Climate change is directly connected to the environment needed to raise healthy livestock and plays a crucial role in the Starzen Group's business, so we are moving ahead with programs to reduce greenhouse gas (GHG) emissions across the supply chain.

reeding and fattening/procurement	Processing and manufacturing	Processing center	Logistics and Products
Measures to reduce methane gas <ul> <li>Trial feeding of Asparagopsis</li> <li>Trial feeding of amino acid-supplemented feed</li> </ul> Initiatives using eco-friendly feed	<ul> <li>Activities by the GHG Reduction Committee (IPR 37)</li> <li>Visualization of local power supply, etc.</li> <li>Solar panel installation: Four plants</li> <li>Partial introduction of renewable energy (Chiba Plant)</li> </ul>	<ul> <li>Switch to eco-friendly packaging materials (@P37)</li> <li>Greater extension of shelf lives <ul> <li>Gas exchange packaging</li> <li>Vacuum-seal packaging</li> <li>Packaging with oxygen absorber</li> </ul> </li> </ul>	<ul> <li>Promoting a modal shift</li> <li>Standardized carboard box specifications</li> <li>Increased sales of soy meat products (<sup>1</sup><sub>1</sub>P.41)</li> </ul>





Solar panel:



Gas exchange packaging

Packaging with oxygen absorber



Soy meat products

Value Creation Story

Increace Capit Efficiency

Medium- to Long-Term Strategy

## Initiatives to reduce GHG emissions from cattle

In October 2023, we started a feeding trial at Hokkaido Hamanaka Cattle Farm, giving the livestock AjiPro®-L rumen-protected lysine developed by Ajinomoto plus feed supplemented for a balanced amino acid profile. This test is aimed at increasing amino acid absorption by the cattle to increase productivity, which should reduce the time needed for fattening and lower GHG emissions. After assessing the impacts on meat quality, weight gain, and other factors, we will consider expanding the number of cattle given this feed.

In another trial in Australia that started in 2023, Australian Wagyu cattle are being given feed supplemented with Asparagopsis, which is a common seaweed native to Tasmania that has been shown to reduce methane gas emissions. Feed mixed with the algal oil extract, manufactured by the bioresearch company Sea Forest, is being given to 100 head of cattle. The animals are being monitored for health and weight gain, and tests are being conducted to





determine impacts on physical condition and meat quality, as well as effects to curb methane gas.

### Introducing clean energy

The Starzen Group is aiming for a 42% reduction in GHG emissions (Scope 1 and 2) by fiscal 2030 compared to fiscal 2022. To achieve this target, we are working to install solar power generation systems at Group plants that generate most of our GHG emissions. As of September 2024, we have solar power generation systems in operation at four sites nationwide and the electricity generated there

is used at all our plants. In November 2023, we installed solar power equipment at Aoki Foods Co., Ltd., and we expect this to reduce CO2 emissions by around 162 tons per annum.



Solar panels at Aoki Foods

The Starzen Group's business is built on the sustainable production of livestock products, and the conservation of the natural environment is indispensable for this purpose. The entire Group engages in initiatives for the environment from various perspectives.

# Energy efficiency and renewable energy transformation

Most of the Starzen Group's Greenhouse gases (GHGs) are emitted at our plants. We are determined to address these emissions, for example by installing highly efficient equipment at each plant. We are also pushing ahead with the introduction of renewable energy systems. The Group is installing solar power generation systems and switching to electricity generated without the use of fossil fuels. GHGs emitted by the Logistics Division are also being reduced, for example through a stepwise expansion of modal shifts (<u>DP. 21</u>).

### **GHG Reduction Committee**

As part of our efforts to address the issue of climate change, the Starzen Group endorsed the Task Force on Climate-related Financial Disclosures (TCFD) recommendations in December 2021 and has been reporting climate-related information based on the TCFD framework since June 2023. The Group has set a target of a 42% reduction in Scope 1 and 2 GHG emissions and a 25% reduction in Scope 3 emissions by fiscal 2030. These targets were certified by the SBTi in June 2024 (DP 38). The GHG Reduction Committee, comprised of managers at each plant, is working to ramp up energy-saving initiatives and roll out these programs across the Group. Specific initiatives include the step-wise introduction of an energy management system that can visualize the status of energy consumption in real time.

