

# Environmental

- 25 Management approach
- 26 Responding to climate change
- 31 Using resources effectively
- 33 Reducing plastics
- 34 Reducing food loss
- 35 Effective use of water resources
- 36 Biodiversity conservation

## Management approach

## We have set and are working toward environmental targets in accordance with our Environmental Policies.

## Management approach

Gratitude for the gifts of nature—this is the fundamental approach regarding environment measures of the NH Foods Group.

We foster the lives of cattle, pigs, chickens, and other livestock amidst the nature created by the environment of the earth and benefit from the bounty of nature.

We believe that it is our responsibility to protect the natural environment that nurtures these lives and cherish the bounty of nature without waste.

## Environmental Policies of the NH Foods Group

In appreciation of nature's blessings, we at the NH Foods Group will promote environmentally sound business activities toward the realization of a sustainable society.

**1. Environmentally conscious products and services**  
We will strive to develop products and provide services that are environmentally conscious.

**2. Improvement of environmental performance**  
We will strive to conserve energy and resources and reduce adverse environmental impact that may arise during the course of our business activities.

**3. Continual improvements**  
We will make continual improvements through the effective application of our environmental management system.

**4. Compliance**  
We will strive to enhance the level of our environmental conservation by complying with applicable legal requirements and, when appropriate, setting our own requirements.

**5. Cooperation with communities**  
We will work together with our host communities to promote environmental activities through close communications with them.

## Environmental targets and results

The NH Foods Group has set environmental targets for each of our three-year medium-term management plans, and we work to achieve these targets. Our targets and results for Medium-Term Management Plan 2020, which ended in fiscal 2020, are as follows.

➡ For details regarding our medium- to long-term environmental targets (to fiscal 2030), which we started working toward in fiscal 2021, please see p. 17-18.

## Medium-Term Management Plan 2020 targets and results

| Action items                 |  | Baseline<br>(Average between fiscal 2012 and fiscal 2016) | Targets<br>(Average between fiscal 2018 and fiscal 2020*) | Results<br>(Average between fiscal 2018 and fiscal 2020),<br>(from the Baseline) |
|------------------------------|--|---|---|--|
| Mitigation of climate change | CO <sub>2</sub> emissions per unit of production | 701.1kg-CO <sub>2</sub> /t                                | 8.0% reduction (from the baseline)                        | <b>10.0% reduction</b>   |
|                              |  |   | 645.1kg-CO <sub>2</sub> /t                                | <b>631.0kg-CO<sub>2</sub>/t</b>  |
| Resource saving              | Thermal energy per unit of production            | 12.0GJ/t  | 8.0% reduction (from the baseline)                        | <b>3.3% reduction</b>  |
|                              |  |   | 11.0GJ/t  | <b>11.6GJ/t</b>  |
|                              | Water consumption per unit of production*1       | 17.7m <sup>3</sup> /t                                     | 3.0% reduction (from the baseline)                        | <b>4.5% increase</b>   |
|                              |  |   | 17.2m <sup>3</sup> /t                                     | <b>18.5m<sup>3</sup>/t</b>   |
|                              | Discharged waste per unit of production*2        | 207.5kg/t   | 6.0% reduction (from the baseline)                        | <b>14.3% increase*3</b>  |
|                              |  |   | 195.1kg/t   | <b>237.1kg/t</b>   |
| Promotion of recycling       | Waste recycling rate                             | 90.8%   | 94.0% or above  | <b>88.9%</b>   |

Note: • CO<sub>2</sub> emissions and thermal energy calculated by using factors stipulated in Japan's "Act on Promotion of Global Warming Countermeasures" each year  
 • Coverage of the Plan: NH Foods Group business sites in Japan • Primary unit of each intensity is per unit of product  
 \*1: Water consumption includes some estimated values from production departments \*2: Excluding farm excreta  
 \*3: Excluding the waste from Typhoon Jebi and the Hokkaido Eastern Iburi earthquake in 2018

## Environmental management system

We strive to reduce adverse environmental impact and comply with laws and regulations in accordance with the Environmental Policies of the NH Foods Group.

The environmental data of each company and operating division and the management of progress made toward targets is handled by the Sustainability Committee. When necessary, the committee discusses issues and relevant measures and provides direction on matters such as response. Following this, the Sustainability Department, which acts as the committee secretariat, coordinates with the relevant business divisions to

build an implementation structure.

In fiscal 2020, there were no accidents that severely affected the environment or violations of laws and regulations.

## Acquisition of ISO 14001 certification

The Group is working to acquire certification under ISO 14001, the international standard for environmental management systems, as a foundation for its environmental preservation activities (as of March 2021).

Sites with  
certification  
in fiscal 2020:

27

Percentage of  
certified sites:

4.7%

## Responding to climate change

## We are working to reduce greenhouse gas emissions in our supply chains.

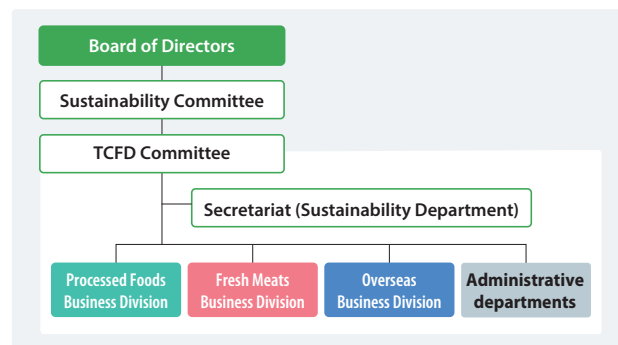
## Basic views

At the 21st United Nations Climate Change Conference (COP 21) in 2015, the Paris Agreement was adopted, which included setting a target to keep the increase in global average temperature to below 2°C above pre-industrial levels, and limiting it to 1.5°C if possible. The NH Foods Group recognizes that climate change is a pressing issue and we are working to reduce our greenhouse gas emissions.

