Appendix

Appendix

Environmental Policy

Kirin Group's Environmental Policy

Basic policy

The Kirin Group places sustainable business growth based on solving social issues at the core of its management, and enriches society and the Earth for future generations through positive impact on people and the environment.

Action policy

In all aspects of our business activities, we have set ambitious targets related to solving social issues connected to the environment as one of the most material management issues, and we will focus on achieving these targets under the leadership of top management and through the participation of all employees.

Compliance
We will comply with all environmental laws, regulations, and agreements as well as voluntary control standards related to our business activities with high moral values.

Technological development
In addition to developing and adopting innovative technologies and methods, we will work with our customers and broad stakeholders to resolve issues on a sustainable basis.

Environmental management
We will develop an environmental management system and make continuous improvements in accordance with our business strategy.

Fostering human capital
We will continuously develop human resources who can create and implement a positive impact on the environment and society as a whole, beyond our own company and its framework.

Communication
We will disseminate highly transparent and reliable information and broadly promote communication with stakeholders.

Revised on October 2021

Appendix

Policies on Biological Resources

Kirin Group's Declaration of Support for Biodiversity Conservation

Kirin Group relies on the bounty of nature to make products. We utilize the power and wisdom nature has to offer in conducting its business activities. Because of that, we recognize the importance of conserving biodiversity as business challenges. Kirin Group actively pursues a broad range of activities to protect biodiversity in order to continue offering new joys of "food and well-being" into the future.

1. Kirin Group promotes sustainable use of resources while ensuring conservation of biodiversity

The Kirin Group is committed to sustainable use of resources while taking biodiversity into consideration in all of its business activities so that all people around the world may continue to enjoy the bounty of nature.

2. Kirin Group makes effective use of its technologies

As a company that offers new joys of "food and well-being," the Kirin Group makes effective use of its technologies when conducting business activities to contribute to the sustainable use of resources and protection of biodiversity.

3. Kirin Group works in cooperation with stakeholders

Kirin Group adds a biodiversity perspective to the environmental protection activities which have continuously been engaged in and works in cooperation with customers and local partners to continue conserving biodiversity.

4. Kirin Group properly complies with treaties and laws

Kirin Group complies with treaties, laws and regulations concerning biodiversity and strives to help people enjoy the blessings of biodiversity worldwide.

Established and released on October 2010

- **Kirin Group Action Plan for the Sustainable Use of Biological Resources**
- **Kirin Group's Principles of Managing Access to Genetic Resources**

Kirin Group's Guidelines on Sustainable Sourcing of Biological Resources

Purpose

The purpose of the Guidelines is to present the fundamental principles of the Group so that it can continue to ensure the "sustainable sourcing of biological resources" based on the Kirin Group's Declaration of Support for Biodiversity Conservation.

Applicable scope

The Guidelines apply to biological resources procured by the Kirin Group's operating companies in Japan for which the Group has specified that there is risk of illegal deforestation, environmental destruction and such like based on risk assessment performed.

Guidelines on Sustainable Sourcing of Biological Resources

Kirin Group procures applicable biological resources based on the following principles.

1. Resources that the Group has confirmed; not to derive from a plantation developed illegally, to have been produced through appropriate procedures in compliance with the laws and regulations of the areas where the raw material is produced.
2. Resources deriving from plantations, forests, etc. that have been certified by credible third parties.
3. Resources that have not been produced by entities which are considered to be involved in environmental destructions.[*1]

Implementation and operation

The Kirin Group regularly revises these Guidelines based on biodiversity risk assessments for products sourced, taking into account the issues associated with biological resources and the fact that sourcing conditions differ for each region. In addition, the Kirin Group also separately formulates action plans and implements them in phases, taking into consideration the unique characteristics of each country or region. When implementing initiatives, the Kirin Group cooperates with suppliers, specialists, NGOs, and other stakeholders, and adopts a long-term perspective that considers support to enable people working in areas producing raw materials to transition to means of production that take into account the sustainability of biological resources.

Information disclosure and external communication

The Kirin Group is committed to maintaining transparency and disclosing the progress of its initiatives through sustainability reports, Home Pages, and other methods. At the same time, the Kirin Group also utilizes appropriate external communication to promote understanding among customers, partners, and society, and thereby increase the use of sustainable biological resources.

*1 Reference is currently made to the FSC's Policy for the Association of Organization with FSC.

