2025

Report on Climate Change Response

Meihua Holdings Group Co., Ltd.

CONTENTS

About This Report

As a global leader in amino acids and functional food ingredients, Meihua Group has consistently integrated sustainable development into its core corporate strategy, leveraging green production, energy structure optimization, and circular economy model to advance low-carbon transformation. To implement the *IFRS Sustainability Disclosure Standard 2: Climate-related Disclosures (IFRS S2)*, Meihua Group has fully incorporated the framework of the Task Force on Climate-related Financial Disclosures (TCFD), and systematically disclosed the physical risks, transition risks and opportunities arising from climate change, the assessment results of climate-related financial impacts, as well as the Entity's strategy, decarbonization progress, and targets for the first time in this report.

Reporting Scope

This report covers Meihua Holdings Group Co., Ltd. and its subsidiaries.

Reporting Period

This report primarily covers the period from January 1, 2025, to December 31, 2025. Some information and financial data have been extended to the previous fiscal year as needed, aiming to provide a more comprehensive view of Meihua Group's strategic planning, implementation outcomes, and future direction in addressing climate change and advancing sustainable development.

Preparation Basis

This report is prepared in accordance with the *Guidelines No. 14 of Shanghai Stock Exchange for Self-Regulation of Listed Companies—Sustainability Report (Trial)*, the *Self-regulatory Guide No. 4 for the Preparation of Sustainable Development Reports (January 2026 Revision) of the Shanghai Stock Exchange*, *Basic Standards for Enterprise Sustainability Disclosure (Trial) (Cai Kuai [2024] No. 17)*, and the *Enterprise Sustainability Disclosure Standards No. 1 – Climate-related Disclosures (Trial)*, and is prepared with reference to the *GRI Sustainability Reporting Standards (GRI Standards)* of the Global Sustainability Standards Board (GSSB), the *SDG Compass: The Guide for Business Action on the SDGs of the United Nations*, and the *IFRS Sustainability Disclosure Standard 2: Climate-related Disclosures (IFRS S2).*

Reporting Language

This report is available in both Chinese and English versions. In case of any discrepancy in interpretation, the Chinese version shall prevail.

Expression Notes

For ease of expression and readability, this report uses "Meihua Group", "the Company", and "we" to refer to Meihua Holdings Group Co., Ltd.; and uses "Tongliao Base", "Xinjiang Base", and "Jilin Base" to refer respectively to "production base in Tongliao City, Inner Mongolia Autonomous Region, composed of Tongliao Meihua, Tongliao Jianlong, etc." "production bases such as Xinjiang Meihua and Wujiaqu Jianlong, located within the Wujiaqu Industrial Park in the Xinjiang Uygur Autonomous Region" "Jilin Meihua production base, situated in Baicheng, Jilin Province".

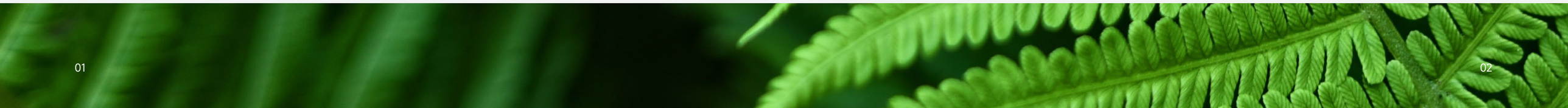
Data Notes

Historical data used in this report originates from Meihua Group's internal statistics and financial records, with all monetary amounts denominated in Renminbi (RMB). The forecasts are based on current access to information and reasonable judgments, but actual outcomes may differ from expectations due to uncertainties related to policy, market, technology, and climate trends. This report is prepared solely for the purpose of Meihua Group's climate and sustainability-related disclosures. It should not be relied upon for any other use.

Report Method

This report is published in electronic format. You can browse and download the Chinese and English versions of the report at the following website: Meihua Group official website (www.meihua.group).

For any questions or suggestions regarding this report, please contact us via email at mhesg@meihuagrp.com or call 0316-2359652.



Chairman's Message

Distinguished partners, investors, colleagues, and friends from all sectors of society:

Climate change is reshaping the trajectory of global development with unprecedented frequency and intensity. The increasing occurrence of extreme events—such as heatwaves, heavy rainfall, droughts, and typhoons—continues to send a clear warning to human society: addressing climate change is an urgent imperative. A growing international consensus has emerged that only an approach driven by emissions reduction, powered by innovation, and enabled through collaboration can safeguard our shared home and ensure a sustainable future.

As a global leader in amino acid and bio-fermentation manufacturing, Meihua Group remains committed to embedding sustainability at the core of its strategy. We are committed to using 2025 as the baseline year and strive to achieve a 17% reduction in carbon emissions per unit of revenue by 2030. Through green process transformation, energy optimization, and transparent governance, we are steadily advancing along the path of low-carbon industrial upgrading while continuously unlocking the long-term value of bio-manufacturing.

Achieving milestone progress in emissions reduction through parallel efforts in energy efficiency improvement and energy transition

We regard decarbonization as a long-term endeavor and systematically promote it along three key pillars: green processes, enhanced energy efficiency systems, and clean energy adoption. By implementing waste heat recovery, energy efficiency upgrades, equipment optimization, and improvements in energy structure, we aim to make production processes more efficient and lower in energy and resource consumption. These efforts enhance our resilience to climate change and provide a replicable pathway for the transformation and upgrading of the bio-fermentation industry. Driven by self-innovation, we are internalizing decarbonization practices as a core "green capability" and striving to become a benchmark for green transformation in the industry.

Building long-term competitiveness through products and technologies

Leveraging cutting-edge advancements in synthetic biology and metabolic engineering, we continue to optimize strains and innovate processes. We are building a full lifecycle circular system encompassing "raw materials—products—by-products—resource utilization," embedding green and low-carbon principles into the very DNA of our products. By turning waste into value at scale, we transform resource burdens into new sources of green growth, achieving synergy between ecological and economic benefits.

Extending low-carbon practices across procurement, packaging, and transportation

We are extending our decarbonization efforts beyond our own operations to both ends of the value chain. Through collaborative innovation and partnerships, we aim to drive upstream and downstream stakeholders toward a green and low-carbon transition, thereby contributing to sustainable development across the industry and society. On the procurement side, we incorporate low-carbon criteria into supplier evaluation systems to build a long-term collaborative decarbonization mechanism, elevating "corporate responsibility" into "industry-wide consensus." On the packaging side, we adhere to the principles of reduction, reuse, and recycling, enhancing the environmental footprint profile of our products. On the transportation side, we expand the use of clean-energy vehicles and optimize logistics structures to build a low-carbon supply chain network. Every delivery we make carries environmental value, making low carbon a shared language across our value chain.

Empowering a sustainable future through synthetic biology

Looking ahead, Meihua Group will continue to implement its "GROWTH for the Future" sustainability strategy. Guided by the vision of "advancing synthetic biology to nourish people and the environment, and to create a harmonious future," we are building an action framework centered on four pillars: Green, Responsible, Low-Carbon and Healthy. Leveraging global expansion as an opportunity, we remain committed to our strategic goal of becoming a leading enterprise in the field of synthetic biology. Through continuous innovation and measurable progress, we aim to deliver long-term value for both humanity and the environment, contributing to a more harmonious and sustainable future.

Chairman: Wang Aijun

April 21, 2026

Meihua Holdings Group Co., Ltd.

About Meihua Group

Company Profile

As a global leader in the amino acid industry, Meihua Group is rooted in synthetic biotechnology. It continues to deepen innovation across the entire amino acid value chain, drives industrial upgrading through forward-looking technological strategies, and has established a world-class, high-end industrial platform covering the full lifecycle of R&D, production, and commercialization. The Company has evolved into a leading enterprise in the global amino acid nutrition solutions sector. Aiming to become a leading enterprise in synthetic biology, the Company has continuously improved its product portfolio and business layout since its establishment, forming a diversified industrial structure covering animal nutrition amino acids (lysine, threonine, valine, etc.), food umami enhancers (monosodium glutamate, disodium nucleotide, etc.), human nutrition and medical amino acids (glutamine, proline, arginine, histidine, etc.), colloidal polysaccharides (xanthan gum, trehalose), and corn processing by-products (corn germ, protein meal, etc.).

The Company implements an integrated R&D, production and sales business model. After more than 20 years of continuous accumulation and technological iteration, the company has forged a full industrial chain covering upstream and downstream sectors, supported by advanced supporting facilities. At present, the company has established a mature industrial foundation and operating system in the amino acid field, and is among the world's largest amino acid manufacturers in terms of both output and product categories. The company can provide differentiated and stable product supply to meet the needs of customers in different regions.

Looking ahead, adhering to the strategy of "Single Focus, Dual Drives, Three Persistences", Meihua Group will focus on the high-quality development of its core business, synergistically improve operational efficiency through technological advancement and management enhancement, and uphold the development philosophies of value co-creation, customer-centricity and integrity-based operations, thereby steadily moving toward its goal of becoming a leading enterprise in synthetic biology.

Single Focus

We aim at achieving high-quality growth in our core business and becoming a leader in bio economy

Dual Drives

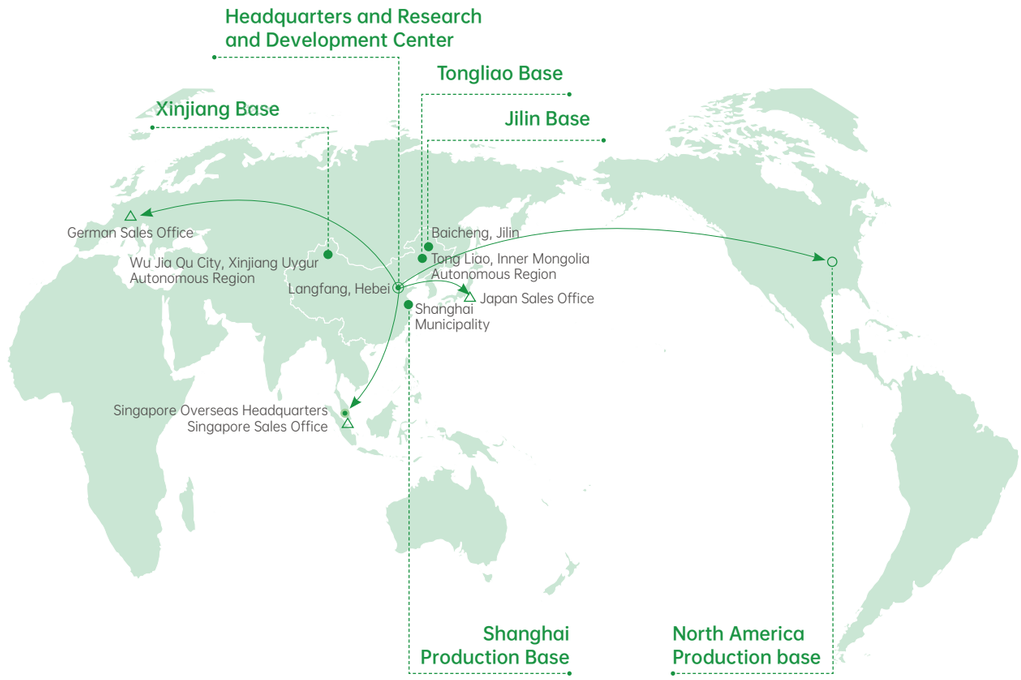
We are driven by Technological Innovation and Outstanding Management

Three Persistences

We uphold the principles of Co-Creation, Customer-Centeredness, and Integrity

In terms of business layout, the Company has established Langfang and Shanghai as its R&D and innovation hubs. It relies on three major production bases in Tongliao, Xinjiang, and Jilin, while also expanding with new production facilities in Shanghai, North America, etc. Additionally, the Company has set up overseas sales offices in Germany, Japan, and Singapore, selling its products to over 150 countries. This structure forms a comprehensive industrial chain system that integrates R&D, production, and sales.

Business Layout of Meihua Group



Headquarters | Domestic Production Base | Overseas Production Base | Overseas Sales Office | Overseas Business Headquarters

The Company's core competence runs through key processes including strain design and construction, fermentation production, separation and extraction, and product moulding, forming a highly efficient and coordinated production closed-loop system. The production capacity and technical level of core products such as lysine, threonine, monosodium glutamate, xanthan gum, and human nutrition and medical amino acids rank among the top in the global industry, demonstrating the Company's comprehensive strength and market competitiveness in the field of amino acids.

Key Products

Animal nutrition amino acid products

Lysine, threonine, tryptophan, feed-grade valine, monosodium glutamate residue, starch by-product feed fiber, corn germ, microbial protein, etc.

Food taste and texture optimization products

Glutamic acid, monosodium glutamate, disodium nucleotide, disodium 5′-inosinate, foodgrade xanthan gum, trehalose, etc.

Human nutrition and medical amino acids

Glutamine, proline, leucine, isoleucine, pharmaceutical-grade valine, inosine, guanosine, adenosine, pullulan polysaccharide, vitamin B2, histidine, arginine, etc.

Other products

Petroleum-grade xanthan gum, bio-organic fertilizer, etc.

01

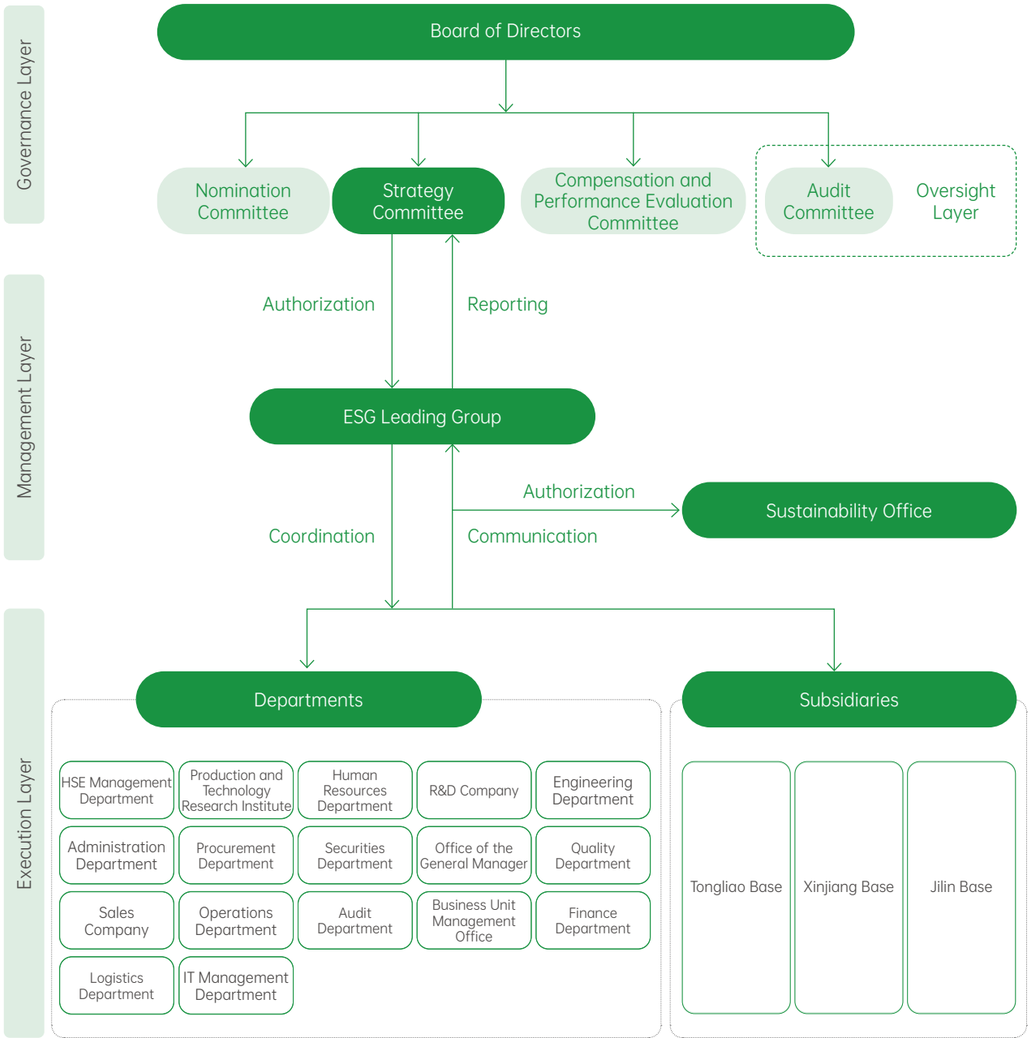
Climate Governance

Meihua Group continuously improves the top-level design of climate governance, establishing a clear and effective climate governance and oversight system, and deeply integrates climate change management into every stage of corporate strategy and operations.