In 2018, we joined the Japan Climate Initiative\*1 and in June 2020, we endorsed the proposal presented by the Task Force on Climate-related Financial Disclosures\*2 (TCFD) and became a member of TCFD Consortium\*3. In fiscal 2021, we established the TCFD Committee to evaluate the risks and opportunities accompanying climate change and following this, to formulate potential scenarios for conducting scenario-based analysis.

This analysis will be the basis for incorporating measures for reducing CO<sub>2</sub> emissions derived from fossil fuels, such as the use of renewable energy, into our business plans. We will also carry out comprehensive information disclosure.

## Framework

Group-wide CO<sub>2</sub> emission trends and ratios (Japan)

## FY2020 results (compared with FY2019)

CO<sub>2</sub> emissions intensity

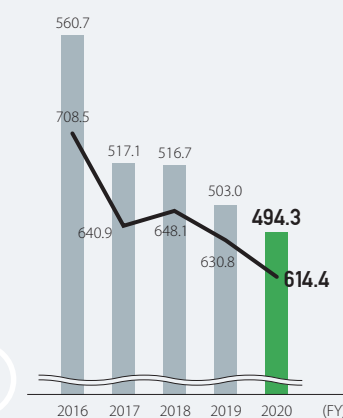
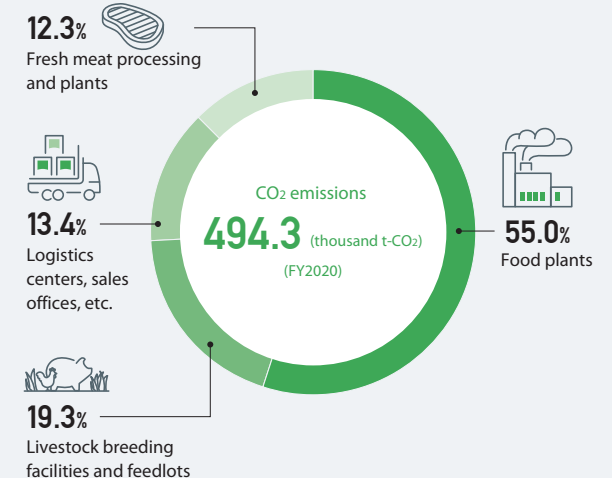
CO<sub>2</sub> emissions intensity down **2.6%**

CO<sub>2</sub> emissions

CO<sub>2</sub> emissions down **1.7%**

CO<sub>2</sub> emissions and intensity

■ CO<sub>2</sub> emissions (unit: thousand tons-CO<sub>2</sub>)  
— CO<sub>2</sub> emissions intensity (unit: kg/tons)

CO<sub>2</sub> emissions breakdown

Scope: Overall domestic operations of the NH Foods Group



\*1 **Japan Climate initiative:** A network that aims to strengthen the distribution and exchange of information among companies, local governments, NGOs, and others in Japan in order to achieve a low-carbon society. CDP Worldwide-Japan, WWF Japan, and the Renewable Energy Institute serve as the secretariat.

\*2 **Task Force on Climate-related Financial Disclosures:** A task force established in 2015 by the Financial Stability Board (FSB), an international organization in which central banks and financial regulators from major countries participate. In June 2017, the final report released recommendations on voluntary disclosure with the aim of encouraging companies and other organizations to identify and disclose the financial impacts of climate change risks and opportunities.

\*3 **TCFD Consortium:** The consortium was established to discuss measures by companies and financial institutions that endorse the TCFD to effectively disclose information and use disclosed information to make appropriate investment decisions by financial institutions and other entities.

## Reducing greenhouse gas emissions from livestock

In Japan, we are working with universities to advance joint research on the intestinal flora of pigs and its relationship to greenhouse gas emissions.



## Responding to climate change

## Here are some examples of our initiatives for reducing greenhouse gas emissions.

## Switch to LED lighting

We are aiming to gradually switch to LED lighting as the standard lighting in properties we own at Group business sites in Japan.

As of the end of March 2021, as one of the milestones of the initiative, we have switched about 75% of our target of around 70,000 fittings.

## Switch to hybrid vehicles

We are aiming to gradually switch from gasoline-based vehicles (excluding certain vehicles such as trucks and light vehicles) to hybrid vehicles\* as the standard vehicles for business use in Japan.

As of the end of March 2021, as one of the milestones of the initiative, we have switched about 60% of our target of around 800 vehicles.

We are working to switch the remaining 40% by the end of March 2022 at the latest, in line with our initial plan.

\* Regarding eco-cars, we are switching to hybrid vehicles when leases come up for renewal.



Switch to hybrid vehicles (NH Foods Marketing, Ltd. Hiroshima Office)

## Installation of solar panels

We are installing solar panels at business locations such as plants and logistics centers.

## Example initiative at Nippon Logistics Center, Inc.

Nippon Logistics Center, Inc., which engages in the storage and shipping of fresh meat, installed a total of approximately 6,200 solar panels on the roofs of warehouses at its Tokyo and Kansai business sites. The annual power generation of the two sites is 1.44 million kWh, equivalent to the annual power consumption of about 400 general households.

As a result, CO<sub>2</sub> emissions have been reduced by 600 tons annually.

## Example initiatives at Nippon Pure Food, Inc.'s Nishinomiya and Iseaki Plants

Nippon Pure Food, Inc. engages in the manufacture and sale of processed meat and meat extract seasonings and in August 2020, it installed solar panels at its Nishinomiya Plant. The plant contains a large amount of refrigeration equipment, which consumes a lot of electricity, especially in summer, so finding ways to reduce this consumption had been a challenge. In the first month after

the panels were installed, they successfully generated about 45,000 kWh, resulting in a reduction in CO<sub>2</sub> emissions of around 20 tons. This is realizing an estimated CO<sub>2</sub> emissions reduction\* of 140 tons per year.

