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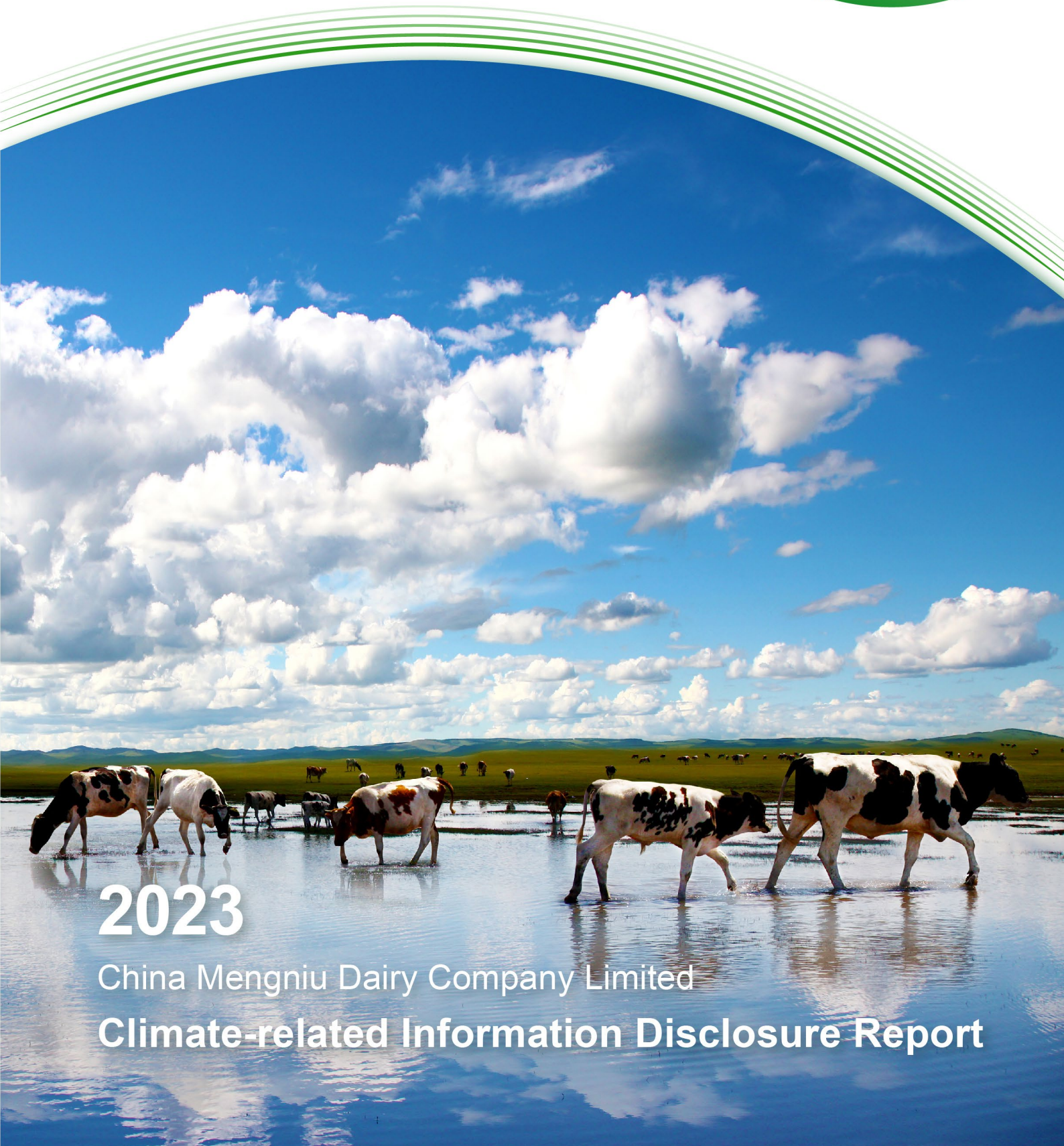


# 2023

China Mengniu Dairy Company Limited

# Climate-related Information Disclosure Report

# Contents

# About This Report

## Reporting Period

This report covers the period from 1 January 2023 to 31 December 2023, with some content and data going back to previous years or extended to coming years as appropriate.

## Organizational Coverage

Unless otherwise specified, the disclosure scope of this report is consistent with the scope of the 2023 annual report of China Mengniu Dairy Company Limited, including China Mengniu Dairy Company Limited and its subsidiaries.

## References

This report was prepared in accordance with Part D *Climate-related Disclosures* Appendix C2 *Environmental*, *Social and Governance Reporting Code* of *Listing Rules of the Hong Kong Exchanges and Clearing Limited*.

## Abbreviations

For ease of presentation and readability, China Mengniu Dairy Company Limited and its subsidiaries are also referred to as "Mengniu", the "Group", and "We" in this report.

## Data Sources

All information and data quoted in this report are from official documents, statistical reports, and financial reports of the Group. The material in this report has been provided by Mengniu employees and partners, and is only used for the disclosure of Mengniu's sustainability management progress, not for commercial purposes.

## Language Versions

This report is available in simplified Chinese and English. In case of inconsistency, please refer to the simplified Chinese version as it shall prevail.

## Report Request

Website: www.mengniu.com.cn

Investor relations website: www.mengniuir.com

# Mengniu's Carbon Neutrality Roadmap

In response to global climate change and the national "Dual Carbon" goal, Mengniu has established its "Dual Carbon" governance structure and set the strategic planning of achieving "carbon peak by 2030 and carbon neutrality by 2050". We focus on production, raw milk, packaging, transportation and products, and integrate climate-related risks and opportunities into the Group's strategic planning and daily operational decisions. Furthermore, we continue to work with upstream and downstream partners in the value chain to explore innovative solutions to address climate change, striving to enhance the climate resilience of the Group's operations and upstream and downstream value chains.

| | | | | |
|---|---|---|---|---|
| **Carbon Emissions Reduction Path in Scope 1 and Scope 2** | • Enhancing capacity utilization | • Improving energy efficiency | • Recycling surplus energy | • Optimizing energy structure |
| **Carbon Emissions Reduction Path in Scope 3** | • Low-carbon milk sources | • Low-carbon packaging | • Low-carbon transportation | • Low-carbon research and development |

## Phase I: 2020-2025

Combining the Group's 2025 strategic planning, Mengniu calculates the phased carbon emissions trends, focuses on scope 1 and scope 2 Greenhouse Gas (GHG) emissions reduction, and explores and deploys scope 3 GHG emissions reduction measures to lay a solid foundation for carbon peaking. The climate-related targets of the Group in 2025 include:

### GHG Emissions Target

In 2025, the GHG emissions intensity of a single tonne of dairy products should be within 165kg$CO_2$e/t

### Water Resources Utilization Target

In 2025, the water consumption per tonne of dairy products is expected to decrease by 6% compared to 2020

### Energy Utilization Target

Mengniu increases its installed photovoltaic power capacity by 30% by the end of 2025 compared to 2023

### Green Packaging Targets

- Completely eliminating the use of PVC[1] and EPS[2] in product packaging by 2025
- Enabling the industry to achieve a 40% recycling rate of paper-based carton packaging and over 90% recycling rate of PET[3] bottles by 2025

## Phase II: 2025-2030

In line with the Group's phase I strategic planning and industrial structure adjustment, Mengniu continues to promote the reduction of scope 1 and scope 2 GHG emissions, and deepen the implementation of the scope 3 GHG emissions reduction measures. The climate-related targets of the Group in 2030 include:

### GHG Emissions Target

In 2030, the absolute value of the scope 1 and 2 GHG emissions reaches the peak, and the GHG emissions intensity of a single tonne of dairy products should be within 160kg$CO_2$e/t

### Forest Protection Target

Striving to eliminate the deforestation risks from timber products, soybean products and palm oil in the supply chain of Mengniu by 2030

### Green Packaging Target

Reducing the use of fossil-based virgin plastics by a cumulative total of 35,000 tonnes by 2030, with 2020 as the base year

## Phase III: 2030-2050

With the target of carbon neutrality, Mengniu maintains the GHG emissions reduction measures and achievements in scope 1 and 2, and promotes comprehensive GHG emissions reduction in scope 3. The proportion of renewable clean energy increases and the product carbon footprint decreases year by year. The climate-related targets of the Group in medium- and long- term include:

### GHG Emissions Target

In 2050, Mengniu achieves carbon neutrality in scope 1, 2 and 3

### Green Packaging Targets

- Using recycled plastics in 20% of plastic packaging by 2035
- Achieving 100% recyclable, reusable or degradable packaging by 2035