Climate Governance Framework

Meihua Group has established a three-tier climate governance structure comprising the Governance Layer, Management Layer, and Execution Layer. In 2025, Meihua Group revised and enhanced its internal management system, the *Management Measures for Addressing Climate Change*, to clarify the responsibilities and operational mechanisms at each level.

Meihua Group Climate Governance Framework



Meihua Group's Climate Governance Responsibilities and Operational Mechanisms

Governance structure	Governance body	Responsibilities and Operational Mechanisms
Governance	Strategy Committee of the Board	• Approve sustainable development strategy, medium- to long-term plans, and annual work plans, and provide oversight for implementation and execution; • Oversee progress on key climate issues and the achievement of critical targets; • Review the results of the sustainability and climate-related risk and opportunity assessments; • Review the annual sustainability and climate change reporting, as well as related material matters.
Management	ESG Leading Group	• Develop and coordinate the formulation of sustainable strategy, objectives, and long-term plans, and submit them for review by the Strategy Committee; • The organization establishes department-level sustainability indicators and tracks progress toward goals and key initiatives; • Coordination of climate risk and opportunity identification assessments, and the development of strategies and management plans; • Coordination of stakeholder communication and materiality assessment; • Coordination of sustainable development disclosure activities, including the relevant sections of annual and periodic reports.
	Sustainability Office	• Coordinate internal and external communications, and regularly provide updates and recommendations to the leading group; • Enhance ESG management systems and ensure their implementation through oversight; • Break down ESG goals and coordinate the implementation of annual tasks; • Coordinate ESG information collection and report writing to ensure accuracy and compliance.
Execution Level	Departments and Subsidiaries	• Identify climate-related risks and opportunities and their actual impact on business operations, and report regularly to the ESG Leading Group; • Assess the magnitude of climate-related risks and opportunities, as well as their financial impact, and develop targeted response strategies; • Develop short-, medium-, and long-term climate risk response strategies to support Meihua Group's overall Strategy formulation; • Implement climate-related metrics and targets, and report progress on a regular basis.

Meihua Group has established a three-tiered meeting mechanism to systematically advance climate governance. The Strategy Committee holds at least one climate-related convention annually to review progress summaries on climate initiatives and strategic planning, and to make decisions on major management matters. The ESG Leading Group convenes at least twice annually to review work summaries and plans, sustainability reports, and budgets, and to report to the Strategy Committee. Departments and base companies arrange internal meetings according to the established process for ESG Leading Group meetings, based on actual circumstances, to discuss progress on ESG initiatives, climate change risk assessments and responses, and report back to the ESG Leading Group.

Meihua Group places importance on the management and oversight of climate-related risks and opportunities, and has established a Sustainability Office between the management and execution levels. The Sustainability Office's core responsibilities include oversight of the identification and assessment of climate-related risks and opportunities, developing the Entity's strategy to address them, reporting annually on progress in climate risk management to the Strategy Committee, and supporting the Audit Committee in their oversight and review functions. In addition, the office is responsible for improving ESG management systems, breaking down targets to respective departments, coordinating information collection and report writing, as well as facilitating internal and external communications, all to advance the implementation of the ESG Strategy.

Climate Oversight Mechanism

Meihua Group has integrated climate and sustainability-related risks and opportunities into its overall risk management framework, ensuring systematic identification, assessment, and management of these factors within strategic planning, major decision-making processes, and daily operations. The Board Strategy Committee serves as the highest governance body for climate and sustainability matters. Through regular review of specialized reporting, oversight of target progress, and examination of risk assessment results, related risks and opportunities are formally integrated into the strategic decision-making and oversight processes at the board level.

Capacity Building

Meihua Group emphasizes the development of sustainable development management capabilities by regularly inviting external specialists to conduct specialized training sessions for the Strategy Committee, the ESG Leading Group, key departments, and various sites, continuously enhancing the awareness and strategic decision-making capacity of key climate governance bodies regarding related risks, opportunities, and international governance frameworks.

Compensation Mechanism

Meihua Group conducts regular oversight and tracking of progress toward sustainability-related goals, with relevant performance metrics disclosed annually in the Environmental, Social, and Governance (ESG) report. To ensure effective implementation of climate and sustainable development goals, Meihua Group has integrated climate-related metrics into the Chairman's compensation evaluation framework and directly linked climate performance to incentive bonuses.

With 2025 as the baseline

reducing carbon emissions per unit of revenue by **17%** by **2030**, is a core climate metric linked to compensation performance evaluations.

02

Climate Strategy

Meihua Group has consistently regarded climate change as a key factor influencing the long-term sustainable development of Meihua Group. Guided by the strategic vision of "Nurturing Future GROWTH", Meihua Group proactively establishes an action framework oriented toward sustainable development, systematically identifying, assessing, and managing climate-related risks and opportunities.

Climate Risk Identification

Meihua Group has developed a comprehensive climate risk register based on the Task Force on Climate-related Financial Disclosures (TCFD) framework, tailored to its industry characteristics and operational realities.

Climate Risk Register

Risk/Opportunity Type	Risk/Opportunity Name	Risk/Opportunity Description
Physical Risk - Acute	Extreme heat	Extreme heat significantly affects the production and fermentation processes of temperature-sensitive products at Meihua Group, potentially leading to reduced output and associated financial losses.
	Heavy snowfall	Heavy snowfall may lead to damage to Meihua Group's warehousing facilities, power outages, and logistics delays, negatively impacting the operational stability.
	Storm/Cyclone	Intense low-pressure storms often bring a significant amount of precipitation and strong winds, which may result in damage to Meihua Group's fixed assets.
	Extreme precipitation and flooding	Extreme precipitation may lead to water accumulation both indoors and outdoors; if drainage is not timely, it could result in financial losses or disrupt normal personnel movement.
Physical Risk - Chronic	Drought	Drought may lead to reduced crop yields, environmental degradation, and severe water shortages, affecting the quality and stability of Meihua Group's supply of corn, a key raw material.
	Rising sea levels	Rising sea levels may add to the risk of flooding and typhoons affecting Meihua Group's business in low-lying areas.
Transition Risk - Policy and Legal	Increase in GHG (greenhouse gases)-related pricing	The national carbon market continues to incorporate high-emission industries, and the carbon trading mechanism may lead to additional carbon compliance costs for Meihua Group, potentially resulting in financial burden.
	Energy structure transformation	Under the national dual carbon strategy, Meihua Group faces external pressures related to reducing coal consumption and optimizing its energy structure, which have led to increased energy costs.
Transition Risk - Technology	R&D and application of decarbonization technologies	In response to external policy requirements and internal energy-saving technological renovation initiatives, Meihua Group is required to continue investing funds in upgrading energy-efficient equipment and process technology improvements.
	Stranded high-energy-consuming assets	New policies may impose higher energy efficiency standards on Meihua Group's existing high-energy-consuming equipment, prompting Meihua Group to accelerate equipment upgrades and potentially leading to the stranding of high-energy-consuming assets.
Transition Risk - Market	Changes in customer preferences	As market trends evolve, customer demand for the environmental performance of products and packaging formats is shifting, requiring Meihua Group to allocate additional resources to meet customers' growing needs for green and low-carbon products.
Transition Risk - Reputation	Stakeholder concerns	Growing attention from corporate stakeholders—such as shareholders, governments, and customers—toward climate change mitigation and sustainable development is increasingly influencing Meihua Group's strategy and operations, leading to reputational pressure.

Scenario Analysis and Timing

To comprehensively assess climate risks, Meihua Group conducts risk impact stress testing through climate scenario analysis to capture the range of potential risk impacts under different scenarios and assess Meihua Group's resilience in responding to risks, thereby providing a solid foundation for the implementation of risk response plans.

Climate Scenario Selection

Meihua Group has established a comprehensive assessment framework that covers physical and transition risks, while also accounting for policy uncertainty and alignment with climate targets. For physical risk scenarios, we adopt three representative Shared Socioeconomic Pathways (SSPs) from the Intergovernmental Panel on Climate Change (IPCC): SSP1-2.6, SSP2-4.5, and SSP5-8.5, corresponding to low, medium, and high emission trajectories, respectively, to systematically assess long-term physical risk exposure under varying intensities of climate policy. For transition risk scenarios, we simulate energy transition pathways under two policy intensities—continued current policies and full implementation of climate commitments—based on the International Energy Agency (IEA)'s Stated Policies Scenario (STEPS) and Announced Pledges Scenario (APS), with appropriate reference to scenario data from other international mainstream institutions. This approach covers multi-level transition risk drivers, ranging from policy lags to target fulfillment.

Scenario Selection for Physical and Transition Risk Analysis

	Physical Risk			Transition Risk	
Scenario Name	IPCC SSP1-2.6	IPCC SSP2-4.5	IPCC SSP5-8.5	IEA STEPS	IEA APS
Potential global temperature rise	1.5–1.8℃	2.4–2.9℃	3.7–5.0℃	2.4℃	1.7℃
Scenario description	Low-emission Scenario: Global efforts are made to actively reduce emissions, aiming to restrict temperature rise to within 1.5°C, with socioeconomic systems undergoing transformation toward sustainable energy.	Mid-emission scenario: Global average temperature is projected to rise by approximately 2.4°C above pre-industrial levels by the end of the 21st century. Socio-economic development continues historical trends, primarily through incremental progress, while seeking a balance between achieving climate targets and economic growth.	High-emission scenario: Global average temperatures will rise significantly, potentially exceeding 4°C above pre-industrial levels, with socioeconomic development trending toward a high-carbon trajectory that is highly dependent on fossil fuels.	Current Policies Scenario: Based on actual policies implemented or planned across various sectors of the energy economy, without assuming the inevitable achievement of aspirational goals such as Nationally Determined Contributions (NDCs).	Announced Pledges Scenario: Assumptions that all climate and energy targets publicly announced by countries (including Nationally Determined Contributions, Net-zero commitments, industry plans, etc.) are achieved on time and in full.

Definition of Timing Scope

Meihua Group has established short-, medium-, and long-term timeframes for climate scenario analysis, defined in accordance with the IFRS S2 (International Financial Reporting Sustainability Disclosure Standard No. 2 – Climate-related Disclosures) issued by the ISSB and the Guidelines for Self-regulatory Supervision of Public Companies by the Shanghai Stock Exchange, No. 4 – Preparation of Sustainable Development Reports, among other domestic and international standards. This framework is designed to systematically identify the extent and evolution paths of related risks and opportunities at different stages, providing a basis for assessing risk materiality, clarifying response priorities, and optimizing resource allocation, thereby supporting the development of a climate governance strategy that is both temporally coherent and operationally actionable.

Definitions of Short-term, Medium-term , and Long-term

Scenario Analysis Results

Meihua Group systematically conducts climate risk assessments across all its domestic and international operations, considering three climate scenarios and three timeframes. By generating objective climate data under each scenario, the assessment identifies climate risks to which Meihua Group is vulnerable.

- Clearly define and assess climate-related indicators, such as the number of high-temperature days and the severity of extreme heat.
- Utilize climate models to select scenario- and time-specific variables, and generate corresponding raw data outputs.
- Develop a risk assessment matrix to analyze risks in terms of likelihood and severity.
- Generate risk assessment conclusions.

Based on the risk assessment findings, Meihua Group identifies and labels assets exposed to various risks, and aggregates the number of high-risk assets within each risk category to reflect Meihua Group's overall physical risk exposure level. Scenario analysis indicates that a significant proportion of Meihua Group's assets are exposed to risks associated with extreme heat and heavy snowfall. In actual production operations, extreme heat and heavy snowstorms have had tangible impacts on Meihua Group. Meihua Group will prioritize the assessment of these two types of acute physical risks to systematically mitigate and address their effects.

Physical Risk Assessment Results

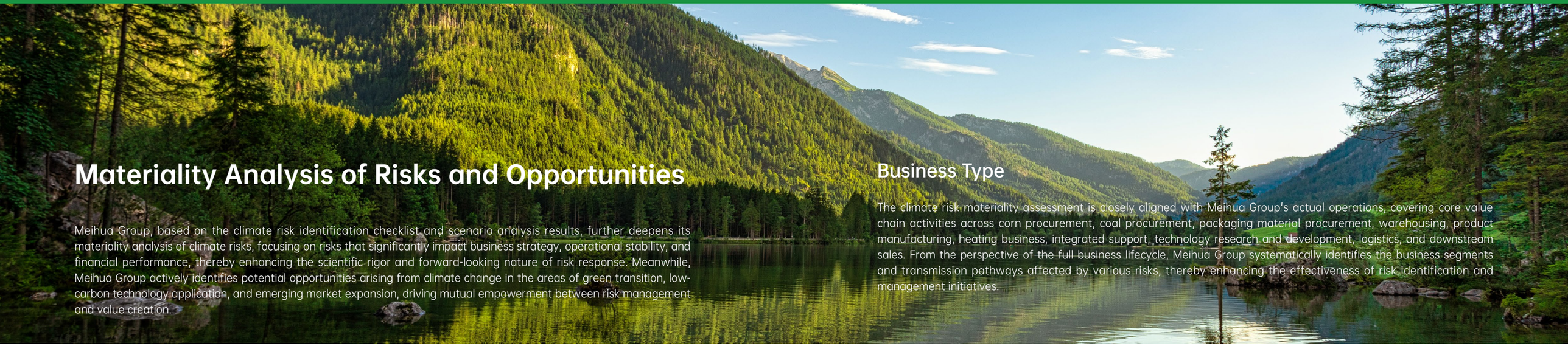
Physical Risk	Time Horizon								
	Short-term			Mid-term			Long-term		
	SSP 1.26	SSP 2.45	SSP 5.85	SSP 1.26	SSP 2.45	SSP 5.85	SSP 1.26	SSP 2.45	SSP 5.85
Extreme precipitation	8%	6%	6%	8%	8%	8%	8%	8%	8%
Storm/ Cyclone	8%	8%	8%	8%	8%	8%	8%	8%	8%
Extreme Heat	69%	40%	69%	40%	40%	40%	69%	40%	69%
Heavy snowfall	37%	38%	37%	2%	31%	37%	37%	37%	27%

Note 1: Color indicates severity level: high medium low

Note 2: The percentages in the chart represent the proportion of risk-exposed assets, defined as the share of total assets vulnerable to a given risk.

Based on scenario data, we further developed forecasts for long-term climate risk trends, identified key tipping points and potential impact pathways, provided scientific basis for medium- to long-term strategic planning and financial planning, and enhanced organizational climate resilience and sustainable development capacity.

Additionally, in Section Materiality Analysis of Risks and Opportunities we conduct a systematic financial analysis of the entire value chain and all risks by integrating scenario data and long-term trend analysis, identifying the potential impacts of these risks on both our own operations and those of our upstream and downstream business partners.



Materiality Analysis of Risks and Opportunities

Meihua Group, based on the climate risk identification checklist and scenario analysis results, further deepens its materiality analysis of climate risks, focusing on risks that significantly impact business strategy, operational stability, and financial performance, thereby enhancing the scientific rigor and forward-looking nature of risk response. Meanwhile, Meihua Group actively identifies potential opportunities arising from climate change in the areas of green transition, low-carbon technology application, and emerging market expansion, driving mutual empowerment between risk management and value creation.

Business Type

The climate risk materiality assessment is closely aligned with Meihua Group's actual operations, covering core value chain activities across corn procurement, coal procurement, packaging material procurement, warehousing, product manufacturing, heating business, integrated support, technology research and development, logistics, and downstream sales. From the perspective of the full business lifecycle, Meihua Group systematically identifies the business segments and transmission pathways affected by various risks, thereby enhancing the effectiveness of risk identification and management initiatives.

