costs due to increase and instability in feed costs	Hogs and chickens bred in-house	Medium to long term	<u>Financial impact</u> : No impact to 5.3 billion yen <ul style="list-style-type: none"> • Instability in the procurement of raw materials • Rising costs for meat production
		Processed food ingredients (pork)	Medium to long term	<u>Financial impact</u> : No impact to 2.2 billion yen <ul style="list-style-type: none"> • Rising costs for processed food production
	Effect of rising temperatures on livestock growth		Medium to long term	<ul style="list-style-type: none"> • Decrease in meat production • Rising costs for meat production
	Higher risk of water-related disasters at sites		Short to long term	<ul style="list-style-type: none"> • Damage to owned facilities • Decline in manufacturing activity, delayed shipments
	Greater water stress at sites		Short to long term	<ul style="list-style-type: none"> • Decline in manufacturing activity
Transition risks	Rising energy costs from the introduction of a carbon tax		Medium to long term	<u>Financial impact</u> : 13 to 20 billion yen <ul style="list-style-type: none"> • Rising production costs
Opportunities	Increase in environmentally conscious consumption trends		Short to long term	<ul style="list-style-type: none"> • Reduction of packaging costs • Future market acquisition
	Growth of the market for new proteins		Short to long term	<ul style="list-style-type: none"> • Future market acquisition

*1 Short term: Less than 3 years, Medium term: 3–10 years, Long term: Over 10 years

Risk management

We regard the identification and management of climate-related risks to be an important issue for contributing to a sustainable environment. As part of these efforts, the TCFD Task Council identifies risks and opportunities and considers strategies and specific measures. Those items are then deliberated at the Sustainability Committee, which is the next level up, before being deliberated once more and decided upon by the Board of Directors. In addition, company-wide climate change risks have been identified by the Risk Management Committee (*) in a risk map, wherein risks were classified by possibility of occurrence, level of impact, etc., and specific measures to address climate change risks are being discussed and promoted by the TCFD Task Council.

*A committee established as a forum to comprehensively cover company-wide risks, identifying and assessing various risks, identifying priority risks, and considering response policies. Based on the policies of the committee, each business department and unit conducts risk control activities related to their business areas and duties, and the results of these activities are reported to the Board of Directors through the committee, wherein actions are taken as necessary.

Indicators and targets

In order to realize our materiality of contributing to a sustainable environment, the NH Foods Group has set the goal of reducing fossil fuel-derived CO₂ emissions with a view to fiscal 2030 (medium- to long-term environmental target). In addition, we are promoting daily activities to achieve carbon neutrality toward 2050. For physical risks, we have also set indicators related to water stress as medium- to long-term environmental targets, and we are striving to make effective use of water resources.

Indicator	FY2030 target	Subject	FY2022 results
Fossil fuel-derived CO ₂ emissions	Reduce by 46% or more (compared to fiscal 2013)	All sites in Japan	Reduction: -102,828 t-CO ₂ Progress rate: 40.6%
	Reduce by 24% or more (compared to fiscal 2021)	All sites overseas	Reduction: -2,809 t-CO ₂ Progress rate: 8.2%
Water consumption per unit of production	Reduce by 5% (compared to fiscal 2019) FY2030 target reduction: 0.8 m ³ /t	Processing and production sites in Japan	Reduction: +0.2 m ³ /t Progress rate: -25.0%
	Reduce by 5% (compared to fiscal 2021) FY2030 target reduction: 0.6 m ³ /t	Overseas processing and production sites	Reduction: +0.5 m ³ /t Progress rate: -83.3%

As one of the largest protein suppliers in Japan (*), we believe it is our mission to pursue a more environmentally friendly livestock industry. The Group visualizes and discloses greenhouse gas emissions from livestock. To reduce emissions, we are promoting research and development for GHG reduction in cooperation with external research institutions.