Established on December 2012、Released on June 2013

Appendix

Other Policies and Principles

Policies on plastic

- The Kirin Group Plastic Policy

Consideration of the Environment in Product Development

- Guidelines on Environmentally Conscious Design for Containers and Packaging

Commitment to the Minister of the Environment

- Eco-First Program

Climate Change Initiatives

- Kirin Group Carbon Credit Policy

Links

Environmental policies are available at the following links:
https://www.kirinholdings.com/en/impact/env/e_policy/
https://www.kirinholdings.com/en/impact/env/3_4a/

Appendix

Policy Recommendations

Participation in the RE100 Climate Group policy working group to create recommendations for the Japanese government

As a member of RE100, Kirin Holdings participated in the policy working group from January to March 2024 to create recommendations for the Japanese government, including expanding renewable energy capacity to achieve the 1.5°C target. A message from the Senior Executive Officer of Kirin Holdings, Hiroshi Fujikawa is posted on the Climate Group website.
https://www.there100.org/our-work/news/re100-calls-japanese-government-urgently-grow-renewables-capacity

Participation in the "Japan Business Coalition for a Global Plastics Treaty"

Kirin Holdings has been participating in the "Japan Business Coalition for a Global Plastics Treaty" since its establishment in November 2023. This coalition conducts policy advocacy with the Japanese government to establish an ambitious international treaty aiming to eliminate plastic pollution. Together with other companies, financial institutions, and NGO partners, we seek to conclude a UN treaty that transitions the plastic value chain to a circular economy, preventing pollution.

Signing the "Business Statement for COP15 (Mandatory Assessment and Disclosure of Nature Impacts)" by Business for Nature

Kirin Holdings endorsed and signed the "Business Statement for COP15" on October 18, 2022, which was initiated by Business for Nature and called on companies worldwide, including our own, to support the mandatory assessment and disclosure of impacts and dependencies on nature by all businesses and financial institutions.

This endorsement was made in the context of the 15th Conference of the Parties to the United Nations Convention on Biological Diversity (COP15), held in Montreal, Canada in December 2022, with the goal of halting and reversing biodiversity loss by 2030.

Joining the "30by30 Alliance for Biodiversity"

Kirin Holdings joined the "30by30 Alliance for Biodiversity," led by Japan's Ministry of the Environment, on April 8, 2022. The "30by30" initiative aims to conserve and protect 30% of the Earth's land and sea areas by 2030, contributing to biodiversity conservation. We believe that Kirin Group's biodiversity conservation activities and the knowledge gained from them can contribute to other effective area-based conservation measures (OECMs).

Expressing support for the Ministry of Economy, Trade and Industry's "GX League Basic Concept"

Kirin Holdings expressed support for the "GX League Basic Concept" announced by the Ministry of Economy, Trade and Industry in March 2022. The "GX League" is a platform where companies actively involved in Green Transformation (GX) collaborate with government, academia, and finance players to discuss and implement economic and social system transformation and create new markets.

Participation in WWF Japan's "Plastic Circular Challenge 2025"

On February 22, 2022, Kirin Holdings participated in the "Plastic Circular Challenge 2025," a framework called for by WWF Japan to address plastic issues related to containers and packaging, and disposable plastics by 2025.
https://www.wwf.or.jp/campaign/pcc2025/ (in Japanese)

Participation in the Climate Leaders Coalition

Lion continues to participate in the Australian Climate Leaders Coalition (CLC), which is committed to leading corporate responses to climate change through transparent and meaningful action on mitigation and adaptation. By participating in the CLC, we call for policies and investments that enable New Zealand to transition to a zero-carbon economy. As a participant, we commit to measuring and publicly reporting emissions, setting public emission reduction targets, and collaborating with suppliers to reduce emissions.

Participation in the Study Group on Non-Financial Information Disclosure

Since 2021, Kirin Group's CSV Strategy Officers have been participating in the Ministry of Economy, Trade and Industry's Study Group on Non-Financial Information Disclosure. This study group examines the ideal form of disclosure and disclosure media that lead to high-quality dialogue with users of non-financial information and aims to accurately communicate Japan's position on non-financial information disclosure and guidelines internationally. The CSV Strategy Officer also participated in a panel discussion at the "TCFD Summit 2020" (hosted by the Ministry of Economy, Trade and Industry, co-hosted by WBCSD and the TCFD Consortium) held on October 9, 2020.

In 2020, we served as a member of the sector-specific guidance review committee (food sector) and contributed to the "TCFD Guidance 2.0" published by the TCFD Consortium on July 31, 2020.

From 2022 to 2023, we also participated in the Ministry of the Environment's "Nature Positive Economy Study Group." This study group aimed to address the integrated resolution of issues such as climate change and the circular economy, considering the relationship between biodiversity, natural capital, and business, based on Japan's industrial structure.