Another program implemented in January 2024 involved switching to natural refrigerants in the freezers at our Matsuo Plant, which is a processed food manufacturing plant. We have also used heat-reflective coatings on plant roofs to help keep the plants cool inside, thereby reducing electricity consumption. At meat processing facilities, we have introduced energy-efficient turbo blowers that contribute to energy savings, and we expect this initiative to reduce CO<sub>2</sub> emissions.



Energy usage (left scale) - Energy usage intensity (right scale)

Note: Total for meat processing business (seven plants) and food processing business (seven plants)

#### Initiatives for food loss and waste

Japan generates over 4.7 million tons of food waste every year. Usually, meat and processed meat products are discounted in stores as they approach their best-before dates, but if they remain unsold, they are thrown out. The Group's meat processing plants are addressing this issue by placing meat with fewer initial bacteria counts into vacuum-seal packaging, gas exchange packaging, or packaging with an oxygen absorber under advanced hygiene controls. This allows us to extend the best-before date significantly compared to conventional sliced meat packaging. Extending best-before dates can help to reduce food waste and loss, and also reduce waste in delivery.

	Air-containing packaging	Gas exchange packaging
Domestic beef	4 days	7 days or longer
Domestic pork	4 days	7 days or longer
Domestic beef by-products	2−3 days	10 days
Domestic pork by-products	2-3 days	8-10 days

Note: When stored at 4°C or less

### Adoption of eco-friendly packaging materials

We are actively working to change our packaging materials in order to reduce our environmental impact. Plastic has long been the main packaging material used for many products, but we are working to reduce plastic use. For example, we have changed the packaging on many of our meat gift products, starting from the 2023 year-end gift season.

We are also gradually transitioning to recyclable eco-friendly plastic trays. We quantified the use of recycled trays and found that, in 2023, the proportion of eco-friendly trays used (by weight) was 40.4%, which equates to a reduction of 182 tons of  $CO_2$ .

Additionally, in order to convey our environmental efforts to our customers, we will expand our proprietary "Ecostar" logo denoting our environmentally friendly products based on our own standards.



The name Ecostar came from an internal "eco-friendly Starzen" campaign for a logo to express our dedication to environmental efforts across the Starzen Group. Foundation Supporting Sustainable Growth

## Using the TCFD Framework to disclose risks and opportunities

In February 2022, the Starzen Group identified issues of materiality that it must address over the medium to long term in order to realize a sustainable society. Among these, social and environmental issues caused by climate change are urgent issues. The medium-term management plan includes an investment plan to promote initiatives that address these issues, including the installation of renewable energy and energy-saving equipment. We have also identified risks and opportunities for the Group by conducting scenario analyses and estimating the impacts on our business, the domestic and overseas livestock industries, and consumers. We have used the TCFD framework to organize these risks and opportunities into four categories: governance, strategy, risk management, and metrics and targets, with information disclosed based on actual figures for fiscal 2022. TCFD 7

#### Progress of each TCFD category and future response policy

Governance	In order to promote sustainability management, the Group has established the Sustainability Committee as an advisory body to the Board of Directors. The committee meets quarterly to deliberate on the formulation of policies related to sustainability promotion and the progress of materiality, reporting and making recommendations to the Board of Directors. Based on the committee's reports and recommendations, the Board of Directors is able to fully understand the status of the Group's efforts to promote sustainability and utilizes the information in the formulation of various strategies.
Strategy	The Group has formulated a scenario detailing the impacts on its business if the global average temperature rises by 1.5/2°C or 4°C by 2100 compared to preindustrial levels. Based on the scenario, we will estimate the financial impacts of risks and opportunities that will significantly affect the Group's business and reflect the findings in our future strategies.
Risk management	In accordance with the Risk Management Regulations, the Risk Management Committee, which meets quarterly, deliberates and discusses Groupwide risks, including sustainability, and reports and makes recommendations to the Board of Directors. In our risk management, we have formulated a matrix based on the frequency of occurrence and the scale of damage, and we have established a system for fixed-point observation of material risks by the committee.
Metrics and targets	The Group has established targets for a 42% reduction in Scope 1 and 2 GHG emissions and a 25% reduction in Scope 3 emissions by fiscal 2030 compared to fiscal 2022. Trends in the Group's GHG emissions are posted on our corporate website. Going forward, we will continue to work to reduce our GHG emissions toward carbon neutrality.