Additionally, in April 2021, the company installed solar panels at its Iseaki Plant. While the surface area of these panels is double the area of the panels at the Nishinomiya Plant, the Iseaki Plant receives more hours of sunlight in a day and the panels have been placed at an orientation that makes it easier to absorb this sunlight, meaning it can generate around two and a half times more. They are realizing an estimated CO<sub>2</sub> emissions reduction\* of 300 tons per year.

In addition to the installation of solar panels, the Iseaki Plant is also equipped with other systems that help to reduce environmental impact. One of these is a central monitoring system that enables it to monitor the state of electric power, gas, water, hot water, and steam usage, thereby facilitating energy saving.

\* CO<sub>2</sub> emissions reductions are calculated using the emission factors of the power company supplying each location.



Nippon Logistics Center, Inc. Tokyo Office



Nippon Pure Food, Inc. Nishinomiya Plant



Nippon Pure Food, Inc. Iseaki Plant

## Responding to climate change

## Here are some examples of our initiatives for reducing greenhouse gas emissions.

## Using waste oil produced by plants

We are installing waste oil boilers that use waste animal and vegetable oils produced during the manufacture of food products as a fuel. This helps reduce CO<sub>2</sub> emissions by decreasing the amount of heavy fuel oil and natural gas used in regular boilers.

In fiscal 2020, waste oil boilers were installed at the Kanto Plant of Nipponham Processed Foods Ltd., which is engaged in the manufacture of processed foods (deli products). In fiscal 2021, waste oil boilers that use waste oil from deep fryers are scheduled to be installed at the Niigata and Hokkaido Plants of Nipponham Delicatessen Ltd., which also manufactures processed foods (deli products).

## Example initiative at Nipponham Processed Foods Ltd.'s Kanto Plant

In fiscal 2020, Nipponham Processed Foods Ltd. started using waste oil boilers at its Kanto Plant. Animal and vegetable oils that have been separated and purged from plant wastewater held in raw water tanks is recovered in a heated tank and purified. It can then be used as fuel for the waste oil boilers. The amount of oil used as fuel each year is substitute for about 400kL of natural gas, realizing an estimated annual reduction in CO<sub>2</sub> emissions of 1,000 tons.

## Adoption of equipment that uses natural refrigerants

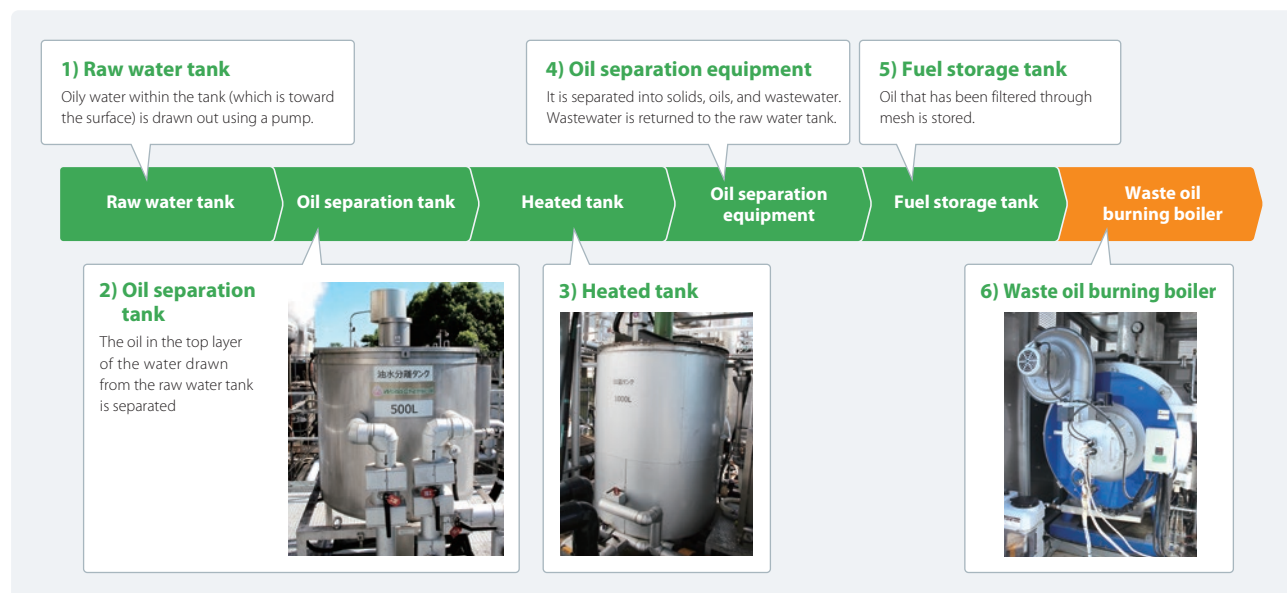
## Example initiative at Nippon Daily Net Co., Ltd.

Nippon Daily Net Co., Ltd., which handles the distribution of hams, sausages, and other processed foods (deli products), has installed fluorocarbon-free refrigeration units that use ammonia, a natural refrigerant, as a refrigerant at its Nagoya 2nd Center, which was completed in May 2020.



Nippon Daily Net Co., Ltd.'s Nagoya 2nd Center  
Fluorocarbon-free refrigeration units

## Oil recycling system (waste oil boiler)



## What are natural refrigerants?

In the past, specific chlorofluorocarbons (CFCs) were commonly used as a refrigerant for refrigerators and freezers. This was because they are not very toxic to the human body and are extremely stable in terms of chemistry, which makes them easy to handle. However, the impact of CFCs on the global environment, such as the depletion of the ozone layer, became apparent so there was a shift toward replacing them with CFC substitutes that have less impact. Unfortunately, although CFC substitutes do not deplete the ozone layer, they do make a substantial contribution to the greenhouse effect, which is a cause of global warming. Therefore, in recent years there has been greater focus on using natural refrigerants, such as ammonia and CO<sub>2</sub>, as their contribution to the greenhouse effect is minimal.

