



Asahi Group  
**TCFD REPORT**  
The Asahi Group's Initiatives  
toward Climate Change



**Asahi**

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### Editorial Policy

In this report, we analyze and report on the risks and opportunities presented by climate change, report the results of our business impact assessments, and report the initiatives formulated in response. In this way, we hope that this report serves as an engagement tool for our shareholders, other investors, and all of our other stakeholders. In 2019, the Asahi Group endorsed the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). Since then, we have disclosed relevant information in our integrated reports and on our corporate website. This report provides a summary and history of our TCFD-related efforts and discloses the results of our scenario analysis for 2021. To help deepen understanding of the Asahi Group among an even wider range of readers, mainly our shareholders and other investors, we will further enhance the content of our information disclosure going forward.

### Issue Date

May 2022

### Scope of Report

Asahi Group Holdings, Ltd. and Group companies

The Asahi Group has carried out a scenario analysis in phases, grouping the product categories of Alcohol Beverages, Non-Alcohol Beverages, and Food. Previously, these categories were classified as the Alcohol Beverages Business, the Soft Drinks Business, and the Food Business. However, following a change in the Group's reportable business segments, this report refers to these segments as "categories" rather than "businesses."

# Asahi Group TCFD REPORT

## Introduction

# The Reasons Why the Asahi Group Is Working to Respond to Climate Change

Global warming has caused abnormal weather conditions all over the world, greatly ruining lives and damaging properties. Phenomena include unprecedented changes to the climate, drought caused by heat waves, and flooding caused by typhoons and torrential rain. Climate change is an important social issue for the Asahi Group, which operates businesses using the blessings of nature, and is a significant threat to business continuity.

To fulfill our mission of “Deliver on our great taste promise and bring more fun to life,” which we declared in the Asahi Group Philosophy (AGP), we aim to pass on a sustainable global environment to future generations, nurturing the blessings of nature.

Under Asahi Group Environmental Vision 2050, we have declared our commitment to helping to realize a sustainable society alongside the growth of our businesses. This will be accomplished by pursuing the two goals of “achieving zero environmental impact in the business activities (neutral)” by 2050 and “utilizing the Group’s proprietary technologies to create more environmental value (plus).”

With a view to realizing carbon neutrality by 2050, we formulated Asahi Carbon Zero, a medium- to long-term target for reducing CO<sub>2</sub> emissions, and acquired 1.5°C certification from the Science Based Targets (SBT) initiative for the Scope 1 and 2 target by 2030. Furthermore, in October 2020 we became the first company in the Japanese beverage industry to join RE100 and have since been promoting a broad range of initiatives including the utilization of renewable energy.

In addition, we aim to create even more environmental value for society (“plus”) by leveraging our proprietary technologies to help promote the transition to a low-carbon society and resolve other social issues. Through this aim, we believe we can create various business opportunities.

To pass on the blessings of nature to future generations based on the “neutral” and “plus” concept, we will appropriately respond to the risks and opportunities presented by climate change while comprehensively examining matters on which climate change will likely have an impact, such as raw material procurement, containers and packaging, and water resources.

## Initiatives toward the TCFD Recommendations

The Asahi Group understands that evaluating the impact of climate change-related risks and opportunities on its businesses and drafting appropriate response measures are important matters in terms of realizing a sustainable society and ensuring business continuity. To that end, the Group endorses the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

We conducted a scenario analysis in the Beer Category in 2019 and expanded the scope of this analysis to the Non-Alcohol Beverages and all Alcohol Beverages categories, including the Beer Category, in 2020. In 2021, we conducted a scenario analysis for the third year in a row, this time covering all major categories, including the Food Category. By clarifying the impact of climate-related risks and opportunities on our business operations and taking measures to resolve those issues, we will make our business operations more sustainable and promote dialogue with investors to enhance social sustainability and our corporate value.

### Asahi Group Environmental Vision 2050: Overview



## The Asahi Group’s Initiatives toward Climate Change

We thoroughly recognize that climate change represents an important management issue which directly impacts our business. To that end, we have established a governance structure that centers on the supervision of the Board of Directors and the participation of the Global Sustainability Committee (hereinafter, the GS Committee). Based on the commitment of our management, we are executing investment in climate change countermeasures and are promoting relevant efforts on a Group-wide basis.

In terms of specific strategies, we have been evaluating the business risks and opportunities presented by climate change over the medium to long term and developing strategies to address climate change-related issues after confirming the impact such issues have on our business. Additionally, we believe it is important to formulate and promote climate change countermeasures. We will therefore establish indicators and targets with a view to realizing a carbon-free society in an effort to reinforce our overall initiatives toward climate change going forward.

With regard to climate change-related business risks, in particular, we have adopted such risks as main risks for the Group within our overall risk management framework. Under our enterprise risk management (ERM) system, we have set a PDCA cycle in motion with the Sustainability Director as the risk owner.

This section explains the four key themes we have identified based on TCFD recommendations: “governance,” “risk management,” “strategies,” and “indices and targets.”

### Governance

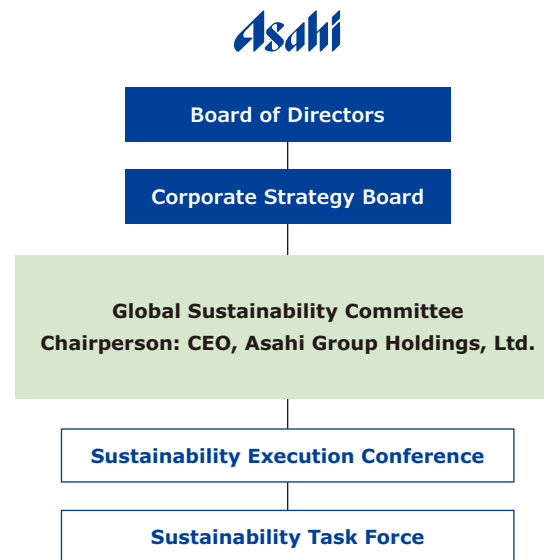
The Asahi Group has established the GS Committee to draft and supervise sustainability strategies, including climate change. The GS Committee is chaired by the CEO of Asahi Group Holdings, Ltd., and comprises the Sustainability Director, the heads of relevant departments, and the CEOs and Sustainability Directors at each Regional Headquarters (RHQ) located in Japan, Europe, Oceania, and Southeast Asia. The strategies and targets

discussed by the GS Committee are deliberated on by the Corporate Strategy Board and reported to the Board of Directors.

In 2020, the GS Committee held discussions on Asahi Carbon Zero, our target that aims to achieve net zero CO<sub>2</sub> emissions by 2050. Through these discussions, we decided on making a significant upward revision to Asahi Carbon Zero, raising the targeted reduction for 2030 to 50% in Scope 1 and 2 compared with 2019.

With the initiatives we implemented since making this upward revision, we greatly improved the certainty of achieving our targeted values. We also saw an increase in ambition within the Group to adopt and actively pursue ambitious targets. In light of these circumstances, we decided to upwardly revise the targeted reduction values in Scope 1 and 2 to 70% compared with 2019 at a meeting of the Corporate Strategy Board held in 2021.

### Management System



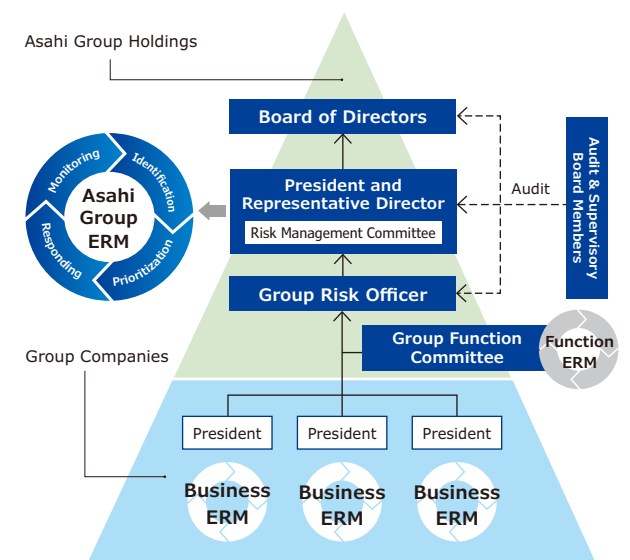
The risks, opportunities, and financial impacts of climate change identified through scenario analysis are also discussed by the Corporate Strategy Board and reported to the Board of Directors.

### Risk Management

The Asahi Group has adopted climate change as a main risk for the Group within its ERM system and set a PDCA cycle in motion under this management system with the Sustainability Director as the risk owner.

At the same time, the Sustainability Section further examines climate change-related risks in more detail, implements response measures, and issues regular reports to the Board of Directors. Additionally, we are taking initiatives to address the issue of plastic, another main risk for the Group, which is widely linked to climate change.

### Asahi Group ERM Structure



■ Strategies

Every year since 2019, we have been conducting a scenario analysis to reconfirm the Group's resilience to climate change and examining response measures to the risks and opportunities that have been clarified. In 2021, we implemented more extensive and accurate scenario analysis aimed at expanding the scope of and enhancing our scenario analysis. We will take measures for the major risks and opportunities that have been clarified through this analysis to ensure that we steadily reduce risks and seize opportunities.