Meihua Group's Primary Business Processes

Corn Procurement	Corn is Meihua Group's core raw material. Meihua Group ensures supply through supplier agreements, market purchases, and direct procurement from farmers, meeting the large-scale production needs of its three major production bases.
Coal Procurement	Meihua Group primarily procures raw coal and fuel coal through long-term agreements with major coal enterprises. Fuel coal is used to meet the energy demand of the bio-fermentation process, ensuring the stable operation of production facilities. Raw coal serves as a key feedstock, providing essential carbon sources and chemical inputs for amino acid synthesis.
Packaging Material Procurement	The Company procures packaging materials tailored to the storage and transportation requirements of a wide range of products, including animal nutrition amino acids, food-grade flavor enhancers, pharmaceutical-grade amino acids, colloidal polysaccharides, and bulk by-products.
Warehousing Operations	The warehousing operations business covers the centralized storage and management of raw materials, work-in-progress, and finished goods, including raw materials such as corn and coal, as well as various end products. Meihua Group ensures material safety through standardized management, optimizes inventory turnover in alignment with production and sales operations, and achieves efficient, safe, and precise packaging of products to maintain consistent quality.
Technology R&D	Meihua Group focuses on the field of synthetic biology, leveraging three modern production bases in Tong Liao, Inner Mongolia; Wu Jia Qu, Xinjiang; and Bai Cheng, Ji Lin, as well as two R&D innovation centers in Langfang and Shanghai, to comprehensively advance process research and development in strain development, fermentation, and extraction.
Heating Business	The heating business provides thermal and electrical energy support to core production processes at the manufacturing base, including bio-fermentation and purification, ensuring the continuous and stable operation of production workflows.
Product Manufacturing	Meihua Group leverages synthetic biology technology as its core capability to produce a range of products, including amino acids for animal nutrition, food flavor enhancers, pharmaceutical-grade amino acids, polysaccharides, and bulk by-products. The transformation from raw materials to finished products is achieved through processes such as feed purification, ammonia synthesis, saccharification and fermentation, and drying and extraction.
Comprehensive Support Services	Comprehensive support services cover multi-dimensional support in administration, human resources, safety, and logistics, providing essential backing for core operations including research and development, production, and sales.
Logistics Business	Logistics business covers the transportation of raw materials from procurement locations to production bases, as well as the distribution of finished products to domestic and international markets. Meihua Group has established a logistics network tailored to its global business, ensuring efficient flow of materials across all supply chain stages.
Downstream Sales	This function serves customers in industries such as feed, food, and pharmaceuticals, supplying a full range of products including animal nutrition amino acids, food flavor and texture optimization solutions, and human medical amino acids.

Risk Analysis

To systematically address the challenges of climate change, Meihua Group has conducted in-depth business-level impact assessments for identified physical and transition risks, incorporating climate scenario data. The analysis covers the time horizon of risk impacts, the potential effects on strategic planning and operational decision-making, as well as the specific impacts on Meihua Group's current and expected financial position, to support the development of risk response strategies and resource allocation.

In addition, Meihua Group has conducted qualitative analysis and assessment of certain risks that have impacts but are difficult to quantify—such as the indirect effects of extreme weather on equipment operation and production efficiency, and the long-term impacts of climate change on brand reputation and market demand—and has developed corresponding management measures and emergency response plans to comprehensively enhance its overall resilience to climate-related challenges.

Physical Risk

Against the backdrop of rapidly shifting global climate conditions, heavy snowfall and extreme heat have had a relatively significant impact on Meihua Group's operations and financial impact. For snowstorm risks, Meihua Group proactively addresses them primarily through warehouse facility reinforcement and enhancement of emergency response systems; for heat-related risks, Meihua Group effectively mitigates impacts mainly through technological upgrades, procurement of cooling equipment, and optimization of production scheduling. The annual cost for risk mitigation is approximately tens of millions of yuan.

Compared to other risks, extreme precipitation, strong winds, droughts, and chronic physical risks have relatively limited impacts on Meihua Group's operations across various scenarios. Meihua Group primarily ensures risk control through routine management practices and supply chain optimization.

Climate Risk Impact Analysis

Risk type	Impact Level	Primary business types affected	Risk impact	The impact on Meihua Group's Strategy and decision-making	Current period and expectations for changes in financial impact
Heavy snowfall	Low / High / Medium; Short-term / Medium-term / Long-term	Warehousing Operations	**Facility damage and losses:** Heavy snowfall may damage storage warehouses for Meihua Group's products and raw materials, and in severe cases, could lead to collapse, resulting in direct financial losses and affecting operational stability.	**Routine response and facility upgrades:** Meihua Group has established routine mechanisms for snow removal and other ongoing operations, and, based on cost considerations, is progressively reinforcing warehouses to enhance resilience.	Decrease in inventories, decrease in fixed assets, increase in non-operating expenses, increase in fixed assets/construction in progress, addition to cash payments for acquiring fixed assets, intangible assets, and other long-term assets, increase in administrative expenses, increase in manufacturing expenses, and increase in selling expenses
		Comprehensive Support	**Operations disrupted:** Snowfall imposed restrictions on employee travel, leading to commuting challenges and affecting Meihua Group's daily operations.	**Snow removal and operational support:** Snow removal operations are contracted to third parties annually, and an effective emergency response mechanism has been established.	Increase in manufacturing expenses and increase in cash paid for other operating activities
		Logistics Operations	**Transport delays:** Persistent snowfall and snow accumulation may disrupt transportation, leading to cargo backlog and resulting in interest losses on capital tied up.	**Logistics optimization:** Diversifying logistics transportation methods by integrating rail and road transport to mitigate risks.	Increase in administrative and selling expenses, and increase in cash paid for other operating activities
Heavy snowfall	Low / High / Medium; Short-term / Medium-term / Long-term	Downstream Sales	**Delivery disruption:** Severe snowstorms may cause interruptions in downstream distribution, affecting product delivery timelines.	**Dynamic scheduling:** Adjust delivery routes promptly, maintain communication with customers, and pre-position goods in advance.	/
		Coal Procurement	**Fluctuations in procurement demand:** Severe snowstorms have affected winter coal procurement volumes, and weather variations may lead to a rapid increase in procurement costs.	**Interseasonal reserve strategy:** Establish a summer coal reserve strategy to dynamically mitigate cost risks arising from future fluctuations in coal procurement.	/
		Corn Procurement	**Declining procurement quality:** Prolonged heavy snowfall or excessive snow accumulation can lead to cold, wet soil and reduced soil aeration, which in turn negatively impacts corn quality and yield.	**Establish procurement standards:** Strict corn procurement standards are enforced, with non-compliant batches rejected outright to ensure raw materials quality.	/
Extreme heat	Medium / High / High; Short-term / Medium-term / Long-term	Product Manufacturing	**Product output losses:** High temperatures may cause inactivation of temperature-sensitive products, promote the growth of contaminant microorganisms leading to reduced product purity, disrupt fermentation and extraction processes, resulting in production constraints and ultimately affecting product yield.	**Technology upgrade:** Implement technical upgrades to the product manufacturing process to mitigate the impact of high temperatures; **Increase investment in cooling equipment:** Continuously procure lithium bromide and other cooling equipment, with an annual procurement cost exceeding ten million yuan, to reduce production environment temperature; **Optimize production scheduling:** Schedule equipment maintenance and shutdowns during the period of summer high temperatures to minimize output losses caused by high temperatures.	Administrative expenses increased, and cash payments for other operating activities increased
		Comprehensive Support	**Employee health risks:** High temperatures may lead to heatstroke or increased fatigue among employees, posing risks to their health and potentially impacting the continuity of Meihua Group's operations.	**Distribute cooling supplies and benefits:** Timely provision of cooling allowances and heat-relief medications to employees working in high-temperature conditions to prevent heatstroke.	Addition in administrative expenses, addition in manufacturing expenses, and addition in cash paid to employees and for employee-related expenses / cash payments for other operating activities
		Warehousing Operations	**Poor ventilation can lead to mold growth:** High temperatures primarily affect storage, especially during the handling of moist grain (wet feed), where inadequate ventilation causes heat accumulation within grain piles and hinders heat dissipation, increasing the risk of mold development and losses.	**Implement cooling measures:** Construct temperature-controlled warehouses, upgrade temperature monitoring equipment, establish grain storage standards, and adopt practices such as grain compacting (to reduce air pockets and heat accumulation) to reduce high-temperature risks through both management and technical approaches.	/

Risk type	Impact Level	Primary business types affected	Risk impact	The impact on Meihua Group's Strategy and decision-making	Current period and expectations for changes in financial impact
Extreme heat	Medium / High / High (Short-term / Medium-term / Long-term)	Logistics Operations	**Temperature differences lead to cargo damage:** High temperatures can cause significant temperature variations at both ends of cargo transportation, increasing the risk of condensation, and mold damage. If logistics routes need to detour through high-temperature areas, the temperature differential risk will be further amplified.	**Equipping desiccants and adjusting trade terms:** Installing desiccants and modifying trade terms to prevent adverse effects from extreme temperatures or temperature fluctuations on goods.	/
		Coal Procurement	**Rising electricity demand:** High temperatures have led to increased electricity demand during summer, and the heightened power load has compelled coal-fired power systems to increase generation to ensure supply stability, resulting in an addition to coal procurement demand.	**Refine the coal procurement plan:** Develop a comprehensive coal procurement plan and implement strategic coal procurement and stockpiling.	/
		Technology Research and Development	**Rising electricity demand:** To maintain indoor temperature stability, air conditioning systems operate for extended periods, resulting in a significant increase in electricity consumption and higher cooling costs. **Operational stability risks:** Some high-power equipment, such as incubators and precision instruments, experience increased thermal management challenges under sustained high temperatures, which has moderately affected operational stability and poses potential operational risks.	**Enhance temperature control:** Strengthen localized heat management by leveraging mature temperature-controlled environmental systems and adding or optimizing exhaust vents. Meanwhile, we enhance equipment operation monitoring and maintenance to timely address operational risks.	/
		Downstream Sales	**Impact of feed demand and transportation costs:** Under extreme heatwave conditions, livestock farming faces challenges such as reduced feed intake and lower feed demand. These are further compounded by increased transportation and storage costs, along with seasonal downturns in consumption, creating temporary pressure on sales.	**Adjusting timing:** Optimizing the seasonal product mix and flexibly adjusting production and sales rhythms, with priority given to promoting durable, high-demand, or seasonally appropriate products during the high-temperature period.	/
Extreme precipitation and flooding	Low / Low / Low (Short-term / Medium-term / Long-term)	Comprehensive Support	**Impact of water accumulation:** Extreme precipitation may lead to indoor and outdoor flooding, resulting in financial losses and potentially posing safety risks to personnel.	**Emergency system construction:** Adequate emergency pumping equipment and mobile power sources are provided, and tiered emergency response plans are established. Timely pumping and drainage operations during rainfall are ensured through regular drills and clearly defined responsibilities.	Increase in administrative expenses and increase in cash paid for other operating activities

Risk type	Impact Level	Primary business types affected	Risk impact	The impact on Meihua Group's Strategy and decision-making	Current period and expectations for changes in financial impact
Extreme precipitation and flooding	Low / Low / Low (Short-term / Medium-term / Long-term)	Corn Procurement	**Corn quality risk:** Strong rainfall during the maturation stage or near harvest can trigger kernel mold contamination and mycotoxin level exceedance, potentially affecting raw material quality and supply stability.	**Clarify procurement criteria:** Establish procurement standards and quality control mechanisms, set a maximum limit for mycotoxin levels in corn, and reject non-compliant products.	/
		Warehouse Operations	**Quality risk for by-products:** Extreme rainfall poses a threat to the quality of open-air stored grain. Once dampened, the grain is prone to mold growth and may also compromise the quality of components such as starch.	**Cross-departmental collaboration:** Strengthen coordination mechanisms with production and logistics departments. After rainfall warnings are issued, dynamically adjust grain intake, outbound, and workshop processing schedules to optimize inventory turnover, and prioritize the secure storage of high-value raw materials and finished products.	/
		Logistics Operations	**Risk of cargo wetting and transportation delays:** Heavy rainfall may cause water ingress into logistics vehicle undercarriages, potentially leading to vehicle malfunctions or cargo wetting, resulting in asset losses. Additionally, intense rainfall can deteriorate road and waterway conditions, causing transportation delays and affecting logistics timeliness.	**Protective measures:** Collaborating with third-party logistics providers, monitoring weather forecasts on a timely basis to ensure provision for rain protection and optimizing transportation routes.	/
		Downstream Sales	**Corn cultivation risks:** Potential adverse impacts on corn growth may lead to reduced yields or quality fluctuations, thereby increasing costs of purchase.	**Diversified procurement and inventory management:** Implement diversified procurement, regional rotation, and inventory adjustment mechanisms.	/
Storm/ Cyclone	Low / Low / Low (Short-term / Medium-term / Long-term)	Technology Research and Development	**Power outage risk:** Storm cyclones may cause sudden power outages, disrupting the normal operation of laboratory equipment and potentially leading to the inactivation and death of developed microbial strains.	**Install backup power systems:** Implement a multi-tiered backup power infrastructure for critical research equipment and laboratories, and establish standardized emergency response procedures, including power outage alerts, equipment switching, and emergency sample preservation.	/
		Comprehensive Support	**Asset loss impact:** May lead to damage of building roofs and walls, resulting in detachment of roof panels and wall panels, as well as damage to fixed assets.	**Enhance the early warning system:** Issue alerts on a timely basis and conduct personnel evacuations to prevent individuals from entering hazardous areas.	Increase in fixed asset losses and non-operating expenses

Risk type	Impact Level	Primary business types affected	Risk impact	The impact on Meihua Group's Strategy and decision-making	Current period and expectations for changes in financial impact
Storm/ Cyclone	Low (Short-term), Low (Medium-term), Low (Long-term)	Corn Procurement	**Corn yield and quality concerns:** Typhoons primarily affect corn-producing regions in southeastern coastal areas and southern China, increasing the risk of lodging, waterlogging, and exacerbated diseases, which reduce yields and add to the risks of mold contamination and mycotoxin formation.	**Enhance procurement standards and layout:** Establish procurement criteria with a defined upper limit for corn mycotoxin levels, rejecting non-compliant products; additionally, utilize futures instruments to increase reserves and optimize procurement positioning, thereby diversifying regional risks.	/
		Product Manufacturing	**Power outage risk:** Storms may cause power outages in production facilities, potentially leading to product production losses.	**Installing underground cabling with periodic checking:** Underground cable networks are deployed in critical production areas to replace part of overhead lines, reducing the risk of physical damage to power transmission caused by strong winds, and establishing a periodic checking mechanism for distribution lines along with corresponding emergency repair plans.	/
		Downstream Sales	**Logistics delay issues:** Transportation processes affecting downstream sales have led to disruptions or delays, particularly impacting domestic customers who rely on Meihua Group to cover shipping costs. This may result in extended delivery cycles and difficulties in meeting delivery obligations.	**Clarify contract terms:** Clearly define climate risk constraints when signing contracts with clients, and reduce the negative impacts of uncontrollable risks by establishing close communication protocols with clients.	/
Sea level rise	Low (Short-term), Low (Medium-term), Medium (Long-term)	Logistics Operations	**Logistics and transportation disruptions:** In the long term, rising sea levels may pose certain risks to port facilities and railway and road transportation networks in coastal areas.	**Optimize transportation strategies:** Flexibly select transportation modes and optimize transport combinations to mitigate risks associated with sea level changes in coastal regions.	/
		Warehousing Operations	**Security threats:** Sea level rise may pose certain challenges to warehousing facilities in coastal areas, potentially affecting the safety and stability of goods storage in the long term.	**Layout optimization:** Proactively plan the distribution of warehousing facilities to ensure that the majority are located in inland regions.	/
		Product Manufacturing	**Production security threats:** Sea level rise will add to geological and drainage risks in coastal areas, affecting future factory site selection decisions.	**Layout optimization:** Prioritize locations with higher elevation and stronger resilience to risks.	/
		Corn Procurement	**Decline in procurement quality:** May contribute to soil salinization and degradation of arable land quality in coastal corn-producing regions.	**Flexible supply:** The nationwide distribution of production areas and the capability for flexible allocation help ensure the stability of corn supply.	/

Risk type	Impact Level	Primary business types affected	Risk impact	The impact on Meihua Group's Strategy and decision-making	Current period and expectations for changes in financial impact
Drought	Low (Short-term), Low (Medium-term), Medium (Long-term)	Corn Procurement	**Decline in procurement quality:** The concurrent occurrence of high temperatures and drought may inhibit maize growth, leading to a significant decrease in yield, thereby affecting maize supply.	**Optimize procurement strategy:** Implement full-cycle monitoring of crop forecasts, planting area, and yield in major corn-producing regions. Utilize dynamic data to prioritize high-quality production areas for targeted procurement, enhancing supply chain stability and efficiency.	/

Transition Risk

Globally, industries are continuously accelerating their transformation pace toward low-carbon and clean operations. In this context, considering the industry characteristics, Meihua Group is more significantly affected by transition risks than physical risks, with carbon pricing increases and energy structure changes posing notable transition pressures.