## "B" score rating from the CDP

The Starzen Group received a "B" score rating in CDP Climate Change Report 2023 published by the Carbon Disclosure Project (CDP). The CDP provides a global platform for companies or local governments to disclose environmental information on climate change, deforestation, and water security.

A "B" score is defined as the "Management" level and indicates that there is evidence of actions associated with good environmental management, based on awareness of the organization's impact on the environmental issue. The score not only evaluates our information disclosure using the TCFD framework but also reflects our initiatives to combat climate change, such as the disclosure of Scope 1, 2, and 3 emissions.

Value Creation Story

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

## SBTi certification of targets as consistent with 1.5°C

The Science Based Targets initiative (SBTi) is a partnership between the World Wide Fund for Nature (WWF), CDP, World Resources Institute (WRI), and the United Nations Global Compact. The SBTi recognizes that companies have an important role to play in combating climate change, provides support by promoting best practice in science-based target setting, and independently certifies companies' GHG reduction targets. The Starzen Group has joined this effort and its GHG reduction targets through fiscal 2030 have been certified as consistent with the 1.5°C target outlined by the Paris Agreement.

Obtaining SBTi certification is a first step toward achieving our goal of becoming a company that is chosen by customers and can continue to grow. In the future, we plan to proactively introduce renewable energy systems to address Scope 1 and 2 emissions. For Scope 3, meat is responsible for some 95% of these emissions, so we need to focus on curbing emissions from beef production. One solution is to reduce methane emissions from cattle belching, and we have started trials in Japan and overseas on feed additives to achieve this.

> SCIENCE BASED TARGETS

### Overview of scenario analysis

After aggregating information on business risks and opportunities, as well as identifying the risks and opportunities of climate change that the Company faces, we narrowed down the key points to those with a particularly high degree of impact.

Based on the published climate change scenarios, we objectively predicted the future and made assumptions on various risks and opportunities in order to quantitatively analyze the impact on our business under the 1.5°C and 4°C scenarios.

## Identification of risks and opportunities

The results of identifying and assessing the importance of climate change risks and opportunities that may affect the Group's business are as follows.

	Risk/opportunity items		Impacts on business					
гуре	Category Item Risks/ opportunities Impacts due to risks/opportunities		Impacts due to risks/opportunities	Importance				
	Policy/ regulations	Rising carbon prices	Risks	• Increased carbon tax burden or rising purchasing costs in response to increased carbon tax burden of suppliers	Large			
S		Regulations on feed, water, and land	Risks	Rising purchasing costs for beef and pork due to suppliers passing on regulatory compliance costs to product prices				
		Regulations to control livestock excrement	Risks	Increasing costs for investigations and countermeasures				
ortuniti		Stricter regulations on plastics	Risks	Increasing manufacturing costs due to the implementation of laws on plastics recycling (higher costs to purchase and recycle containers and packaging materials)				
possible oppo	Markets	Ober ree in concurrent testes	Risks	Declining demand for products with large environmental impacts				
		Changes in consumer tastes	Opportunities	• Growing demand for development of products with low environmental impacts and for alternative sources of protein	Large			
		Dising first and sharthisity prices	Risks	<ul> <li>Increasing transportation and storage costs due to rising fuel prices, etc.</li> </ul>	h de alle une			
risk/		Rising fuer and electricity prices	Opportunities	Lower production costs from the utilization of solar, geothermal, or other forms of renewable energy				
sition		Declining demand for fossil resources	Risks	<ul> <li>Rising costs for packaging materials and additives, and rising costs of refrigerants due to changes in demand for fossil resources</li> </ul>	Small			
		Development of new low-carbon production		<ul> <li>Growing capital investments to expand adoption of energy-efficient equipment and declining asset value of existing facilities due to the faster pace of technological innovation</li> </ul>	Medium			
	Technologies	ies technologies	Opportunities	• Growing demand for compost made from livestock excrement due to reduced access to petroleum-derived fertilizer	Medium			
		Development of low-carbon products	Opportunities	<ul> <li>Increasing sales from the marketing of certified-sustainable beef products</li> </ul>	Large			
		Increase in average temperature	Risks	Adverse impacts on livestock, rising electricity costs related to refrigeration, freezing, and HVAC				
risk/possible rtunities	Chronic	Impacts on crops used as feed caused by long-term changes in rainfall and weather patterns	Risks	<ul> <li>Rising prices for feed commodities because of poor crop yields caused by water stress</li> <li>Rising cost to restructure supply chains following the shift in areas suited for production</li> <li>Difficulty sourcing groundwater due to saline intrusion in areas where groundwater is used for irrigation or industrial purposes</li> </ul>				
Physical oppo	Acute	Increasing frequency and severity of extreme weather	Risks	<ul> <li>Declining productivity and damage to farms or livestock caused by the increasing frequency and severity of storm and flood damage</li> <li>Suspension of operations due to plant collapse or production equipment damages</li> <li>Suspension of transportation due to disruptions in logistics networks or warehouse damages, etc.</li> </ul>	Medium			