In particular, we will invest over 50 billion yen by 2030 as a measure to reduce CO<sub>2</sub> emissions based on Asahi Carbon Zero in order to reduce impacts, such as the impact of a carbon tax on production costs.

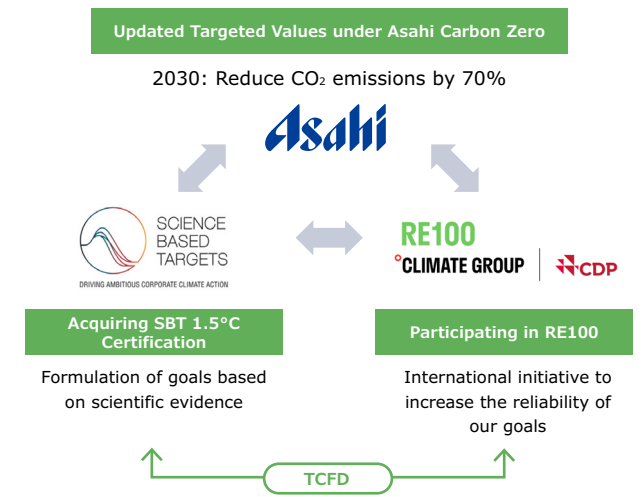
■ Indices and Targets

We have established Asahi Carbon Zero as a medium- to long-term target for reducing CO<sub>2</sub> emissions. Under Asahi Carbon Zero, we aim to achieve net zero CO<sub>2</sub> emissions in Scope 1, 2, and 3 by 2050. As an interim target for 2030, compared with 2019, we aim to reduce Scope 1 and 2 emissions by 70% and Scope 3 emissions by 30%. In addition, we have set another interim target of 40% reduction by 2025 in Scope 1 and 2.

In addition, we have acquired SBT 1.5°C certification from the SBT initiative for the Scope 1 and 2 target by 2030. In October 2020, we joined the RE100 renewable energy initiative. By joining this initiative, we aim to realize a shift to 100% renewable energy by 2050.

To increase the probability of achieving these targets, the Sustainability Task Force manages the progress of the road map for

reducing CO<sub>2</sub> emissions at each RHQ and shares issues, in addition to adopting key performance indicators (KPIs) at each RHQ. Furthermore, we have adopted measures and are reinforcing initiatives to realize the sustainable utilization of related agricultural raw materials, containers and packaging, water, and other materials.



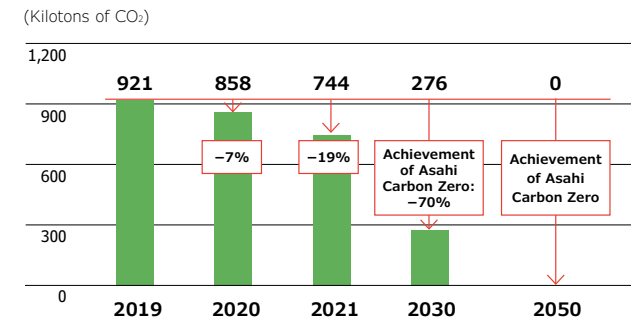
Group-wide Target Asahi Carbon Zero and Targets at Each Regional Headquarters

Asahi Carbon Zero—The Asahi Group's Medium- to Long-Term Target for Reducing CO <sub>2</sub> Emissions	
<b>Asahi Carbon Zero</b>	
<b>Group-wide</b>	<p><b>2050</b> Reduce our CO<sub>2</sub> emissions in Scope 1, 2, and 3 to zero, thereby becoming carbon neutral*<sup>1</sup></p> <p><b>2030</b> Reduce CO<sub>2</sub> emissions in Scope 1 and 2 by 70% (compared with 2019)*<sup>2</sup> Reduce CO<sub>2</sub> emissions in Scope 3 by 30% (compared with 2019)*<sup>1</sup></p>
<b>Japan</b>	<ul style="list-style-type: none"> <li>• Use renewable energy for 100% of electricity purchased at all production bases by 2025</li> <li>• Reduce CO<sub>2</sub> emissions every year by 1% or more over the previous year</li> </ul>
<b>Europe</b>	<ul style="list-style-type: none"> <li>• Reduce CO<sub>2</sub> emissions in Scope 1 and 2 to zero by introducing renewable energy at plants, thereby becoming carbon neutral by 2030</li> <li>• Shift to 100% renewable energy for the electricity used at plants by 2025</li> </ul>
<b>Oceania</b>	<ul style="list-style-type: none"> <li>• Reduce CO<sub>2</sub> emissions in Scope 1 and 2 by 50% by 2025 (compared with 2019)</li> <li>• Shift to 100% renewable energy for the electricity used in Australia and New Zealand by 2025</li> </ul>
<b>Southeast Asia</b>	<ul style="list-style-type: none"> <li>• Reduce CO<sub>2</sub> emissions in Scope 1 and 2 every year by 2% or more over the previous year</li> </ul>

\*1 Applicable companies: Asahi Breweries, Ltd., Asahi Soft Drinks Co., Ltd., Asahi Europe and International Ltd., and Asahi Holdings (Australia) Pty Ltd

\*2 Applicable companies: Asahi Group Japan, Ltd., Asahi Europe and International Ltd., and Asahi Holdings (Australia) Pty Ltd

Scope 1 and 2 CO<sub>2</sub> Emissions (Compared with 2019)



Note: Covers Japan, Europe, and Oceania

## History of Scenario Analysis

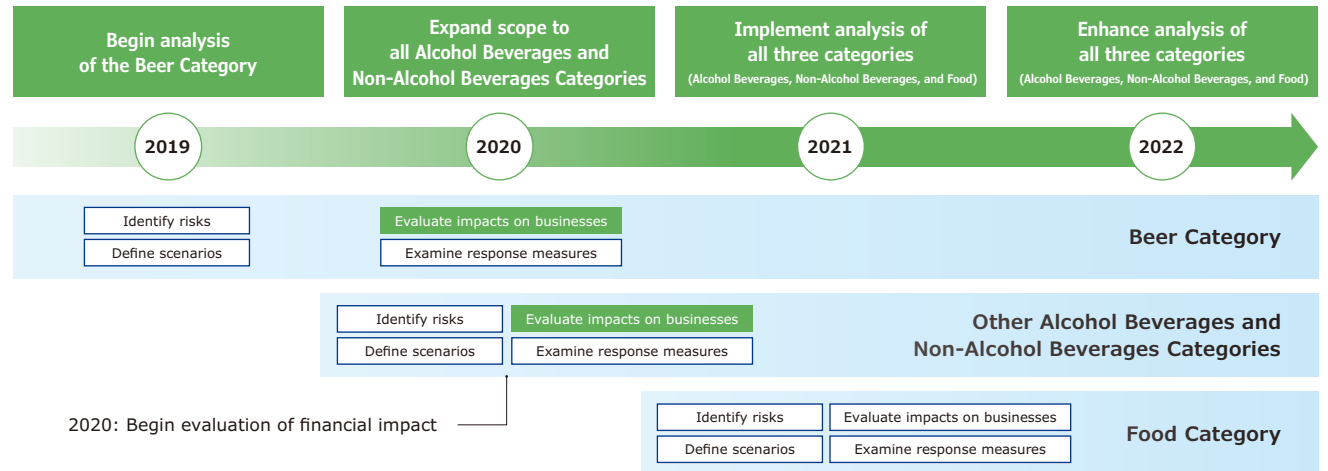
The Asahi Group has mainly been operating in the Alcohol Beverages Category, Non-Alcohol Beverages Category, and Food Category. Scenario analysis began with analysis of the Beer Category, which has the most impact, and we have gradually expanded, refined, and enhanced the scope of analysis.

In 2021, the third year of analysis, we added the Food Category to the scope of the 2019 and 2020 analysis, becoming the first time we analyzed all the categories. From 2022 onward, we will continue to refine and enhance the analysis of all three categories.

### 2019 Scenario Analysis

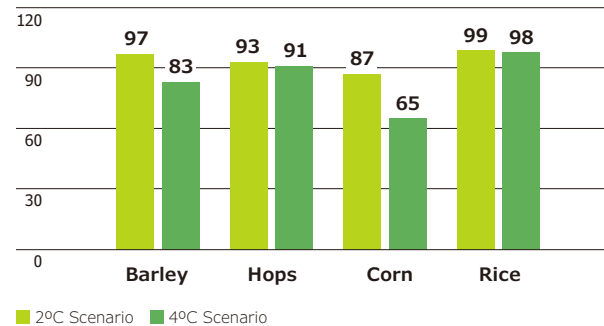
The scenario analysis in 2019 examined the Beer Category. Climate change clearly had a major impact, such as reduced yields of agricultural products that are important for our businesses, a rise in production costs due to the introduction of a carbon tax, and the exacerbation of risks of water stress and flooding in agricultural producing areas and at production sites.

In particular, we analyzed the environmental impact of the main agricultural raw materials used in the Beer Category (barley, hops, corn, and rice) and have come to understand that there is a risk that yields will decrease due to climate change. We have also estimated the financial impact of the introduction of the carbon tax on the Asahi Group. As we discuss measures against these impacts, we are beginning to see the possibility that we can seize opportunities by reinforcing mitigation and adaptation measures.