Currently, the Company continues to increase investment in energy-saving and carbon-reduction projects, optimize its energy structure, and actively participate in carbon trading markets, ensuring steady progress toward low-carbon, clean, and green operations amid global transition trends.

Risk type	Impact Level	Primary business types affected	Risk impact	The impact on Meihua Group's strategy and decision-making	Current period and expectations for changes in financial impact
Increase in GHG (greenhouse gases)-related pricing	Low (Short-term), High (Medium-term), High (Long-term)	Product Manufacturing	**Cost increases:** As the scope of the national carbon emission trading market continues to expand, the Company, whose operations include high-energy-consuming production processes such as ammonia synthesis, faces the potential inclusion in the national carbon market management framework, leading to higher carbon compliance costs.	**Advance energy conservation and carbon reduction, and monitor trends in the carbon market:** The Company systematically implements energy-saving and carbon-reduction initiatives across its operations, proactively develops strategies for carbon allowance rollover and trading, manages potential carbon allowance shortfalls, and reduces medium- to long-term carbon costs.	A decrease in cash and cash equivalents, an increase in non-operating expenses, and a reduction in cash flows paid for other operating activities
		Heating Business	**Compliance pressure from quota shortfall:** The national carbon market has incorporated the power sector. If the Company's heating stations exceed their allocated carbon quotas, they must purchase additional allowances to meet compliance requirements, resulting in financial burden.	**Prioritize energy conservation and carbon reduction in heating business:** The Company's heating stations continuously optimizes combined heat and power efficiency to reduce carbon emissions in heating business, conducts carbon verification in accordance with regulations, and engages in allowance trading based on the Carbon price.	A decrease in cash and cash equivalents, an increase in non-operating expenses, and a reduction in cash flows paid for other operating activities

Risk type	Impact Level	Primary business types affected	Risk impact	The impact on Meihua Group's Strategy and decision-making	Current period and expectations for changes in financial impact
Increase in GHG (greenhouse gases)-related pricing	Low / High / High (Short-term / Medium-term / Long-term)	Downstream Sales	**Cross-border carbon tax payment pressure:** In the context of increasingly stringent greenhouse gas emission regulations in major global markets such as Europe and the United States, in the long term, products exported by the Company to other countries may face cross-border carbon tax payment obligations.	**Develop targeted export strategies:** The Company proactively identifies products exported to the EU (e.g., amino acids, organic acids), calculates their carbon emission intensity during production, and formulates targeted export strategies to reduce carbon emissions associated with these products.	/
		Logistics Operations	**Trends in inclusion within carbon markets:** Long-term, there is a likelihood that carbon emissions from downstream logistics and transportation activities, classified as Scope 3 emissions, will be included within the scope of carbon market management.	**Initiate green logistics initiatives:** The Company's logistics decarbonization efforts have effectively reduced emissions, addressing the decarbonization pressures within the value chain.	/
Energy structure transformation	High / High / High (Short-term / Medium-term / Long-term)	Product Manufacturing	**Risks associated with raw coal substitution and upgrading:** The use of raw coal may be restricted under tightening policy and environmental requirements, necessitating adjustments to existing coal-based production processes. The increasing complexity of equipment retrofitting and process adaptation may affect operational stability.	**Feasibility assessment of raw coal upgrading:** The Company has initiated assessments on adjusting the raw material mix and upgrading production processes. The substitution of cleaner coal has been incorporated into its medium- to long-term plans, with transformation efforts being advanced in a prudent and phased manner based on operational conditions.	Decrease in inventories, increase in operating costs, and increase in cash payments for goods and services.
		Heating Business	**Reduced use of fuel coal:** Amid the transition toward cleaner production, the share of coal-fired power generation and combined heat and power (CHP) is expected to gradually decline. Reliance on purchased electricity and clean energy may increase, leading to higher energy costs, lower utilization of self-owned facilities, and increased risk of asset impairment.	**Continuously improving energy efficiency:** The Company adopts a combined heat and power (CHP) model to recover waste heat, enhancing energy utilization efficiency and strictly controlling coal-fired carbon emissions; **Systematically optimize the energy structure:** gradually reduce the proportion of coal-fired power generation, increase the use of purchased electricity, steam, and clean energy, and promote a shift toward a cleaner and more diversified energy mix.	Inventories decreased, increase in operating costs, and cash payments for goods and services increased.
		Coal Procurement	**Risk of contracted coal consumption:** Under low-carbon transition and coal control policies, the Company's coal consumption may be restricted, leading to a reduced procurement scale and shorter contract cycles, which could weaken its bargaining power and supply security capabilities.	**Optimize procurement strategy:** By integrating short-term market purchases with medium- to long-term strategies, ensure stable supply of core resources.	/

Risk type	Impact Level	Primary business types affected	Risk impact	The impact on Meihua Group's Strategy and decision-making	Current period and expectations for changes in financial impact
R&D and application of decarbonization technologies	High / High / High (Short-term / Medium-term / Long-term)	Product Manufacturing	**Pressure from carbon reduction technology investment:** Continuous financial investment in the research, development, and application of carbon reduction technologies may pose certain challenges to the Company's cash flow management.	**Develop a carbon reduction action plan:** During the implementation of energy-saving technology upgrades, ensure that project investment levels remain relatively stable. Align with external energy conservation and carbon reduction requirements and internal technology upgrade strategies, and steadily increase investments in decarbonization technologies based on the Company's financial resilience.	Increase in fixed assets, increase in cash paid for other operating activities, and increase in cash paid for the acquisition of fixed assets, intangible assets, and other long-lived assets
		Heating Business	**Energy efficiency improvement investment pressure:** The Company continues to advance the upgrading of waste heat power generation and cascaded energy utilization technologies, which involve high initial capital expenditures and significant equipment operation and maintenance requirements.	**Prioritize initiatives and implement technological upgrades incrementally:** Gradually invest in energy-saving and carbon-reduction technologies within the heating business segment, combining targeted staff training with financial risk control strategies to alleviate cash flow pressures arising from large-scale investments.	
		Technology R&D	**Technical investment pressure and production line adjustment costs:** The new strain faces uncertainties in stability, safety, and scalability, which may lead to technical failure, increased production line adjustment costs, and wasted R&D resources.	**Avoiding technology failures and R&D resource waste:** The Company conducts comprehensive pre-project research on emerging technologies such as microbial strain development, gradually implementing R&D projects through pilot initiatives to prevent technology failures, R&D resource waste, and associated financial losses.	An increase in R&D expense and cash paid for other operating activities
Stranded high-energy-consuming assets	High / High / High (Short-term / Medium-term / Long-term)	Product Manufacturing	**Asset phase-out or impairment:** If the government further strengthens energy conservation regulation and expands the scope of energy efficiency standards, particularly by including process pathways such as coal-to-ammonia production using brown coal in regulatory coverage, it may impact the Company's high-energy-consuming assets.	**Monitor external standards and conduct timely assessments of equipment energy consumption:** The Company monitors external policies and standards on a timely basis, conducts assessments of equipment status in advance, and carries out disposals such as early resale to ensure the smooth exit of high-energy-consuming equipment.	A decrease in fixed assets, an increase in gains on disposal of non-current assets, and an increase in net cash receipts from disposal of fixed assets, intangible assets, and other long-term assets
		Heating Business	**Asset phase-out or impairment:** Due to carbon emission constraints and the transition of the Company's energy consumption structure toward renewable energy, coal-fired power assets may gradually exit the market, leading to reduced expectations for income from coal-fired power units and potential impairment of related fixed assets.	**Monitor external policy trends and continuously improve heating stations energy efficiency:** The Company is actively advancing energy-saving and consumption-reducing measures, such as waste heat recovery utilization, to enhance energy use efficiency, reduce coal consumption intensity, gradually decrease reliance on coal, and mitigate the adverse impacts of coal control policies and energy structure adjustments.	

Risk type	Impact Level	Primary business types affected	Risk impact	The impact on Meihua Group's Strategy and decision-making	Current period and expectations for changes in financial impact
Stranded high-energy-consuming assets	High (Short-term) High (Medium-term) High (Long-term)	Warehousing Operations	**Equipment aging and high energy consumption:** Some older temperature- and humidity-controlled equipment, ventilation and purification systems, among other facilities, have experienced equipment aging and high energy consumption due to extended service life, posing a risk of stranded assets.	**Timely assessment of equipment energy consumption:** The Company conducts assessments of warehouse equipment operating conditions in advance, initiates disposals at appropriate times, and ensures a controlled and orderly exit of high-energy-consuming warehouse equipment.	A decrease in fixed assets, an increase in gains on disposal of non-current assets, and an increase in net cash receipts from disposal of fixed assets, intangible assets, and other long-term assets
Changes in customer preferences	Low (Short-term) Low (Medium-term) Medium (Long-term)	Packaging Material Procurement	**Preference for environmentally friendly packaging:** Customers' preference for environmentally friendly and recyclable packaging materials has increased, potentially leading to restrictions on the use of conventional plastic or woven bags, driving adjustments to the procurement structure, and increasing packaging cost and supplier entry requirements.	**Procurement model optimization and advance green packaging procurement:** The Company optimizes packaging solutions, increases the proportion of environmentally friendly packaging materials, enhances Supply Chain Management and cost control, and integrates Sustainable Packaging into decision making and long-term planning.	Increase in inventory, increase in operating costs, decrease in cash receipts from the sale of goods and the rendering of services
		Product Manufacturing	**Low-carbon product preference:** Customers' preference for low-carbon products and sustainably produced goods has increased, which may alter market demand structure and negatively impact the order volume and market competitiveness of certain products.	**Life Cycle Carbon Reduction and Footprint Assessment:** The Company optimizes product structure and production processes in alignment with low-carbon and sustainable development goals, integrates customer requirements into production planning, investment decisions, and resource allocation, and actively conducts product carbon footprint verification and related initiatives to enhance the competitiveness of low-carbon products.	/
		Downstream Sales	**Compliance with eco-friendly packaging and risk of order loss:** High-end markets and overseas customers show a stronger preference for paper-based and other environmentally friendly packaging materials. If Meihua Group's packaging upgrades fail to meet expectations, this could lead to a reduction in order volume and result in revenue losses.	**Eco-friendly Packaging Upgrade and Customer Response:** The Company advances iterative optimization and standardized management of packaging solutions in alignment with green packaging initiatives and customer needs, integrating relevant requirements into product delivery, procurement strategies, and supplier collaboration. Ongoing efforts are focused on reducing packaging materials and validating alternative solutions, thereby mitigating compliance risk and enhancing order stability.	/

Risk type	Impact Level	Primary business types affected	Risk impact	The impact on Meihua Group's Strategy and decision-making	Current period and expectations for changes in financial impact
Stakeholder Concerns	Low (Short-term) Low (Medium-term) Low (Long-term)	Warehousing Operations	**Transition to new energy vehicles (NEVs):** Government policies encourage the use of new energy vehicles for transportation and distribution, prompting the Company to gradually replace fuel-powered vehicles with electric or hybrid vehicles.	**Low-carbon transportation planning:** In alignment with policy requirements, the Company is gradually advancing the electrification and replacement of internal logistics vehicles, while assessing investment timing, operational costs, and efficiency impacts. These initiatives are incorporated into warehousing operations management and long-term asset planning.	Increase in fixed assets, increase in non-operating expenses, and increase in cash payments for the acquisition of fixed assets, intangible assets, and other long-term assets.
		Heating Business	**Pressure from energy structure adjustment in self-owned heating stations:** With the advancement of the "dual carbon" strategy and increasingly stringent coal control policies, regulatory requirements on the energy efficiency, emissions, and energy mix of self-owned heating stations are becoming stricter. The company may need to gradually reduce the proportion of coal-fired power and increase the share of clean energy or purchased electricity to meet compliance requirements.	**Energy structure optimization and low-carbon transition:** The Company actively promotes waste heat recovery projects to improve overall energy efficiency. At the same time, it continues to explore renewable energy applications and optimizes its energy mix through measures such as the purchase of green electricity, thereby reducing reliance on coal-fired power and steadily addressing regulatory compliance and low-carbon transition requirements.	/

Meihua Group conducts a systematic assessment of climate-related risks from a full value chain perspective, identifying the impact levels of various risks on different business segments, and ultimately performing a comprehensive evaluation of risk impact to establish conclusions on the materiality of climate risk impacts, thereby supporting Meihua Group's risk management and decision making.

Risk Impact Conclusion

Risk	Short-term impact	Medium-term impact	Long-term impact	Type of business impact	Impact Level
Heavy snowfall	Low	High	Medium	Warehousing Operations Comprehensive Support Logistics Operations Downstream Sales Corn Procurement Coal Procurement	
Extreme Heat	Medium	High	High	Product Manufacturing Comprehensive Support Warehousing Operations Logistics Operations Coal Procurement Technology Research and Development Downstream Sales	
Extreme precipitation	Low	Low	Low	Comprehensive Support Corn Procurement Warehousing Operations Logistics Operations Downstream Sales	
Storm/Gale	Low	Low	Low	Technology Research and Development Comprehensive Support Corn Procurement Product Manufacturing Downstream Sales	
Sea level rise	Low	Low	Low	Warehousing Operations Product Manufacturing Logistics Operations Corn Procurement	
drought	Low	Low	Medium	Corn Procurement Downstream Sales	
Increase in pricing related to GHG (greenhouse gases)	Low	High	High	Product Manufacturing Heating Business Downstream Sales Logistics Operations	
Energy structure transformation	High	High	High	Product Manufacturing Heating Business Coal Procurement	
R&D and application of decarbonization technologies	High	High	High	Product Manufacturing Heating Business Technology Research and Development	
Stranded high-energy-consuming assets	High	High	High	Product Manufacturing Heating Business Warehousing Operations	
Changes in customer preferences	Low	Low	Low	Packaging Material Procurement Product Manufacturing Downstream Sales	
Stakeholder Concerns	Low	Low	Low	Warehousing Operations Heating Business	

Climate Opportunities

As a leading enterprise in the field of biomanufacturing, Meihua Group actively embraces green transition trends and proactively identifies emerging market opportunities, technological innovations, and business model innovations driven by climate change. The Company systematically identifies and analyzes climate-related opportunities across areas such as green finance, enhanced resource efficiency, and low-carbon product upgrades, aiming to transform external environmental changes into new drivers for sustainable development and business growth.