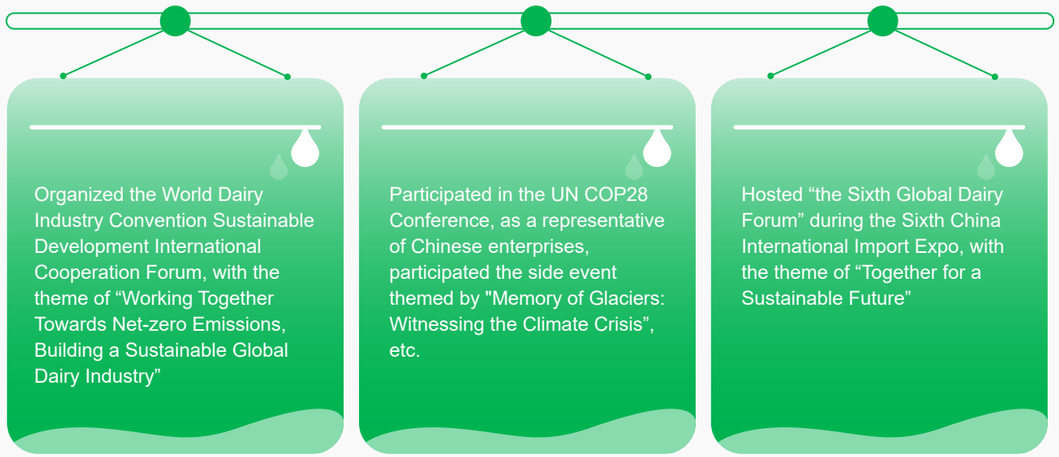
2020 — 2025 — 2030 — 2050

[1] PVC: Polyvinyl chloride.
[2] EPS: Expandable polystyrene.
[3] PET: Polyethylene terephthalate.

# The Progress of Mengniu's Carbon Neutrality Efforts

## Advocate for Initiatives


## Global Action








## Major Accomplishments

### Carbon Emissions Reduction in Scopes 1 and 2

In 2023, comprehensive energy consumption was **27.14** MWh/RMB million of revenue

In 2023, purchased **10.82** million kWh of green electricity, a year-on-year increase of **41%**

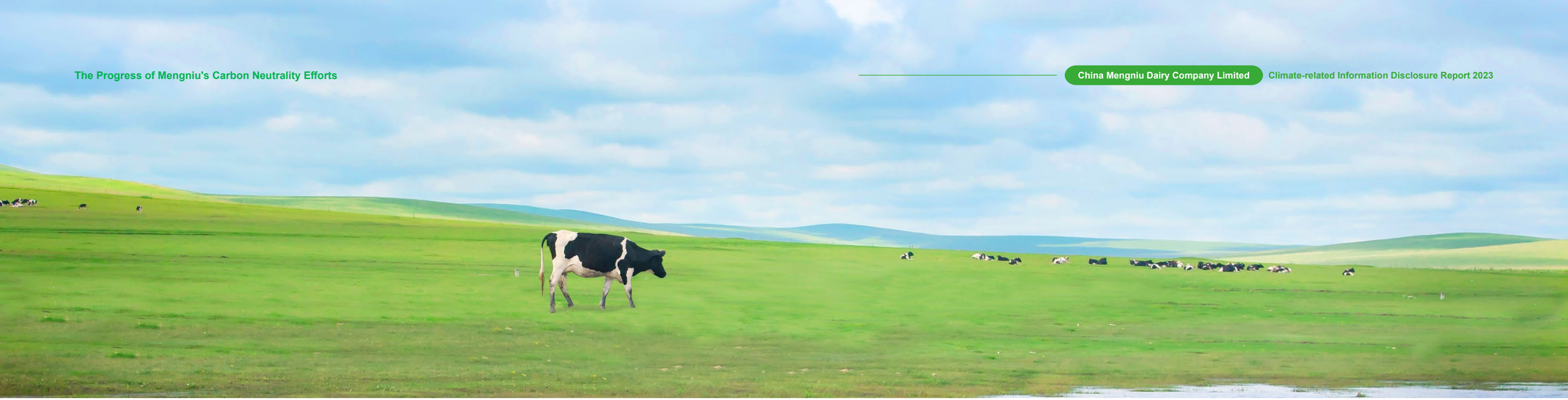
In 2023, annual electricity saving reached **21.6** million kWh, steam saving was **29,000** tonnes, and a total carbon reduction of over **21,000** tonnes was achieved

In 2023, the cumulative installed photovoltaic power capacity reaching **22.06** MW, representing an increase of **51.09%** compared to 2022

In 2024, the Wuhan Factory under the Chilled Product Business Unit was certified as a **zero-carbon emission factory**

In 2023, the Beijing Factory under the Chilled Product Business Unit was certified as a **carbon neutral management system** and a **zero-carbon emission factory**

The Qujing Factory was certified as a **zero-carbon emission factory** for the second consecutive year



# Carbon Emissions Reduction in Scope 3

## Low-carbon Milk Sources

In 2024, **China's first deal of "zero deforestation"** soybeans has been successfully completed between China Modern Dairy under Mengniu and COFCO International

In 2024, China Modern Dairy was awarded the first "**Low-Carbon Pasture Innovation Demonstration Base**" by the Beijing Low Carbon Agriculture Association

In 2023, the implementation of more than **260** carbon reduction initiatives, including the replacement of coal-fired boilers and conservation of water and electricity in cooperative farms, was promoted, reducing GHG emissions by about **185,000** tonnes


China Shengmu under Mengniu has promised that **100%** of the soybeans purchased by the Company come from countries and regions without deforestation risk and land conversion risk

China Modern Dairy under Mengniu has been planting trees on unused land within its farms, achieving an annual carbon sequestration capacity of approximately **2,600** tonnes

## Low-carbon Packaging

In 2024, the first ***Mengniu Green Packaging Value Report*** has been published

In 2023, the proportion of recyclable packaging materials to the total weight of packaging materials reached **98.53%**


In 2023, **89.1%** of virgin paper for inner packaging has obtained the FSC[4] certification, an increase of **7.1%** compared to 2022. All of the product's outer cartons are made from recycled paper

Desert Organic Pure Milk of Mengniu's *Milk Deluxe* brand adopts plant-based cap, and the paper-based bottle body does not contain a bleach-coated layer, which is approximately **3%** lighter than packages made from normal packaging materials, and **8%** lower carbon footprint compared to similar packages

Tetra Brik® e-commerce packaging for Mengniu's *Milk Deluxe* pure milk optimizes the double-layer packaging of "gift box, paper insert, and outer shipper" to single-layer automatic sheet packaging. It also introduces plant fiber molding new materials as a supplement, thereby expecting a reduction of **16,588** tonnes of paper consumption on a yearly basis

Mengniu carries out the "PP[5] Outer Shipper" project, with an annual usage of **740,000** units, significantly reducing the amount of paper carton used

[4]FSC (Forest Stewardship Council): It is an international management organization for forest sustainable development that encourages companies to implement sustainable forest management models by certifying forest management and timber products, to protect biodiversity and the rights of the communities where forests locate.

[5]PP: Polypropylene.

## Carbon Emissions Reduction in Scope 3

### Low-carbon Research and Development

Continue to develop plant-based products

In 2023, the Chilled Product Business Unit completed the optimization of **60** transportation routes, reducing mileage by approximately **4,690** kilometers and reducing GHG emissions by **2,400** tonnes

### Low-carbon Transportation

The Room Temperature Business Unit launched a strategic cooperation with the railroad bureau and shipping company, designed and relied on a total of **22** railroad and sea transportation lines, shipping a total of **2.69** million tonnes of products in 2023

Mengniu has put more than **150** new energy vehicles into use, and the cooperative farms have replaced more than **60** fuel-powered vehicles with gas-powered vehicles or electric vehicles

### Carbon Footprint of Products

Mengniu's *Deluxe* Frozen Cheese Milk Ice Cream obtained the **Carbon Neutrality Certification for two consecutive years** in 2023 and 2024. The carbon footprint of a cup of *Deluxe* Frozen Cheese Milk Ice Cream has been reduced by **14.4%** from 2023

In 2024, Mengniu completed the **life cycle carbon footprint accounting** of 7 products, including *Yoyi C,* Flavored Yoghurt, Mengniu Yoghurt Cups, Fresh Yoghurt and *YO!FINE DIARY Yoghurt*, and obtained third-party accounting certification

Stage 1, Stage 2 and Stage 3 of Mengniu's *Yashili* Reeborne Jingzhi Milk Powder 700g and 750g have obtained the **carbon neutrality product certificates**, achieving relatively zero GHG emissions

# Governance

A robust governance framework and clear management responsibilities are key for enterprises to effectively manage climate change. Guided by its sustainable development strategy, Mengniu has established a three-level governance structure consisting of the governance, management and executive levels to ensure the steady progress of all climate change-related work. Moreover, Mengniu is actively exploring new paths of sustainable development integrated with the Group's business to realize high-quality development.