## Scenario analysis definitions

Referring to the climate change scenarios published by the International Energy Agency (IEA) and others, we selected scenarios in which the average global temperature is expected to rise by 1.5/2°C or by 4°C, respectively, by 2100 compared to preindustrial levels.

Recognizing that the effects of climate change are likely to materialize over a medium- to long-term time horizon, we are analyzing the impacts of climate change in 2050 as our timeline. The assumptions used for each scenario are described below.

### Trial calculation of impacts on our business and response

**1.5/2°C** The impact of physical risks will remain limited, but responding to transition risks, such as various regulations and customer requests, will be necessary.

Governments' low-carbon policies are also limited, the transition to a low-carbon society is restricted to a limited extent, and physical risks will increase due to rising average temperature.

We organized the main climate change risks and opportunities facing the Group's business based on external information and estimated the impact of material risks and opportunities on our business based on forward-looking data on each risk and opportunity. We examined how our responses affect these impacts based on the estimates. The results are shown below. (ND = no data)

4℃

Turne	Risk/opportunity items		Impacts on business	Financial impacts		Financial impacts		Timing of	Desserves
туре	Category	Subcategory	Risks/opportunities	1.5/2°C	4℃	occurrence	Response		
sk/possible unities	Policy/ regulations	Rising carbon prices	Increased carbon tax burden or rising purchasing costs in response to increased carbon tax burden of suppliers	¥	ND	Short term	<ul> <li>Adoption of renewable energy and energy-saving measures</li> <li>Extension of product shelf life using skin-packing with gas barrier and vacuum-seal packaging</li> <li>Measures to reduce GHG emissions</li> </ul>		
Transition ris opportu	Markets	Changes in consumer tastes	Risks: Declining demand for products with large environmental impacts Opportunities: Growing demand for development of products with low environmental impacts and for alternative sources of protein	,	ND	Medium term	<ul> <li>Development of low-carbon products such as certified sustainable beef, etc.</li> <li>Establishment of production system and sales channels in preparation for rising demand</li> <li>Sales of Zero Meat brand</li> </ul>		
Physical risk/possible opportunities	Chronic	Increase in average temperature	Adverse impacts on livestock	ND		Long term	<ul> <li>Promoting animal welfare</li> <li>Introduction of cooling systems in cattle sheds</li> <li>Cooperation with suppliers to improve breeding and fattening environments</li> </ul>		
			Adverse impacts on feed or raw materials procurement	ND	ł	Long term	<ul><li>Support for suppliers to mitigate flood damage</li><li>Diversification of procurement methods</li></ul>		
			Rising electricity costs related to refrigeration, freezing, and HVAC	ND		Long term	<ul> <li>Adoption of and transition to energy-saving, high-efficiency industrial and business equipment</li> </ul>		