### Increase in Raw Material Costs Due to Decrease in Yield of Agricultural Raw Materials

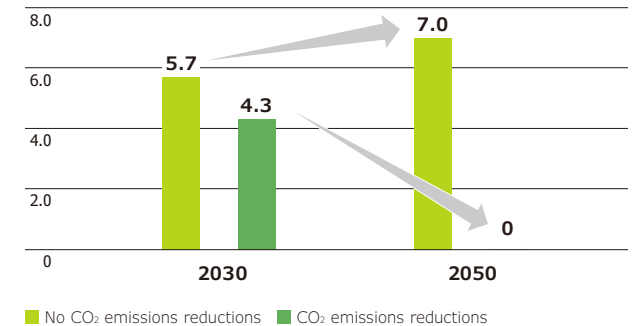
Impact on yield under the 2°C Scenario and the 4°C Scenario (%) (Estimated figures for 2050, with the 2018 supply amount as 100)



Barley and corn show a large decrease in yield under the 4°C Scenario compared with the 2°C Scenario

### Impact on Production Costs (Scope 1 and 2) Due to Introduction of the Carbon Tax

Impact amount of the carbon tax under the 2°C Scenario (¥ billion)



Reduction of carbon tax if Asahi Carbon Zero is implemented  
 ➔ 2030: ¥1.4 billion; 2050: ¥7.0 billion

### 2020 Scenario Analysis

In 2020, we expanded the scope of analysis to the Non-Alcohol Beverages Category and all Alcohol Beverages categories, including the Beer Category.

The scope of analysis was expanded to include coffee, milk, and sugar as primary raw materials in the Non-Alcohol Beverages Category (e.g., carbonated beverages, dairy beverages, coffee-based beverages) and the Non-Beer Alcoholic Beverages Category (e.g., Western liquors, shochu). To predict yields in 2050, the Asahi Group analyzed numerous books on the impact of climate change on farm produce and experimentally calculated impacts by agricultural product type and production area to carefully identify changes in harvest yields. It was learned that the 4°C Scenario would significantly reduce harvest yields in many production areas, particularly of corn and coffee.

Furthermore, we estimated the future prices of corn and coffee, which are high-risk agricultural materials used in the Non-Alcohol Beverages Category, to experimentally calculate their financial impact on the position of the Group. We experimentally calculated the financial impact of climate change based on the amount of raw materials purchased for the current Non-Alcohol Beverages Category. This revealed a potential 1.97 billion yen increase in the cost of corn, and a potential 2.66 billion yen increase in the cost of coffee.

Additionally, we calculated the impact of the introduction of a carbon tax on our production operations for 2030 and 2050. Assuming the carbon tax would be 100 dollars/ton in 2030 and 144 dollars/ton in 2050, the carbon tax liability of the Alcohol Beverages and Non-Alcohol Beverages categories combined would be 6.47 billion yen in 2030 and 6.43 billion yen in 2050. The increasing use of renewable energy leads the Asahi Group to expect that the goal of zero CO<sub>2</sub> emissions from electric power will be achieved by 2050. However, the total carbon tax liability will be nearly unchanged due to the increase in the carbon tax.

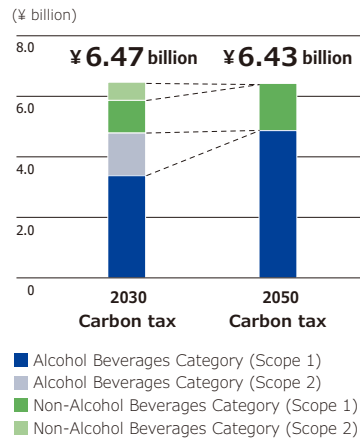
It has been estimated that PET bottles will be impacted by

the carbon tax to a greater extent than other materials in the Non-Alcohol Beverages Category's supply chain. The Asahi Group experimentally calculated the financial impact of the introduction of a carbon tax on the PET bottles that it uses. Assuming that the impact of a carbon tax on the processes involving the extraction

of raw materials to the manufacturing of PET resin is included entirely in the purchase price, the cost increase would be 6.23 billion yen according to the experimental calculation.

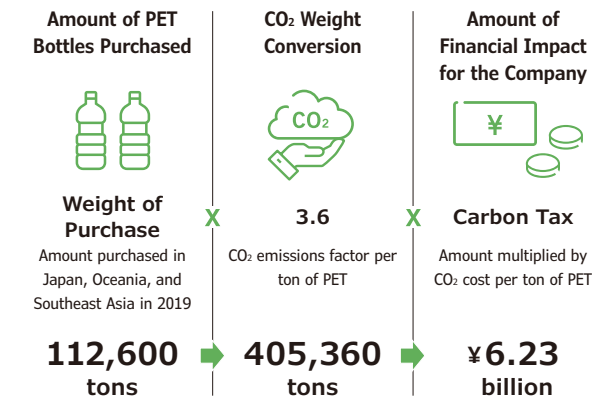
We are identifying and engaging in response measures for the results of each of the above estimations.

#### Impact on Production Costs



Calculating the monetary impact of CO<sub>2</sub> emissions on production phases

#### Impact of Fluctuating PET Bottle Prices



**Increase in costs due to decreased yields of main agricultural raw materials**

Corn	¥1.97 billion
Coffee	¥2.66 billion

(In 2050, under the 4°C Scenario)

- Cooperate with suppliers in response to climate change
- Support local farmers in response to climate change

**Increase in production costs (Scope 1 and 2) due to the introduction of carbon tax**

2030	¥6.47 billion
2050	¥6.43 billion

- Reduce amount of CO<sub>2</sub> emissions
- Utilize in-house technology through co-creation with stakeholders

**Increase in cost of PET bottles when the cost of carbon tax is transferred**

¥6.23 billion (In 2050)

- Switch to recycled PET bottles
- Reduce the weight of PET bottles

## Applying Scenario Analysis to the Strategies

From global common social issues, the Asahi Group has identified risks and opportunities related to its business activities and has established the following four themes to direct its response efforts: “Respond to climate change,” “Respond to plastic issue,” “Sustainable raw material procurement,” and “Preserve sustainable water resources.” We have engaged in comprehensively discussing the major issue of climate change from the perspective of each of these themes.

As a result of endorsing the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) in 2019, we have reevaluated the risks and opportunities of climate change, set out specific scenarios, and visualized the quantitative impact on the entire business. As a result, we reconfirmed the Asahi Group’s resilience to climate change and have been able to share the need for further response measures with the entire Group.

Since then, we have implemented scenario analysis on a yearly basis to renew a shared awareness of the risks and opportunities of climate change, continued to promote existing strategies, and further expanded and enhanced strategies for climate change issues based on the results of scenario analysis.

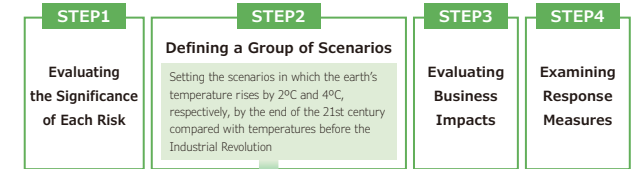
The Asahi Group has established KPIs for each theme and is closely monitoring the progress of efforts to address these themes. Specifically, the Sustainability Task Force carries out the formulation of Group-wide targets, applying them to the targets of each RHQ and closely monitoring the progress of their road map.

The results of the scenario analysis are shared within the Environment Task Force, which handles environmental themes, and we discuss in detail the realization of response measures for these themes within the Environment Task Force.

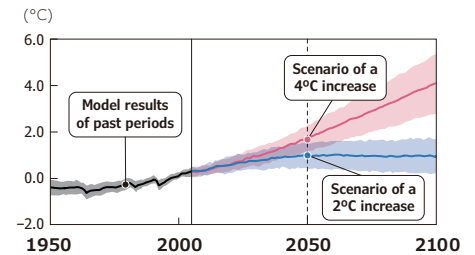
For example, the results of the 2020 scenario analysis were shared with each RHQ within the Environment Task Force to discuss response measures and meticulously monitor progress. Additionally, the results of the 2020 scenario analysis were reported to the Board of Directors. As a result, we confirmed the increased probability of achieving Asahi Carbon Zero and adopted ambitious targets that increase the momentum within the Group to actively engage its achievement, leading to the upward revision of its interim targets.

In this way, we can create specific response measures by visualizing the realistic quantitative impact for the future in 2030 and 2050 through scenario analysis.

