



华虹宏力
HHGRACE

2023 年度 環境、社會及管治報告

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

HUA HONG SEMICONDUCTOR LIMITED
華虹半導體有限公司

(Incorporated in Hong Kong with limited liability)
(於香港註冊成立之有限公司)
(SEHK:01347)
(香港聯交所股份代號:01347)
(SSE STAR MARKET:688347)
(上交所科创板證券代碼:688347)

2023 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

Management Statement of the Board

The Company adheres to the entrepreneurial spirit of “set a course mastering the challenges ahead” and promotes the “Hua Hong 520 Spirit” of “showing loyalty to and love for the motherland, always keeping the promise, being diligent and dedicated, and always fulfilling the mission”. By embracing the concept of “openness, innovation, and cooperation” and driven by “bravery, perseverance, and unity”, we have strengthened business operations and development, advanced production expansion, perfected the innovation system, and enhanced technological capabilities, thereby achieving stable and coordinated operation and sustainable development.

The Company firmly believes that Environmental, Social, and Governance (ESG) management has laid the foundation for sustainable and high-quality development. We have crafted ESG management objectives for 2030, focusing on water resource management, energy use management, greenhouse gas emissions management, waste emission management, and sustainable supply chain management. In identifying, assessing, and managing ESG issues, the Company takes into consideration its development strategy and external policy trends. In 2023, we added “corporate governance”, “environmental management”, and “intellectual property protection” as new issues and upgraded the “anti-corruption” issue to “business ethics issue” as well as the “emissions management” issue to the “emissions and waste management” issue. These adjustments better address concerns of stakeholders and ensure effectiveness of the Company’s ESG management strategies and measures. In 2023, the Company passed corporate social responsibility (CSR) audit certification by the global corporate social responsibility (CSR) assessment agency Eco Vadis, covering labor, environmental management, business ethics, and sustainable procurement and received a bronze medal.

The management and practical progress of ESG issues in this report were considered and approved at the third meeting of the Board of Directors of the Company held in 28 March 2024.

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1 ESG Management System

1.1 ESG Management Structure

Based on the corporate vision of “Continuous Innovation and Empowering the Future for Global Customers”, the Company established a top-down environmental, social, and governance (ESG) management structure, continues to improve the ESG management system, encourages innovation-driven development, fosters innovative talents, and strives to reduce the impact of business operation on the environment. We also make efforts to diversify the supply chain capabilities and promote the joint creation of corporate business and social values.

The Board, as the highest decision-making/management body for the Company's ESG management, is responsible for the following aspects:

- to direct the formulation of ESG management policies and strategies of the Company and ensure that they are up to date, relevant, and in compliance with applicable legal and regulatory requirements;
- to direct the identification and determination of the importance of significant ESG issues of the Company;
- to supervise the setting and implementation of the Company's ESG goals, including: setting ESG management performance goals of the Company; monitoring progress in achieving the goals; and advising on actions required to achieve the goals;
- to review and approve the Company's annual Environmental, Social, and Governance Report and other ESG related disclosures.

The management level will be responsible for supervising the overall implementation according to the formulated ESG targets, and the ESG working group assists in development and implementation of ESG management and regularly reports to the Board on the progress of ESG key performance indicators, so as to promote the realization of the Company's ESG management targets.

ESG Management Structure



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1.2 ESG management strategies and targets

The Company has integrated ESG management into its products, business operations, and corporate development and formed a complete ESG management strategy covering the four aspects of "Responsibility for Employees", "Responsibility for the Industry", "Responsibility for People's Livelihood", and "Responsibility for Investors".

ESG Management Strategies



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The Company has set ESG management targets for water use efficiency, energy use efficiency, GHG emissions, waste reduction, and conflict mineral due diligence, based on the development of its business and its ESG performance in operations. On an annual basis, the Board of Directors reviews ESG performance and achievement of the Company's ESG goals for the previous year and discloses the results in the ESG report, so as to promote the achievement of ESG management targets.