*Estimated by the NH Foods Group using data for the weight of products handled, and external data

Reference

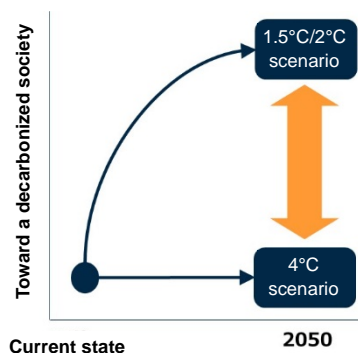
Scope 1 to 3 emissions of the NH Foods Group are disclosed below

(Data Book 2022 (<https://www.nipponham.co.jp/csr/report/2022/pdf/all.pdf>) page 17)

Scenario analyses and response

We set and contrasted two climate change scenario patterns with the key concept of a decarbonized society.

Scenario outline



Pattern	Reference scenario	Assumed worldview
1.5/2°C	SSP1-1.9/2.6 IEA-NetZero	<ul style="list-style-type: none"> Decarbonization trend. Higher regulatory costs, such as carbon taxes Increased interest in climate change, stimulating the new protein market and increasing opportunities to select environmentally friendly products
4°C	SSP3-7.0	<ul style="list-style-type: none"> Increases in feed and meat procurement prices due to rising temperatures, floods, droughts, etc. Effect of rising temperatures on livestock Concerns of water risks at company sites

Scenario analysis results

For FY2023 activities, the financial impact was calculated for high physical risk impact items.

	Risks and opportunities		Financial impact 1.5/2°C to 4°C	Status of response
Physical risks	Rising breeding costs due to increase and instability in feed costs	Hogs and chickens bred in-house	Large (No impact to 5.3 billion yen)	<ul style="list-style-type: none"> Efforts to improve feed conversion ratio (*1.2) Collaborations with feed companies to develop feed using locally produced raw materials Securing grain through recycling-oriented agriculture using in-house hog manure
		Processed food ingredients (pork)	Large (No impact to 2.2 billion yen)	<ul style="list-style-type: none"> Taking climate change into consideration, developing new business partners and expanding procurement sources in and throughout countries and regions Improving manufacturing costs and revising product prices
	Effect of rising temperatures on livestock growth		Medium	<ul style="list-style-type: none"> Implementation of heat control measures
	Higher risk of water-related disasters at sites		Small	<ul style="list-style-type: none"> Strengthening equipment against flood risks Strengthening product supply systems in times of disaster
	Greater water stress at sites		Small	<ul style="list-style-type: none"> Efficient use of water resources at sites with high water stress risks
Transition risks	Rising energy costs from the introduction of a carbon tax		Large (20 to 13 billion yen)	<ul style="list-style-type: none"> Efficient energy use and fuel conversion in processing and manufacturing processes Expanding use of renewable energy Reducing logistics emissions by converting to low-emission vehicles and improving logistics efficiency
Opportunities	Increase in environmentally conscious consumption trends		Medium	<ul style="list-style-type: none"> Developing products with high sustainability value Product development using new proteins Research and development of new proteins
	Growth of the market for new proteins		Large	

*1 Adjusting the composition of grains, etc., in a compound feed to be suitable for growth and promote efficient weight gain

*2 The results of the scenario analysis for feed conversion ratio suggest that there may be a partial impact but not a major impact

Increase and instability in feed costs

[Reason for identification]

The NH Foods Group is in the livestock production business, and it was thought that the price of grain feed might increase in the future due to the growing demand for food caused by population growth, the effects of rising temperatures and droughts, and the possibility of competition from demand for biomass fuels from grains. A scenario analysis was conducted and found that while there may be an increase in revenue with some grains depending on the degree of temperature increase, there may be a decrease in grain revenue and procurement costs may increase under the 4°C scenario due to climate change effects. Since the impacts of climate change vary by livestock type and breeding region, we will continue to analyze those specific risks/opportunities. In addition, feed prices have risen due to the recent destabilization of the situation in grain exporting countries. This trend is likely to continue into the future, so we are continually considering measures.

[Status of response]

With regard to measures to cope with rising grain feed prices, in addition to price revisions of products, we have been working to improve feed conversion ratios for some time now, and are promoting technological development to reduce feed costs.