Appendix

Voluntary Participation Leading to Policy Recommendations

Participation in Consortiums and Government Activities (Organization Names / Activity Content)

RE100
We are a member of the international initiative "RE100," which consists of companies aiming for 100% renewable energy for electricity. We are working towards achieving 100% renewable energy for electricity by 2040.

Japan Climate Initiative (JCI)
We participate in this network to strengthen information sharing and dialogue with companies and local governments that are actively working on climate change measures.

TCFD Consortium
Kirin Holdings has been a member of the "TCFD Consortium" since its establishment in 2019. In 2020, we served as a committee member for the sector-specific guidance review committee (food sector).

We Mean Business Coalition
Kirin Group is committed to setting emission reduction targets approved by SBTi and to reporting climate actions in mainstream reports using a recognized framework as CDSB, which are advocated by We Mean Business Coalition.

Science Based Targets Network
SBTN sets scientifically grounded targets for natural capital and aim to achieve a sustainable global system. Kirin Holdings has set targets aligned with the SBTi (Science Based Targets initiative) standards for GHG emission reduction, achieving the "SBT1.5°C" target in 2020 and the "SBT Net Zero" certification in 2022.
We are the first company in the Japanese pharmaceutical and food industries to participate in the Corporate Engagement Program (CEP) of SBTs for Nature, which discusses rule-making for the new initiative for setting natural capital targets following the SBT.

United Nations Global Compact
Kirin Group has joined the "United Nations Global Compact" since September 2005.

Japan Sustainability Local Group (JSLG)
Kirin Holdings participates as a director member of the Steering Committee of UNGC.

National Movement for Creating a New and Prosperous Lifestyles toward Decarbonization
Kirin Group participates in the new national movement for decarbonization, "Creating a New and Prosperous Lifestyle toward Decarbonization," which started in 2022. We also participate in the "Public-Private Partnership Council for New National Movement" supporting this movement.

Keidanren Voluntary Action Plan
The Brewers Association of Japan, which Kirin Brewery is a member of, and the Japan Soft Drink Association, which Kirin Beverage is a member of, participate in Japan Federation of Economic Organizations' environmental impact reduction efforts, working on GHG emission reduction and waste recycling.

Eco-First
Eco-First is a programme where companies promise the Minister of the Environment to undertake their own environmental conservation efforts, such as measures against global warming. Kirin Group was certified as the first company in the manufacturing industry and also participates in the "Eco-First Promotion Council" organized by certified companies.

Private Sector Engagement Initiative on Biodiversity
Kirin Holdings participates in the "Private Sector Engagement Initiative on Biodiversity," established in 2010 by The Nippon Keidanren, the Japan Chamber of Commerce and Industry, and KEIZAI DOYUKAI (Japan Association of Corporate Executives).

Forest Supporters
Kirin Group participates in the "Forest Supporters" campaign, a national movement to promote beautiful forest creation, organized by the National Land Afforestation Promotion Organization.

Water Project
Kirin Group has participated in the "Water Project," a public-private partnership awareness project aimed at promoting the maintenance or recovery of healthy water cycles, since 2014.

Rainforest Alliance Consortium
Kirin Group has been a founding member of the "Rainforest Alliance Consortium," established in September 2015 by the Rainforest Alliance and companies handling its certified products, aiming to promote sustainable agriculture.

Consortium for Sustainable Paper Use (CSPU)
Kirin Group has been a founding member of the "Consortium for Sustainable Paper Use," established by five (currently eleven) companies and WWF Japan, promoting sustainable paper use.

Clean Ocean Material Alliance (CLOMA)
Kirin Group participates in the "Clean Ocean Material Alliance (CLOMA)," established to solve the global marine plastic waste problem by promoting the sustainable use of plastic products and the development and introduction of alternative materials, accelerating innovation.

Japan Sustainable Palm Oil Network (JaSPON)
Kirin Group participates in the "Japan Sustainable Palm Oil Network (JaSPON)," established to promote the sustainable procurement and consumption of palm oil.

Alliance to End Plastic Waste
Kirin Group participates in the Alliance to End Plastic Waste, an international non-profit organization aiming to solve the problem of waste plastic in the environment. Working together with participating companies from a global perspective, we aim to realize a society where plastic continues to circulate.

Appendix

Voluntary Participation Leading to Policy Recommendations

The TNFD Forum
The TNFD Forum is a support network sharing the mission and vision of the Taskforce on Nature-related Financial Disclosures (TNFD), a framework for information disclosure for nature capital risk management. Kirin Holdings became the first domestic food and beverage and pharmaceutical company to participate in December 2021.