ESG Management Targets and Progress in 2023

Aspect	Target	Progress in 2023
Water resources management	The water consumed per unit product (m ³ per 8-inch wafer) in 2030 will decrease by 12% as compared with 2015	The water consumed per unit product in 2023 was 2.83 m ³ per 8-inch wafer, decreasing by 11% as compared with 2015
Energy consumption management	Comprehensive energy consumption per unit product (MWh per 8-inch wafer) in 2030 will decrease by 7% as compared with 2015	Comprehensive energy consumption per unit product in 2023 was 0.30 MWh per 8-inch wafer, decreasing by 21% as compared with 2015
GHG emissions management	GHG emissions per unit product (tCO ₂ e per 8-inch wafer) in 2030 will decrease by 12% as compared with 2015	GHG emissions per unit product in 2023 was 0.14 tCO ₂ e per 8-inch wafer, remaining basically flat as compared with 2022
Waste discharge management	Under the philosophy of lean manufacturing management, the Company will take reduction measures to continuously reduce hazardous waste produced per unit product and non-hazardous waste produced per unit product	<ul style="list-style-type: none"> Under the philosophy of lean manufacturing management, the Company continuously reduced generation of hazardous waste The non-hazardous waste produced per unit product in 2023 was 2.36 kg per 8-inch wafer, remaining flat as compared with 2022
Wastewater Discharge Management	100% compliance on discharge	<ul style="list-style-type: none"> 100% compliance on wastewater discharge in 2023
Air Emission Discharge Management	100% compliance on discharge	<ul style="list-style-type: none"> 100% compliance on air emission discharge in 2023
Sustainable supply chain management	The due diligence rate on suppliers of conflict minerals will reach 100%, and the utilization rate of compliant minerals will reach 100%	<ul style="list-style-type: none"> Have conducted due diligence on suppliers of "conflict minerals", with a coverage rate of 100%, and completed the latest version of the investigation report on conflict minerals and extended minerals According to due diligence, all suppliers are found to use compliant raw materials with the utilization rate of compliant minerals up to 100%

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Social Recognitions in 2023

No.	Honors
	Global
1	EcoVadis Bronze Medal
	National
2	2022 Outstanding Intelligent Manufacturing Scene
3	2023 National Worker Pioneer
4	The 15th China Semiconductor Innovation Products and Technology
	Shanghai
5	First Prize in Shanghai Science and Technology Award
6	Water Efficiency Leader of Key Water-Using Enterprises in Shanghai
7	2022 Top 20 Enterprises with Corporate Social Responsibility Reports in Shanghai
8	100 Smart Factories in Shanghai
9	2023 Top 100 Innovative High-Tech Enterprises in Shanghai
10	Shanghai Outstanding Invention Gold Award
11	Shanghai Model Unit for Open and Democratic Factory Affairs Management
12	Shanghai Women's Civilization Post
13	Shanghai Worker Pioneer
14	Shanghai Model Worker's Small Home
15	Second Prize in Shanghai Industrial Water Reuse Outstanding Cases
	Jiangsu
16	Wuxi Model Unit for Happy Enterprise Construction
17	Wuxi City Model Worker's Home

SOCIAL AND GOVERNANCE REPORT

1.3 Involvement of Stakeholders

Based on the business and operational characteristics of our Company and leveraging the experience and practices in industry at home and abroad, Hua Hong Semiconductor has determined the following to be our stakeholders: our shareholders and senior management, customers, employees, government agencies and regulators, partners, communities, and the public and actively communicates with all of these stakeholders via various channels and methods, including websites, media, meetings, reports, and social activities.

Communications and Issues of Concern of Stakeholders

Key stakeholders	Description	Issues concerned	Communications and responses
Shareholders and senior management	Domestic and foreign investors holding equity and debt investments in our Company, and senior management members of the Company	<ul style="list-style-type: none"> Compliant operation Corporate governance Risk management Business ethics Customer relationship management Water resource management Product quality and safety R&D innovation 	<ul style="list-style-type: none"> Regular reviews of laws and regulations are conducted, the outcomes of which are used for revising management systems to ensure operational compliance Publication of financial and performance reports, communication with investors through the Shanghai Stock Exchange e-interaction platform, emails, and roadshows Robust risk management system Improvement in anti-corruption management mechanisms Conducting customer satisfaction surveys The WRI Water Risk Atlas is used to assess water risk levels and develop a comprehensive water resource management system Implementation of product quality and safety management measures Organization of technical seminars and industry exchange meetings