## Scenario Analysis Steps



RCP Scenarios Adopted by the IPCC



Source: Created by the Asahi Group based on the IPCC’s Fifth Assessment Report Summary for Policymakers (Figure SPM.7)

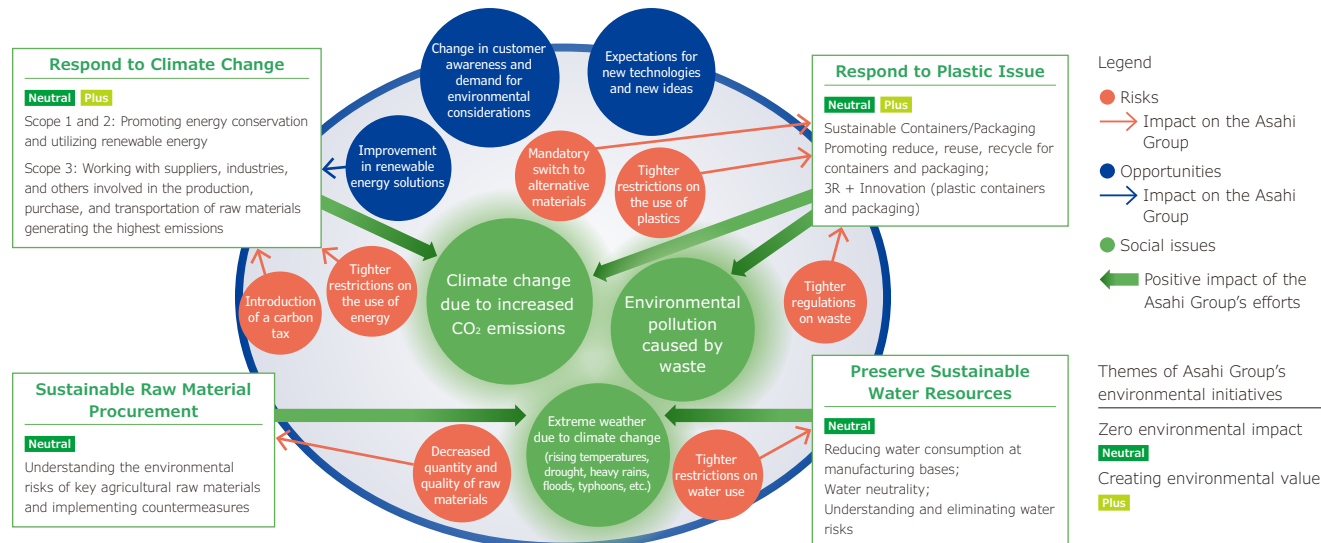
Scenario analysis refers to RCP2.6 (under 2°C) and RCP8.5 (4°C) scenarios developed by the Intergovernmental Panel on Climate Change (IPCC) and the scenario created by the International Energy Agency (IEA). We have established the following two scenarios as the Asahi Group. (STEP 2)

**Under 2°C Scenario**

- Global average temperature rises are kept under 2°C by the end of the 21st century
- Bold political measures and technological innovations are promoted to achieve sustainable development
- Businesses are likely to be impacted by social changes associated with the shift to a decarbonized society

**4°C Scenario**

- Global average temperature rises are kept at approximately 4°C by the end of the 21st century
- Businesses are likely to be impacted by changes to climate, such as temperatures rises





## Scenario Analysis for 2021

We identified various climate change-related risks and opportunities such as transition risks and physical risks in 2021. Among these, the risks and opportunities shown in the table below are particularly important to the Asahi Group. Among the important

risks and opportunities identified, the increase in raw material prices due to the reduction of agricultural materials' harvest yields, the increased cost of water-related risks, and the increases in costs due to the introduction of a carbon tax may

have a particularly significant impact. The Asahi Group implemented the following business impact evaluations and derived key response measures for each.



Risk Categories		Risks		Expected Impacts
Risks	Transition	Policy and Legal	Carbon Tax	Under Asahi Group Environmental Vision 2050, we are taking steps to achieve Asahi Carbon Zero, an initiative that aims for zero CO <sub>2</sub> emissions within our value chain. However, while circumstances vary by country and region, we anticipate a significant financial impact from the introduction of a carbon tax.
			Containers and Packaging (Scope 3)	Since containers and packaging, which make up approximately 40% of Scope 3, are mainly manufactured with fossil fuels, the introduction of a carbon tax is expected to have a significant impact on procurement costs.
		Regulations on Water Use	Since water is indispensable to our raw material production and factory operation, we anticipate that the introduction of additional regulations on water use will have a significant impact on our business continuity and financial position.	
	Market and Technology	Changes in Customer Behaviors	Heightened environmental awareness of consumers has the potential to become a new factor that impacts net sales.	
Physical	Chronic	Rising Price of Raw Materials	If a rise in raw material prices and the resultant transition to alternative raw materials become necessary, we will incur significant financial impact and this may affect the continuity of our business operations.	
		Rise in Global Average Temperature	Various costs of cooling products are expected to increase.	
	Acute	Changes in Precipitation Patterns	If our agricultural land and production bases were impacted by severe water shortages, it could potentially become difficult to continue our business operations.	
Intensification of Abnormal Weather		In the event that damage from heavy rains and typhoons, which are occurring more frequently in recent years, were to become more severe, our value chain may suffer significant harm, making it difficult to continue our business operations.		

Defining a Group of Scenarios (page 7)

Main Impacts of Risks		Business Impacts	Response Measures to Reduce Risks
<b>Increased procurement costs due to reduced yields of agricultural products</b>		Pages 9–10	<ul style="list-style-type: none"> <li>Share information with suppliers</li> <li>Conduct business with operators that have acquired third-party certification</li> <li>Directly procure raw materials from farmers</li> <li>Support farmers</li> </ul>
<b>Water-Related Risks</b>	Water-related risks in raw material production areas (drought, etc.)	Page 16	<ul style="list-style-type: none"> <li>Countermeasures for heavy rain, equipment, etc.</li> <li>Assessment and elimination of water risks</li> </ul>
	Halt to operations at production bases and damage to equipment due to flooding	Page 15	
<b>Introduction of Carbon Tax</b>	Impact on Production Costs (Scope 1 and 2)	Page 12	<ul style="list-style-type: none"> <li>Reduce CO<sub>2</sub> emissions based on Asahi Carbon Zero</li> <li>Utilize in-house technology (beer by-products, etc.)</li> </ul>
	Impact on Scope 3	Page 13	

Opportunity Categories		Opportunities	Expected Impacts
Opportunities	Products and Services	Changes in Customer Behaviors	<ul style="list-style-type: none"> <li>Heightened environmental awareness of consumers has the potential to become a new factor that impacts net sales.</li> <li>Heightened awareness of disaster prevention following the intensification of climate change is expected to increase demand for products suitable for stockpiling.</li> <li>Demand is expected to increase for products that lessen the impact of climate change on people's health.</li> </ul>
		Changes in Product Markets	Temperature increases are expected to have a major impact on beer and beverage consumption during the summer.
	Energy Sources	Utilization of New Technology	Development of technology that contributes to decarbonization has the potential to become a new factor that impacts net sales.

Key Impacts of Opportunities		Business Impacts	Initiatives for Opportunities
<b>Increase in demand for emergency supplies</b>		Page 18	Provide goods suitable for emergency supplies and stockpile
<b>Increase in demand for products that reduce health impacts</b>		Page 18	Provide heatstroke prevention products
<b>Development of technology that contributes to decarbonization</b>		Page 18	Develop and expand sales channels for highly resilient agricultural materials

## 1. Impact on Procurement Costs Due to Reduced Yields of Agricultural Products

In 2019, the Asahi Group analyzed the impact of climate change on the main agricultural materials used in the Beer Category (barley, hops, corn, and rice), and it learned that climate change created the risk of a reduction in harvest yields. In 2020, the scope of analysis was expanded to include coffee, milk and sugar as primary raw materials in the Non-Alcohol Beverages Category (e.g., carbonated beverages, dairy beverages, coffee-based beverages) and the Non-Beer Alcohol Beverages Category (e.g., Western liquors, shochu). To predict harvests in 2050, the Asahi Group analyzed multiple books on the impact of climate change on farm produce and experimentally calculated impacts by agricultural product type and production area to carefully identify changes in harvest yields. We also estimated future prices and experimentally calculated the financial impact of climate change.

In 2021, we added palm oil, cacao, and soybean to the scope of analysis. These are important raw materials used in the Food Category that are thought to have a major impact on business continuity due to their high procurement volume and cost. Additionally, in a continuation from 2019 and 2020, we expanded the geographical areas of analysis for barley and corn, which are vital for the business continuity of the Asahi Group. We further refined the analysis of barley by estimating its future price and calculating its financial impact.

### Yield Forecasts for Each Scenario in 2050 (Compared with Current Yields)

It has become clear that the yield for barley, the main ingredient in the Beer Category, has decreased in some areas. As for new areas in the scope of analysis in 2021 (Hungary, the Northern and Southern regions of Italy, and Poland), yields are expected to decrease in Poland and the Southern region of Italy.

Under the 4°C Scenario, yields are expected to decrease

significantly in numerous production areas for corn and coffee, common raw materials in each category and the main raw materials in the Non-Alcohol Beverages Category.

Regarding the main agricultural raw materials in the Food Category, despite a downward trend in palm oil yields, cacao is expected to increase and soybean is also expected to increase in some areas.