- Governance Structure
- Climate Governance Mechanism

# Governance Structure

To effectively respond to the risks and opportunities associated with climate change, we have included climate related-work in the Group's sustainable development governance structure. Led by the board of directors, with the management team taking charge, and various functional departments. including the Dual-carbon Management Department, business units and factories, they perform the supervision, coordination, and execution of climate change-related matters. We have integrated climate change governance into all aspects of the Group's operations, to firmly and solidly promote the implementation of climate change work.

## Governance Level

Comprised of members of the Group's Board of Directors, whose responsibilities include:

- Comprehensively overseeing climate change-related matters;
- Reviewing and approving the Group's climate change-related strategic plans;
- Overseeing the response, implementation and performance of climate change-related matters;
- Regularly reviewing climate change-related targets;
- Receiving reports from management level on climate change-related work at least once a year and making recommendations.

## Management Level

Comprised of the Group's core senior management, whose responsibilities include:

- Conducting overall deployment and systematic promotion of the Group's climate change-related work;
- Coordinating the formulation and review of major policies and strategic plans;
- Managing climate change-related risks and opportunities targets;
- Clarifying the climate change-related functions of the Group's different business departments;
- Receiving reports from the executive level on climate change matters and reporting to the Board of Directors;
- Approving and reviewing climate-related targets and key initiatives at least once a year.

## Executive Level

Set up the “Dual-carbon” Action Promotion Team comprised of responsible personnel from relevant functional departments, business units and holding companies, whose responsibilities include:

- The Group's Dual-carbon Management Department is responsible for the implementation of decisions and plans as well as daily work; the preparation of the Group's low-carbon development plan, the setting and breakdown of the Group's emission reduction targets; the unified coordination and deployment of carbon emission management as well as the regular review of the implementation progress of the relevant work;
- Functional departments, business units and holding companies are responsible for undertaking, transforming and promoting the work, identifying climate change-related risks and opportunities, implementing climate change response programs and carbon reduction measures, and quantifying the effect of emission reductions. In addition, they are also responsible for reporting their work progress and the status of achieving GHG emission targets;
- Mengniu’s factories implement business units’ low-carbon development measures, collect factory-level GHG emission data, ensure the achievement of business units’ carbon targets, and report the results of carbon reduction efforts to business units.





# Climate Governance Mechanism

Mengniu organizes the meeting of the Sustainability Committee at least once a year to oversee the management of climate change matters and report to the Board of Directors on the progress of work on climate change. We disclose Scope 1 and Scope 2 GHG emissions information on an annual basis, and continue to promote new technologies for energy saving and consumption reduction, adjust the energy use structure and increase the utilization rate of renewable energy, to ensure the effective progress of climate matters.

In 2023, Mengniu held 2 Sustainability Committee meetings, 2 Sustainability Executive Committee meetings and 1 Sustainability Conference to report the progress of sustainable development to the Directors and senior management of the Group, and discuss and make decisions on key ESG issues, thus ensuring the effectiveness of our climate strategies and measures.

Mengniu provides the Board of Directors with climate-themed training every year. In addition, external experts are invited from time to time to share the latest trends and insights on climate change-related issues, to enhance the Board of Directors’ awareness and understanding of climate issues and to keep abreast of the most recent developments on climate change.

To achieve climate-related targets, Mengniu has incorporated climate-related key performance indicators (KPIs) into the annual performance contracts of senior management, including green benchmark factory building and carbon emission intensity decline, etc. Based on the different responsibilities that senior management hold in climate-related matters, we have established differentiated performance assessment weightings. We conduct a comprehensive assessment of the performance of senior management every year and update and optimize the climate-related KPIs of senior management according to the assessment results and the actual development of the Group, to motivate the management to actively promote the implementation of climate-related strategies.

We have included climate-related key performance indicators in the performance appraisal system for middle-level management to ensure their full attention on the implementation of climate strategies in their daily work. At the same time, during the Group's annual excellent recognition selection, we have established a climate-related evaluation dimension to commend middle-level managers who have made significant contributions to promoting climate action.

# Strategy

Mengniu closely follows domestic and international policy trends and action processes to address climate change, and identifies, assesses and responds to climate change-related risks and opportunities based on Mengniu’s operations and the key reference factors of mainstream climate scenario analysis. Mengniu has included climate-related considerations in Mengniu's Dual-carbon Strategic Planning to enhance the Group's climate resilience, and endeavors to continuously improve the capabilities of its supply chain partners to address climate change.

- Climate-related Risks and Opportunities
- Strategies and Measures
- Climate Resilience

# Climate-related Risks and Opportunities

Based on a comprehensive consideration of the Group's strategic development targets, business operations and value chain impacts, we analyze the substantial risks and potential opportunities arising from climate change. Here are the impacts of climate-related risks and opportunities we have identified on the Group's business model and the value chain, as well as a preliminary assessment of their potential financial impacts.

Based on our own operations, Mengniu analyzes the impact that physical risks related to extreme rainfall, flooding, extreme heat, extreme cold and rising mean temperatures may have on our business model, value chain and the potential financial impacts on the Group.

| Types of Risks | Impacts of Climate-related Risks on the Business Model and the Value Chain | Potential Financial Impacts on the Group |
|---|---|---|
| Acute Risks | **Business Model**<br>○ Increased frequency of extreme rainfall, flooding and typhoons: Production facilities for power supply or water supply have been severely damaged, causing some factory production lines and other operations to cease, leading to a decrease in production capacity<br><br>**Value Chain**<br>○ Flooding: Increased risk of flooding in farms and factories located in low-lying areas, and increased probability of disruptions or delays in logistics and transportation<br>○ Extreme rainfall: Overly wet conditions caused by extreme rainfall may have a negative impact on the physical condition of dairy cattle, thus affecting milk production and quality | **Business Model**<br>○ Maintenance costs are increased due to equipment damage<br>○ Construction costs are increased for factories to protect factories against extreme rainfall and to design for flooding and drainage<br>○ Insurance costs are increased due to extreme weather such as flooding, and there may be difficulties in obtaining insurance in areas where the risk occurs frequently<br><br>**Value Chain**<br>○ Disruptions in production, logistics and transportation of factories in value chain may cause supply disruptions, which may result in unstable lead-time of Mengniu's products, thereby affecting sales revenues |
| | **Business Model**<br>○ Increased frequency of extreme cold and extreme heat: Increased risks of heatstroke and frostbite for employees when working outdoors<br><br>**Value Chain**<br>○ Increased heat stress in dairy cattle under extreme heat, resulting in limited milk production and affecting milk production and quality | **Business Model**<br>○ Additional medical expenses may be incurred due to heatstroke or frostbite caused by employees' outdoor work<br><br>**Value Chain**<br>○ Disease rates are increased as a result of heat stress in dairy cattle, resulting in additional treatment costs and increased purchasing costs |
| Chronic Risks | **Business Model**<br>○ Rising mean temperatures: More energy is required to ensure the proper temperature in the workplace<br>○ High temperatures shorten the outdoor working hours of station operators, thus placing greater demands on cooling and heat prevention<br><br>**Value Chain**<br>○ Prolonged high temperatures may lead to drought, and the resulting water stress may lead to reduced production of soybeans, corn, and other dairy cattle feed<br>○ Temperature control inside the transport trucks and engine cooling performance need to be improved to address the high temperatures | **Business Model**<br>○ The rising temperature will increase the energy consumption of cooling and air conditioning systems, resulting in higher operating costs<br>○ Additional costs will be incurred to provide protective measures and high temperature subsidies for employees<br><br>**Value Chain**<br>○ The drought leads to decrease in feed production and supply shortage, thus leading to increase in feed prices and purchasing costs<br>○ Rising temperatures lead to increased vehicle maintenance frequency and increased maintenance costs for temperature control systems, thus resulting in increased operating costs |

Mengniu analyzes four categories of transition risks, including policy and legal risks, technology risks, market risks and reputation risks, to assess the impact of transition risks on Mengniu's own operations and supply chain.