## Responding to climate change

## Here are some examples of our initiatives for reducing greenhouse gas emissions connected to logistics.

## Reducing deliveries by truck

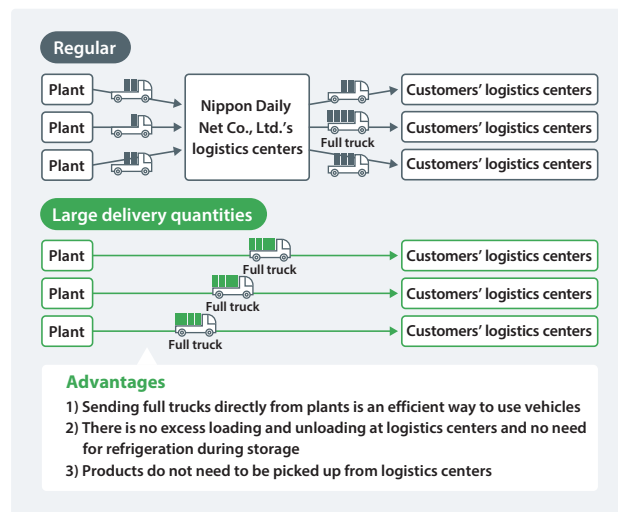
## Expansion of direct deliveries from plant to customer

We are expanding direct deliveries of hams, sausages, and other processed foods (deli products) from plants to Customers' logistics centers.

Usually, products from each plant are transported to logistics centers operated by Nippon Daily Net Co., Ltd., and then a mix of products are delivered to the logistics centers owned by our customers. In cases where a large number of a specific product is ordered, a filled up truck will make a delivery from the plant directly to the customer's center.

We launched this initiative in 2018 and as of April 2021, we have established 80 direct delivery routes around Japan. This has reduced our total number of truck deliveries by around 50 to 60 per month.

## Transportation tactics to reduce truck deliveries



## Integrating logistics within the Group and implementing joint deliveries with other companies

In the Processed Foods Business, in regard to the distribution of hams, sausages, and other processed foods (deli products), we have been working to improve the use of truck carrying capacity by reducing the total number of vehicles by integrating logistics between plants and making deliveries to stores and customers' logistics centers more efficient.

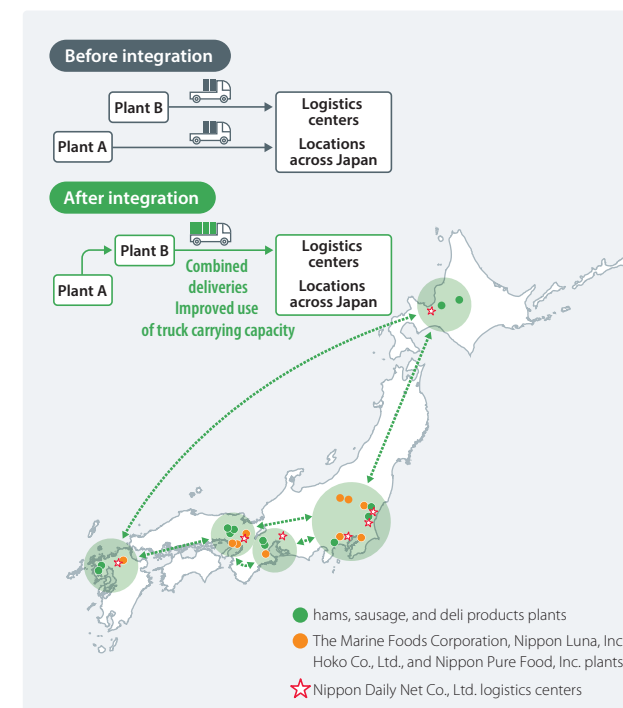
In fiscal 2020, we began a logistics integration project for the Processed Food Business that incorporated The Marine Foods Corporation, which handles marine products, Nippon Luna, Inc., which both handle dairy products, Hoko Co., Ltd., and Nippon Pure Food, Inc., which handles processed meats and meat extract seasonings, and we are now working toward further logistics integration. For example, as we have plants, logistics sites, and sales bases in each area of Japan, we are combining deliveries from plants that are located alongside major transport routes between areas. Additionally, our efforts are not limited to within the Group, we are also implementing joint deliveries with many companies, including with businesses in the same industry and different industries.

Although these initiatives have just started, we are already seeing some benefits from improving the use of truck carrying capacity and combining deliveries. Going forward we will contribute to reducing the environmental impact of our logistics by further enhancing and developing initiatives to improve efficiency.

## Installation of digital tachographs

Since fiscal 2018, four NH Foods Group companies that sell fresh meat have equipped their vehicles with digital tachographs. These record drive data in real time while the vehicles are

## Integrating logistics by area across Japan



being driven and visualize aspects such as sudden starts, emergency braking, unnecessary idling, and dangerous driving. We predict that this will improve the safety consciousness of drivers and reduce CO<sub>2</sub> emissions by improving fuel consumption.

Kanto Nippon Food, Inc. installed the devices in fiscal 2018 and saw improvements in fuel consumption in the same year.



## Responding to climate change

## Here are our initiatives for conducting life cycle assessments.

## Carbon footprint measures

Before products reach customers and are consumed, there are five major stages starting with procurement of basic ingredients (such as meats and wheat), production, processing and ending with disposal and recycling of product packaging (see figure to the right). We calculate how much of an environmental impact each of these five stages has and take measures to address the carbon footprint using the method of life cycle assessment\* to evaluate the impact.