Additions in 2021
  More than a 15% decrease compared with current yields

	Item	Country of Production	Under 2°C Scenario	4°C Scenario
Main Raw Materials of Beer Category	Barley	Canada (Spring)	+1%	+2%
		France (Spring)	-10%	-18%
		France (Winter)	-5%	-10%
		Eastern Region of Germany (Winter)	+8%	+19%
		Australia	-7%	-13%
		Czech Republic (Spring)	+18%	+7%
		Hungary (Spring)	+4%	+9%
		Northern Region of Italy (Winter)	+10%	+14%
		Southern Region of Italy (Winter)	-8%	-11%
		Poland	-9%	-15%
	Hops	Czech Republic (Yield)	-5%	-7%
		Czech Republic (Quality)	-13%	-25%
	Common Raw Materials of Each Category	Corn	United States	-12%
Brazil			-3%	-9%
Argentina			-9%	-16%
China			0%	-10%
Ukraine			-17%	-26%
Germany			-2%	-4%
Australia			-13%	-27%

	Item	Country of Production	Under 2°C Scenario	4°C Scenario
Raw Materials of Non-Alcohol Beverages and Other Alcohol Beverages Categories	Sugar	Australia	+1%	+2%
		Brazil	+3%	+12%
		India	0%	-3%
		Japan	+2%	+21%
		Thailand	-26%	-45%
	Raw milk	Australia	-9%	-19%
		United States	-6%	-11%
		Japan	-2%	-3%
		New Zealand	-2%	-2%
	Coffee	Brazil	-8%	-23%
		Colombia	-4%	-15%
		Guatemala	-11%	-17%
		Tanzania	-2%	-9%
		Ethiopia	-8%	-25%
Vietnam		-9%	-24%	
Indonesia		-10%	-30%	

	Item	Country of Production	Under 2°C Scenario	4°C Scenario
Main Raw Materials of the Food Category	Palm oil	Indonesia (Suitable Areas)	+1%	-1%
		Malaysia	-3%	-13%
	Cacao	Ghana	+4%	+11%
		Côte d'Ivoire	+1%	+12%
	Soybean	United States	-5%	-10%
		Canada	+16%	+28%
		China	0%	+5%
		Japan (Hokkaido)	+6%	+9%

## 1. Impact on Procurement Costs Due to Reduced Yields of Agricultural Products

### ■ Future Prices Outlook and Financial Impact






The Asahi Group estimated the future prices of corn, coffee, and sugar, which are high-risk agricultural materials used in the Non-Alcohol Beverages Category, to experimentally calculate their financial impact on the position of the Group.

The Asahi Group experimentally calculated the financial impact of climate change based on the amount of raw materials purchased for the current Non-Alcohol Beverages Category. This revealed a potential 1.97 billion yen increase in the cost of corn and a potential 2.66 billion yen increase in the cost of coffee. Meanwhile, the financial impact of sugar is expected to decrease since the price has fallen due to an increase in production volume.

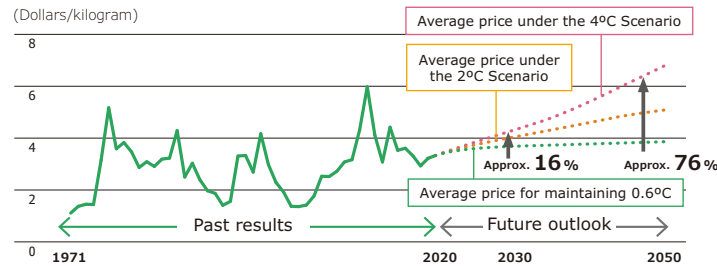
The financial impact of barley, which was added to the research, is expected to be approximately 400 million yen. Despite the price rising due to a decrease in production volume in some areas, this is minor compared to price fluctuations due to factors other than changes in production volume. The financial impact of palm oil and soybean is also expected to be minor.

Meanwhile, the prices of cacao and sugar are expected to fall due to an increase in production volume following rises in the global temperature. The procurement cost of sugar is expected to fall to approximately 2.5 billion yen in 2050.

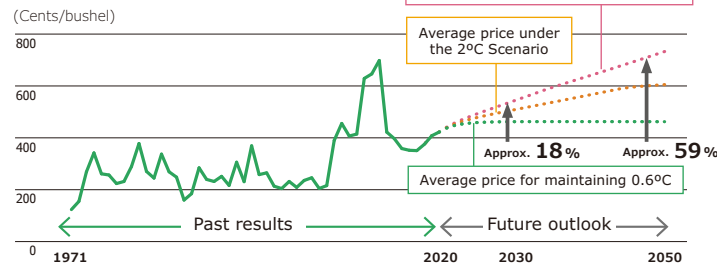
#### Experimental Calculations of Financial Impact in 2050

Item	4°C Scenario
 <b>Palm oil</b>	¥20 million
 <b>Cacao</b>	-¥60 million
 <b>Soybean</b>	¥4 million
 <b>Barley</b>	¥400 million
 <b>Sugar</b>	-¥2.48 billion

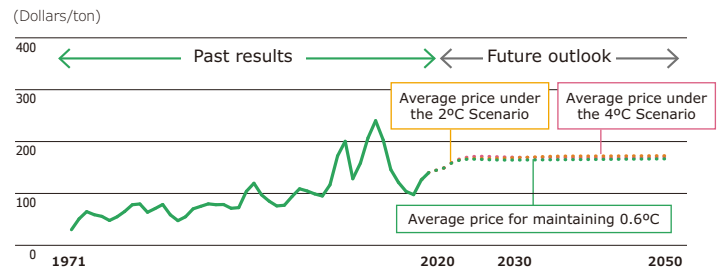
#### Forecast for Price of Coffee



#### Forecast for Price of Corn



#### Forecast for Price of Barley



#### Calculation Methods

Basis of costs calculation: From historical price trends, we derived a formula to identify variables (balance of production and consumption, GDP per capita, previous year's market price, and the proportion of ethanol raw materials [corn only]) and used regression analysis to reproduce past prices.

Predictions of future production and consumption, GDP per capita, and the proportion of ethanol raw materials (corn only) were entered into the formula to estimate future prices.

Coffee prices are expected to rise by an average of approximately 16% in 2030 and approximately 76% in 2050 under the 4°C Scenario, compared to maintaining 0.6°C.

Corn prices are expected to rise by an average of approximately 18% in 2030 and approximately 59% in 2050 under the 4°C Scenario, compared to maintaining 0.6°C.

Barley prices are expected to rise by an average of approximately 4% in 2030 and approximately 2% in 2050 under the 4°C Scenario, compared to maintaining 0.6°C.

## 1. Impact on Procurement Costs Due to Reduced Yields of Agricultural Products

### Response Measures

To stabilize the procurement of raw materials that are essential to the Asahi Group's businesses, we aim to cooperate with and support farmers in all areas where raw materials are sourced. Additionally, we aim to optimize procurement by promoting countermeasures, such as sharing the results with suppliers on future risks. Below, we will introduce some of the products we are working on in each area.

▶ More details can be found in *Asahi Group Sustainability Data Book* → "Sustainable Raw Material Procurement"



#### 1. Directly procure barley from farmers

Asahi Beverages Pty Ltd. purchased approximately 70,000 tons of barley directly from farmers in Victoria and Queensland. Amid wildfires, droughts, and other natural disasters caused by climate change, we are monitoring agricultural processes and investing in new technology to improve the sustainability and efficiency of barley cultivation together with farmers.

In the Northern Region of Australia, we are promoting the introduction of a soil improvement program and launching initiatives aimed at increasing yield.



#### 3. Share information with raw material suppliers

Based on risk evaluation experimental calculations, we share information on environmental and human rights risks with raw material suppliers, which have a significant impact on the procurement of agricultural raw materials. We will continue to check local information as it becomes available, while further strengthening information sharing with raw material suppliers.

#### 2. "FOR HOPS," a project that supports hop farmers

In the Saaz hops growing region of the Czech Republic, we are introducing support through smart agriculture that utilizes AI technology in order to increase the resilience of hops production against climate change.

A team comprising Agritecture Consulting, TENSOAI, Hop Growers Union of the Czech Republic, hop research institutes, major producers, and Asahi Europe and International Ltd. launched the project in June 2021 with a 190,000-dollar subsidy from Microsoft's AI for Earth program.

In order to further enhance stability and predictability of hops production in the Saaz region, we utilize real-time data at farms that use big data, past data, information from satellites, and IoT sensors, and which have identified methods of mitigating the impacts of climate change on agricultural products, such as administration of water and fertilizer and countermeasures against damage from disease and harmful insects, and which have developed smart agriculture that advises farmers through a mobile app.



#### 4. Conduct business with agricultural product operators that have acquired third-party certification

Asahi Group Holdings, Ltd. joined the Roundtable on Sustainable Palm Oil (RSPO) in December 2016 and became a full member of this group in July 2019 with the aim of being able to take environmental, human rights, and other issues into account when procuring palm oil.

In addition, from 2019, we have been purchasing certified credits under the Book and Claim certification method for some of the palm oil procured by the Group, and Asahi Group Foods, Ltd. plans to purchase certified credits for 50% of its total palm oil procurement in 2022.

We will continue our efforts to procure sustainable palm oil in accordance with the Asahi Group Sustainable Procurement Principles.

## 2. Impact of Carbon Tax Introduction on Production Costs (Scope 1 and 2) and on Scope 3

Under Asahi Group Environmental Vision 2050, we are taking steps to achieve Asahi Carbon Zero, an initiative that aims for zero CO<sub>2</sub> emissions within our value chain. However, while circumstances vary by country and region, we anticipate a significant financial impact from the introduction of a carbon tax. We therefore calculated the impact of a carbon tax on our production operations for 2030 and 2050.