| Types of Risks | Impacts of Climate-related Risks on the Business Model and the Value Chain | Potential Financial Impacts on the Group |
|---|---|---|
| Policy and Legal Risks | **Business Model**<br>○ Ever-tightening regulation: With the implementation of the ever-tightening carbon reduction policies and regulations, the enterprise needs to meet the increasing compliance requirements | **Business Model**<br>○ Mengniu may need to invest more resources to meet the compliance requirements, which increases the Group's operating costs |
| Technology Risks | **Business Model**<br>○ Transition to low-carbon technologies: There are uncertainties about whether the Group will be able to adapt, iterate and use low-carbon technologies | **Business Model**<br>○ The adoption of lower carbon technology and other emerging technologies facilitates the improvement of operational efficiency and reduction of operational costs<br>In 2023, we invested RMB 27.45 million in the implementation of environmental protection and energy saving projects such as sludge drying, rainwater and sewage diversion, chemical phosphorus removal, elimination of high energy consuming equipment, and wastewater pipeline network transformation<br><br>○ Development costs are increased due to investments in energy saving and carbon reduction technologies |

| Types of Risks | Impacts of Climate-related Risks on the Business Model and the Value Chain | Potential Financial Impacts on the Group |
|---|---|---|
| Market Risks | **Value Chain**<br>○ Climate change may affect the supply and the price of Mengniu's raw materials<br>○ Demand for low-carbon products such as plant-based or non-dairy milk alternatives is likely to rise as consumers become more carbon-aware | **Value Chain**<br>○ Rising raw material prices lead to higher procurement costs for Mengniu<br>○ Inability to effectively capture changes in consumer preferences may lead to loss of consumers, market share and product sales |
| Reputation Risks | **Value Chain**<br>○ Stakeholder concerns: An increasing number of stakeholders are concerned about the climate response performance of listed companies, including but not limited to regulators, shareholders, partners, customers, and the public. If Mengniu fails to address climate-related issues with appropriate measures, the Group's reputation may be affected | **Value Chain**<br>○ If Mengniu fails to take appropriate climate response measures, in particular failing to effectively communicate with relevant parties on climate matters, and the failure may slash the investment and financing channels |

In realizing Mengniu's Dual-carbon Strategic Planning, seizing the opportunities presented by climate change is key to reducing carbon emissions from Mengniu's own operations and the value chain. Mengniu has integrated five types of opportunities including resource efficiency, energy source, markets, products and services, and resilience, into its strategic planning, while capitalizing on potential opportunities for financial benefits.

| Types of Opportunities | Impact of Climate-related Opportunities on the Business Model and the Value Chain | Potential Financial Impacts on the Group |
|---|---|---|
| Resource Efficiency | **Business Model**<br>○ Adoption of more efficient production methods: Water and energy efficiency can be improved through the implementation of energy-saving and emission reduction technologies and the adoption of intelligent operation systems<br>**Value Chain**<br>○ Adoption of efficient modes of transportation: Fuel consumption can be reduced by improving transportation efficiency through optimizing transportation structure and routes | **Business Model**<br>○ The Group's operating costs can be reduced through practices such as energy conservation, emission reduction, and optimization of water efficiency<br>**Value Chain**<br>○ The operating costs can be reduced by optimizing transportation routes |
| Energy Source | **Business Model**<br>○ Use of renewable energy: By investing in renewable energy, the Group will gradually increase the proportion of renewable energy used and reduce the use of fossil fuels, which will optimize the Group's energy structure and significantly reduce GHG emissions | **Business Model**<br>○ Increasing the development and utilization of renewable energy sources, such as green electricity trading, photovoltaic power development, and biomass energy utilization can reduce production costs or bring benefits |

| Types of Opportunities | Impact of Climate-related Opportunities on the Business Model and the Value Chain | Potential Financial Impacts on the Group |
|---|---|---|
| Markets | **Business Model**<br>○ Policy subsidies: If Mengniu actively responds to public incentive policies, including financial subsidies, preferential tax policies, loan preferences, and quota system, the Group may receive additional subsidies or financial support from these policies | **Business Model**<br>○ Utilizing renewable energy and public incentive policies and other channels may bring additional income or subsidies to the Group |
| Products and Services | **Business Model**<br>○ Development of low-carbon products: The competitiveness of enterprises or organizations in the industry can be improved by promoting the development of green business and continuously innovating and developing new low-carbon products<br>**Value Chain**<br>○ Shifts in consumer preferences: As consumers' concern for environmental protection and sustainable development continues to grow, low-carbon products need to be introduced to adapt to shifts in consumer preference | **Business Model**<br>○ The development of low carbon products can enhance the Group's reputation and attract more consumers, to increase market share and improve competitiveness<br>**Value Chain**<br>○ Potential increase in sales revenue can rise from providing low-carbon products or services that meet the growing market demand |
| Resilience | **Business Model**<br>○ Improvement of climate change risk management capabilities, search for green technologies, improvement of production efficiency, optimization of production processes and development of new products are all considered for future development, thus diversifying the Group's product and marketing activities and strengthening the resilience of traditional dairy companies<br>**Value Chain**<br>○ Developing sustainable agriculture and improving the adaptive capacity of farms contribute to the Group's resilience to climate change risks | **Business Model**<br>○ Increased business resilience can attract more investors and customers, thus providing funds for business growth<br>**Value Chain**<br>○ Enhanced farms resilience contributes to reducing farms losses due to climate risk, thereby minimizing procurement costs and maintaining supply chain stability |

# Strategies and Measures

To address the identified risks and opportunities related to climate change, Mengniu has developed targeted responses based on its operations and upstream and downstream supply chains.

## Responses to Climate Risks

### Risk Type: Acute risks

**Risk Drivers**

- Increased frequency of extreme rainfall, floods and typhoons
- Increased frequency of extreme cold or heat

**Our Responses**

- Formulating emergency plans for extreme weather
- Predicting extreme precipitation events and carrying out rational management and risk avoidance
- Formulating wintertime safe production risk prevention and control measures under the situation of extreme cold to ensure stable supply
- Adjusting production strategies for hot weather and using backup generators to ensure electricity supply when necessary
- Developing an emergency response plan for heatstroke caused by high temperatures
- Ensuring sufficient water supply for diary cattle
- Ensuring proper temperature in the buildings where the dairy cattle are located

### Risk Type: Chronic risks

**Risk Drivers**

- Rising mean temperature

**Our Responses**

- Increasing the frequency of maintenance inspections of transportation-related facilities
- Optimizing technologies of the constant temperature control and refrigeration systems to improve refrigeration efficiency
- Formulating hot weather response management documents
- Using sunshades, fans, water-cooling systems, and windbreak walls for maintaining proper temperatures in the buildings where the dairy cattle are located
- Providing high-temperature subsidies and protective measures for employees working outdoors

Mengniu attaches great importance to the living environment of animals in the farms, and is concerned about the impact of climate change on their living conditions. We have published regulations such as the *Mengniu Animal Welfare Policy* and the *Welfare Promotion and Implementation System for Dairy Cattle in Farm*, and participated in the compilation of animal welfare-related group standards such as the *Farm Animal Welfare Requirements- Dairy Cattle* and the *Heat Stress Prevention and Control Standard for Dairy Cattle*, so as to integrate animal welfare measures with farm production practices and enhance the ability to protect farm animals under extreme weather conditions. We are committed to ensuring that dairy cattle are spared from hunger and thirst under extreme weather conditions, and have access to ample food and water; we also provide appropriate housing or habitats for dairy cattle to receive comfortable sleep and rest.

### Risk Type: Policy and legal risks

**Risk Drivers**

- Ever-tightening regulation

**Our Responses**

- Shifting energy use to renewable energy
- Promoting integrated energy solutions
- Realizing high-quality disclosure of data such as energy consumption and carbon emissions in accordance with the rules of the regulators and reporting guidelines
- Monitoring the newly-released policies and legal requirements in real time in the locations where we operate
- Developing reasonable environmental risk control plans and programs

Mengniu focus on the carbon emissions generated by its own operations. To enhance a comprehensive understanding of GHG emissions, fully understand carbon emission data, and effectively track and evaluate the progress of emission reduction, the Group has formulated *Mengniu Group Carbon Emission Management Measures* and *Mengniu Group Carbon Emission Accounting Technical Guide* to guide carbon management work. Meanwhile, Mengniu has established a “1+4” carbon emission MRV (monitor, reporting and verify) system, utilizing online management and monitoring system to standardize personnel management and strengthen data management. In addition, the MRV system significantly improves the speed of data, reduces the recurrence of accounting issues and ensures the consistency, integrity and accuracy of data by standardizing workflow processes, clarifying accounting methods, and establishing a three-level audit mechanism. This year, the Group carried out on-site carbon management-related audits in 20 factories, sorted out and classified issues encountered during the audit process to form a *50-question List of Carbon Emissions MRV*.