\* **Life cycle assessment:** A method of evaluating the environmental impact of products and services. An environmental assessment is intended to evaluate environmental impact in advance, primarily of large-scale development and so on, but a life cycle assessment identifies the environmental impact of individual products in each stage from production to shipping, sale, use, disposal, and re-use.

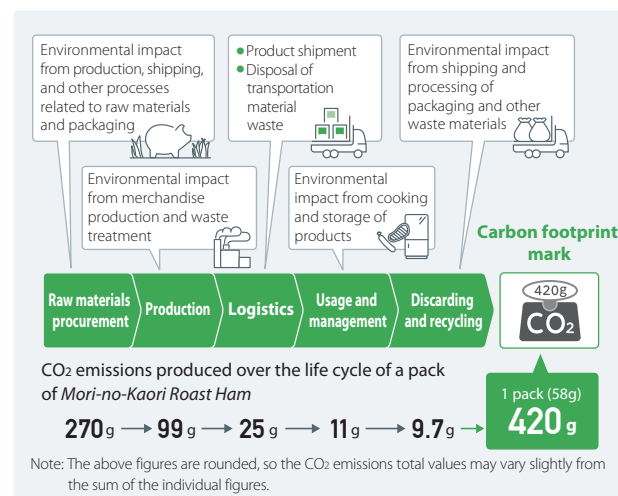
Reducing CO<sub>2</sub> emissions in supply chains

We are switching to biomass-derived materials for some of the materials we use in the packaging for the products we supply to customers. This reduces the amount of fossil fuels used compared to previous packaging materials and it is also expected to reduce CO<sub>2</sub> emissions produced in areas such as waste disposal.

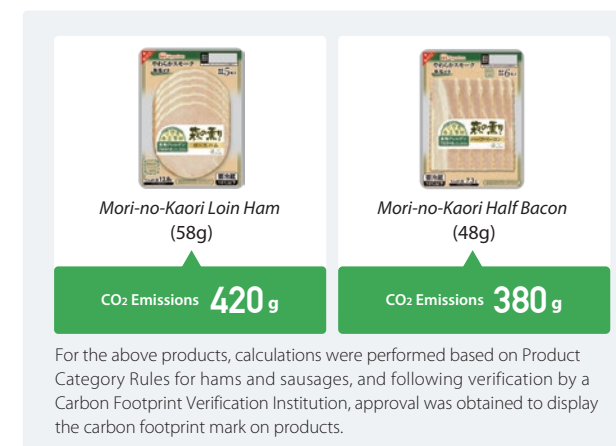
In addition to reducing the CO<sub>2</sub> emissions generated by the Group, we are also working to reduce emissions throughout our entire supply chains.

➡ For other initiatives, such as packaging and container initiatives, see p. 33.

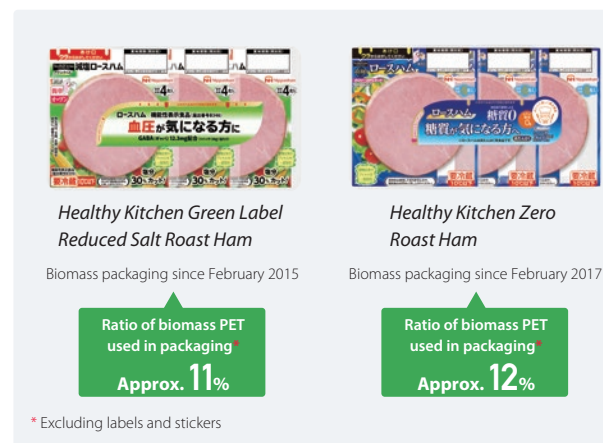
## Carbon footprint through a product's life



## Products with the carbon footprint mark



## Products that use biomass packaging



TOPICS

## Carbon neutral\* initiatives

In June 2021, Breeders & Packers Uruguay S.A. (BPU), which is engaged in the processing, packing, and sale of beef in Uruguay, concluded an agreement with Montes del Plata, a major Uruguayan forestry company, to work together on a carbon neutral initiative. This will involve BPU planting trees in the farms of its suppliers in order to absorb and fix CO<sub>2</sub> found in the atmosphere in order to offset the greenhouse gas emissions generated during the raising and production of cattle.

In addition to leading the industry in advancing initiatives to reduce greenhouse gas emissions, BPU is also applying a carbon neutral concept to its products in order to promote ethical consumption through these products.

\* Carbon neutrality is when the amount of greenhouse gases, such as CO<sub>2</sub>, emitted is equal to the amount absorbed.



## Using Resources Effectively

## We are respecting the bounty of nature by using resources effectively.

## Basic views

The sources of the Group's business are the gifts of the earth and its expansive natural environment as well as the vast bounty of nature. Therefore, we believe in using this bounty with respect and leaving nothing to waste. However, it is inevitable that various unneeded things will be generated through business activities and production processes.

We work to reduce the generation of these unneeded things as much as possible by introducing new technologies that enable us to use them effectively. In this way, we ensure the effective use of limited resources.

## Effective use of the bounty of nature in production

The Group has created a Vertically Integrated System from raising and producing livestock to marketing, for cattle, pigs, and chickens. Through this system, we provide safe and secure products to customers and are able to make full use without waste of the various resources generated during meat processing (such as bones and hides).

Bones are boiled to make ingredients for soup and condiments, and hides are used as a material for bags and other products. In addition, collagen is extracted for use as an ingredient in health foods.