### ■ Scope 1 and 2

The Asahi Group calculated the financial impact of the introduction of a carbon tax on its production operations for 2030 and 2050, specifically toward its Scope 1 and 2 emissions in the Alcohol Beverages (Japan, Europe, and Oceania), Non-Alcohol Beverages (Japan, Oceania, and Southeast Asia), and Food (Japan) categories.

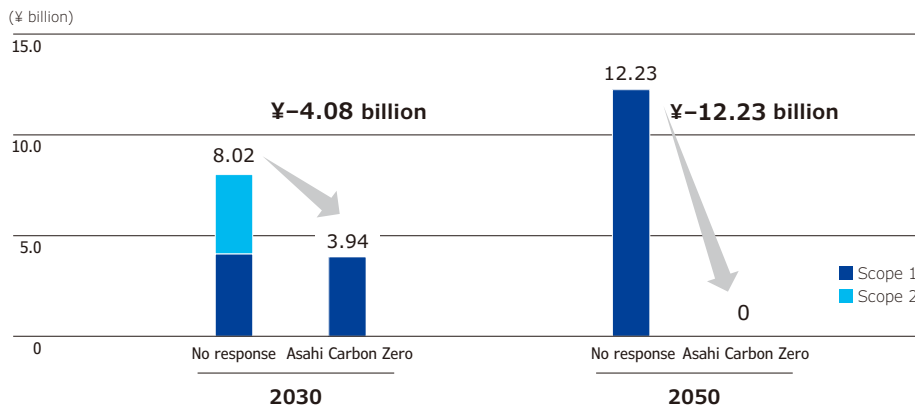
Accordingly, as carbon tax amounts are likely to increase, the estimated financial impact of a carbon tax introduction increased from the trial calculation we performed in 2020. However, we have confirmed that if we reach Asahi Carbon Zero's interim target of a 70% reduction of CO<sub>2</sub> emissions by 2030, this would result in a reduction of 4.08 billion yen in 2030 and the entire cost amount of 12.23 billion yen if we achieve zero CO<sub>2</sub> emissions in 2050.

	2030			2050	
	Scope 2 electric power CO <sub>2</sub> emission factor	Amount of carbon tax	Total financial impact	Amount of carbon tax	Financial impact
<b>Experimental calculation for 2021</b>	-69.1%	\$130 <small>* \$90 in Southeast Asia</small>	<b>¥8.02 billion</b>	\$250 <small>* \$200 in Southeast Asia</small>	<b>¥12.23 billion</b>
Experimental calculation for 2020	-51%	\$100	¥6.47 billion	\$144	¥6.43 billion

Notes:

1. The impact amount is calculated from the volume of CO<sub>2</sub> emissions during manufacturing.
2. The Scope 2 emissions factor for electricity comes from the International Energy Agency (IEA)'s "Net Zero by 2050: A Roadmap for the Global Energy Sector (NZE)."
3. The amount of carbon tax (unit price per ton) is independently estimated and set according to the forecast figures by the IEA NZE.

### Experimental Calculation of Total Financial Impact of Carbon Tax for 2021



Note: Details of Asahi Carbon Zero target: 70% reduction (compared with 2019) by 2030 in 2021; 50% reduction (compared with 2019) by 2030 in 2020

### Calculation Method

In 2020, we calculated the impact of a carbon tax introduction on our production operations based on the assumption that the carbon tax would be 100 dollars/ton in 2030 and 144 dollars/ton in 2050. We also used a Scope 2 emission factor for electricity that is 51% lower than our current emission factor. The scope that this calculation covered included the Alcohol Beverages (Japan, Europe, and Oceania) and Non-Alcohol Beverages (Japan, Oceania, and Southeast Asia) categories.

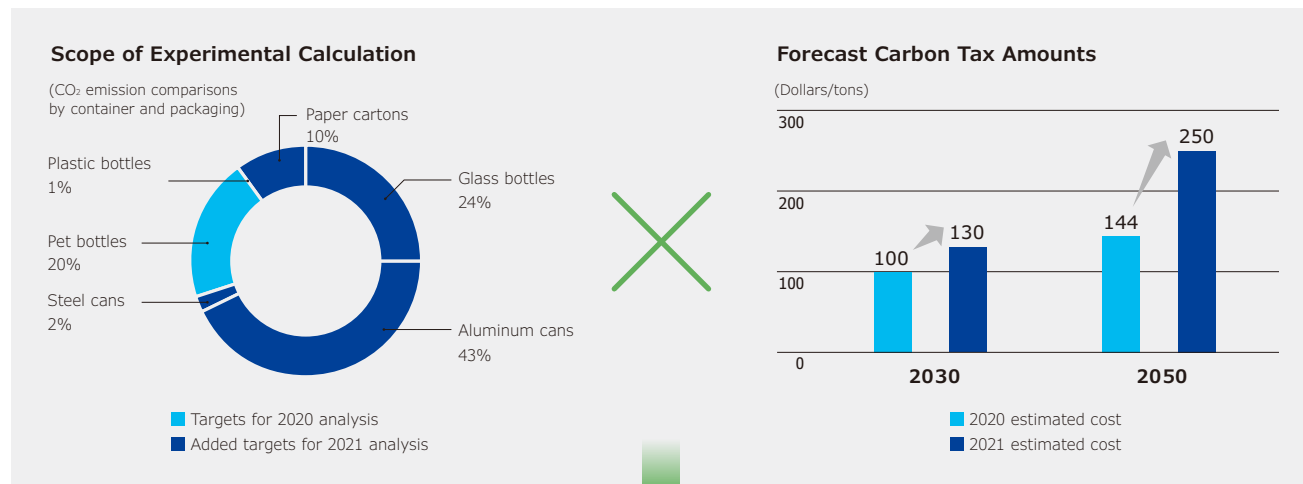
Meanwhile, in 2021, we calculated the impact based on the assumption that the carbon tax would be 130 dollars/ton (90 dollars/ton in Southeast Asia) and 250 dollars/ton (200 dollars/ton in Southeast Asia). We also expanded the scope to cover Scope 1 and 2 CO<sub>2</sub> emissions in the Alcohol Beverages (Japan, Europe, and Oceania), Non-Alcohol Beverages (Japan, Oceania, and Southeast Asia), and Food (Japan) categories. Furthermore, we used a Scope 2 emission factor for electricity that is 69.1% lower than our current emission factor.

## 2. Impact of Carbon Tax Introduction on Production Costs (Scope 1 and 2) and on Scope 3

### ■ Scope 3 (Containers and Packaging)

In regard to 2030 and 2050, the targeted years of Asahi Carbon Zero, we calculated the financial impact of the introduction of a carbon tax on containers and packaging in 2021, which account for approximately 40% of the Scope 3 emissions of the Asahi Group. The scope of this calculation covered six varieties of representative containers: PET bottles, aluminum cans, steel cans, glass bottles, plastic bottles, and paper cartons. This differs from the calculation from 2020 in which we only calculated the financial impact of PET bottles, which, among all the containers we use within the supply chain of the Non-Alcohol Beverages Category, are believed to be significantly impacted by the introduction of a carbon tax.

As we expanded the varieties of containers and packaging used in this trial calculation and based it on the assumption that the forecast for the carbon tax will be higher than the previous year, the calculated amount rose significantly year on year. Accordingly, the amount of the carbon tax, which is now expected to cover all containers, is forecast to be 32.25 billion yen in 2030 and 62.01 billion yen in 2050. Through this calculation, we confirmed that PET bottles would account for 49.5% and aluminum cans 28.7% of the additional cost compared to the procurement cost of 2020, respectively, as these containers give off a particularly large amount of CO<sub>2</sub> emissions.



### Financial Impact of Carbon Tax Introduction

	2030	2050
<b>Experimental calculation for 2021</b>	¥32.25 billion	¥62.01 billion
<b>Experimental calculation for 2020</b>	¥4.33 billion	¥6.23 billion

**Notes:**

1. The impact amount is calculated from the volume of CO<sub>2</sub> emissions during manufacturing.
2. The amount of carbon tax is independently estimated and set according to the forecast figures by the IEA's "Net Zero by 2050: A Roadmap for the Global Energy Sector (NZE)."
3. In 2020, the scope covered Japan, Europe, Oceania, and Southeast Asia. In 2021, the scope covered Japan (Alcohol Beverages and Non-Alcohol Beverages), Europe, and Oceania.

### Calculation Method

While the scope of the trial calculation only covered PET bottles in 2020, it was expanded to cover six varieties of major containers and packaging in 2021.

Furthermore, the assumed amounts for the carbon tax used in the 2020 trial calculation were 100 dollars/ton for 2030 and 144 dollars/ton for 2050, with the targeted areas being Japan, Europe, Oceania, and Southeast Asia. Meanwhile, the assumed amounts for the 2021 trial calculation were 130 dollars/ton (90 dollars/ton in Southeast Asia) for 2030 and 250 dollars/ton (200 dollars/ton in Southeast Asia) for 2050, targeting Japan (Alcohol Beverages and Non-Alcohol Beverages), Europe, and Oceania.

## 2. Impact of Carbon Tax Introduction on Production Costs (Scope 1 and 2) and on Scope 3

### Response Measures

The Asahi Group has formulated a broad range of initiatives to reduce CO<sub>2</sub> emissions with a view to achieving Asahi Carbon Zero. These include introducing renewable energy, capturing and reusing steam and other waste heat given off during the manufacturing process, introducing cogeneration facilities, and transitioning to alternative fuels. Going forward, the Group will invest over 50.0 billion yen in similar initiatives in an effort to reach its CO<sub>2</sub> reduction targets for 2030.