Meihua Group's Climate Change Opportunities Inventory

Opportunity Name	Opportunity Description	Time Horizon	The Company's Practices and Planning
Policy support for green bonds	Policy guidance and incentive measures in the green bond sector have gradually matured, and the construction of energy-saving projects related to ammonia synthesis has been included in the *Green Finance Support Project Catalogue (2025 Edition)*.	Medium- to long-term	The Company actively promotes green transition through synthetic biology technologies, effectively reducing energy consumption via microbial strain engineering and process optimization to align with policy support directions. Plans are in place to utilize leveraging green financial policies to secure financing for low-carbon projects, including energy efficiency upgrades in ammonia synthesis.
Environmental-related tax incentives	Article 13 of the *Environmental Protection Tax Law of the People's Republic of China* stipulates that enterprises which can control the emission concentration of taxable atmospheric and water pollutants below 30% of the national emission standards are eligible for a tax reduction to 75%, and if below 50%, the tax is reduced to 50%.This clause provides clear policy incentives for companies to reduce tax burdens through environmental upgrades.	Short-term	The Company has been recognized as National Benchmark Enterprise for Energy Conservation and Environmental Protection in the Bio-Fermentation Industry, and possesses a comprehensive waste gas governance system and a sound environmental management foundation, meeting the corresponding application requirements. Meanwhile, Meihua Group actively advances the circular utilization of carbon resources across the industrial chain, leveraging technical innovations to achieve high-value utilization of waste materials, thereby supporting waste reduction and carbon emission mitigation. For detailed information on specific projects, please refer to Section 5.4.2 on Circular Resource Utilization.
Subsidies and incentives related to motor energy efficiency improvement	The national standard *Minimum Energy Efficiency Limits and Energy Efficiency Grades for Electric Motors (GB 18613-2020)* raises the minimum allowable efficiency level to IE3 (Energy Efficiency Class III), driving enterprises to phase out inefficient motors. Meanwhile, some local governments provide financial subsidies for motor system energy efficiency improvement projects, integrating the promotion and application of high-efficiency motors from targeted initiatives into broader and more sustainable national strategies.	Short-term	The Company has systematically upgraded high-efficiency equipment, significantly improving motor efficiency and overall energy efficiency. Detailed performance improvements in energy efficiency are provided in Section 5.2.1, Energy Efficiency Improvement.
Renewable Energy Power Generation Subsidy and Grid Integration Policy	National policies strongly support the "self-consumption with surplus feed-in" mode, enabling favorable green electricity consumption and revenue from green certificate trading. The NDRC's *Notice on Promoting Full Coverage of Green Power Certificates for Distributed Photovoltaic Power Generation and Other Renewable Energy Electricity to Encourage Consumption of Renewable Energy Power* has achieved full coverage of green power certificates for electricity generated from distributed photovoltaic power generation and other renewable energy sources. The NDRC's *Management Measures for Renewable Energy Tariff Additional Funds* establishes the core basis for subsidy applications, disbursements, and supervision.	Medium- to long-term	The Company's Tongliao Meihua 11MW rooftop distributed photovoltaic project adopts the "self-generation and self-consumption" model, further optimizing the power structure in Keerqin District, increasing the share of renewable energy, and reducing the Company's energy costs. Meanwhile, the Company focuses on optimizing its energy structure and comprehensively advances three clean energy initiatives—distributed photovoltaics, external power storage, and direct green electricity supply—building a green and low-carbon energy supply system and strengthening the foundation for renewable energy subsidy applications. For detailed information on specific projects, please refer to Section 5.2.2 on Clean Energy.
Carbon Emission Trading and Energy Trading Policies	The Ministry of Ecology and Environment's *Notice on Carrying Out the Allocation and Settlement of National Carbon Emission Allowances for the Power Generation Sector in 2023 and 2024* introduced a carryover policy for allowances, incentivizing enterprises to sell surplus quotas. The Company can achieve carbon asset appreciation and monetization of energy value by optimizing its energy structure and leveraging surplus carbon emission allowances and green certificate volumes.	Medium- to long-term	The Company has launched distributed photovoltaic projects and refined its self-owned heating stations' carbon compliance trading strategy, laying a solid foundation for the appreciation of carbon assets and the monetization of energy value.
Improvement in resources utilization efficiency	In the context of the NDRC's *Implementation Guidelines for Energy-Saving and Carbon-Reduction Upgrading in Key Areas of High-Energy-Consuming Industries*, which calls for energy-saving upgrades in sectors such as fermentation, the Company can significantly improve energy and resources use efficiency through energy-saving renovations. Meanwhile, the NDRC's *Management Measures for Central Budgetary Investment Special Projects on Energy Conservation and Carbon Reduction* support projects in key industries related to energy conservation and carbon reduction. The Company's projects, including optimization of low-pressure steam pipelines at heating stations, steam pipeline upgrades for ammonia synthesis, and energy efficiency improvements to air separation turbine units, currently align with the policy subsidy direction.	Short-term	The Company enhanced energy and resources use efficiency through systematic energy-saving retrofits, resulting in significant reductions in energy consumption and carbon emissions, thereby establishing a solid foundation for policy incentives. Specific response measures are detailed in Section 5.2.1 on Energy Efficiency Improvement and Section 5.3.3 on Improvement in transportation efficiency.
Developing low-carbon products and services	Driven by policy guidance and market demand, the Company leverages its strengths in bio-fermentation technology to accelerate its positioning in emerging areas such as low-carbon, high-value functional products and green ammonia, while expanding its capabilities in green raw material development, Circular Economy services, and zero-carbon energy solutions.	Medium- to long-term	The Company is exploring pathways for coupling green ammonia production with existing synthetic ammonia processes, planning demonstration projects to gradually replace fossil-based synthetic ammonia and further extend toward high-value-added, low-carbon product lines. For detailed project information, please refer to Section 5.5.1 on Forward-Looking Strategic Deployment in the Green Ammonia Industry.
Enhanced Customer Trust and Market Preference	As customers increasingly demand green procurement and sustainable supply chains, the Company enhances customer trust by adopting low-carbon packaging, meeting international environmental standards, and obtaining authoritative certifications.	Short-term	The Company prioritizes the use of renewable and biodegradable materials to support customers in obtaining low-carbon packaging products that meet international standards. For detailed implementation practices, please refer to Section 5.1.2 on Sustainable Packaging.

Strategy Decision Making and Response Planning

To systematically address physical and transition risks associated with climate change, Meihua Group has integrated climate resilience into its corporate strategy and developed a climate adaptation response plan. Building on comprehensive risk coverage, Meihua Group will focus on high-impact transition risks such as increase in GHG-related pricing and changes in energy structure, as well as high-impact physical risks including heavy snowfall and extreme heat. Targeted response strategies will be developed accordingly, with priority ensured throughout the implementation process to enhance the precision and effectiveness of risk responses. This approach will strengthen the systematic and actionable nature of climate risk management, effectively mitigating potential impacts on operations.

Risk Classification	Risk Type	Primary Response Directions	Strategy Priority
Transition Risk	Increase in GHG (greenhouse gases) related pricing	Optimization of coal selection	High
	Energy mix transformation	Energy strategy implementation	High
	R&D and application of decarbonization technologies	Energy strategy implementation	High
	Stranded high-energy-consuming assets	Promoting carbon reduction across the value chain	High
	Shifts in customer preferences	Promoting carbon reduction across the value chain	Medium
	Stakeholder Concerns	Enhancing warehouse management	Low
Physical Risk	Heavy snowfall	Enhancing warehouse management	High
	Extreme heat	Intelligent production control	High
	Storm/Cyclone	Ensuring stable logistics supply	Low
	Extreme precipitation and flooding	Ensuring orderly operations	Low

Optimization of Coal Selection

Risk associated with energy mix changes and Increase in pricing related to GHG (greenhouse gases)

- ***Establish a high-quality fuel coal suppliers screening mechanism and clarify the 'quality-based pricing' procurement approach.***

Meihua Group has established a systematic vendor management mechanism for fuel coal, with key quality indicators such as fixed carbon, reactivity, ash content, and sulfur content serving as unified control criteria. Suppliers are subject to onboarding assessments, requiring the submission of third-party certified quality test reports prior to contract signing. Quality audits and random sampling checks are conducted to verify coal sample preparation, storage, and shipment management, forming a dynamic quality evaluation system. Meanwhile, Meihua Group incorporates relevant quality requirements into procurement contract management and directly links quality performance to price settlement, implementing premium pricing for qualified deliveries and deductions for non-compliant ones. Batch testing, spot-check revalidation, and incentive-punishment mechanisms are also implemented to guide suppliers in continuously and steadily improving the quality of fuel coal supply, ensuring the safety and stability of production operations.

- ***Gradually replace inefficient coal types, optimize the raw coal composition, and reduce production risks***

Meihua Group is gradually phasing out coal types with low fixed carbon content, poor reaction efficiency, and high pollution indicators, in accordance with the requirements of production processes for raw coal reactivity and energy efficiency. It is also reducing ash and sulfur content in existing coal types through methods such as coal washing and blending. Meihua Group has developed a 6–12 month coal type optimization plan, under which candidate coal types are evaluated through laboratory-scale and industrial-scale combustion tests to verify their energy efficiency performance and equipment compatibility. Implementation of replacement is carried out only after verification confirms compliance with process requirements. Meanwhile, Meihua Group proactively secures multiple alternative coal types to ensure production continuity and stability during supply fluctuations or structural change.

- ***Establish a dynamic monitoring mechanism to enhance flexibility in coal procurement***

Meihua Group strengthens ongoing monitoring of the coal market to dynamically track price trends and supply changes, and enhances the flexibility of its procurement strategy by improving spot purchasing capacity and reducing the proportion of long-term agreement coal. Meanwhile, adjustable procurement volumes and price adjustment mechanisms have been introduced into procurement arrangements to mitigate cost risks arising from market price fluctuations, enhancing the resilience and adaptability of coal procurement.

- ***Establish a fuel coal carbon content measurement procedure to prepare for inclusion in the national carbon market***

Meihua Group has established standardized procedures for measuring the elemental carbon content of fuel coal at each site, in accordance with national regulatory requirements for carbon emissions in the relevant industry, and conducted continuous monitoring for at least one year on all coal types used for heating business to ensure that carbon content data are traceable and auditable. The complete measured data will serve as the basis for Meihua Group's compliance and trading activities in the national relevant industry's carbon market, ensuring Meihua Group has accurate and compliant underlying data to support its carbon emissions reporting.

Energy Strategy Implementation

Risk associated with changes in energy structure

Feasibility assessment of renewable energy projects for photovoltaic and wind power, and advance the construction of self-consumption clean energy projects at the factory site.

The Company has conducted feasibility assessments for photovoltaic construction on factory rooftops, warehouse roofs, and open areas, in accordance with clean energy substitution policies, while simultaneously evaluating wind resources and solar irradiance in the surrounding region to assess the potential for distributed wind-solar complementary projects. The results of the evaluation will inform the planning of on-site photovoltaic systems for self-consumption, gradually enhancing Meihua Group's internal renewable electricity generation capacity and reducing reliance on conventional energy sources. Details on the effectiveness of clean energy usage can be found in Section 5.2.3, Clean Energy.

By purchasing green power and green certificates, increase the proportion of renewable energy to meet the requirements for green transition.

When internal clean energy development is not feasible or the construction timeline is lengthy, the Company plans to participate in provincial power trading centers for green electricity trading, establish long-term green power procurement contracts, and supplement these efforts with green certificate acquisition mechanisms to increase the total share of renewable energy usage, ensuring Meihua Group meets its phased targets for green transition as planned.

Daily dispatch mechanism optimization prioritizing green power and using coal power for peak support, to avoid over-generation.

The Company's dispatch center formulates the startup/shutdown schedule and load allocation for coal-fired power units based on daily load forecasts, prioritizing the utilization of photovoltaic power generated within the plant for self-consumption. When green electricity supply is sufficient, coal power generation is reduced; when green electricity is insufficient, coal-fired units are deployed to meet peak demand. The dispatch center updates its scheduling strategy daily to avoid over-generation, thereby reducing unnecessary coal consumption and carbon emissions.

R&D and application of decarbonization technologies

Advancing waste heat power generation technology upgrades to enhance internal green electricity supply capacity

Building on existing waste heat recovery retrofits, Meihua Group has implemented technical upgrades to its sulfuric acid production waste heat power generation project, improving the efficiency of thermal-to-electric energy conversion. This enables waste heat power generation to become a stable and sustainable internal source of green electricity, further reducing reliance on purchased power and enhancing the overall capacity for clean energy supply. The performance of waste heat recovery technologies is detailed in Section 5.2.2, Energy Efficiency Improvement.

Promoting Carbon Reduction Across the Value Chain

Risk of stranded high-energy-consuming assets

The Company proactively aligns with external policies, prioritizing the retrofitting of high-energy-consuming processes and equipment, and actively leveraging relevant subsidies and financial support for mitigation. Meanwhile, the Company systematically reduced energy consumption and carbon emissions per unit of product by optimizing core processes such as ammonia synthesis and xanthan gum production, combined with energy efficiency measures including waste heat power generation and high-efficiency equipment replacement, effectively mitigating the risk of stranded assets in high-energy-consuming facilities. Practices related to green processes and energy efficiency improvements are detailed in sections 5.2.1 Energy Efficiency Improvement.

Increase in pricing related to GHG (greenhouse gases)

Establishing a low-carbon supply chain system covering the raw material stage

The Company drives continuous improvement among upstream suppliers in energy use, carbon emission control, and compliant operations through institutional constraints, risk assessment, and tiered management, thereby establishing a low-carbon supply chain system covering the raw material stage. Low-carbon procurement practices are detailed in Section 5.1.1, Low-Carbon Procurement.

Risk associated with changing customer preferences

Implement green packaging management measures to enhance the ability to adapt to changes in customer preferences.

In response to the ongoing increase in downstream customers' demands for green packaging and plastic reduction, Meihua Group has systematically implemented multiple green packaging management initiatives, integrating environmental requirements into every dimension and stage of packaging design and material control. In the implementation process, Meihua Group has continuously reduced the environmental impact of packaging materials by carrying out packaging weight reduction, adopting eco-friendly inks and reducing ink usage, promoting the recycling and reuse of pallets, and replacing stretch films, reducing the use of plastic pallets, and adopting wooden pallets.

Enhancing Warehouse Management

Heavy snowfall risk

Assess warehouse structural safety and implement differentiated maintenance

Meihua Group conducted a systematic assessment of its warehousing facilities and developed differentiated maintenance strategies based on building age and regional risk. Critical reinforcement was carried out at older warehouses in Tongliao and Xinjiang, while routine inspections of newly constructed facilities and optimization of drainage systems were also prioritized to enhance disaster resilience. Meanwhile, prior to the snow season, heating, fire protection pipelines, and outdoor equipment are fully insulated and reinforced, with aging components repaired to minimize freezing and cracking risks.

Establish a dynamic grain coverage and snow removal operation mechanism

Meihua Group initiates response measures based on meteorological warnings, prioritizing the maintenance of main logistics routes; grain surfaces are covered prior to snowfall, and roof snow is dynamically cleared during snow events, systematically mitigating risks of structural damage and moisture exposure.

Assign dedicated personnel to ensure effective emergency response

During snowstorms, Meihua Group assigns dedicated personnel to conduct regular inspections of critical areas including rooftops, walls, and temperature and humidity levels. Any abnormalities are reported immediately and addressed according to established response plans, ensuring timely and effective emergency response.

Heat risk

Establish a governance framework for heat-related risk

Establish a three-tier warehouse safety management system covering Governance, Management, and Operations, clearly define responsibilities and operational standards, establish a closed-loop management process, and ensure standardized and systematic control of high-temperature risks in accordance with established control criteria.

Thermal Regulation Renovation and Temperature Control Monitoring

Establish a comprehensive assessment mechanism to develop differentiated strategies based on warehouse conditions and temperature control requirements, implementing sealing reinforcement, equipment integration, or constant-temperature reconstruction in a categorized manner, thereby scientifically optimizing resource allocation. Meanwhile, intelligent temperature-monitoring devices have been deployed to continuously monitor temperature and humidity. Automatic alerts are triggered when thresholds are exceeded, guiding operators to promptly adjust ventilation and cooling measures, with enhanced focus on managing perishable goods.

Optimize air conditioning energy efficiency management and promote green cooling practices

Meihua Group deployed smart meters and implemented department-level energy consumption tracking and dynamic alerting for air conditioning in storage areas. Departments with abnormal energy usage were promptly alerted and encouraged to optimize air conditioning operation schedules, temperature settings, and area management, thereby strengthening refined energy management. Meanwhile, the 'ceiling fan + air conditioning' hybrid cooling mode is being promoted in open-plan workspaces. When perceived temperature is below 28°C, ceiling fans are prioritized to provide wind chill effects, effectively reducing air conditioning load. This approach significantly lowers energy consumption while maintaining comfort levels, achieving a synergistic improvement in energy efficiency and environmental comfort.

Risk related to stakeholder concerns

Promote the electrification of transportation equipment to reduce impacts from energy and compliance risks.