Business for Nature
Kirin Holdings endorsed and signed the "Business Statement for COP15," aimed at the 15th Conference of the Parties to the Convention on Biological Diversity (COP15) held in December 2022.

Production Sites (Production Sites / Activity Content)

Sri Lanka Tea Farms
Since 2013, we have been supporting the acquisition of Rainforest Alliance certification at tea farms in Sri Lanka, the tea production region, to enhance sustainability. Since 2018, we have also started supporting certification acquisition for small farms and conservation of water sources on the farms.

Vietnam Coffee Farms
Since 2020, we have expanded our support for acquiring Rainforest Alliance certification to coffee farms in Vietnam.

Domestic Vineyards
Since 2014, at Mercian's self-managed Mariko Vineyard on the Jimbadai Plateau in Ueda City, Nagano Prefecture, and at Tengusawa and Jyonohira Vineyards in Yamanashi Prefecture, we have been conducting ecosystem surveys and vegetation restoration activities. We also hold environmental classes at elementary schools at the foot of the mountains.

NGOs/NPOs/Environmental Organizations
(Organization Names / Activity Content)

WWF Japan
We cooperated with WWF in the formulation of the "Sustainable Biological Resources Procurement Guidelines" and "Action Plan." We co-founded the "Consortium for Sustainable Paper Use" and continue to engage in activities.

Rainforest Alliance
We jointly support the acquisition of certification for tea farms in Sri Lanka and coffee farms in Vietnam.

FSC Japan
We engage in joint activities to promote FSC-certified paper. In 2017, the Kirin Group committed to the "Vancouver Declaration on SDGs and FSC Certification."

RSPO (Roundtable on Sustainable Palm Oil)
Kirin Holdings participate as a member of the non-profit organization aimed at promoting the production and use of "Sustainable Palm Oil."

Junior United Nations Environment Program (JUNEC)
We co-host the "Kirin School Challenge."

Earthwatch Japan
We jointly conduct vegetation surveys and Clara restoration activities at Mariko Vineyard.

Japan Network for Climate Change Actions
We jointly implement the "Environmental Mark Program" targeting after-school programs, Girl Scouts, Boy Scouts, and libraries.

Industry Associations (Organization Names / Activity Content)

Brewers Association of Japan
We jointly formulate and implement Voluntary Action Plans for the Environment regarding containers and packaging, global warming countermeasures, and the formation of a circular society, and work together to prevent the littering of beverage containers and promote environmental beautification.

Japan Soft Drink Association
We jointly formulate and implement Voluntary Action Plans for the Environment regarding containers and packaging, global warming countermeasures, and the formation of a circular society, and work together to prevent the littering of beverage containers and promote environmental beautification.

Recycling Organizations
We promote 3R (Reduce, Reuse, Recycle) in cooperation with the Container and Packaging Recycling Association and various recycling promotion councils.

The beverage Industry Environmental Beautification Association
Six beverage manufacturer organizations collaborate on activities for environmental beautification.

Next Generation Engagement
(Activity Names / Activity Content)

Kirin School Challenge
We organize environmental workshops for junior and senior high school students.

Japan Environmental Youth Network
We support Japan Environmental Youth Network, organized by the Ministry of the Environment and the Environmental Restoration and Conservation Agency of Japan, and serve as judges for both regional and national competitions.

Appendix

Voluntary Participation Leading to Policy Recommendations

Environmental Mark Program

The Kirin Group supports the implementation of educational programs for children in settings such as after-school care centers, Girl Scouts and Boy Scouts, and libraries, using a special version of the “Environmental Mark Program” tool. This tool was jointly developed based on the original program created by the Japan Network for Climate Change Actions with support of Japan Fund for Global Environment by the Environmental Restoration and Conservation Agency.

Plant Environmental Tours

We conduct tours such as the “Feel the Blessings of Nature Tour” at the Yokohama Plant.

Research Institutions (Organization Names / Activity Content)

National Agriculture and Food Research Organization (NARO)

We conduct joint research on ecosystem changes associated with the creation of vineyards on idle abandoned land, as well as vegetation restoration activities for rare and native species.