**Monitoring level**

Each factory develops and publishes a carbon emission monitoring plan

**Accounting level**

Mengniu has established and implemented a normalized accounting mechanism featuring “synchronized data source, one record for one factory”

**Reporting level**

Each factory implements a carbon emission file management system and ensure 100% filing

**Verification level**

Forming a three-level audit mechanism consisting of factory self-audit, business unit review, and random audit by the Group

## Risk Type: Technology risks

**Risk Drivers**

- Transition to low-carbon technologies

### Our Responses

- Actively utilizing emerging technologies, such as renewable energy and battery-based storage technology
- Reducing the product carbon footprint

Mengniu assesses the potential for carbon reduction from the entire life cycle perspective and is committed to reducing the carbon footprint of its products. This year, the Chilled Product Business Unit launched the *Yoyi C* with new environmental plastic-reduced packaging, which adopts a label-free design and changes PS[6] material to PP material, making it easier to be recycled and reused. The carbon footprint of the product with new packaging has been reduced by 46.62% compared with the previous packaging, and the product was awarded the Certification of Product Carbon Reduction.


The carbon footprint of the product with new packaging has been reduced by **46.62%** compared with the previous packaging, and the product was awarded the Certification of Product Carbon Reduction.

## Risk Type: Market risks

**Risk Drivers**

- Increasing cost of raw materials
- Changing customer behavior

### Our Responses

- Reducing the impact of climate-related risks on raw material prices by applying green procurement strategy
- Conducting consumer trend surveys to understand the market's preference for low-carbon products, thus assisting in product development decisions

Adhering to the development philosophy of building a responsible supply chain, Mengniu deepens and expands the Group's green procurement standards, and has established a management strategy of "traceability, supervision, training, certification and substitution". Mengniu has identified timber products, soybean products and palm oil as factors of the deforestation risks, which pose risks to the stability of Mengniu's supply chain. To reduce the risk of supply chain instability, Mengniu has launched the "zero deforestation" supply chain program, which comprehensively evaluates the deforestation risk of agricultural products through product traceability and develops corresponding control procedures to supervise raw material suppliers with deforestation risk. Besides, Mengniu has conducted supplier training to clarify the requirements and standards of the "zero deforestation" program to suppliers. Mengniu also encourages its suppliers to obtain third-party certifications with international credibility, such as sustainable forest certifications (FSC/PEFC[7]/CFCC[8]) and the RSPO certification. In addition, Mengniu actively pursues alternatives for raw materials with deforestation risk to reduce the risks of deforestation products and ensure the controllability of the procurement prices of raw materials.

[6]PS: Polystyrene.

[7]PEFC (Program for the Endorsement of Forest Certification): It is an international non-profit, non-governmental organization that strives for sustainable forest management through independent third-party forest certification.

[8]CFCC (China Forest Certification Council): It is the governing body of China's forest certification system.



## Risk Type: Reputation Risks

**Risk Drivers**

- Stakeholder concerns

### Our Responses

- Prioritizing management and supervision related to climate change response by senior management, and following the trends in climate-related policies
- Enhancing communication with investors and consumers

Mengniu has established the GREEN Sustainable Development Strategy, in which "response to climate change" is a key issue in one of the five strategic pillars, "Environment-Carbon Net-Zero", with the aim of formulating climate change response strategies and promoting the implementation of the strategies. While committing to its own carbon reduction, Mengniu also actively contributes to global climate action. Mengniu participates in various international initiatives and climate-related international conferences, such as the Pathways to Dairy Net Zero (PDNZ) global climate initiative jointly launched by the Food and Agriculture Organization of the United Nations (FAO), the International Dairy Federation (IDF), and the Global Dairy Forum (GDP). In addition, Mengniu has joined the United Nations Global Compact (UNGC) and actively spoken out at the UN COP28 Conference, demonstrating Mengniu's determination and actions to cope with climate change and reduce GHG emissions from the dairy industry.

# Actions on Climate Opportunities

## Opportunity Type: Resource Efficiency

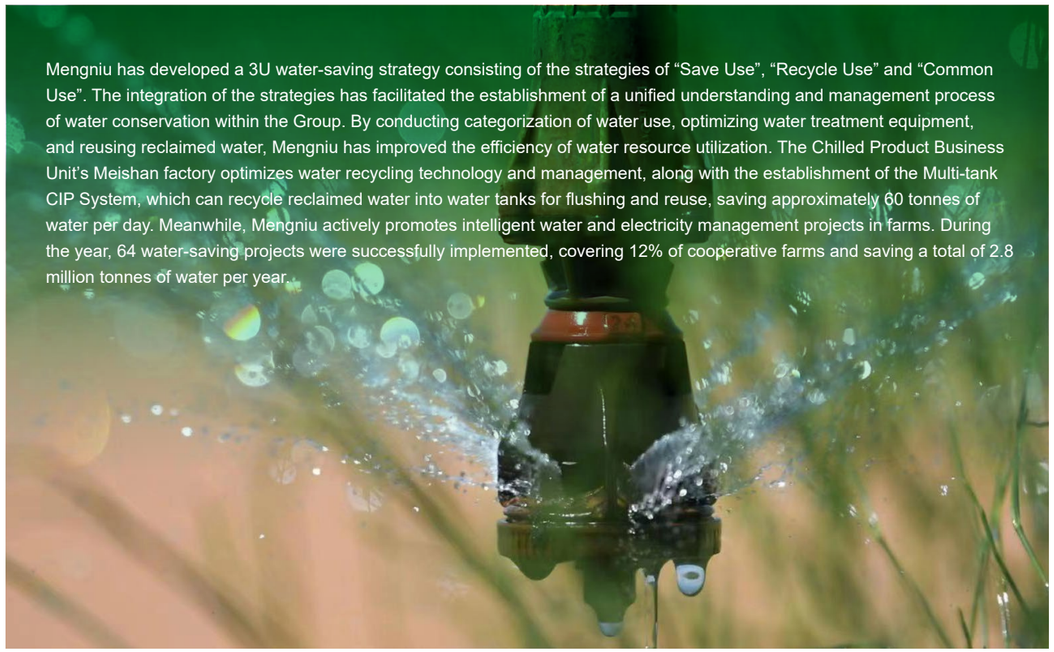
**Opportunity Drivers**

- Use of more efficient production processes
- Use of efficient transportation modes

**Our Actions**

- Actively improving energy efficiency and water efficiency by adopting technologies such as intelligent operation systems and waste heat recovery
- Creating low-carbon farms and continuously promoting coal-fired boilers replacement, water and electricity conservation, and the use of new energy vehicles
- Adopting the intensive transportation mode and optimizing the transportation structure and routes

Mengniu carries out energy-saving actions at each stage of production, and has improved energy efficiency through installing intelligent control equipment, adjusting cooling distribution, reducing transmission loss, optimizing equipment parameters and upgrading energy-saving equipment. 15 factories of the Room Temperature Business Unit have implemented a smart energy system, utilizing digital and intelligent technologies such as intelligent group control technology and efficiency analysis model, resulting in a 5% increase of energy conversion efficiency. The Shangzhi Factory adjusts heating control using visualized data, controlling the operation of equipment according to the weather and temperature, saving 31,680 kWh of electricity annually.



Mengniu has developed a 3U water-saving strategy consisting of the strategies of “Save Use”, “Recycle Use” and “Common Use”. The integration of the strategies has facilitated the establishment of a unified understanding and management process of water conservation within the Group. By conducting categorization of water use, optimizing water treatment equipment, and reusing reclaimed water, Mengniu has improved the efficiency of water resource utilization. The Chilled Product Business Unit’s Meishan factory optimizes water recycling technology and management, along with the establishment of the Multi-tank CIP System, which can recycle reclaimed water into water tanks for flushing and reuse, saving approximately 60 tonnes of water per day. Meanwhile, Mengniu actively promotes intelligent water and electricity management projects in farms. During the year, 64 water-saving projects were successfully implemented, covering 12% of cooperative farms and saving a total of 2.8 million tonnes of water per year.

## Opportunity Type: Energy Source

**Opportunity Drivers**

- Use of renewable energy

**Our Actions**

- Deploying biomass energy utilization and distributed photovoltaic power generation and regional conditions and optimizing energy structure through biogas recovery, green energy outsourcing and application of green energy-saving technologies based on its own operating

Mengniu focuses on optimizing its energy structure and promoting the transition to renewable energy sources. The Group continued to promote photovoltaic power generation and direct green electricity procurement. During the year, the newly installed capacity of photovoltaic power generation projects was 7.46MW, with the cumulative installed photovoltaic power capacity reaching 22.06MW, representing an increase of 51.09% compared to 2022, and successfully achieved the renewable energy target set in 2022. In 2023, the Group's green electricity procurement reached 10.82 million kWh, indicating a significant increase of 41% compared to 2022.