Meihua Group continues to systematically replace diesel dump trucks with electric ones in transportation equipment management, and annually completes the electrification upgrade of vehicles scheduled for replacement based on their service life and renewal plans. Currently, the proportion of electric dump trucks within Meihua Group exceeds the relevant regulatory requirements, effectively mitigating potential impacts from fuel price volatility and increasingly stringent emissions regulations.

Intelligent Production Control

Heat risk

Immediate response based on monitoring data

Temperature monitoring points have been deployed in key production areas to enable real-time monitoring and threshold-based alerts; upon detection, rapid response follows established procedures, including ventilation, localized cooling, thermal shielding, or equipment operation adjustments, to ensure production quality and safety.

Optimize production scheduling to avoid high-temperature risks

Flexibly adjust production schedules by scheduling temperature-sensitive processes and high-energy-consuming equipment operations during nighttime low-temperature periods or off-peak electricity usage hours, thereby reducing peak heat dissipation and energy consumption.

Temperature control adjustments to process operations

Establish a correlation table between environmental temperature and process parameters. When temperature exceeds the threshold, the system automatically adjusts parameters such as reaction time and feeding rate to ensure process stability and reliable output under high-temperature conditions.

Ensuring Stable Logistics Supply

Heat risk

Ensure vehicle operations and cargo quality during high-temperature conditions

Vehicles are equipped with automatic mist cooling systems and other facilities; temperature-sensitive goods are transported using dual temperature control measures, including phase change containers and insulating blankets. During periods of high-temperature warnings, direct routes are prioritized to ensure transportation safety and product quality.

Heavy snowfall and storm risks

Multi-regional supplier deployment and emergency preparedness

Implementation of a multi-regional sourcing strategy in critical raw material procurement has reduced dependency on single supply regions, effectively mitigating regional weather-related risks and enhancing supply chain resilience and bargaining power. Meanwhile, emergency supply obligations under extreme weather conditions have been incorporated into procurement contracts, requiring suppliers to develop emergency response plans and clearly define their priority supply responsibilities, thereby shifting risk management upstream to the source of supply.

Establish a weather-linked procurement mechanism

Dynamically adjust procurement pace based on meteorological warnings, implementing agile responses for bulk raw materials such as corn by moderately advancing purchases and increasing inventory levels according to warning levels to prevent supply disruptions; meanwhile, utilizing futures instruments to hedge against price volatility triggered by weather conditions. By conducting integrated analysis of weather, market, and supply conditions, we proactively anticipate and address risk to ensure supply chain resilience under extreme weather conditions.

Weather Forecasting and Logistics Scheduling

Integrate the logistics system with national weather alert mechanisms, automatically triggering alerts and notifying dispatch when extreme weather impacts critical areas, significantly enhancing emergency response speed. Meanwhile, key raw material suppliers are required to predefine at least two transportation routes for each order and upload location data in real time via IoT devices; during snowstorms, progress updates and estimated arrival times must be provided every two hours. By leveraging transportation visibility and multi-path resilience, potential disruption risks can be identified promptly, enabling dynamic adjustments to inventory, production, or the initiation of emergency procurement to ensure uninterrupted logistics and stable supply during extreme weather events.

Ensuring Orderly Operations

Risks such as heavy snowfall, extreme heat, storms, and extreme precipitation

Equipment Inspection and Maintenance

Complete anti-freezing treatments for heating pipes, fire protection pipes, and outdoor equipment (such as insulation wrapping, material reinforcement, and repair of aged components) before the snow season; simultaneously implement daily inspections twice a day, focusing on pipeline networks, insulation conditions, valves, and water systems, with records and feedback on abnormalities to ensure safe equipment operation during extreme cold.

Power Emergency Resilience

Diesel generators are deployed in key areas such as research and development centers and production workshops, with monthly load bank testing conducted and an emergency fuel reserve mechanism established — upon issuance of a snowstorm warning, fuel supply for at least 48 hours of power generation is ensured to address potential grid outages and logistics disruptions.

Flexible Work Arrangements and Commuting Management

Remote work is activated during orange or red snowstorm warnings, with non-essential staff working from home and essential personnel scheduled in advance for on-site duty; during hot seasons, the 'Office Guidelines for High-Temperature Weather' is issued, allowing staggered commuting (e.g., 7:00–16:00) to reduce employees' exposure to extreme heat.

Heat Prevention and On-site Catering Support

Cooling supplies such as Huo Xiang Zheng Qi Water and ice packs are regularly available in office areas and workshop rest zones; free refreshments including mung bean soup and salt soda are provided in staff lounges. The canteen has added chilled noodles and salads to its menu to better suit hot weather conditions, with daily monitoring of cold chain temperatures to ensure food safety and stable supply during high-temperature periods.

03

Risk Management

Meihua Group has established a climate risk management framework within the governance structure of sustainable development, addressing the potential impacts of climate change on its strategic development, production operations, and financial performance. Through a clearly defined management structure and division of responsibilities, Meihua Group has established a management process covering risk identification, assessment, materiality determination, monitoring, and integration, enabling systematic management of climate-related physical and transition risks.

Risk Management Process

Risk Identification

Meihua Group identifies climate-related physical and transition risks using a science-based approach. In response to physical risks, Meihua Group has identified potential climate risks across its operational locations by leveraging the ThinkHazard tool, based on clearly defined operational boundaries, and supplemented with desk-based analysis of historical events, resulting in a comprehensive physical risk inventory. To address transition risks, Meihua Group systematically identifies and assesses the transition risks it faces by considering policies in the local country and region where operations are located, along with industry development trends, across four dimensions: technology, reputation, market, and policy/legal.

Risk Assessment

Meihua Group systematically assesses the materiality of climate risks by integrating both qualitative and quantitative analysis methods. Quantitatively, potential major losses or response costs are measured by focusing on the financial impact of risks; qualitatively, the objective impact of risks and Meihua Group's resilience are assessed to identify its ability to respond to and recover from actual climate-related impacts. Through a dual-dimensional cross-analysis, risks are scientifically identified and classified, providing a reliable basis for developing precise and executable strategies.

Quantitative Assessment - Financial Losses and Response Costs

Meihua Group has calculated the financial impacts of various risks on its businesses for the current period, the next fiscal year, and both short- and long-term horizons, based on climate model projections, combined with the assessment of historical event costs and future response cost assessments. Based on the financial impact assessment results, Meihua Group evaluated the financial materiality of various risks, which serves as one of the key references for determining the extent of risk impact.

Financial Impact Assessment Criteria

Qualitative Evaluation - Objective Impacts and Response resilience

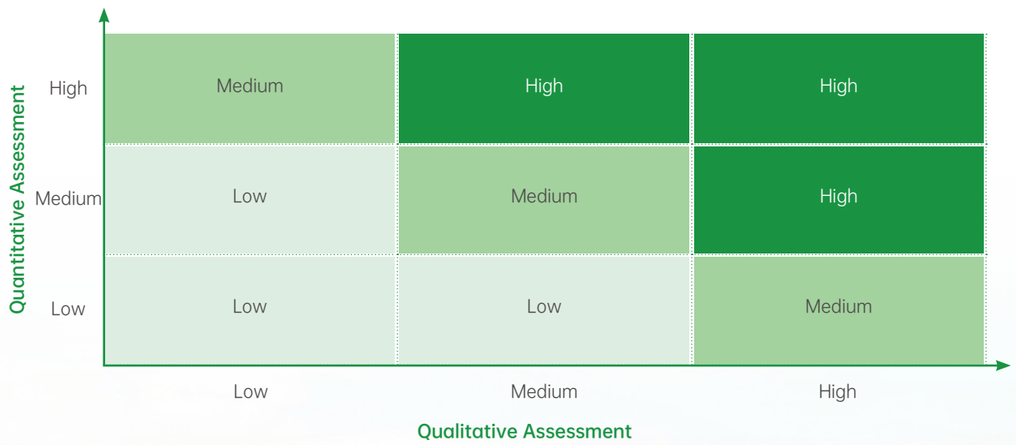
Meihua Group conducts qualitative evaluations from two dimensions—objective risk impact and business resilience—using climate models to assess the likelihood of their occurrence and severity across different scenarios and timeframes, resulting in objective evaluation results regarding risk impacts. On this basis, further analysis is conducted on each business unit's capacity to respond to physical risks, such as whether they possess the technical foundation and practical experience to address the aforementioned objective risks, thereby deriving the resilience assessment outcome.

Objective Impact and Resilience Assessment Criteria

Risk Materiality Assessment

Ultimately, based on the quantitative results of the evaluation regarding financial losses and response costs, as well as the qualitative evaluation results concerning objective impact levels and resilience capacity, Meihua Group developed a two-dimensional materiality matrix for climate risks, deriving conclusions on the materiality of each risk category, thereby providing critical support for Meihua Group's climate risk prioritization management.

Risk Materiality Assessment Matrix



Financial Threshold

Meihua Group referred to the definition and illustrative example provided by the Shanghai Stock Exchange regarding financial materiality assessment, using the 2024 net income of RMB 2.697 billion as a benchmark, and applied a relative threshold approach to evaluate the financial materiality of climate-related physical risks and transition risks. During the assessment process, Meihua Group used the maximum potential financial impact of individual risks under various climate scenarios as the basis for evaluation, categorized risks based on their proportion of net profit, and conducts risk prioritization to support subsequent focus on risk management and resource allocation.

Criteria for Assessing the Financial Materiality of Climate Risks

Financial Materiality Level	Judgment threshold (as a percentage of net income in 2024)	Judgment Statement
Low financial materiality	< 2.5%	The maximum financial impact of risk under various climate scenarios is low, with limited effect on Meihua Group's overall operations and financial performance.
Moderate financial materiality	2.5%–5%	Risk may have a moderate impact on Meihua Group's operations or financial performance under certain scenarios, requiring ongoing monitoring and implementation of management measures.
High financial materiality	> 5%	Risk may have a significant impact on Meihua Group's financial performance under relevant scenarios and is classified as a key risk requiring prioritized management and response.

Monitoring Approach

Meihua Group has established a routine climate risk monitoring framework focused on identified physical and transition climate risks, continuously tracking changes in risks and the implementation of corresponding mitigation measures. Meihua Group conducts regular monitoring of the impacts of extreme weather events on production operations, key assets, and operational stability, based on actual production and operational conditions, while simultaneously tracking the implementation progress of critical climate risk mitigation measures. Through continuous collection and analysis of related risk information, Meihua Group is able to timely identify trends in climate risks and provide a basis for subsequent adjustments and optimizations of risk management measures.

Risk Integration

Meihua Group has integrated climate risk management as an integral part of its sustainable development management, established corresponding climate risk management mechanisms, and standardized relevant management requirements and work processes through the 'Management Measures for Addressing Climate Change and Sustainable Development'. To ensure comprehensive management and monitoring of climate risks, Meihua Group has established a clear risk management framework and defined responsibilities.

At the governance level

The Strategy Committee, as those charged with governance, is responsible for advancing the organization's overall climate risk management efforts, providing strategic-level design and macro guidance, and reviewing medium- to long-term plans as well as annual objectives and action plans. The Audit Committee serves as an oversight body, specifically responsible for overseeing climate risk management, monitoring the implementation of major climate risk response measures, and conducting focused audits on whether relevant requirements have been effectively implemented across business units.

At the management level

The ESG Leading Group is responsible for comprehensively advancing climate risk management, reviewing the identification, assessments, and implementation of response measures related to climate risks, and promoting the execution of relevant policies, procedures, and management requirements.

At the operational level

Departments and Subsidiary Companies of the Group are responsible for the practical implementation of climate risk management measures, ensuring that risk identification, assessment, and response actions are effectively carried out. The operational team's efforts ensure the effective implementation and execution of climate risk management measures.

Currently, climate risk management operates as an independent module and is integrated with Meihua Group's climate governance, scenario analysis, and risk materiality assessment activities, providing support for relevant management decision-making. Meihua Group plans to progressively promote the synergistic integration of climate risk management with overall risk management, based on enhanced risk management capabilities. By strengthening the integration of climate risks with other operational risks across identification, assessment, and management processes, the Company enhances the systematic consideration of climate risks within broader governance and decision-making frameworks, thereby continuously improving the foresight and comprehensiveness of our overall risk management.

04

Performance Target

Meihua Group has integrated the management of climate-related risks and opportunities into its strategy and established measurable, time-bound indicators and targets. We have established key performance indicators (KPIs) in areas such as emissions reduction, climate resilience, and energy, and conduct timely oversight and disclosures to demonstrate our actions and commitments toward addressing climate change.

Climate Target

Meihua Group has established a multi-tiered climate target framework covering both short-term and long-term horizons to systematically address climate change challenges and advance low-carbon transition.

In Scope 1 and Scope 2 emissions reduction, Meihua Group has set clear short-term targets:

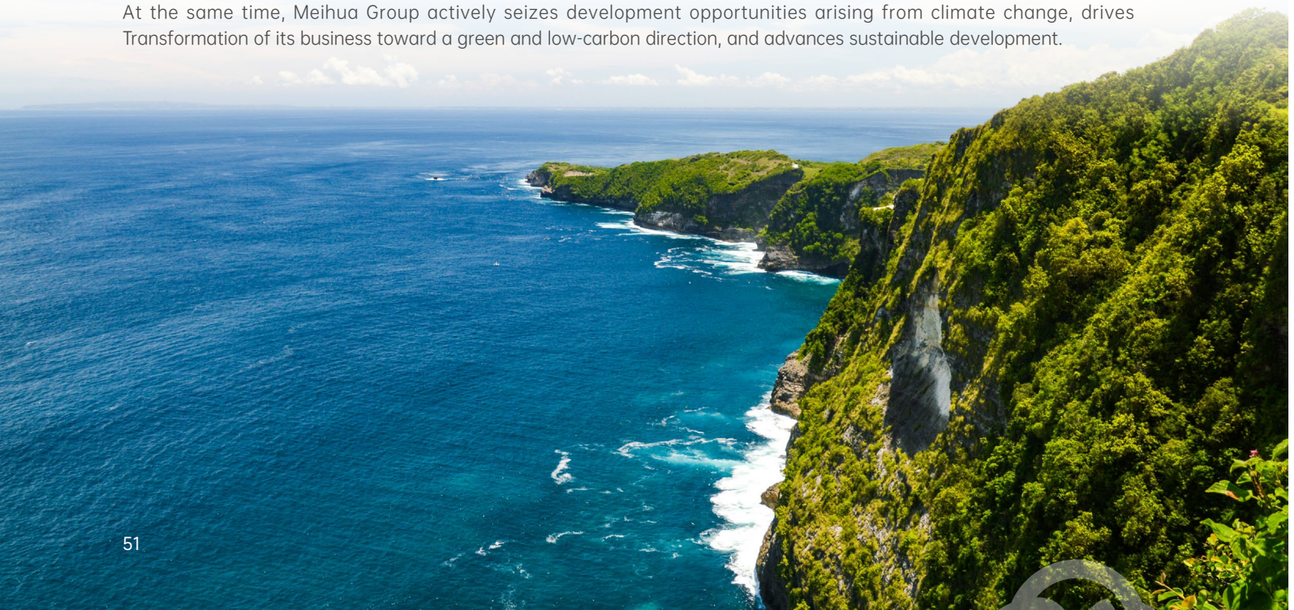
Achieving a **17%** reduction in GHG (greenhouse gases) intensity per unit of revenue by **2030**.

We have established a long-term vision to achieve **carbon neutrality** in our operations by **2060**.

These goals are deeply integrated into Meihua Group's overall strategy and will provide clear guidance on our investments and actions in key areas such as technological upgrading, energy efficiency improvement, and clean energy substitution.

Climate Metrics

Meihua Group continuously refines its actions to address climate change, regularly tracks the progress of established goals and indicators, ensures effective management of adverse impacts arising from climate change, and conducts assessments of the effectiveness of mitigation measures to continuously enhance climate governance performance. At the same time, Meihua Group actively seizes development opportunities arising from climate change, drives Transformation of its business toward a green and low-carbon direction, and advances sustainable development.