Furthermore, in order to maintain a stable supply under the influence of rising costs and shortages in meat procurement from outside the Group, we are expanding our procurement sources by developing new suppliers, building a more stable meat procurement network.

[Efforts to secure feed grain using in-house hog manure]

Wheat grown in fields in Hokkaido owned by a Group company is made into feed in cooperation with feed manufacturers and fed to hogs. The manure generated at the hog farms is processed into fertilizer and spread on the fields in an effort to promote recycling-oriented agriculture (*).

*Only applies to some farms

Effect of rising temperatures on livestock growth

[Reason for identification]

The environment, such as temperature and humidity, greatly affects the growth of livestock. Analyses in Japan, Australia, and Turkey, where the NH Foods Group's production and breeding sites are located, showed that daily weight gain may deteriorate as temperatures rise. We also believe that rising temperatures will pose a potential long-term risk to meat procurement costs from outside the Group.

[Status of response]

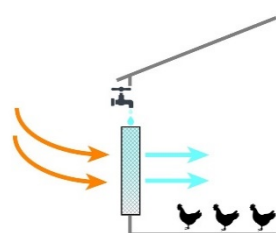
Livestock	Country	Main measures
Chickens	Japan	Cooling pads, misting equipment
	Turkey	Cooling pads
Hogs	Japan	(All areas) Shading nets (Some areas) Spot coolers, cooling pads, roof sprinklers, additional airflow and exhaust fans
Cattle	Australia	Installation of sunshades per section

[Installation of cooling pads/misting equipment for poultry houses]

Cooling pads (*1) and misting equipment (*2) are being installed to prevent heat buildup in poultry farms. We changed our policy to install misting equipment on farms in the Tohoku region, for which there were no installation plans up to the previous fiscal year, in consideration of the impact of sudden temperature changes and future temperature rises. Progress regarding the installation schedule is shown in the table below. In the future, we will further improve breeding management and study the development of technology to improve production performance under hot conditions.

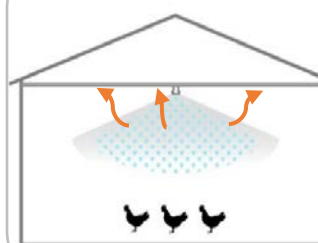
Country	Geographic area	Installation rate
Japan	Hokkaido	84%
	Aomori, Yamagata, Niigata	80%
	Miyazaki, Kagoshima Oita, Kumamoto	100%
Turkey	Izmir	100%

*1 Cooling pads



Cooling pads are moistened pads placed at the outside air intakes to cool the air using the heat of vaporization as outside air passes through.

*2 Misting equipment



Misting equipment sprays misty water into a poultry house, and by evaporating the misty water, the heat of vaporization lowers the air temperature.

Higher risk of disasters at sites

[Reason for identification]

It is said that the risk of severe disasters will increase as extreme weather increases due to climate change. Of the Group's farms, processing and production plants, and logistics centers, the NH Foods Group confirmed that some of its domestic and overseas sites are located in areas at high risk of flooding and storm surges.

[Status of response]

For sites located in high flood risk areas, interviews were conducted on the current state of response, etc. The impact of flooding remained insignificant. We will continue to monitor risks.

Geographic area		Number of sites	Water-related disasters*1		Main response	Risk assessment
			Flood	Storm surge		
Asia		212	11	3	-	-
Breakdown	Japan	205	6	2	<ul style="list-style-type: none">• Review of BCP, including the supply structure of major products• Insurance against flood damage	Minimal
	China/Taiwan	2	1	0	<ul style="list-style-type: none">• On-site checks confirmed a low likelihood of occurrence	Minimal
	Southeast Asia	5	4	1	<ul style="list-style-type: none">• Measures such as raising the floor level of equipment have been implemented• Joint measures have been implemented in industrial parks	Minimal
Oceania		8	0	1	<ul style="list-style-type: none">• Sites are dispersed, so even in the unlikely event of a natural disaster, the impact on business would be minimal	Minimal
North America		2	0	0	-	
South America		1	0	0	-	
Middle East		1 *2	1	0	<ul style="list-style-type: none">• On-site checks confirmed a low likelihood of occurrence	Minimal