▶ More details can be found in *Asahi Group Sustainability Data Book* → “Respond to Climate Change”

Additionally, we engage in activities to ensure our containers and packaging are more sustainable, striving to conserve resources as well as reduce the weight and improve the recyclability of our containers and packaging from a 3R (reduce, reuse, recycle) perspective. These efforts extend to all kinds of containers and packaging materials, including PET bottles, cans, glass bottles, caps, labels, and cardboards. We also engage in efforts toward innovating containers aimed at changing the consumer behavior of throwing containers away after one use.

▶ More details can be found in *Asahi Group Sustainability Data Book* → “Respond to Plastic Issue”

### 1. Use of green heat in the Netherlands and the Czech Republic

We are currently proceeding with the gradual transition to renewable energy for electricity at our European plants. At the same time, we are undertaking efforts toward sustainable heat, in addition to electricity, in order to further accelerate our initiatives for achieving carbon neutrality. To that end, we have commenced the use of “green heat,” which is generated from the renewable energy used during the brewing process.

In 2021, Koninklijke Grolsch N.V. in the Netherlands, which operates under the corporate umbrella of Asahi Europe and International Ltd., concluded a heat supply contract with Twence, a regional energy supplier, and subsequently commenced the use of green heat in 2022. Through the use of green heat, Koninklijke Grolsch N.V. is expected to be able to reduce its CO<sub>2</sub> emissions from natural gas usage by approximately 5,500 tons a year.

Also, in the Czech Republic, Plzeňský Prazdroj, which operates under the same corporate umbrella, entered into a long-term contract with the energy company Plzeňská teplárenská for the supply of green heat, running up to 2028. Based on this contract, Plzeňský Prazdroj commenced the use of green heat that utilizes wood chips as a raw material in 2021.

Going forward, we will continue to reinforce our initiatives to utilize renewable energy in Europe with the aim of achieving carbon neutrality.



### 2. Demonstration testing of biomethane fuel cell power generation system

At the Ibaraki Brewery of Asahi Breweries, Ltd., we are carrying out a demonstration test of power generation through fuel cells that utilize biomethane gas derived from wastewater treatment processes. We believe that the widespread use of this system in society will contribute to the reduction of the whole of society's CO<sub>2</sub> emissions. Accordingly, we intend to promote the popularization of the newly developed system by disclosing as much information as possible, without obtaining a patent for it.



### 3. Expanding the introduction of renewable energy through PPA

In 2019, Karadoc Solar Farm, one of the largest solar power plants in Victoria, Australia and built by Australian energy solutions provider BayWa r.e., officially commenced its commercial operations and began supplying electricity to Carlton & United Breweries Pty. Ltd. (CUB), a subsidiary of Asahi Holdings (Australia) Pty Ltd. Upon the plant's completion, CUB entered into a 12-year power purchasing agreement (PPA) with BayWa r.e. to receive an annual supply of 74,000 MWh of electricity. Not only does this PPA allow CUB to procure renewable energy, it will also reduce purchasing costs and secure power supply over the long term, thereby bringing the company much closer to its goal of sourcing 100% of its purchased electricity from renewable sources by 2025. As of 2020, CUB's classic beer brand, *Victoria Bitter*, is brewed with 100% solar electricity.



### 4. Commencing delivery of major brand *Victoria Bitter* via electric truck

In July 2021, Asahi Beverages Pty Ltd., a subsidiary of Asahi Holdings (Australia), introduced an electric truck for the delivery of its mainstay brand *Victoria Bitter*. The truck is powered entirely by 100% solar power drawn from Asahi Beverages' solar farm and is able to run up to 250 km off a single charge. The electric truck delivers over 100,000 cans and bottles each week from Asahi Beverages' distribution center in west Melbourne to stores across the city. The introduction of the electric truck was made possible through the cooperation of Linfox Pty Ltd., a major logistics company, and Volvo Group Australia, which provides vehicles to Linfox. By expanding the use of electric trucks moving forward, Asahi Beverages aims to realize its targets for CO<sub>2</sub> reductions.



### 3. Business Impact Assessment of Water and Other Damage and Risk Assessment of Raw Material Producing Areas

For the Asahi Group, which makes use of the blessings of nature in its business activities, water is an indispensable and valuable resource. It is also a precious resource for all people and the global environment.

Floods and other natural disasters are currently occurring on a global scale, as are issues related to water resources. Demand for water has been growing each year, and there is a risk that the number of areas facing water shortages will increase going forward. In 2021, the Asahi Group implemented water risk analysis and estimated the impact on its businesses. This analysis identified risks including operational impact on production bases and impact on the procurement of raw materials.

#### ■ Operational Impact on Production Bases

We estimated the impact of typhoons, floods, and other natural disasters on all Group production bases under a scenario that assumes a 4°C rise at the end of the 21st century by utilizing the World Resources Institute tool Aqueduct Floods, which investors use to conduct flood risk analysis due to the impact of climate change. Assuming the occurrence of a once-in-a-century flood, we analyzed the risk of flooding at each production base from the perspectives of river flooding and coastal flooding.

As a result of our analysis, five bases are at risk of damage to property, plant, and equipment and inventory assets due to flooding above floor level, with an estimated damage amount of approximately 1.73 billion yen.

We have also identified 10 production bases where suspension of operations is highly likely and which face approximately 6.72 billion yen in loss of opportunities if suspension of business were to continue.

Risk	Survey item	Number of bases impacted	Impact amount
Suspension of operations and damage to bases due to typhoons, floods, and other natural disasters*1	Damage to property, plant, and equipment*2	5	¥1.73 billion
	Opportunity loss due to suspension of operations*3	10	¥6.72 billion

#### ■ Calculation Method

\*1 Calculation targeted property, plant, and equipment and inventory assets of production bases in 2020.

\*2 We determined damage percentages specific to depth of flooding and estimated the amount of damage to property, plant, and equipment and inventory assets of production bases while taking into account the insurance coverage ratio.

\*3 We calculated the financial impact of opportunity loss by determining the average number of days of suspended operations specific to depth of flooding and the number of days of suspended operations at each impacted production base.

#### ■ Water Risks in Raw Material Production Areas

We have identified regional raw material production risks through survey indicators\*1 and have also identified major suppliers and production areas that have significant business impacts by conducting evaluations through a combination of water risk survey indicators and business characteristic indicators.\*2 The results showed that the Group faces the following risks in each of the areas where it procures raw materials.

\*1 Survey indicators: water stress, future water stress, flood risks, drought risks, regulatory risks, and risk to reputation. These risks were evaluated using the five grades of "extremely low," "low," "moderate," "high," and "extremely high."

\*2 Business characteristic indicators: procurement amount and water consumption amount



### 3. Business Impact Assessment of Water and Other Damage and Risk Assessment of Raw Material Producing Areas

#### ■ Analysis Results

- Current and future water stress is extremely high in China and the United States. Such risk increases when irrigation water is being used.
- In the United States, where soybeans and corn are produced, the business impact of future water stress is extremely high in Michigan while the business impact of future water stress and risk to reputation is extremely high in Illinois.
- Flood risks are extremely high in the Czech Republic, where barley is produced. Concerns of business impact would arise in the event of floods or other water-related disasters affecting farmland, storage facilities, or transportation methods. Drought risks and risk to reputation were also high in the country.
- In Brazil, where coffee is produced, risk to reputation is extremely high in Minas Gerais and flood risks are extremely high in São Paulo.
- In Australia, where sugarcane is produced, the risk to reputation is extremely high. A significant business impact would also arise in the event that our reputation were damaged due to misinformation. Furthermore, in Queensland, there are concerns of business impact from flood risks.

Extremely high High

	Raw material	Raw material producing countries with high risks	Risk type					
			Water stress	Future water stress	Drought	Flood	Regulatory	Reputation
Food Category	Palm oil	Malaysia				High		High
		Indonesia			High	High		Extremely high
		The Philippines			High	High		High
	Soybean	Japan		High				
		China	High	Extremely high		High		Extremely high
		Canada						High
Raw milk	United States		Extremely high		High		Extremely high	
	The Netherlands	High	Extremely high				High	
Cacao	Ghana				High			
	Côte d'Ivoire					High		
Beer Category	Barley	Czech Republic			High	Extremely high		High
		Italy		High				
	Hops	Poland			High			High
		Germany				High		High
	Rice	Japan				High		High
Common in category	Corn	United States				Extremely high		Extremely high
Non-Alcohol Beverages Categories	Coffee	Brazil				Extremely high		Extremely high
	Sugarcane	Thailand				High		High
		Australia				High		Extremely high
	Skim milk and whole milk powder		High					

### 3. Business Impact Assessment of Water and Other Damage and Risk Assessment of Raw Material Producing Areas

#### ■ Response Measures

Based on these trial calculations, the Asahi Group will implement the assessment of water-related risks and the reinforcement of response measures, while promoting the further reduction of water usage in plants, in order to realize the use of sustainable water resources. Additionally, we will conduct initiatives to realize the sustainable procurement of raw materials.