Appendix

Sustainable Finance

Please refer to the following website reporting on green bonds and transition-linked loans.
https://www.kirinholdings.com/en/impact/csv_management/sustainable_finance/

Appendix

Environmental Management Certification Status

Japan

As of June 2025

Business Companies	Business Locations	Type
Kirin Brewery	Integrated Certification (10)	Self Assessment
Kirin Beverage	Integrated Certification (3)	Self Assessment
Mercian	Integrated Certification (3)	Self Assessment
Kirin Distillery	Fuji-Gotemba distillery (1)	Self Assessment
Shinshu Beverage	Main Factory	Third Party Certification
Kyowa Kirin	Takasaki Plant, Ube Plant, Tokyo Research Park, Fuji office	Self Assessment
Kyowa Hakko Bio	Main office, Yamaguchi Production Center	Third Party Certification
Kyowa Pharma Chemical	Kyowa Pharma Chemical	Third Party Certification

Number of independently certified business locations	3
Number of business locations making Self Assessment of conformity	21
Number of uncertified business locations	5
Certification rate (%)	83

Overseas

Business Companies	Business Locations	Type
Lion	Little Creatures Brewery Fremantle Little Creatures Brewery Geelong Little Creatures Packaging O'Connor Castlemaine Perkins Brewery James Boag Brewery Murwillumbah Brewery Tooheys Brewery Pride Brewery Speights Brewery Wither Hills Winery	Third Party Certification
Vietnam Kirin Beverage	Vietnam Kirin Beverage	Third Party Certification
Coca-Cola Beverages Northeast	Hartford Londonderry	Third Party Certification
Kirin Brewery (Zhuhai)	Jinding Plant	Third Party Certification
Kyowa Hakko Bio	Thai Kyowa Biotechnologies Shanghai Kyowa Amino Acid	Third Party Certification

Number of certified business locations	16
Number of uncertified business locations	13
Certification rate (%)	55

Appendix

External Awards

Year	Award Recipient	Award Name	Award Content	Implementing Organization
2025	Kirin Holdings	6th "ESG Finance Awards Japan" Environmental Sustainable Company Category	Gold Award (4th time)	Ministry of the Environment
2024	Kirin Holdings	Top 100 Environmental Education & ESD Practice Videos	Selection	Ministry of the Environment
2024	Kirin Brewery	Food Loss Reduction Promotion Award	Chairman's Award	Consumer Affairs Agency, Ministry of the Environment
2024	Kirin Holdings	CDP Water Security	A List (8 consecutive years)	CDP
2024	Kirin Holdings	CDP Climate Change	A List	CDP
2024	Kirin Holdings	FY2024 Private Sector Agriculture, Forestry, and Fisheries Research and Development Achievers Award	Minister of Agriculture, Forestry and Fisheries Award (Discovery and commercialization of β-lactolin)	Ministry of Agriculture, Forestry and Fisheries
2024	Kirin Holdings	SX Brand (Sustainability Transformation Brand) 2024	SX Brand Selection	Ministry of Economy, Trade and Industry
2024	Kirin Holdings	CDP Supplier Engagement Rating	Leaders Board (5 consecutive years)	CDP
2024	Kirin Holdings	5th "ESG Finance Awards Japan" Environmental Sustainable Company Category	Gold Award	Ministry of the Environment
2024	Kirin Holdings	CDP Water Security	A List	CDP
2024	Kirin Holdings	CDP Climate Change	A-	CDP
2024	Kirin Holdings	5th "Nikkei SDGs Management Survey"	Highest Rank (5 consecutive years)	Ministry of the Environment
2023	Kirin Holdings	CDP Supplier Engagement Rating	Leaders Board	Ministry of the Environment
2023	Kirin Holdings	Leading Company in Sustainable Raw Material Procurement for Domestic Food Manufacturers	Cabinet Secretary's Award	Ministry of Agriculture, Forestry and Fisheries
2023	Kirin Holdings	4th "ESG Finance Awards Japan" Environmental Sustainable Company Category	Special Award	Ministry of the Environment
2022	Kirin Holdings	10th Ministry of the Environment Good Life Award	10th Anniversary Special Award Biodiversity Award	Ministry of the Environment
2022	Kirin Holdings	CDP Water Security	A List	CDP
2022	Kirin Holdings	CDP Climate Change	A List	CDP
2022	Kirin Holdings	CDP Supplier Engagement Rating	Leaders Board	CDP

Awards for Container and Packaging

Year	Award Recipient	Award Name	Award Content	Implementing Organization
2022	"Namacha" brand's new PET bottle: "Green Ecology Bottle"	2022 Japan Packaging Contest	Packaging Technology Award (Proper Packaging Award)	Japan Packaging Institute
2022	Development of lightweight PET bottles for wine	46th Kinoshita Award	Packaging Technology Award	Japan Packaging Institute
2022	Heartland Beer – 330ml and 500ml glass bottles	18th Glass Bottle Award 2022	Special Award	Japan Glass Bottle Association