*1 We referred to hazard maps for domestic sites and the World Resources Institute's Aqueduct tool for overseas sites

*2 For administrative purposes, multiple locations are counted as one location

Greater water stress at sites

[Reason for identification]

For the Group's farms and processing/manufacturing plants, we assess water stress and monitor water withdrawals in high-stress areas. The survey revealed that while many of the sites have low water stress, some are located in areas that are considered high stress.

[Status of response]

We continue to conduct interviews with sites located in areas considered to have high water stress. When we checked the situation again in fiscal 2023, there was no change.

We will continue to monitor risks related to water stress. We will also continue our efforts to achieve our environmental targets.

Country/region	Number of sites	Number of sites in water-stressed areas*1		Main response	Risk assessment
		1.5/2°C	4°C		
Breakdown	Asia	196	4	5	-
	Japan	189	0	0	-
	China/Taiwan	2	0	0	-
	Southeast Asia	5	4	5	Based on the business impact of past water stress and on-site interviews, the risk was judged to be minimal
	Oceania	8	0	0	-
	North America	2	1	1	Based on the business impact of past water stress and on-site interviews, the risk was judged to be minimal
	South America	1	0	0	-
	Middle East	1	1	1	Based on the business impact of past water stress and on-site interviews, the risk was judged to be minimal

“Water withdrawals in high water stress areas (FY2022)”

	Group overall	(Of those) High water stress region at 4°C
Number of production facilities	208	7 (3.4%)
Water withdrawal amount (1,000 m ³)	16,311	1,149(7.0%)

*1 Refer to the World Resources Institute' Aqueduct tool

Higher costs due to carbon tax

[Reason for identification]

In the 1.5°C/2°C scenario, a carbon tax on fossil fuel-derived CO₂ emissions was considered. The financial impact assessment identified the potential for a significant impact on business. However, in the medium to long term, there is a possibility of introducing a carbon tax on emissions from livestock, and we will consider measures to reduce these emissions.

The price of fossil fuels also continues to rise due to the impact of the international situation. If this situation continues to 2030, domestic electricity prices could be affected by about 1 to 2 billion yen per year compared to 2022.

Scenario	Geographic area	Item	2030	2050
Assuming 2022 emissions	Domestic	Carbon tax impact (hundred million yen)	84	161
		Emissions (1,000 t-CO ₂)	459	459
	Overseas	Carbon tax impact (hundred million yen)	26	49
		Emissions (1,000 t-CO ₂)	141	141
Assuming achievement of reduction targets (Horizontal drop from 2030)	Domestic	Carbon tax impact (hundred million yen)	54	104
		Emissions (1,000 t-CO ₂)	297	297
	Overseas	Carbon tax impact (hundred million yen)	20	38
		Emissions (1,000 t-CO ₂)	109	109

* Financial impact is calculated using FY2022 emissions vs. if FY2030 reduction targets are achieved

* Carbon tax pricing reference: Net Zero by 2050 scenario from the IEA World Energy Outlook 2021 (equivalent to 1.5°C target)
Set price: FY2030: 130 USD/t-CO₂, FY2050: 250 USD/t-CO₂, \$1 USD = 140 yen

[Status of response]

Reduction of fossil fuel-derived CO₂ emissions

- Promote the introduction of solar power generation on Company premises, etc.
- Use waste oil boilers that utilize used frying oil as well as recovered oil in wastewater as fuel

Initiative	Number of installed locations in 2021	Number of installed locations in 2023 *1	CO ₂ reduction *2,3
Solar panels	Operation: 8 sites (2,442 MWh)	Operation: 29 sites (7,254 MWh/year)	2,855 t-CO ₂
Waste oil boilers	Operation: 5 sites	Operation: 7 sites	Approx. 2,100 t-CO ₂