## Changes in waste generated and waste per unit of production by the Group in Japan

## FY2020 results

## Waste generated

**403**  
thousand tons

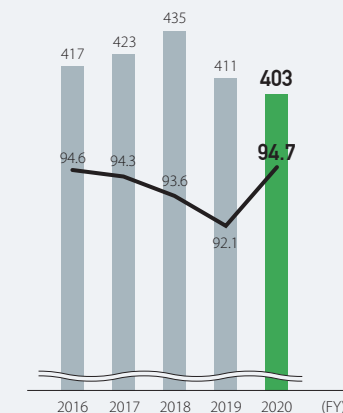
## Waste recycling rate\*

**94.7%**

\* Based on annual amount of waste generated

## Waste generated and waste recycling rate

■ Waste generated (unit: thousand tons)  
— Waste recycling rate (unit: %)



## Breakdown of generated waste

1.9%

Logistics centers,  
sales offices, etc.



22.0%

Food plants



29.3%

Fresh meat processing  
and plants

Waste generation  
**403** thousand tons  
(FY2020)



46.8%

Livestock  
breeding  
facilities and  
feedlots

Scope: Overall domestic operations of the NH Foods Group

## Research and development that helps keep bio-resources healthy

The NH Foods Ltd. Research & Development Center uses the Group's abundant bio-resources to conduct research and development that is useful for healthy lifestyles.

We obtain collagen, placenta extract, chondroitin, and other functional materials from pig and chicken cartilage, pig placentas, and other organs, which in the past were not adequately utilized. We scientifically evaluate them for safety, effectiveness, and so on, and then commercialize them.





## Using Resources Effectively

## Using livestock manure effectively.

## Resource recycling within the Group

## Effective use as fertilizer and fuel

The Group also uses the manure generated from raising cattle, pigs, chickens, and other livestock by processing it into fertilizer, fuel, and other materials for effective use both in Japan and overseas.

Some of the chicken manure produced is incinerated in a boiler for use as a heat source to produce hot water for heating and cleaning poultry houses. In addition, pig manure and some chicken manure is organically decomposed using bacteria to produce organic fertilizer. This fertilizer has exhibited effects on the cultivation of vegetables, flowers, and other crops and is recognized as a high-quality fertilizer. We are also cultivating feed crops using this fertilizer.



A fertilizer plant of Interfarm Co., Ltd.



Tsubumaru and Bunta Jr pig manure fertilizers

## Resource recycling in collaboration with third parties

## Japan's first chicken manure power generation business

In Miyazaki Prefecture, the Group is engaged in business activities in all processes, ranging from production to treatment, processing, manufacturing, and sales.

As part of these activities, our Miyazaki Production Division, which is in charge of the production, treatment, and processing of chicken, ships approximately 83,000 chickens per day raised at contracted production farms. In order to appropriately treat the excrement generated as these chickens are raised, Nippon White Farm Co., Ltd. established Miyazaki Biomass Recycle Co., Ltd. as

## Power generation process

## Cyclical ecosystems (biomass power generation)



## The flow from chicken manure to electric power

Approximately 43,000 tons of poultry manure is generated each year from production farms contracted by the Miyazaki Production Division of Nippon White Farm Co., Ltd.

Approximately 90% of it is delivered to Miyazaki Biomass Recycle Co., Ltd., to generate electricity from the energy produced from incineration.

## Incineration capacity of Miyazaki Biomass Recycle Co., Ltd.

Amount of incinerated poultry manure:

**132,000 tons/year**

Amount of power generated:

**76,662 MWh/year\***

Note: Compared with coal thermal-power generation, this is equivalent to a CO<sub>2</sub> reduction of 66,000 tons and annual power consumption for approximately 20,000 general households.



## The flow from incineration ash to fertilizer

The ash remaining after chicken manure is incinerated is purchased by the Miyazaki Environmental Preservation Agricultural Cooperative, sold to NH Foods Ltd., fertilizer producers, and others, and distributed on the market. The incineration ash is sold as organically-derived fertilizer that contains phosphorous and potassium and contributes to improving soils. Chicken manure is continuously and effectively used as a resource, leading to reductions in the environmental impact and cyclical use in cooperation with other companies.

## Amount of incineration ash generated annually

**Approx. 12,000 tons per year**



Japan's first chicken manure power generation business in May 2003 through joint investment by parties including poultry farmers, local agricultural cooperatives and other businesses\* in Miyazaki Prefecture. The company has the capacity to generate 76,662 MWh annually, which is enough power to supply roughly 20,000 residential households. It has sealed facilities as a measure against odor influence on the surrounding environment.

\* Agricultural cooperatives: Koyu Chicken Produce of Miyazaki Cooperative, Miyazaki Environmental Conservation and Agriculture Cooperative, Miyazaki Biomass Utilization Agricultural Cooperative Companies: Koyushokuchō Co., Ltd., Nippon White Farm Co., Ltd., Wellfam Foods Corporation, Yamashita Shoji Limited, Kyuden Mirai Energy Inc.

## Reducing Plastics

## We are working to reduce the amount of plastics we use.

## Reducing the use of plastic in containers and packaging

We are working to balance the quality of our products with environmental concerns such as final waste disposal sites and depletion of resources, with regard to the containers and packaging of the products that we supply to customers.

Appropriate packaging is essential for ensuring safety and maintaining the freshness of products, but once the products are consumed, that packaging becomes waste material. Also, in recent years, marine plastic litter has become an increasingly serious problem, so reducing plastic use has become a social

issue. The Group is focusing on these circumstances, examining what we should do with regard to containers and packaging, and taking action.

## Case study



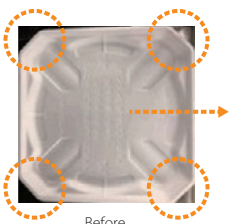
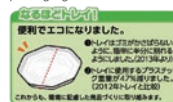
## Reducing plastic use

## Ishigama Kobo series circular pizzas

We have changed the shape of the tray underneath the product to cut down on the plastic used for the four corners.