Indicator	unit	2025
Total GHG emissions (location-based)	tons of CO_2 equivalent (tCO_2e)	21,322,471.81
Total GHG emissions (market-based)	tons of CO_2 equivalent (tCO_2e)	21,509,424.47
Scope 1 emissions	tons of CO_2 equivalent (tCO_2e)	11,553,526.42
Scope 2 emissions (location-based)	tons of CO_2 equivalent (tCO_2e)	2,143,819.69
Scope 2 emissions (market-based)	tons of CO_2 equivalent (tCO_2e)	2,330,772.35
Scope 3 emissions	tons of CO_2 equivalent (tCO_2e)	7,625,125.70
Category 1: Purchased Goods and Services	tons of CO_2 equivalent (tCO_2e)	2,671,041.34
Category 2: Capital Goods	tons of CO_2 equivalent (tCO_2e)	69,110.38
Category 3: Fuel- and Energy-Related Activities (Not Included in Scope 1 or Scope 2)	tons of CO_2 equivalent (tCO_2e)	3,796,041.51
Category 4: Upstream Transportation and Distribution	tons of CO_2 equivalent (tCO_2e)	1,004,301.48
Category 5: Waste Generated in Operations	tons of CO_2 equivalent (tCO_2e)	15,109.01
Category 6: Business Travel	tons of CO_2 equivalent (tCO_2e)	2,430.10
Category 7: Employee Commuting	tons of CO_2 equivalent (tCO_2e)	3,264.07
Category 8: Upstream Leased Assets	tons of CO_2 equivalent (tCO_2e)	210.22
Category 9: Downstream Transportation and Distribution	tons of CO_2 equivalent (tCO_2e)	271.35
Category 10: Processing of Sold Products	tons of CO_2 equivalent (tCO_2e)	16,978.67
Category 12: End-of-Life Treatment of Sold Products	tons of CO_2 equivalent (tCO_2e)	13,447.29
Category 13: Downstream Leased Assets	tons of CO_2 equivalent (tCO_2e)	22,424.09
Category 15: Investments	tons of CO_2 equivalent (tCO_2e)	10,648.60

In 2025

By implementing a series of energy-saving technological upgrades and optimization measures, we achieved a cumulative annual carbon reduction of **15,911.49** tons of CO_2 equivalent. This progress steadily advances our low-carbon transition and supports the attainment of our climate goals.

The Company has strictly complied with the national power carbon emission trading system requirements and successfully completed the annual carbon emission allowance reconciliation and carryover process within its operational scope (Xinjiang Base and Tongliao Base heating stations).Through a comprehensive decarbonization approach combining internal energy efficiency improvements, process optimization, and energy-saving and carbon-reduction projects, Meihua Group has not experienced any allowance shortfalls and achieved a 100% carbon allowance compliance rate. During the reporting period, Meihua Group did not receive rectification notices, investigations, or administrative penalties from environmental protection authorities related to carbon emission allowance settlement. Compliance performance has remained consistently strong.

Currently, Meihua Group does not engage in carbon credit trading activities; however, Meihua Group has implemented a series of forward-looking and systematic initiatives within the framework of carbon market mechanisms. Through continuous optimization of production processes, advancing the green transformation of energy structures, implementing energy efficiency improvement projects, and strengthening monitoring and accounting of carbon emissions, Meihua Group has established a relatively comprehensive carbon management system, creating enabling conditions for the future participation in carbon trading markets and the realization of carbon asset value.

05

Carbon reduction progress

To systematically advance the implementation of its carbon neutrality strategy, Meihua Group has established a carbon reduction action framework covering the entire value chain. We have deeply integrated carbon reduction principles and practices into the full lifecycle management, spanning raw material procurement, production manufacturing, logistics transportation, and product application. We continue to invest in green and low-carbon technology research and development, striving to establish a multi-layered, integrated greenhouse gas emission reduction system.

Carbon reduction in raw materials

Meihua Group integrates low-carbon principles throughout its supplier management process by systematically incorporating low-carbon standards, continuously expanding green procurement and the use of eco-friendly packaging materials, significantly improving resource utilization efficiency of raw materials, and driving the supply chain toward greener, lower-carbon, and more sustainable development.

Low-Carbon Procurement

Meihua Group has fully integrated ESG factors into the end-to-end management of its suppliers, systematically advancing carbon reduction initiatives at the raw material stage, and gradually reducing carbon emission intensity in the upstream supply chain.

Meihua Group incorporates environmental compliance and greenhouse gas emission management requirements into its new supplier evaluation process, based on the Management Measures for Sustainable Procurement. It focuses on suppliers' foundational capabilities in energy use, emissions management, and compliant operations. Meihua Group explicitly prohibits suppliers from engaging in serious environmental violations such as evading regulatory oversight to discharge pollutants, illegal disposal of hazardous waste, or the falsification of environmental monitoring data. By establishing strict compliance standards, Meihua Group effectively prevents high-environmental-risk suppliers from entering its supply chain.

Meihua Group conducts ESG risk assessments and tiered management for suppliers, with carbon emissions and energy consumption as key focus areas, systematically identifying decarbonization priorities upstream in the supply chain. Meihua Group has integrated issues such as circular materials management, energy management, and climate change response into its supplier ESG management framework. By combining suppliers' ESG performance scores with their financial significance within the business, Meihua Group identifies a list of high-ESG-risk suppliers, providing a basis for differentiated management and targeted improvements. Meanwhile, Meihua Group continues to collect carbon emission and energy consumption data from key suppliers through supplier ESG risk assessment questionnaires, enabling the identification of carbon hotspots and providing data support for Scope 3 emissions accounting.

Meihua Group has developed and issued the Supplier Code of Conduct, explicitly integrating the concept of low-carbon development into the behavioral standards and management requirements for suppliers. Meihua Group encourages suppliers to develop and implement low-carbon development strategies tailored to their unique operational characteristics, continuously reducing GHG (greenhouse gases) emissions from operations through energy-saving technology upgrades, improved energy efficiency, and a gradual transition to clean energy sources. Through institutional guidance and behavioral standards, Meihua Group has gradually extended low-carbon management requirements to the upstream raw material supply chain, driving suppliers to continuously improve in energy management and carbon emission control, thereby establishing a positive feedback loop for collaborative decarbonization.

Meihua Group has integrated supplier decarbonization metrics into its Supply Chain Management system, promoting the implementation of low-carbon procurement. Meihua Group has progressively expanded the scope of its carbon reduction program, ensuring that all supplier manufacturing facilities are included in management, thereby driving continuous reductions in carbon emissions and energy consumption. To accurately understand supply chain carbon emissions, Meihua Group will systematically collect and manage Scope 3 emissions data from upstream and downstream supply chain activities, providing data support for future emission reduction initiatives. In addition, Meihua Group will invite suppliers to participate in GHG (greenhouse gases) reduction training to enhance their awareness of energy conservation and emissions reduction, encourage the implementation of emission-reducing measures in daily operations, and jointly promote low-carbon transformation of the supply chain. By integrating the aforementioned carbon reduction targets into the Supply Chain Management system, Meihua Group has initially established a low-carbon management framework covering raw material procurement and upstream stages, providing strong support for enhancing the overall green competitiveness of the supply chain and achieving the Company's carbon neutrality goal.

Green Packaging

Meihua Group takes 'reduction, reuse, and resource recovery' as its core principle, systematically advancing green packaging management to promote the lightweighting, circularity, and sustainability of packaging materials. Meihua Group has established the 'Green Packaging Procurement Strategy and Management System' to enhance the green packaging management system across multiple dimensions, including institutional development, packaging design, procurement management, and supply chain collaboration. Through systematic initiatives, Meihua Group aims to drive carbon reduction from the source of packaging, supporting the overall transformation of the supply chain toward greener and lower-carbon practices.

Green Design

Optimize packaging specifications and production requirements, prioritize the use of renewable and biodegradable materials, promote lightweight design, and reduce material usage while ensuring Product Safety.

Material Management

Strictly select packaging materials that meet environmental standards, ensuring they are non-toxic and harmless, produced through environmentally friendly processes, and promoting the recycling and reuse of discarded packaging.

Green Procurement

Environmental requirements are incorporated into the assessment of suppliers, with a preference given to suppliers possessing green production capabilities, and green procurement terms are clearly defined in the contract.

Optimized usage

Deferred in accordance with product characteristics, the packaging format has been optimized to reduce unnecessary packaging materials and improve packaging fit, while transportation methods have been optimized to lower carbon emissions.

Regenerative Agriculture

Meihua Group is exploring the introduction of regenerative agriculture practices within the upstream supply chain, focusing on key crops such as corn, and piloting initiatives in Northeast China. By optimizing cultivation methods and agricultural management measures, Meihua Group aims to drive carbon reduction from the very source of raw material production. In pilot farms, more than 20% of crop residues were returned to the field, reducing straw burning, increasing soil organic matter content, and enhancing the soil's carbon sequestration capacity. Meanwhile, more than 50% of arable land has adopted a three-year two-crop rotation or multiple crop rotation system. This farming practice has improved soil quality, reduced the use of fertilizers and pesticides, and further lowered carbon emissions.

To continuously reduce greenhouse gas emissions, Meihua Group has gradually increased the use of organic fertilizers, reduced chemical fertilizer application, and improved soil quality, lowering production costs while decreasing carbon emissions in agricultural production. In addition, Meihua Group is exploring the integration of renewable energy sources such as solar and biomass energy to reduce reliance on fossil fuels, improve energy efficiency in agricultural production systems, and further lower greenhouse gas emissions. These measures have not only effectively reduced carbon emissions from agricultural activity but also enhanced soil carbon sequestration capacity, laying a foundation for the low-carbon transformation of agriculture and the achievement of carbon neutrality.

Case Regenerative Agriculture Corn Cultivation Pilot

The Nestlé Regenerative Agriculture Corn Pilot Project at the Jilin Base achieved a reduction of 586 CO_2 equivalent tons, with a carbon footprint of 1,044 CO_2 equivalent tons during the reference period and 458 CO_2 equivalent tons during the project period, verified for emission reduction effectiveness.

Carbon reduction in production

Emissions from production processes are central to Meihua Group's achievement of its carbon neutrality goal. Meihua Group promotes energy efficiency improvement projects and the application of clean energy to advance energy conservation, consumption reduction, and emission reduction. Through the synergistic effect of the above measures, we have reduced Scope 1 and Scope 2 emissions, and continue to advance the greening and low-carbon transformation of manufacturing operations.

Energy Efficiency Improvement

Meihua Group drives upgrades to its energy efficiency systems, focusing on two core Pathways: energy recovery and utilization, and the replacement of equipment with high-efficiency alternatives. This initiative aims to unlock energy-saving and carbon reduction potential within production processes, continuously improving energy use efficiency and the low-carbon level of operations.

In the area of energy recovery and utilization, Meihua Group has focused on secondary energy sources such as waste heat and waste gas generated within production processes, implementing a series of technical upgrades. Through the construction of waste heat power generation systems, optimization of cross-process thermal energy exchange networks, and recovery of surplus process streams, Meihua Group converts potential energy from production processes into directly usable steam and electricity, achieving tiered and efficient energy utilization.

Case Sulfuric Acid Production and Waste Heat Power Generation Expansion Project

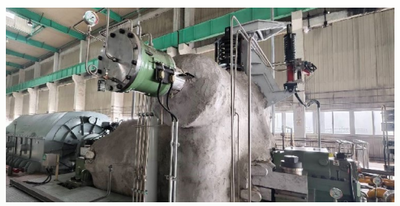
From August 2025 to April 2026, the Tong Liao plant utilized all waste heat from the sulfuric acid facility for power generation, employing a 15 MW waste heat steam turbine generator. The project generates approximately 123.2 million kilowatt-hours of electricity annually, reducing emissions by 72,146 tons of CO_2 equivalent, and achieves tiered energy utilization.

Sulfuric Acid Production and Waste Heat Power Generation Expansion Project

In the context of equipment with high-efficiency alternatives, Meihua Group has systematically upgraded and replaced key production equipment, continuously reducing energy consumption and carbon emission intensity per unit of output. In 2025, we focused on upgrading high-energy-consuming steam power systems, heating systems, and associated equipment by adopting higher-efficiency motors, replacing them with advanced circulating fluidized bed boilers, converting steam-driven equipment for electric drive, and widely implementing intelligent technologies such as variable frequency control, resulting in a significant improvement in overall energy efficiency.

Case Heating Station Water Pump Renovation Project

In 2025, the Xinjiang plant carried out a renovation project for the water pumps in the heating station. We redesigned the circulating cooling water system to better match operational needs, replacing the original circulating water pumps with smaller-capacity models. This reduced the operating power from 630 kWh to 400 kWh, resulting in an annual cumulative carbon reduction of 967 tons of CO_2 equivalent.



Steam Turbine Retrofit Project

Case High-Efficiency Boiler Upgrade Project

In 2025, the Tongliao plant completed a coal-fired boiler upgrade project. We decommissioned two 130-ton legacy boilers and installed a new 350-ton high-efficiency boiler featuring low-bed-pressure and low-ammonia combustion technologies. After the upgrade, the boiler's electricity consumption decreased by over 50%, thermal efficiency increased by more than 3%, and the project achieved an annual coal savings of approximately 350,000 tons.

High-Efficiency Boiler Upgrade Project

Clean Energy

To systematically advance carbon reduction efforts, Meihua Group focuses on optimizing the energy structure within production processes by deploying three clean energy projects: distributed photovoltaics, grid-connected energy storage, and direct green power supply. These initiatives aim to directly reduce carbon emissions from the energy supply side, thereby building a green, efficient, and cost-effective energy supply system.

Project Type	Project Progress and Benefits
Distributed Photovoltaics	Meihua Group fully utilizes resources from factory rooftops and idle land at production bases to develop distributed photovoltaic power stations, aiming to reduce energy costs and carbon emissions. By the end of 2025, we had cumulatively generated 23,935,685 kWh of renewable energy and reduced carbon emissions by 12,700 tons of CO_2 equivalent. The distributed photovoltaic project at the Jilin facility has been operating stably and is plans to launch a new phase. The Xinjiang facility has also completed preliminary planning and will leverage the region's high-quality solar resources to develop a distributed photovoltaic power station with an installed capacity exceeding 50 MW.
Grid-connected Energy Storage	To seize opportunities in the power market and enhance energy economics and operational resilience, Meihua Group is steadily advancing feasibility studies and strategic planning for energy storage systems, in alignment with electricity policies at its business locations. This initiative aims to explore the optimization of electricity costs through intelligent power load management, and to lay the foundation for future grid interaction and support for renewable energy integration.
Direct Green Power Supply	Meihua Group is actively exploring direct market-based transactions for green electricity. Leveraging the abundant wind power resources in Jilin Province and the increasingly open electricity trading market, Meihua Group will collaborate with electricity retailers to establish direct green power supply channels in the future, gradually increasing the proportion of green power in total energy consumption and directly reducing carbon emissions from the procurement end.

Carbon reduction in logistics

Aligned with the low-carbon strategy, Meihua Group focuses on logistics as a key emission sector and systematically advances decarbonization efforts in transportation through the application of clean energy, promotion of intermodal transport, and improvement of operational efficiency. By continuously guiding the low-carbon transition of transportation structures and vehicles while ensuring logistics efficiency and supply stability, Meihua Group has effectively reduced energy consumption and carbon emission intensity in logistics operations, laying a solid foundation for the development of a green logistics system.

Clean Energy Transportation

Meihua Group actively promotes the application of clean energy vehicles in logistics transportation, collaborating with carriers to increase the proportion of clean energy transport vehicles such as LNG and CNG, and gradually optimizing and phasing out vehicles below National V and National IV emission standards to reduce reliance on conventional diesel fuel. By 2025, Meihua Group has systematically introduced clean energy-powered transport vehicles across key production operations areas, with each manufacturing base deploying at least 20 clean energy vehicles for transportation. The total shipment volume handled by clean energy vehicles is approximately 5.4 million tons. Among the operations at the Xinjiang facility, the share of clean energy-powered transport vehicles has exceeded 80%, positioning Meihua Group's overall logistics decarbonization efforts as a leader in the industry.

Transportation structure optimization

Meihua Group continuously optimizes its logistics and transportation structure by developing and advancing a transportation structure optimization plan, driving a gradual transformation from road-based transport toward low-carbon modes such as rail, inland waterway, and maritime shipping, and steadily increasing the share of rail and waterborne transport in medium- and long-distance logistics. Meihua Group has increased the share of ocean freight from 10% to 13% by 2025, and plans to further increase it to 15% by 2026.