Awards for Business Sites

Year	Award Recipient	Award Name	Award Content	Implementing Organization
2023	Shanghai Kyowa Amino Acid	Reevaluation of Water-Saving Companies	Award	Shanghai City
2023	Shanghai Kyowa Amino Acid	Evaluation Meeting for Industrial Water Reuse Cases	Excellence Award	Shanghai City

Awards for Greening

Year	Award Recipient	Award Name	Award Content	Implementing Organization
2022	Kirin Brewery Shiga Plant	Lake Biwa Forest Creation Partner Agreement	Certificate of Appreciation for Contribution to Forest Creation for Water Sources	Shiga Prefecture

Awards for Energy Conservation

Year	Award Recipient	Award Name	Award Content	Implementing Organization
2022	Kirin Brewery Hokkaido Chitose Plant	Hokkaido Energy Conservation and New Energy Promotion Grand Prize New Energy Category	Encouragement Award	Hokkaido Government
2022	Kyowa Kirin Ube Plant	Yamaguchi Prefecture Global Warming Countermeasures	Excellent Business Site	Yamaguchi Prefecture
2022	Shinshu Beverage	Business Activity Global Warming Countermeasure Plan System	Excellent Business Operator Award	Nagano Prefecture Zero Carbon Promotion Office
2022	Thai Kyowa Biotechnologies	Green Industry	Level 3	Ministry of Industry (Thailand)

Awards for Biodiversity

Year	Award Recipient	Award Name	Award Content	Implementing Organization
2025	Jyonohira Vineyard	Sustainably Managed Natural Sites	Certification	Ministry of the Environment
2023	Mariko Vineyard	Sustainably Managed Natural Sites	Certification	Ministry of the Environment

Appendix

Other Information Disclosure

Environmental Information Disclosure Through Products (Subjects / Disclosure Content)

Eco-Rail

In 2006, Kirin Beverage, and in 2010, Kirin Brewery were selected as "Eco-Rail Mark" certified companies by the Ministry of Land, Infrastructure, Transport and Tourism for actively addressing global environmental issues through the use of rail freight transportation. (As of 2022, only Kirin Brewery continues this certification.)

Carbon Footprint

Kirin Brewery began working on carbon footprint initiatives with the beer industry in 2008. The PCR (Product Category Rule) for beer, which serves as the basis for calculation, was certified in February 2011 and revised in December 2013.

Rainforest Alliance Certification Mark

In August 2021, Kirin launched the year-round sale of "Kirin Go-go-no-Kocha Straight Tea" in 250ml paper packs (LL Slim), displaying the Rainforest Alliance Certification Mark, which is awarded to farms recognized for pursuing more sustainable agricultural practices while protecting nature and producers.

FSC Certification Label

Many paper containers used by Kirin Brewery and Kirin Beverage (including Tropicana) are labeled with the FSC certification to help customers understand the importance of forest conservation. This label is also found on some of Mercian's paper containers and Sunrise brand wines.

Organic Wine

Mercian sells wines that have received "organic certification" such as Euroleaf, Ecocert, Biodivin, Bioagrisert, and Sohiscert.

Disclosure to Investors (Subjects / Disclosure Content)

Reports

We also disclose environmental information in various investor reports such as:

More information→P.3

- Integrated Report
- Kirin Group Environmental Report*
- Kirin Holdings Securities Report
- Kyowa Kirin Annual Report
- Kyowa Hakko Bio CSV Progress Report
- Lion Sustainability Report
- Blackmores Sustainability Report
- FANCL FANCL Report

Websites

Furthermore, environmental information is disclosed on various websites such as:

More information→P.3

- Kirin Holdings Creating Shared Value with Society Site (Environment)*
- Kirin Holdings IR Information

* Information based on the final report of the Task Force on Climate-related Financial Disclosures (TCFD) has been disclosed annually since 2018 in the Environmental Report and on the Environmental Site.