Label on the rear of the packaging



Before



After

Plastic  
reduction  
47%\*1

Ishigama Kobo series Thick Sliced Pizza Bread  
Ishigama Kobo series Mini Pizzas 3-pack

We have reduced the amount of plastic used for the entire product by discontinuing the use of trays and shrinking the size of the exterior packaging.



Plastic  
reduction  
45%\*2



Label on the rear of the packaging



環境に配慮し、  
プラスチックトレイを  
使用していません。

Plastic  
reduction  
51%\*2



## Using recycled resources

## Irodori Kitchen series

We are using recycled materials in the packaging, have made the packaging film thinner, and also use biomass ink.



Recycled  
material use  
Approx. 11%\*3

## Entier series

We are using recycled materials in the packaging.



Recycled  
material use  
Approx. 5%\*4



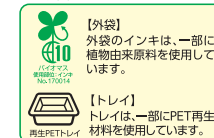
Recycled  
material use  
Approx. 8%\*3

## The Chuka Meisai series

We are using recycled materials for some of the materials in the tray underneath the product, as well as biomass ink for some parts of the external packaging.



●本品には下記のような包材を使用しています。



Label on the rear of the packaging

\*1 Compared to trays produced in 2012 \*2 Compared to previous products produced in 2019 \*3 Excluding labels and stickers \*4 Excluding stickers

## Reducing food loss

## We are working to solve food loss issues.

## Reducing food loss

We are unifying our approach to food loss throughout the Group, striving to understand the actual situation, such as the amount of loss, and advancing food loss reduction initiatives.

## Example initiative at Nipponham Factory Ltd.

Nipponham Factory Ltd., which engages in the production of hams and sausages, is looking to reduce food loss at all of its plants by continually working to reduce waste, such as the fresh and processed meat waste that is unavoidably generated during production processes. The Ibaraki Plant is the company's main plant and in fiscal 2020, it launched three initiatives—reducing waste through improvements to the block (the end lump of ham sliced off before the rest is sliced), updating production management systems, and improving the precision of inspections. The company is also communicating the aims and significance of these initiatives to employees and a spirit of treating products of the bounty of nature with respect is being fostered throughout the entire plant. In fiscal 2020, the amount of waste decreased by 30% year on year as a result of these activities.

## 1. Reducing waste through improvements to the ham slicing stump

We changed the shape of the block to increase the amount of useable meat. The end piece, which cannot be sliced, can now be used for a different grade of product, avoiding waste.

## 2. Updating production management systems

We updated production management systems and improved the precision of production plans, significantly reducing waste.

## 3. Improving the precision of inspections

We are reducing waste by using new technology such as x-rays and metal detectors in inspection equipment to make the detection of defective products more precise.

## Reducing household food loss

According to Japan's Ministry of Agriculture, Forestry and Fisheries, out of the six million tons of food loss recorded in fiscal 2018, 46% was discarded by households. In light of this situation, we are working on creating products that will reduce household food loss.

## Development of products that can be stored at room temperature

We are enhancing our lineup of products that can be stored at room temperature for long periods. In March 2021, we launched the *Ajiwai Range* series of prepared foods which can be stored for up to 90 days and eaten by just heating using a microwave, and three products in the *Stock Pork* series of ham and sausages that can be stored for up to 365 days. Then in May 2021, we launched the *Stock Meat* series made using our original "high temperature, high pressure" cooking technique and which can be stored at room temperature for up to 180 days.

These products not only contribute to solving food loss issues but are also useful in disaster preparation as an emergency food. They are also a perfect fit for the Nagarastock (Stock up & Stay Stocked!) initiative being advocated by the Ministry of Economy, Trade and Industry, which encourages people to maintain a stock of extra daily commodities in preparation for disasters and to replenish it when necessary. Going forward we will continue to advance research that extends the storage period of products.



## Ajiwai Range series

Lineup includes *Nikujaga*, *Beef Stew*, *Hamburg Steak*, *Chikuzenni*, and *Soup Curry*.



## Stock Pork series

In addition to *Luncheon Meat* launched in fiscal 2019, we have also launched *Weiner*, *Block Bacon*, and *Sausage Steak*.

## Stock Meat series

The lineup includes two products, *Pulled Pork* and *Pulled Beef*. The block meat is cooked at high temperatures under high pressure, giving it a characteristic tenderness so it can be pulled easily using a fork.



## Extending product lifespans

Oakey Beef Exports Pty. Ltd., which is engaged in the packing and processing of beef in Australia, is working to extend the lifespans of its products based on thorough sanitation and quality management. It has been able to lengthen the refrigerated shelf life of these products from 77 days to 100 days.

Also, BPU, which is engaged in the packing and processing of beef in Uruguay, is using a packaging method in which consumer products are vacuum packed after processing, keeping them fresher for longer. In this way, it is helping to reduce food loss across society, from mass retailers to households.

NH Foods Ltd.'s Research and Development Center is also advancing research into extending the shelf life of fresh meat.



## Effective Use of Water Resources

## We are tackling water risk and working to use water resources effectively.

## Basic views

Water is a key resource that is essential for our business activities. There are concerns that regions where access to water will deteriorate (greater water risk) as a result of climate change and economic activity will increase around the world. It is with this understanding that the Group strives to reduce its environmental impact by effectively using limited water resources in its business activities and by discharging wastewater following proper treatment.

## Water risk analysis

In order to assess and respond to water risk at production and manufacturing regions in Japan and overseas, in fiscal 2019, we began a first phase of screening of regions in which we have established plants using the WRI's Aqueduct\* tools. Based on the results of this, in fiscal 2021, we will advance considerations within the TCFD framework.

\* A water risk assessment tool developed by the World Resources Institute (WRI).