**During the year**

Newly installed capacity of photovoltaic power generation projects was **7.46**MW

Cumulative installed photovoltaic power capacity reaching **22.06**MW

An increase of **51.09%** compared to 2022

The Group's green electricity procurement reached **10.82** million kWh, indicating a significant increase of **41%** compared to 2022

## Opportunity Type: Markets

**Opportunity Drivers**

- Policy subsidies

**Our Actions**

- Applying for national incentive subsidies

## Opportunity Type: Products and Services

**Opportunity Drivers**

- Developing low-carbon products and services
- Shifts in consumer preferences

**Our Actions**

- Increasing investment in the R&D of low-carbon products
- Developing green packaging

Focusing on the whole life cycle of its products, Mengniu carries out research and development of green and low-carbon products in line with market trends and business development needs. Mengniu's premium ice cream brand, *Deluxe*, brings consumers healthy, high-quality, low-carbon and environmentally friendly products by selecting the finest ingredients and strictly controlling the number of ingredients in the products. In 2024, *Deluxe* Frozen Cheese Milk Ice Cream (75g) obtained once again the Product Carbon Neutrality Certificate after 2023. The carbon footprint of the product was measured in accordance with PAS 2050:2011 *Specification for the Assessment of the Life Cycle Greenhouse Gas Emissions of Goods and Services* and PAS 2060:2014 *Specification for the demonstration of carbon neutrality*, covering GHG emissions throughout the product's entire life cycle includes upstream raw material extraction and processing, raw material transportation, product manufacturing, product sales and transportation, product use and product disposal stages. It is proved that the carbon footprint of each cup of *Deluxe* Frozen Cheese Milk Ice Cream was reduced by 14.4% compared to last year.


碳 中 和 证 书

Carbon Neutrality Certificate

证书编号：CEC-2024-CN-P-0012

申请方：

内蒙古蒙牛乳业（集团）股份有限公司

地址：内蒙古呼和浩特市和林格尔盛乐经济园区

碳中和评价声明：

中环联合（北京）认证中心有限公司（CEC）受内蒙古蒙牛乳业（集团）股份有限公司委托，依据PAS 2050:2011《产品和服务在生命周期内的温室气体排放评价规范》、PAS2060：2014《碳中和证明规范》对其2024年度计划生产的27万杯蒂兰圣雪冰冻奶酪牛乳冰淇淋（净含量75g）全生命周期的温室气体排放碳中和进行了评价，结果如下：

1.产品信息：内蒙古蒙牛乳业（集团）股份有限公司生产的蒂兰圣雪冰冻奶酪牛乳冰淇淋（净含量75g）（数量：2024年计划生产27万杯）

2.温室气体排放量：上述产品预计全生命周期温室气体排放量为 88.02 $tCO_2e$。

3.碳排放抵消：内蒙古蒙牛乳业（集团）股份有限公司购买VCS机制Hangjin Yihewusu Phase I 49.5MW Wind Power Project项目（项目编号为1128）的200 $tCO_2e$碳信用进行足额抵消，实现碳中和。用于抵消的减排量备案号：13670-521158414-521158613-VCS-VCU-262-VER-CN-1-1128-01012020-31122020-0。

4. 信息披露：上述信息已披露于碳中和信息平台（http://cn.edcmep.org.cn）。

独立性与能力声明

CEC是中国认证认可主管部门批准的第三方专业认证机构，以公认的质量和诚信基础，面向全球开展应对气候变化与生态环境治理领域的评估与认证服务。CEC申明与内蒙古蒙牛乳业（集团）股份有限公司及其利益相关方无任何利益冲突。

中环联合（北京）认证中心有限公司

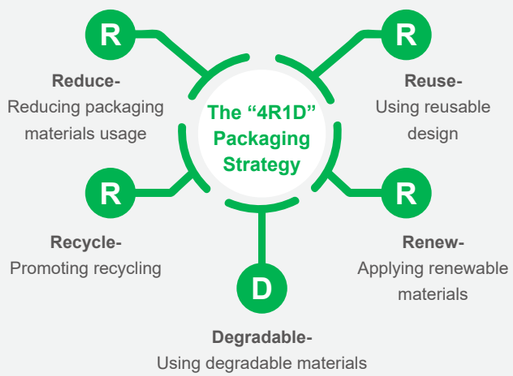
签发人：

签发日期：2024年[illegible]日

China Environmental United Certification Center Co., Ltd.

http://www.eucenc.com

Focusing on the goals of "controlling environmental pollution, conserving the Earth's resources and achieving net-zero emissions target", Mengniu has developed the "4R1D" packaging strategy to reduce the impact of packaging waste on the environment by using less packaging material, increasing the proportion of mono-material, applying more recycled materials and using degradable materials. For some packaging box types of Mengniu's *Milk Deluxe*, it is expected to reduce the annual paper consumption by 16,588 tonnes after reducing the use of paper insert and outer shipper. In terms of using reusable design, Mengniu's Chilled Product, Room Temperature, Fresh Milk and other business units have applied PP outer shipper to a variety of product lines. The annual usage of reusable PP outer shippers has reached 740,000 units. PP material is not only lightweight but also easy to recycle and reuse, effectively achieving the "greening, minimization and recycling" of the recycled boxes.




## Opportunity Type: Resilience

**Opportunity Drivers**

- Developing sustainable agriculture
- Adopting energy-saving measures

**Our Actions**

- Developing sustainable agriculture to improve the ecological environment within farms and enhance climate change resilience
- Developing energy-saving and emission-reduction technologies and improving factories' operational ability to cope with and adapt to climate change

Mengniu is committed to promoting the green and low-carbon development of the farms and improving the ecological environment of the farms through a series of measures such as strengthening waste management, resource recycling and the use of renewable energy. Mengniu requires cooperative farms to strengthen the management of wastewater, waste gas, noise and solid waste to reduce the negative impact on the environment during raw milk production. Besides, Mengniu guides all cooperative farms to carry out power generation from cow manure and harmless return of manure. During the year, all of Mengniu's cooperative farms have realized manure resource utilization. In addition, China Modern Dairy under Mengniu generates of electricity generated from manure and utilizes renewable energy sources like solar and wind power to replace conventional fossil fuels, which offers clean and environmentally friendly electricity for farms.

### Resourceful Utilization of Manure

China Modern Dairy under Mengniu continuously optimizes its manure management model and constructs a green industrial chain featuring a "Planting and Breeding Cycle". This cycle consists of five key steps: "Feed planting - Dairy farming - Manure treatment - Manure return to the farmland (Biogas power generation) - Feed planting". In 2023, China Shengmu under Mengniu returned organic fertilizer to 250,000 mu of farmland, reduced the use of chemical fertilizer by approximately 125,000 tonnes.

In 2023, China Shengmu under Mengniu returned organic fertilizer to **250,000** mu of farmland, reduced the use of chemical fertilizer by approximately **125,000** tonnes.

### Forage R&D and Cultivation

China Modern Dairy under Mengniu has organized technical teams to collaborate with the Institute of Grassland Research of CAAS to carry out high-quality forage technology research projects. The quality of alfalfa developed has met the international standard for premium forage, and some high-quality alfalfa has reached the standard for special-grade forage. The use of pointer sprinklers and drip irrigation equipment in alfalfa cultivation is conducive to achieving integrated water and fertilizer management, saving 40% - 60% water compared to traditional flood irrigation. Alfalfa can be harvested for 5-6 years once sown, without the need for continuous plowing of the soil. Rhizobia that coexists with its roots also have effect of fixing nitrogen, which can effectively improve soil conditions and achieve a win-win result of cost saving and ecological protection. Helin Yimu Pasture of China Modern Dairy has been using alfalfa planted in its base as a substitute for imported forage for a long term. As of December 2023, its proportion of using alfalfa has exceeded 90%, and each dairy cow has saved about RMB 770 in annual feeding costs.

As of December 2023, its proportion of using alfalfa has exceeded **90%**, and each dairy cow has saved about RMB **770** in annual feeding costs.

# Climate Resilience

Taking into account Mengniu's strategic planning and business operations, we have analyzed the potential impacts of climate change-related risks and opportunities on the Group's headquarters, all operating locations and factories. We enhance the Group's strategic planning and risk management abilities by developing and implementing adaptation and mitigation actions, so as to strengthen climate resilience.