Lectures (Dates / Subjects)

March 1, 2024

Cabinet Secretariat Water Circulation Policy Headquarters "3rd Corporate Collaboration Water Circulation Webinar"

April 19, 2024

Green Carbon Offset Forum "2nd Public Seminar"

October 17, 2024

Hitotsubashi University CFO Education and Research Center

October 18, 2024

Ministry of the Environment "Study Group on Integrated Information Disclosure for Corporate Decarbonization (Carbon Neutrality, Circular Economy, Nature Positive)"

October 25, 2024

Japan-Australia Economic Committee

December 8, 2024

Toda Scholarship Foundation

December 11, 2024

Sri Lanka Tea Board

Case Studies (Subjects / Disclosure Content)

JB Press "Leading Practices in Sustainability Management"

"The True Value of 'Nature Positive': Kirin's Pioneering Commitment to Environmental Management"
https://jbpress.ismedia.jp/articles/-/79753 (in Japanese)

Nikkei ESG "Hot Issue"

"Kirin Shares Emissions Reduction Measures with Its Suppliers"
https://project.nikkeibp.co.jp/ESG/atcl/column/00005/041200446/ (in Japanese)

Appendix

Climate Change Scenarios / Natural Capital Scenarios

Climate change scenarios

		Kirin Group Scenario 3 4°C scenario. SSP3, RCP8.5	Kirin Group Scenario 1 2 or 1.5C Scenario. SSP1, RCP2.6
Scenario		●Laws and regulations related to climate change are strict in developed countries, but insufficient globally, resulting in failure to achieve the required reduction in GHG emissions. ●Higher temperatures, droughts and heavy rains, and reductions in daily temperature ranges lead to significant decreases in the yield and quality of agricultural products. Natural disasters caused by climate change also become frequent and severe. ●The financial impact on companies of compliance with laws and regulations and energy usage is small, but it becomes difficult to use low-cost, high-quality natural capital. ●Global warming also leads to an increase in infectious diseases, heatstroke, etc.	●Governments around the world enact strict laws and regulations related to climate change, resulting in a sufficient reduction in GHG emissions. ●The rise in temperature is curbed, natural disasters do not increase much more than current levels, and the impact on agricultural yields is also limited. Natural disasters do not change significantly from current levels. ●The financial impact on companies of compliance with laws and regulations and energy usage is large, but the cost of using natural capital is acceptable. ●The impact of global warming on health is minimal.
Analysis results		●Significant decline in yields of major agricultural products. Possible decline in quality. Increase in procurement costs. ●Damage to agricultural production areas, production stoppages, and delivery difficulties due to floods and droughts caused by climate change. ●The increase in energy costs and agricultural prices due to carbon taxes is minimal. ●There is major harm from infectious diseases and heatstroke due to global warming.	●The impact on yields of agricultural products and procurement costs is minimal. ●The impact of floods and droughts caused by climate change on agricultural production areas, production, and delivery is minimal. ●The impact of energy costs and agricultural prices due to carbon taxes is major. ●The impact of infectious diseases and heatstroke due to global warming continues.
Scientific basis	Agricultural products	●Decreases in global beer supply due to extreme drought and heat, Nature Plants, VOL.4, NOVEMBER 2018, 964-973 (Xle et al.) ●IPCC (2019) Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems Chapter 5: Food Security ●Risk of increased food insecurity under stringent global climate change mitigation policy. Nature Climate Change volume 8, pages 699-703 (Hasegawa T, Fujimori S, HavlikP, Valin H, BodirskyBL, DoelmanJC, FellmannT, Kyle P et al. 2018) ●Zebish et al. (2005) "Climate Change in Germany Vulnerability and Adaptation of climate sensitive Sectors" FAO "Food and agriculture projections to 2050," etc.	
	Drought risk	●Aqueduct 3.0 (current risk), Aqueduct 2015 (risk assessment combining future projections, climate scenarios RCP4.5 and RCP8.5, and socioeconomic scenarios SSP2 and SSP3), etc.	
	Flood risk	●AIR Touchstone version 8.2	
	Agricultural products (impact of global warming on prices and carbon taxes)	●IPCC (2019) Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems Chapter 5: Food Security and Risk of increased food insecurity under stringent global climate change mitigation policy. Nature Climate Change, volume 8, pages 699-703 (Hasegawa T, Fujimori S, HavlikP, Valin H, BodirskyBL, DoelmanJC, FellmannT, Kyle Petal. 2018)	
	Energy	●IEA "World Energy Outlook 2019" Annex A (rate of decline in future electric power emission factors), IEA WEO 2019 (Kirin Group Scenario 3: Current Policies Scenario, Group Scenario 1: SD Scenario, 1.5°C Scenario: IPCC Special Report on Global Warming of 1.5°C)	