## Reusing wastewater

Interfarm Co., Ltd is the NH Foods Group's pig rearing company and it ships the largest amount of pig products in Japan. In November 2021, it began operation of an advanced reverse osmosis (RO) filtration unit at its Donan Office which uses RO filtration to filter the impurities from wastewater. As more than 80% of the treated water is reusable, this method can significantly reduce water consumption.

The reclaimed water will be used for cleaning and other tasks.

## Total water resource use by the Group in Japan

## FY2020 results (compared to FY2019)

## Water consumption

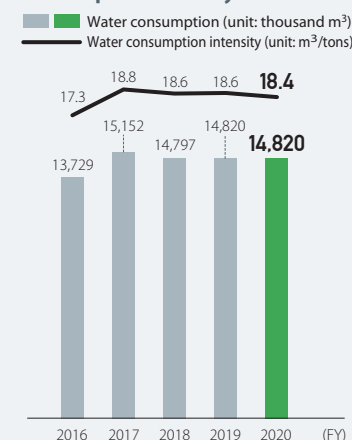
**14,820**  
thousand m<sup>3</sup>

## Water consumption intensity

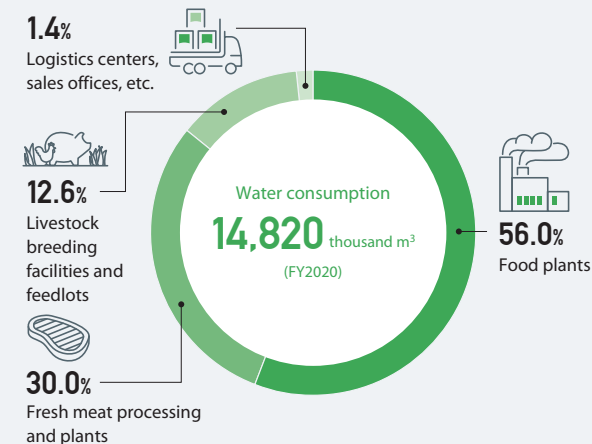
**Down 1.1 %**

Notes:  
1. The figures shown have been rounded off so they may differ from figures shown elsewhere.  
2. Figures for water consumption and discharge include some estimated values from production departments

## Water consumption and water consumption intensity



## Water consumption breakdown



Scope: Overall domestic operations of the NH Foods Group

## Water source friendly RO filtration



Produces  
reusable water

## Reusing coolant water

At food products plants operated by the Nippon White Farm Group, 10% of water consumed is reused water.

Most of this reused water is water kept at a temperature of between 2 and 5°C which is used for refrigerating carcasses after processing. Carcass refrigeration has two stages, precooling and main refrigeration, and some of the water used at the main refrigeration stage is mainly reused for precooling, and overflow water used at the precooling stage is mainly used as water for the showers used for cleaning at the preprocessing stage.

## Biodiversity conservation

## Here are our initiatives aimed at conserving abundant nature for future generations.

## Basic views

The NH Foods Group conducts business activities that are in harmony with the environment in order to achieve a sustainable society.

Rich soil and oceans that provide the bounty of nature are essential for the business activities of the NH Foods Group, whose work stems from these resources.

In order to pass down the richness of the soil and oceans to the next generation, the NH Foods Group respects the workings of nature at each of our business sites, preventing environmental pollution and reducing environmental burden by appropriately managing and continually improving environmental management systems.

## Activities for conserving the natural environment

We utilize forest conservations systems being advanced by Japan and individual prefectures, and carry out forest cultivation activities with customers, employees, and their families. We also support various organizations that are working to conserve the natural environment.

## Forest conservation activities

Since 2002, we have been participating in the Corporate Forest program sponsored by the Forestry Agency to conduct *Minna no Mori* (forests for everyone) forest development activities. These activities include pruning trees and thinning undergrowth at two locations, Seto Jokoji Temple in Aichi Prefecture and Mount Tsukuba in Ibaraki Prefecture. Each year, these contribute to cultivating water sources totaling 5,398m<sup>3</sup> (equivalent to approximately 2.7 million two-liter PET bottles).

Also, Nippon Luna, Inc., which manufactures and sells fermented milk and lactic acid probiotic beverages, has been carrying out forest conservation activities at *Nippon Luna no Mori* in Kinokawa, Wakayama Prefecture, since fiscal 2018. As part of a corporate forest program being operated by Wakayama Prefecture, it carries out activities such as tree thinning experiences for employees, their families, and other related parties.

Unfortunately, these forest conservation activities have been suspended since fiscal 2020 in order to help prevent the spread of COVID-19.

## Participation in Afan Woodland Restoration Activities

The C.W. Nicol Afan Woodland Trust listens to the voices of the

forest while purchasing deteriorated forests and restoring forests with an eye toward biodiversity. The trust conducts activities with a vision of expanding forests with high biodiversity throughout Japan and creating a healthy, peaceful, and spiritually enriching society while restoring spirits to bring smiles to the faces of children through abundant forest environments.

The Group is in agreement with these aspirations and has provided support for Afan Woodland (Shinanomachi, Nagano Prefecture) activities as an official sponsor since 2005, participating in the development of forests with abundant wildlife.

## Coral reef preservation activities

Coral reefs account for about 0.2% of the area of the oceans but about one-fourth of all marine organisms are thought to be in some way connected to these reefs.

SeaSeed, a company based in Okinawa Prefecture, is cultivating and transplanting coral with the aim of expanding coral reefs in Okinawa Prefecture into the future.

As the Group is engaged in meat, processing, and marine product businesses in Okinawa Prefecture, we endorse SeaSeed's ideas and we have been supporting its activities since 2014.



"Minna no Mori" forest conservation activities at Seto Jokoji Temple



Forest conservation activities at Nippon "Luna no Mori"



Fledged owls in the Afan Woodland



Planting coral on the seabed