*1 Jan–Dec 2023 results

*2 Calculated based on electricity supplier emission factors at sites where photovoltaic power generation is installed

*3 CO₂ reduction by waste oil boilers is estimated figures for FY2023

- We are aiming to operate a carbon neutral farm by 2026 by supplying electricity generated by a solar power generation facility with an annual capacity of approximately 3,000 MWh to be installed in the town of Nanporo, Hokkaido, to the Group's hog facilities, as well as by improving the efficiency of energy use and offsetting through biogenic GHG credits
- Installation of a wastewater-derived biogas plant in Australia
- Introduction of energy-saving equipment
- Incorporation of the concept of Internal Carbon Pricing (ICP) when installing and updating equipment that costs more than a certain amount, and raising awareness of CO₂ costs

Reduction of livestock-derived greenhouse gas emissions

- The domestic hog farming business uses biogas generated from waste and wastewater treatment as energy
- Research to reduce methane emissions from livestock

Partner	Research theme
Hokkaido University	Development of methane emission suppression method in bovine lumen
Tokushima University	Research on greenhouse gas emissions in pigs

Increase in environmentally conscious consumption trends

In a decarbonized society, concern over climate change is expected to increase, making it easier to select companies and products that are more environmentally friendly. The NH Foods Group recognizes the growing importance of realizing sustainability values and communicating them to consumers.

For this reason, we aim to provide sustainable products and services by promoting initiatives throughout the Group aimed at creating a sustainable society. Furthermore, in order to meet consumer expectations, we are actively working on sustainable packaging and developing products with a low environmental impact.

[Status of response]

Reduction of CO₂ emissions through reduced use of plastics

- The use of plastic has been reduced by 21% through the introduction of non-tray packaging for *Chuka Meisai*. In 2023, the number of target products was expanded (from 2022)
- Packaging for major wiener products was changed to eco-friendly pillow-type packaging. Packaging material weight was cut by 28% (from 2022)
- Change of packaging form for *Ishigama Kobo*, review of packaging size, 2.4% decrease in tray size (from 2024)
- Change the containers of *Ísey SKYR* from plastic to paper. (from 2022)
- Use of plastics made from biomass as part of their raw materials. This applies to certain processed food products, *Sakurahime* chicken, and *Kitanokomekokko*



Chuka Meisai

Eliminated trays from packaging, reduced plastic

used by approximately 21%*

*Calculated based on the number of shipments of 10 out of 15 *Chuka Meisei* products in 2021



Main wiener products

Packaging changed from a drawstring pouch type to an eco-friendly pillow type, reducing packaging material weight by 28%*

Compared with the two-127-g drawstring pouch bundle pack of SCHAU ESSEN (film weight ratio)



Sakurahime,

Kitanokomekokko

Biomass materials are used for some packaging plastic

Growth of the market for new proteins

In the future, the market is expected to expand, including new proteins in addition to the meat market, against the backdrop of increasing demand for protein due to global population growth. Furthermore, the market for new proteins is expected to grow significantly due to increased health consciousness, changes in consumer attitudes, and technological innovations associated with the transition to a decarbonized society. Although estimates of the future market size for new proteins published by external organizations vary, in a scenario where the ongoing transition to decarbonization continues, the global market is expected to exceed several tens of trillions of yen. As such, we continue to engage in research and development as we expect large business opportunities to arise in the medium to long term.

[Status of response]

- The *NatuMeat* range of plant-based products are being developed for consumers, restaurants, and distribution companies, and overseas expansion is also being considered



- We are developing alternative products for marine products, such as tuna sashimi, popcorn shrimp, and fish-style fried foods



Plant-based
tuna sashimi



Plant-based
popcorn shrimp

- We are conducting joint research with external research institutions and startups regarding cell-based food (cultivated meat) made from a large number of livestock-derived cells
- We are carrying out research for future commercialization, including the development of a cheaper method to grow cells using food-based culture media instead of costly animal serum



Cell-based food prototype created using
company technology