## Climate Change Scenario

With reference to the Shared Socioeconomic Pathways (SSP) of the United Nations Intergovernmental Panel on Climate Change (IPCC) and the publicly released climate change scenarios of the International Energy Agency (IEA), and as well as the Group's Dual-carbon Strategic Planning, Mengniu selects applicable low-emission scenario and high-emission scenario to analyze the impacts of major climate-related physical and transition risks on its operations.

We evaluated potential physical risks by adopting the IPCC SSP1-2.6 and SSP5-8.5 scenarios and assessed the potential transition risks by adopting the IEA Net Zero Emissions by 2050 (NZE) and the Stated Policies Scenario (STEPS).

| Physical Risks | | Transition Risks | |
|---|---|---|---|
| SSP1-2.6<br>Low-emission Scenario | SSP5-8.5<br>High-emission Scenario | NZE<br>Net Zero Emissions by 2050 Scenario | STEPS<br>Stated Policies Scenario |
| This scenario outlines an ideal scenario for global carbon dioxide emissions to reach net zero by around 2050. | This scenario simulates a future where economic development is primarily based on energy-intensive industries with virtually no policy restrictions. | This scenario hypothesizes the possibility and effects of achieving net zero GHG emissions worldwide by 2050. In this scenario, countries will introduce strict policies to enhance the adoption of energy-saving technologies and decrease their dependence on fossil fuels. | This scenario hypothesizes the trends of energy demand and supply without taking into account the introduction of any new policies or measures. |

# Climate Resilience Assessment

**Transition risks:** Affected by the risk factors associated with the low-carbon transition, Mengniu is mainly exposed to transition-related risks arising from the increased efforts in various countries for low-carbon transition, including the stricter low-carbon transition policies and the development and application of low-carbon technologies:

| Scenario Drivers | Potential Impacts |
|---|---|
| Ever-tightening low-carbon transition regulations and policies: Increasingly strict carbon reduction policies for the dairy industry driven by the national “Dual Carbon” objective. | As various carbon reduction regulations and policies are promoted and implemented, the Group may face increased operating costs to comply with the requirements of various carbon reduction regulations and policies, such as increased costs for purchasing trading allowances after being included in the carbon trading system, as well as increased costs for purchasing “zero deforestation” raw materials as required by regulations or policies. |
| Development and application of low-carbon technologies: Increasing demand for equipment renovation and the development and application of energy-saving and emission-reduction technologies as the Group moves to low-carbon operations. | Increased costs due to the renovation of energy-intensive equipment and the development of energy-saving and emission-reduction technologies. |

To address transition risks, Mengniu actively identifies relevant policy requirements, carries out carbon emission management, and continues to develop and apply energy-saving technologies. We have improved capacity efficiency by reducing existing processes and applying innovative production technologies; we have also improved energy efficiency in production by applying intelligent control equipment, reducing transmission losses and upgrading energy-saving equipment. Additionally, we have implemented refined energy management through measures including condensate recovery, installation of pipe heat exchangers, utilization of waste heat from air compressors to achieve multi-level utilization of surplus energy. Also, we continue to expand the use of renewable energy, with a cumulative installed capacity of solar photovoltaic power exceeding 22.06 MW.

Meanwhile, Mengniu is promoting the building of a “zero deforestation” supply chain, prioritizing the procurement of timber products with sustainability certification. We actively utilize recycled timber products, promote the procurement of “zero deforestation” soybeans for farms, increase the proportion of RSPO-certified palm oil, and trace the origins of palm oil.

**Physical risks:** Frequent extreme weather and rising mean temperatures may affect Mengniu's operations:

| Scenario Drivers | Potential Impacts |
|---|---|
| Frequent extreme weather: Extreme rainfall may cause disasters such as waterlogging, flooding, and landslides, impacting normal production and operation of enterprises. | The likelihood of flooding and waterlogging increases as extreme rainfalls occurs at higher frequency and intensity. The increased risk of instability in the operation, production and supply chain transportation of Mengniu's factories increases the risk of asset loss and pushes up costs. |
| Rising mean temperatures: In the event of rising mean temperatures, enterprises are required to invest more resources to maintain a normal production and operation environment. | Rising mean temperature may result in higher operating costs for factories, such as increased electricity consumption and higher infrastructure maintenance expenses. |

Mengniu makes predictions of extreme precipitation events in advance and has developed a series of emergency plans, including special plans for flood control and lightning protection. Meanwhile, Mengniu continues to optimize flood drainage design and enhance the construction of protective facilities. We adjust our production strategy in response to hot weather, and if necessary, we use backup generators to ensure power supply and normal operation in the factory. In addition, we have provided high-temperature subsidies for employees and developed an emergency response plan for employees who may suffer from heatstroke.

As present, in the face of transition and physical risks of different severity under different climate scenarios, Mengniu has not encountered significant compliance pressures, nor has it experienced disruptions in its operations or supply chain caused by extreme weather. To prepare for future potential challenges, Mengniu will continue to optimize its climate change response initiatives, enhance its disaster preparedness and response mechanisms, pursue sustainable procurement practices, and ensure the ongoing and stable operation of the Group’s business. Additionally, we will continuously assess major climate-related risks and opportunities of the farms at upstream value chain to understand their profound impact on Mengniu’s production and operations, thereby enhancing the Group’s overall resilience to climate change.

# Risk Management

Climate-related risks may potentially impact the Group's operations and supply chain. Mengniu identifies climate-related risks, assesses both physical and transition risks arising from climate change, and develops appropriate response plans to mitigate and avoid the substantial impacts of these risks on the Group, thereby ensuring the stable operation of the Group’s business.

- Risk Management System
- Risk Management Organization Framework

# Risk Management System

With reference to the internationally accepted COSO[9] risk management framework and according to the business needs of the Group, Mengniu has built a top-down “three lines of defense” of risk management system, and clarified hierarchy and corresponding responsibilities of risk management work. The Audit Committee of the Board supervises the overall risk management procedures, and has established the Risk Management Committee as the highest deliberative and decision-making body for risk management matters. The Risk Management Department is a daily operational agency established by the Risk Management Committee, and regularly reports to the Audit Committee of the Board on the operation effectiveness of the risk management system and control of important risks.

Mengniu has established risk management system norms based on the *Group Risk Management Manual* and the *Risk Management System*. Mengniu carries out risk management work through the “Six-step Method” of risk management processes including risk identification, risk assessment, risk response, risk monitoring, risk evaluation and risk reporting, and implements a closed-loop management model of “risk identification, business autonomous management and audit supervision and followup”.

[9]COSO: Committee of Sponsoring Organizations of the Treadway Commission.

# Risk Management Organization Framework

Mengniu conducts risk management through a “three lines of defense” management system. Mengniu's climate-related risk management adheres to the Group's risk management system and policies. Within the risk management organization framework, all relevant departments and business units work closely with value chain partners to manage climate-related risks through the process of “risk identification, risk assessment, risk prioritization, and risk response”, which promotes the Group’s decision-making in a more comprehensive manner, so as to jointly boost the sustainable development and build a supply chain that is more resilient to climate change.

01

**First line of Defense**

The first line of defense is mainly composed of various business departments, responsible for the daily operation and management of the Group, as the risk responder and principal responsible party, independently identifying the major risks in the business process, and designing corresponding risk response plans.

02

**Second Line of Defense**

The second line of defense is composed of the Risk Management Committee, risk management department and the Group's functional departments, which are mainly responsible for planning and supervising risk management work and improving the risk management system.

03

**Third Line of Defense**

The third line of defense is composed of the internal audit and discipline inspection and supervision departments. The internal audit supervises and evaluates the Group's risk management and internal control systems and gives improvement suggestions; the discipline inspection and supervision department accepts multi-channel reports and promptly follows up the investigation of events.

# Metrics and Targets

Mengniu is taking concrete steps to mitigate and adapt to the effects of climate change by scientifically setting and managing climate change-related metrics and targets, formulating and implementing targeted strategies, and regularly reviewing and assessing our progress, in order to actively and steadily push forward our goals of achieving carbon peak and carbon neutrality.

- Climate-related Targets
- Greenhouse Gas Emissions Metrics

# Climate-related Targets

With China advocating “carbon peak” and “carbon neutrality” strategies, Mengniu Group actively responds and sets the targets of “carbon peak by 2030 and carbon neutrality by 2050”. Additionally, Mengniu has established phased and specific targets for reducing the carbon emissions intensity per tonne of dairy products to ensure the successful realization of these targets.

**Phase I**
**2020-2025**

Combining the Group’s 2025 strategic planning, Mengniu calculates the phased carbon emissions trends, focuses on scope 1 and scope 2 GHG emissions reduction, and explores and deploys scope 3 GHG emissions reduction measures to lay a solid foundation for carbon peaking. In 2025, the GHG emissions intensity of a single tonne of dairy products should be within 165kg$CO_2$e/t.