Natural capital scenarios

		Kirin Group Scenario 3 4°C scenario. SSP3, RCP8.5
Scenario		Original scenario
Scope of analysis	Dependence	●Corn, barley, wheat, rice, soybeans, sugarcane, hops, black tea leaves, green tea leaves, oolong tea leaves, coffee beans, powdered milk, raw milk, grapefruit, lemon, orange, grape, apple, tomato, plum, palm oil, cardboard and paper cartons
	Impact	●Same as above
Scientific basis	GHG emissions by agricultural product	●Carbon footprint: CarbonCloud | ClimateHub database ●Agricultural production data: FAO average over the past five years, emissions models based on PCC guidelines, and global warming factors applied to IPCC GWP100 ●Paper: CFP data from the Japan Paper Association (because it is not in the ClimateHub database)
	Land use footprint	●Area harvested (ha) per crop and production quantity(t): Calculation of acreage per unit yield (ha/t) using 2022 data in FAO FAOSTAT ●Paper: Calculated using data from papers related to global forest product footprint estimation (because it is not included in FAOSTAT)
	Water footprint by agricultural product	●M. M. Mekonnen and A. Y. Hoekstra (2011) The green, blue and grey water footprint of crops and derived crop products Hydrol. Earth Syst. Sci., 15, 1577-1600 If not included in this, the water footprint was identified in another paper by Schyns et al. ●Joep F. Schyns, Martijn J. Booij, Arjen Y. Hoekstra (2017) The water footprint of wood for lumber, pulp, paper, fuel and firewood Advances in Water Resources Volume 107, September 2017, Pages 490-501
	Commodity risk	●Judged based on whether or not agricultural products are included in the SBTN's High Impact Commodity List ●Judged based on whether or not they are included in the list of commodities covered by the European Regulation on Deforestation Free Products (EUDR)
	Agricultural products and water risk by region	●Assessed by cross-referencing data on food production, demand, trade, prices, and hunger in countries and regions around the world from the WRI's Aqueduct Food and the International Food Policy Research Institute (IFPRI)
	Pollution (fertilizer usage)	●International Fertilizer Association (IFA) database "IFASTAT": Inputs of nitrogen, phosphorus, and potassium per hectare (kg/ha) by crop

Appendix

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Impact of lower yields on procurement costs for agricultural products in 2050 and Estimation of the impact on agricultural product procurement costs from carbon pricing in 2050

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Assessment of impact of carbon pricing

Estimation of impact of carbon pricing

1) We calculated the rate of decline in future electric power emission factors from the IEA "World Energy Outlook 2019" Annex A (Current Policies Scenario and SD Scenario).
2) We calculated actual electric power emission factors from the actual energy usage and GHG emissions of the Kirin Group in the base year (2019), and estimated future electric power emission factors under the two scenarios (Current Policies Scenario and SD Scenario) by multiplying actual emission factors by the rate of decline in emission factors calculated in Step 1.
3) We used the electric power emission factors that we calculated to forecast GHG emissions in the Kirin Group in 2030 and 2050. We categorized these forecasts depending on whether or not we take measures to reduce emissions.
4) We applied the IEA WEO 2019 Current Policies Scenario to the Kirin Group scenario 3, and the SD Scenario for the Kirin Group scenario 1, while also setting the IPCC "Special Report on Global Warming of 1.5°C" as our new 1.5°C scenario, and we set the carbon prices indicated in each data source as the basis for the future carbon prices for each scenario (IEA WEO 2019 P758 and IPCC Special Report on Global Warming of 1.5°C 2.5.2.1 Price of carbon emissions).
5) We calculated the future impact by multiplying the forecasts of future GHG emissions that we calculated in Step 3 by the carbon prices that we set in Step 4. We calculated the increase in costs if we did not implement initiatives to reduce GHG emissions from the difference in impact depending on whether or not we take measures to reduce emissions.

External diseconomies related to Kirin Group PET bottles

We estimated that impairment losses related to marine ecosystem services would be approximately 0.36 to 3.56 million yen (approximately 3,300 US$ to 33,000 US$) per ton of plastic in 2011, based on the estimations of Beaumont et al. We estimated that the median proportion of PET bottles that flowed into the ocean from Japan would be 0.5%, based on the "Annual Report on the Recycling of PET Bottles"
by the Ministry of the Environment. We set the total amount of PET materials used by Kirin Group major domestic companies at 66,894 tons in 2018, and multiplied this amount by the above estimates.

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Financial impact of transition risks related to natural capital (procurement of certified products)

- Estimated by multiplying by royalties, etc., if coffee and tea leaves are procured as certified products.

Financial impact of transition risks related to natural capital (reduction in agricultural chemicals and chemical fertilizers at tea farms)

- Estimated based on the results of on-site interviews, taking into account prices of chemical and organic fertilizers, as well as respective personnel expenses for the application of these fertilizers.