Case Jiangxi Cross-Regional Inland-Sea Combined Transport Decarbonization Project

In 2025, Meihua Group has achieved inter-regional river-sea combined transport operations in the Jiangxi region, covering destinations including Nanchang, Yichun, and Ganzhou. The total actual shipment volume for the year was approximately 2,700 tons, resulting in logistics cost savings of around RMB 280,000, while effectively reducing energy consumption and carbon emissions across the entire logistics chain. In the future, Meihua Group will gradually expand the application of intermodal transport in regions such as Hunan and Hubei, further promoting the green and low-carbon transformation of logistics transportation.

Improvement in transportation efficiency

Meihua Group has enhanced collaboration with third-party logistics carriers, systematically improving logistics operational efficiency and advancing joint carbon reduction in transportation by optimizing transport organization and cost management. In operational management, Meihua Group conducts systematic assessments of transportation pricing and routing options to guide carriers in continuously optimizing Pathways, with a focus on reducing empty runs and non-productive travel. This collaborative model has effectively reduced energy consumption and carbon emission intensity per unit of transportation, providing sustained management support for the practical implementation of logistics decarbonization initiatives.

Carbon reduction in product

Meihua Group has fully integrated the concept of green and low-carbon development into its research and development and production processes. Leveraging synthetic biology technologies, Meihua Group has continuously optimized microbial strains and innovated processes, significantly improving resource conversion efficiency and reducing environmental burden. Meihua Group has systematically established an industrial circular system in the production process, achieving synergistic energy-saving models such as water resource reuse, waste heat recovery, and by-product resource utilization, effectively reducing the carbon emission intensity across the product's life cycle.

Optimization of biological fermentation pathways

Meihua Group actively applies synthetic biology and metabolic engineering technologies, striving to optimize fermentation pathways at the source to achieve carbon sequestration and carbon reduction in production processing.

Case Carbon sequestration and reduction driven by biosynthesis

Meihua Group focuses on cutting-edge carbon reduction technologies, leveraging deep bioinformatics and systems metabolic engineering to innovatively identify and apply novel biosynthetic pathways, enabling systematic, multi-dimensional optimization of metabolic flux throughout the entire chain of glutamate production. The team accurately identified carbon loss nodes and developed a dynamic feedback control model, directing more carbon flow toward target product synthesis and significantly reducing byproduct formation and carbon emissions. Currently, this low-carbon process, integrating cutting-edge algorithms with experimental validation, has been fully implemented across the entire monosodium glutamate production line, achieving a transformative upgrade in the industrial microbiology sector—from 'passive emission reduction' to 'active carbon capture'.

Meihua Group adopts an internationally advanced dual-driven strategy of 'rational design + evolutionary engineering' to reconfigure the metabolic network of Escherichia coli. Meihua Group successfully developed an efficient anaerobic fermentation cell factory, enabling the selective synthesis of L-valine using glucose and ammonia as substrates. This process fundamentally reduces oxygen consumption and energy consumption requirements in conventional aerobic fermentation by maintaining intracellular redox homeostasis and optimizing energy metabolism pathways, achieving carbon fixation and emission reduction at the conceptual level. This technology integrates synthetic biology, metabolic engineering, and low-carbon process design in a synergistic manner, offering a replicable innovative model for the green and high-end development of the amino acid industry.

Circular Resource Utilization

Meihua Group is actively advancing carbon resource circulation within its industrial chain by leveraging technological innovation and operational model optimization, transforming waste materials generated during production into high-value resource products. This 'turning waste into treasure' approach consistently promotes the reduction of raw and auxiliary material usage and carbon emissions.

Case Resource Recovery Project for Amino Acid Fermentation Byproduct

By 2025, Meihua Group has completed the verification of the pilot-scale process for the project on resource recovery of amino acid fermentation broth. The project employs green bio-fermentation technology to convert the residual fermentation broth from amino acid purification—classified as high-concentration organic waste—into high-value feed protein products. The project is expected to reduce incineration of 2,000 tons of mother liquor annually, resulting in a reduction of 1,100 tons of carbon dioxide emissions. This project is not only a typical example of Meihua Group's implementation of the Circular Economy and promotion of low-carbon transformation across the industrial chain, but also an important industrialized outcome in advancing new quality productivity and enhancing the value of resources and environmental benefits.

Case Tongliao Base Wastewater Resource Recovery Project

The Tongliao Base is advancing the advanced treatment and resource recovery of high-concentration organic wastewater in its amino acid production lines. Through the extraction and conversion of organic components from wastewater, multiple by-products—including corn steep liquor, corn germ, corn fiber, feed-grade molasses, feed protein, and organic fertilizer—were successfully recovered, establishing a closed-loop production model encompassing 'raw material—product—by-product—resource recovery'. Under this model, the comprehensive utilization rate of corn can reach 119%, achieving a significant improvement in resource efficiency. Organic fertilizer, as a product of resource integrated utilization, has received relevant assertions and circular economy incentives.

Green technology R&D and application

Meihua Group regards the research, development, and application of green technologies as a core strategy to drive sustainable development and foster new quality productivity, actively monitoring and positioning itself in low-carbon technology directions with industry foresight. Meihua Group focuses on three key areas: green ammonia production, intelligent carbon capture, utilization, and storage (CCUS), and clean biomass energy application, aiming to establish a multidimensional decarbonization system covering raw materials, production, and energy processes, continuously enhancing industrial resilience and competitiveness.

Forward-looking deployment in the green ammonia industry

Meihua Group is actively advancing its green ammonia production initiatives, aiming to reduce the carbon footprint of ammonia—the key raw material—at the source. Green ammonia is produced by using renewable energy sources such as wind and solar power to electrolyze water for hydrogen production, which is then combined with nitrogen from the air, enabling carbon-neutral or low-carbon ammonia manufacturing. For Meihua Group, green ammonia serves not only as a clean energy carrier but also as a key low-carbon nitrogen source in the production of amino acids, monosodium glutamate (MSG), and other products. Meihua Group will explore coupling pathways between green ammonia production technologies and existing ammonia synthesis processes, plan and construct demonstration projects, and gradually replace a portion of conventional fossil-based ammonia. This approach aims to systematically reduce the carbon intensity across the entire value chain and enhance the green resilience of upstream raw material supply.

CCUS intelligent system development

CCUS technology is evolving toward intelligent and low-cost solutions, demonstrating application potential particularly in handling high-concentration carbon dioxide generated during processes such as fermentation. The industry integrates real-time monitoring, automated controls, and intelligent resource allocation pathways to reduce capture energy consumption and operational costs, and repurposes captured carbon dioxide for applications such as food-grade product production or microalgae cultivation. Meihua Group will focus on developing integrated, one-touch automated CCUS systems in the future, promoting intelligent management of carbon capture processes, exploring the conversion of carbon dioxide generated during production into products with economic value, and enhancing the granularity and efficiency of carbon asset management.

Application of biomass co-firing technology

Biomass co-firing technology is recognized as an effective pathways to reduce reliance on fossil fuels in heating and power generation, and has attracted significant attention across the industry. By pre-treating renewable resources such as organic waste (e.g., mycelial residues) and straw, and blending them with coal for combustion, net carbon emissions from boiler systems can be effectively reduced, while enabling energy recovery from waste. Meihua Group plans to advance the research and demonstration of biomass co-firing technology by optimizing the blending ratio, improving combustion processes, and enhancing associated flue gas treatment technologies, thereby promoting a transition toward cleaner and lower-carbon energy structure while ensuring stable energy supply.

Appendix

Guidelines No. 14 of Shanghai Stock Exchange for Self-Regulation of Listed Companies—Sustainability Report (Trial)

Topic	Corresponding Clause	Corresponding section
Section One: Addressing Climate Change	Article 21: In addition to disclosing information on governance, Strategy, impacts, risks and opportunities management, metrics, and targets related to climate change in accordance with the requirements set out in Chapter Two of this Guidance, disclosure entities shall also provide relevant information on climate change in line with the provisions of this section.	Climate Governance Climate Strategy Risk Management Performance Target
	Article 22 (1) Meihua Group's assessment of the impact of climate change on its strategy and business model, as well as the approaches taken to address these impacts.	Climate Risk Identification
	Article 22 (ii) Significant uncertainties considered by Meihua Group when assessing its climate resilience.	Scenario Analysis and Timing
	Article 22 (iii) Meihua Group's ability to adjust its strategy and business model to adapt to Climate change over short-, interim, and long-term periods.	Scenario Analysis and Time Phases
	Article 23 (1) Meihua Group's adjustments to its current and future strategies, business models, and resource allocation in response to Climate-related risks and opportunities.	Materiality Analysis of Risks and Opportunities
	Article 23 (ii) Meihua Group has already taken or plans to implement measures, such as improving production processes and upgrading equipment, to directly or indirectly address climate-related risks and opportunities.	Strategy and Decision Making for Response Planning
	Article 23 (iii) Transformation programs established by Meihua Group to address related risks and opportunities associated with climate change, along with the fundamental assumptions underlying the development of these programs.	Strategy and Decision Making for Response Planning
	Article 23 (iv) Resources provided by Meihua Group to implement transformation programs.	Strategy and Decision Making for Response Planning
	Article 23 (v) Progress on the implementation of Meihua Group's transition plan.	Strategy and Decision Making for Response Planning
	Article 24: Disclosure entities shall calculate and disclose the total greenhouse gas emissions during the reporting period, converting emissions of different greenhouse gases into metric tons of carbon dioxide equivalent. Reporting entities should disclose their Scope 1 and Scope 2 greenhouse gas emissions, and are encouraged to report Scope 3 emissions if capable. For disclosure subjects involved in the use of carbon credit allowances, the source and quantity of such allowances used shall be disclosed. For disclosure entities participating in carbon emission trading, it shall be disclosed whether the required settlement was completed during the reporting period, and whether there are any instances of being required to rectify by relevant authorities or under investigation. The Exchange encourages disclosure entities with the capability to engage third-party organizations to verify or attest to their greenhouse gas emissions and other related data.	Climate Indicators
	Article 25 (1) Meihua Group's greenhouse gas (GHG) emissions by classification of business units or facilities across different scopes	Climate Indicator
	Article 25 (ii) Greenhouse gas emissions by Meihua Group, classified by country or region	Climate Indicator
	Article 25 (iii) Meihua Group provides a classification of GHG (greenhouse gases) emissions by source type, including combustion, processing, electricity, heating, cooling, and steam, among others.	Climate Indicators
	Article 26: Disclosing entities shall disclose the standards, methodologies, assumptions, or calculation tools used for accounting greenhouse gas emissions, and explain the aggregation methods applied to emission quantities (e.g., equity share, financial control, operational control).If there are changes in the accounting standards, methodologies, or assumptions during the reporting period, the reasons for such changes shall be explained and the specific impacts disclosed.	Carbon Inventory and Accounting Basis
	Article 27: The disclosing entity shall provide disclosures regarding relevant information on greenhouse gas (GHG) emission reduction practices, including participation in various emission reduction mechanisms, emission reduction targets, emission reduction measures (such as management practices, financial investments, and technology development), and their outcomes. Disclosing entities shall categorize and disclose the direct greenhouse gas emissions reductions achieved through mitigation measures such as redesigning production processes, upgrading equipment, improving technologies, and switching fuels, expressed in metric tons of carbon dioxide equivalent. Disclosing entities may also provide separate disclosures for each mitigation measure. Disclosing entities shall report on their registration and trading activities related to national voluntary greenhouse gas reduction projects and certified carbon reduction credits (CCERs), as well as any participation in other emission reduction mechanisms, including project details and registered or traded emission reductions (if applicable).	Climate Target Climate Indicator
	Article 28: When disclosing 主体 (disclosures) regarding new technologies, new products, new services, and related research and development progress that contribute to reducing carbon emissions and achieving carbon neutrality, the disclosing entity shall objectively and prudently disclose specific details of the products or services resulting from the relevant process technologies, R&D investment and progress in related business areas, approvals or certifications already obtained, scale-up production capabilities already established, and order status achieved. It is encouraged to provide a narrative description of the impact on the entity's current and future financial position and results of operations, as well as potential uncertainties and risks.	Carbon Reduction in Raw Materials Reducing Carbon Emissions in Production Logistics Decarbonization Carbon Reduction in Products Green Technology Research, Development, and Application

IFRS Sustainability Disclosure Standard 2: Climate-related Disclosures (IFRS S2) Index

Dimension	Recommended Disclosure Content	Corresponding Section
Governance	The governance body(s) (which can include a board, committee or equivalent body charged with governance) or individual(s) responsible for oversight of climate-related risks and opportunities.	Climate Governance
	Management's role in the governance processes, controls and procedures used to monitor, manage and oversee climate-related risks and opportunities.	Climate Governance
Strategy	The climate-related risks and opportunities that could reasonably be expected to affect the entity's prospects.	Climate Strategy
	The current and anticipated effects of those climate-related risks and opportunities on the entity's business model and value chain.	Climate Strategy
	The effects of those climate-related risks and opportunities on the entity's strategy and decision-making, including information about its climate-related transition plan.	Climate Strategy
	The effects of those climate-related risks and opportunities on the entity's financial position, financial performance and cash flows for the reporting period, and their anticipated effects on the entity's financial position, financial performance and cash flows over the short, medium and long term, taking into consideration how those climate-related risks and opportunities have been factored into the entity's financial planning.	Climate Strategy
	The climate resilience of the entity's strategy and its business model to climate-related changes, developments and uncertainties, taking into consideration the entity's identified climate-related risks and opportunities.	Climate Strategy
Risk management	The processes and related policies the entity uses to identify, assess, prioritise and monitor climate-related risks.	Risk Management
	The processes the entity uses to identify, assess, prioritise and monitor climate-related opportunities, including information about whether and how the entity uses climate-related scenario analysis to inform its identification of climate-related opportunities.	Risk Management
	The extent to which, and how, the processes for identifying, assessing, prioritising and monitoring climate-related risks and opportunities are integrated into and inform the entity's overall risk management process.	Risk Management
Metrics and targets	Information relevant to the cross-industry metric categories	Performance Target
	Industry-based metrics that are associated with particular business models, activities or other common features that characterise participation in an industry.	Performance Target
	Targets set by the entity, and any targets it is required to meet by law or regulation, to mitigate or adapt to climate-related risks or take advantage of climate-related opportunities, including metrics used by the governance body or management to measure progress towards these targets.	Performance Target

Carbon Inventory and Accounting Basis

The calculation of Meihua Group's greenhouse gas (GHG) emissions is based on internationally recognized accounting guidelines. The following are the internationally acknowledged standards used as the basis for the calculations:

- Greenhouse Gas (GHG) Scope 1 and Scope 2: The Greenhouse Gas Protocol (GHG Protocol)'s Corporate Accounting and Reporting Standard[1].
- Greenhouse Gas (GHG) Scope 3: The Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard[2].

Inventory of Scope 1 and Scope 2 Activities

- Scope 1: Direct emission sources include combustion emissions from coal, natural gas, diesel, and gasoline. Process emissions cover CO_2 releases from the decomposition of CO_2-containing raw materials or carbonate raw materials, as well as process emissions from fossil fuels and other hydrocarbons used as feedstocks. Fugitive emissions sources include refrigerant leakage, fire extinguisher leakage, SF_6 leakage from circuit breakers, septic tank leakage, and emissions from anaerobic wastewater treatment for COD removal.
- Scope 2: Indirect emission sources include purchased electricity, purchased heat, and purchased steam.

Inventory of Scope 3 Activities

- Category 1: Purchased Goods and Services
- Category 2: Capital Goods
- Category 3: Fuel- and Energy-Related Activities (Not Included in Scope 1 or Scope 2)
- Category 4: Upstream Transportation and Distribution
- Category 5: Waste Generated in Operations
- Category 6: Business Travel
- Category 7: Employee Commuting
- Category 8: Upstream Leased Assets
- Category 9: Downstream Transportation and Distribution
- Category 10: Processing of Sold Products
- Category 12: End-of-Life Treatment of Sold Products
- Category 13: Downstream Leased Assets
- Category 15: Investments

[1] ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf
[2] ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041,613_2.pdf

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