▶ **More details can be found in Asahi Group Sustainability Data Book**  
→ “Preserve Sustainable Water Resources”

▶ **More details can be found in Asahi Group Sustainability Data Book**  
→ “Sustainable Raw Material Procurement”



#### 1. Countermeasures for heavy rain, equipment, etc., due to the operational risks at production bases

When a large-scale natural disaster occurs, there may be risks to suspension of operations resulting from the inability to secure personnel and the stagnation of product supply due to damage to production and logistics functions. Accordingly, the Asahi Group is creating systems that minimize the impact on Group business activities by undertaking the development of various action manuals, ensuring the maintenance of facilities and equipment, and the holding of emergency drills on themes such as ensuring the safety of employees (and their families) and business continuity.

In anticipation of large-scale natural disasters, especially in earthquake-prone Japan, we are formulating business continuity plans (BCPs) based on the results of previous earthquake countermeasures and the experience of the Great East Japan Earthquake (March 11, 2011).

#### 2. Reduction of water usage, assessment, and elimination of water risks

We are reducing water consumption at the water recycling facility at the Yatala Brewery of Carlton & United Breweries Pty. Ltd. by utilizing high-quality recycled water in various aspects of manufacturing (excluding any processes that come in contact with product), such as cleaning steam generators and production tanks and creating steam used for heat sterilization. Furthermore, we are reducing the volume of water we use by reviewing the manufacturing process.

In the evaluation of water stress risks (the degree of stress between water supply and demand), we found that two of our production plants in Italy qualify as extremely high risk. We have examined survey results for past water risk (vulnerability) surveys in Europe and begun considering possible countermeasures against such risks.

At production sites in Japan, no sites were found to be high risk under the above water risk assessment criteria. However, we conducted our own more detailed water risk (vulnerability) surveys at two plants in Japan during 2020 and confirmed that there were no serious risks. Additionally, we have started conducting surveys of plants at other overseas sites, such as those in Oceania.



#### 3. Implementation of water risk surveys for suppliers

As a result of water risk surveys of agricultural production sites, we recognized the need for on-site checks. Accordingly, from 2017 we have been conducting interviews on the circumstances of water risks when implementing supplier quality audits.

Between 2017 and 2021, we conducted supplier quality audits at the factories of the total 131 suppliers and conducted interviews on the circumstances of water risks.

- Procurement of raw materials impeded by water shortages: 129 factories not impeded; two impeded
- Operation of factories impeded by water shortages: 131 not impeded

The two factories which answered that procurement of raw materials was impeded by water shortages have experienced severe droughts in the past, resulting in crop failure of agricultural products. As a response to this, agricultural producers at Factory A have prepared numerous water sources, and the procurement division of Asahi Group Holdings, Ltd. has carried out a decentralization of procurement areas in response to risks. Suppliers at Factory B are examining multiple agricultural raw materials.

Going forward, we will implement appropriate countermeasures that are relevant to the situation and surroundings if it becomes clear that water-related risks exist.

## Opportunities

The Asahi Group is aware of the importance of seizing business opportunities that contribute to resolving climate change while assessing the related risks and opportunities. We will not only reduce the environmental impact by utilizing the Group's proprietary technologies but also create a cycle that is positive for the environment by creating environmental value in society and having a positive impact on the environment. Furthermore, we aim to realize a sustainable society while achieving business growth through the support of a rich diet.

### ■ Expansion of Sales Channels for Agricultural Materials Derived from Brewing Yeast Cell Walls

With expectations to respond to environmental issues, including climate change, new food system strategies are being conceived in countries around the world and the reduction in volume of chemical fertilizer and agrochemical use has been set as one of the targets for achieving this. Amid an increase in the risk of damage to agriculture, a decrease in brewing yields of agricultural products, and a decrease in quality due to climate change, an increase in demand is predicted for agricultural materials derived from brewing yeast cell walls (fertilizer raw materials) that are expected to improve crop growth. The agricultural materials derived from brewing yeast cell walls developed by the Asahi Group have been confirmed to have positive effects including the enhancement of crop immunity against disease, increase in yield, and increase in quality of agricultural products. These agricultural materials can also be utilized in diverse crops and are expected to reduce agrochemical use and reduce the CO<sub>2</sub> emissions corresponding to yield.

Asahi Biocycle Co., Ltd. carried out evaluation tests in collaboration with JA Gifu (located in Gifu, Gifu Prefecture, Japan) to confirm whether we can reduce damage to rice plants from golden apple snails,\* by using agricultural materials derived from brewing yeast cell walls in rice cultivation.

Golden apple snails are an invasive species of shellfish that are known for causing damage to crops in paddy fields, such as rice, and thrive in warm regions. Furthermore, the expansion of their habitat due to the impact of global warming is becoming a serious agricultural issue.

In June 2020, we used agricultural materials derived from brewing yeast cell walls (raw materials in fertilizer) in conjunction with the transplantation of rice seedlings in approximately five hectares of paddy fields in Mizuho, Gifu Prefecture, Japan. After using these fertilizer raw materials, we observed very little damage to the rice plants compared with adjacent fields that did not use the fertilizer. In 2021, the second year of the

evaluation tests, we expanded the area of the tests to a total of 12 hectares of paddy fields belonging to JA Gifu's Sunami Agricultural Association.

\* Scientific name: *Pomacea canaliculata*



Paddy fields that did not use the fertilizer raw materials suffered approximately 20% crop damage due to golden apple snails (September 2020).



Paddy fields that used the fertilizer raw materials reduced crop damage (September 2020).

### ■ Sales Expansion of Freeze-Dried Products

Natural disasters, such as heavy rain and drought, are expected to gradually increase in strength and frequency due to climate change. The Cabinet Office of Japan has indicated its direction to formulating and promoting disaster plans in preparation for severe meteorological disasters. They have also recognized the need to increase stockpiles of emergency food and prepare for prolonged stays in evacuation centers due to an increase in awareness of natural disasters.

There is a need to provide high-added value and functionality due to the diversification of emergency foods and stockpile food for people requiring special attention, such as the elderly, infants, and people with chronic illnesses, and for the reduction of stress when staying in evacuation centers. Due to this need, the rolling inventory method is being widely publicized by the government and local authorities, which are encouraging the regular purchase of food for stockpiling. Accordingly, freeze-dried food products are attracting attention since they can be enjoyed as regular food, are lightweight without taking up space, can be stored for a long time at room temperature, and are less likely to lose their nutritional components.

Asahi Group Foods, Ltd. aims to support a rich diet through freeze-dried products that boast advanced technological strength, have a production line, have an overwhelmingly wide lineup, and boast the top share of the market. In addition to the Japanese staple miso soup, we have developed products including curry, rice bowl dishes, pasta, chilled soup that can be rehydrated with cold water, and low-sodium products.

Freeze-dried products are also suitable for the rolling inventory method of building up stock while enjoying them as regular food items. Moreover, we can contribute to the maintenance of the mental and physical health of highly stressed evacuees suffering from nutritional deficiencies by enabling them to bring a variety of foods to stays in evacuation centers.

There is an increasing frequency of natural disasters and an increasing demand for preparing for prolonged stays in evacuation centers. Accordingly, we will expand sales of freeze-dried products in combination with Asahi Group Foods' dietary supplements, which can provide nutritional support during a disaster, and Asahi Soft Drinks' *Asahi OISHII MIZU* long-life mineral water (for emergency stockpiling).

### ■ Development of Products That Contribute to Heatstroke Countermeasures

Amid predictions of temperature rises due to climate change, there are concerns about the impact on health, such as heatstroke. The Asahi Group is developing products that contribute to countermeasures against heatstroke.

It is said that minerals (salt) are lost together with water when sweating, so salt intake is recommended while rehydrating.

Products such as *CALPIS THE RICH* and *DODECAMIN*, sold by Asahi Soft Drinks Co., Ltd., are part of our heatstroke countermeasure designs, and we plan to develop other products in summer 2022.

Asahi Group Foods, Ltd. also offers a selection of products, including candy that enables easy salt intake.

We will utilize the Asahi Group's combined strength of the Non-Alcohol Beverages Business and the Food Business to continue developing products that contribute to countermeasures against heatstroke.



## Closing

# Aiming to Increase the Resilience of the Asahi Group

When responding to the serious risks and opportunities we have identified so far, the Asahi Group will continue to implement and accelerate existing initiatives. At the same time, we will further strive to develop new initiatives, reduce the risks of climate change, and endeavor to seize opportunities.



For the Asahi Group, which is a business that uses the blessings of nature, climate change is a serious threat to the continuity of our business activities. Responding to climate change issues contributes to both the sustainability of the Asahi Group and the creation of a sustainable society.

After announcing our endorsement of recommendations by the Task Force on Climate-related Financial Disclosures (TCFD), we

clarified the risks and opportunities of climate change through scenario analysis. We will continue to discuss and implement response measures that increase the degree of resilience to climate change, enhance the sustainability of our business activities, and further contribute to the sustainability of society.

Under the Asahi Group Philosophy, we have adopted “building value together with all our stakeholders” as Our Principles. We

place importance on co-creation together with all our stakeholders to realize Asahi Group Environmental Vision 2050.

When implementing response measures, we will further reinforce our initiatives across the entire value chain through co-creation together with all our stakeholders.



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