**Phase II**
**2025-2030**

In line with the Group’s phase I strategic planning and industrial structure adjustment, Mengniu continues to promote the reduction of scope 1 and scope 2 GHG emissions, and deepen the implementation of the scope 3 GHG emissions reduction measures. In 2030, the absolute value of the scope 1 and 2 GHG emissions reaches the peak, and the GHG emissions intensity of a single tonne of dairy products should be within 160kg$CO_2$e/t.

**Phase III**
**2030-2050**

With the target of carbon neutrality, Mengniu maintains the GHG emissions reduction measures and achievements in scope 1 and 2, and promotes comprehensive GHG emissions reduction in scope 3. The proportion of renewable clean energy increases and the product carbon footprint decreases year by year. In 2050, Mengniu achieves carbon neutrality in scope 1, 2 and 3.

Mengniu has also established quantitative targets for water resources utilization, energy utilization, forest protection, and green packaging, and regularly reviews the progress of these targets.

| Timeline | Targets | Progress |
|---|---|---|
| | **Water Resources Utilization Target** | |
| 2025 | The water consumption per tonne of dairy products is expected to decrease by 6% compared to 2020 | As of the end of 2023, Mengniu had reduced its water consumption per tonne of dairy products by 3.8% compared to 2020, meeting expectations. |
| | **Energy Utilization Target** | |
| 2025 | Mengniu increases its installed photovoltaic power capacity by 30% compared to 2023 | As of the end of 2023, Mengniu had achieved its renewable energy utilization target set in 2022 ahead of schedule, with a cumulative installed capacity of photovoltaic power over 22.06MW, marking a 51.09% increase compared to 2022. The renewable energy utilization target under review is a new target for 2024. |
| | **Forest Protection Target** | |
| 2030 | • Striving to eliminate the deforestation risks from timber products, soybean products and palm oil in the supply chain of Mengniu by 2030 | • In 2023, 89.1% of the virgin paper we purchased for inner packaging has obtained the FSC certification, an increase of 7.1% compared to 2022. All the carton boxes for external packaging were made from recycled paper.<br>• In 2023, Mengniu procured 200 tonnes of RSPO-certified palm oil, achieving the expected progress for this phase. Mengniu steadily works on the traceability of the procured palm oil, with 100% of palm oil traceable to refineries , 80% to palm oil mills, and 73% to plantations.<br>• In 2024, China Modern Dairy under Mengniu by far procured 50,000 tonnes of “zero deforestation” soybeans. |
| | **Green Packaging Targets** | |
| 2025 | • Completely eliminating the use of PVC and EPS in product packaging by 2025<br>• Enabling the industry to achieve a 40% recycling rate of paper-based carton packaging and over 90% recycling rate of PET bottles by 2025 | • New targets set in 2024. |
| 2030 | • Reducing the use of fossil-based virgin plastics by a cumulative total of 35,000 tonnes by 2030, with 2020 as the base year | |
| 2035 | • Using recycled plastics in 20% of plastic packaging by 2035<br>• Achieving 100% recyclable, reusable or degradable packaging by 2035 | |

# Greenhouse Gas Emissions Metrics

Mengniu continues to implement carbon emission reduction efforts, strengthen technology innovation of energy conservation and emission reduction, and constantly adjust its energy structure. During the year, both the total greenhouse gas emissions and carbon emission intensity of Mengniu have decreased.

## Mengniu's GHG Emissions[10] from 2020 to 2023:

| Indicator | Unit | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| Total GHG Emissions | ten thousand tonnes of $CO_2$ equivalent | 127.00 | 136.00 | 142.57 | 142.33 |
| Scope 1 | ten thousand tonnes of $CO_2$ equivalent | 21.00 | 26.00 | 25.37 | 27.04 |
| Scope 2 | ten thousand tonnes of $CO_2$ equivalent | 106.00 | 110.00 | 117.20 | 115.29 |
| GHG emissions per tonne of products | kg/tonne | 169.00 | 171.00 | 168.31 | 166.17 |

[10] Notes on Mengniu's GHG Emissions Calculation Methodology: According to the internationally recognized WBCSD/WRI greenhouse gas accounting system, standard under the *IPCC 2006 National Greenhouse Gas Inventory Guidelines 2019 Revision* and the ISO 14064-1 standard, the emission amount is determined by calculating the active data and the corresponding emission factor. Scope 1 emissions refer to GHG emissions directly generated by burning fuels in factories, such as self-owned boilers, vehicles, and the direct energy includes natural gas, diesel, gasoline, etc. Scope 2 emissions are defined as greenhouse gas emissions produced by purchased electricity and steam. The main types of GHG involved in the production process of Mengniu's self-operated factories include carbon dioxide, methane, and hydrofluorocarbons. The GHG monitoring method complies with *General guideline of the GHG emissions accounting and reporting for industrial enterprises GB/T 32150-2015*. The GWP (Global Warming Potential) and emission factor were selected with reference to the IPCC Sixth Assessment Report.



Carbon emissions generated at the farms during raw milk production are a significant contributor to carbon emissions in Mengniu's value chain. Mengniu is actively advancing carbon emission reduction efforts at the farms level. This includes measures such as adjusting feed composition and structure, managing and optimizing herd structure, improving manure management practices, and improving energy efficiency on farms, in order to continuously manage carbon emissions from farms. In 2023, China Modern Dairy and China Shengmu achieved greenhouse gas emissions of 0.89 $kgCO_2e$ and 0.85 $kgCO_2e$ per kilogram of fat and protein-corrected milk, respectively, both showing a decrease from 2022.

China Modern Dairy and China Shengmu, as two main dairy farm partners of Mengniu, their GHG emissions are an important part of the GHG emissions and management in Mengniu's value chain.

## The GHG emissions data for China Modern Dairy and China Shengmu from 2021 to 2023 are as follows:

| Indicator | Unit | 2021 | 2022 | 2023 |
|---|---|---|---|---|
| **China Modern Dairy Holdings Ltd.[11]** | | | | |
| GHG Emissions (scope 1) | tonnes of $CO_2$ equivalent | 1,116,991.70 | 1,654,588.91 | 1,946,733.20 |
| GHG Emissions (scope 2) | tonnes of $CO_2$ equivalent | 208,676.32 | 410,249.01 | 362,578.42 |
| **China Shengmu Organic Milk Limited[12]** | | | | |
| GHG Emissions (scope 1) | tonnes of $CO_2$ equivalent | 568,686.24 | 524,506.95 | 491,988.00 |
| GHG Emissions (scope 2) | tonnes of $CO_2$ equivalent | 85,313.76 | 101,493.05 | 106,388.00 |

[11] Notes on China Modern Dairy 's GHG Emissions Calculation Methodology:

a. GHG inventory includes carbon dioxide, methane and nitrous oxide. The GHG accounting is presented on a carbon dioxide equivalent basis and is based on the *2021 Baseline Emission Factors for Regional Power Grids in China* published by the Ministry of Ecology and Environment of the People's Republic of China and the *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories* published by IPCC (Intergovernmental Panel on Climate Change).

b. Data and Calculation Methodology are derived from the *China Modern Dairy 2023 Environmental*, *Social and Governance Report*.

[12] Notes on China Shengmu's GHG Emissions Calculation Methodology:

a. The Scope 1 GHG emissions are calculated in accordance with *2006 IPCC Guidelines for National Greenhouse Gas Inventories*, and $CO_2$ emissions from fossil fuels are converted from the use of coal and diesel oil. The Scope 2 GHG emissions are calculated in the light of *2017 Baseline Emission Factors for Regional Power Grids in China and the HKEX Reporting Guidance on Environmental KPIs*. Each MWh of electricity consumed in North China is converted to the production of 0.9680 tonnes of $CO_2$ emissions, which is calculated from electricity consumption.

b. In 2023, the scope of accounting for Scope 1 of GHG emissions was expanded. For Scope 1, the increase of GHG emissions expanded from fuel combustion to carbon emissions from intestinal tract and manure of cattle, and the data of the past two years were retrospectively adjusted. The reduction of Scope 1 GHG emissions came from carbon sequestration of biomass such as afforestation, while other types of biomass were added to the calculation in 2023. The relevant emission factors come from the *2006 IPCC Guidelines for National Green House Gas Inventories*.

c. Data and Calculation Methodology are derived from the *China Shengmu 2023 Environmental*, *Social and Governance (ESG) Report*.


China Mengniu Dairy Company Limited

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