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Key stakeholders	Description	Issues concerned	Communications and responses
Customers	IDMs and fabless semiconductor companies	<ul style="list-style-type: none"> • Data security and privacy protection • Product quality and safety • Customer relationship management • R&D innovation 	<ul style="list-style-type: none"> • Establishment of information security and privacy protection policies • Implementation of product quality and safety management measures • Conducting customer surveys • Organization of technical seminars and industry exchange meetings
Employees	Our employees and contract personnel who serve our Company on a continuous basis	<ul style="list-style-type: none"> • Employee interests and welfare • Employee health and safety • Employee development and training 	<ul style="list-style-type: none"> • Formulation of an employee handbook • Establishment of a platform for talent development and learning sharing • Organization of safety production training and health checkups • Diversification of the employee training system
Government and regulators	Manufacturing, tax, environmental protection security and other departments, local governments, SFC and other governmental or regulatory authorities	<ul style="list-style-type: none"> • Compliant operation • Green products • Emissions management and waste management • Energy management • Climate change mitigation and adaptation 	<ul style="list-style-type: none"> • Robust internal control and compliance system • Green production • Research and development of low-carbon and energy-efficient products • Emissions and waste are properly managed through recycling and other methods • Collaboration with institutional inspections • Organization of energy-saving and carbon reduction initiatives

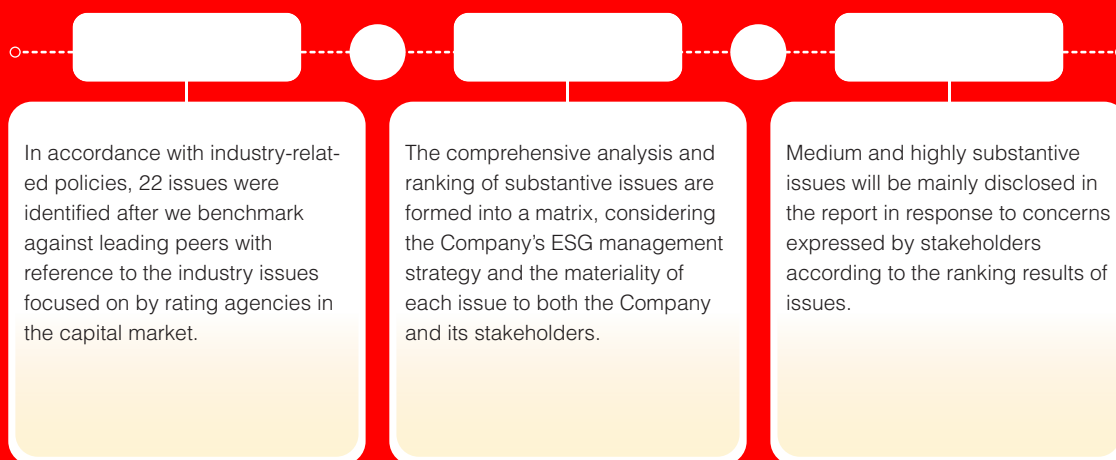
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Key stakeholders	Description	Issues concerned	Communications and responses
Partners	Suppliers, research institutions, industry associations, etc.	<ul style="list-style-type: none"> Industry development Product quality and safety R&D innovation Sustainable supply chain management 	<ul style="list-style-type: none"> Active participation in industry exchanges Optimization of product quality management More investments in research and development Promotion of responsible sourcing
Communities and the public	Communities in which we operate, the public and media, etc.	<ul style="list-style-type: none"> Community and public benefit 	<ul style="list-style-type: none"> Engagement in Community activities, employee volunteer activities, public welfare activities, social cause campaigns, etc.

1.4 Identification and Analysis of Substantive Issues

The identification and analysis of substantive ESG issues represent a crucial element in ESG management. The Company has developed a comprehensive process for identifying and analyzing material issues, whereby regularly carrying out identification and screening work. In light of our ESG management strategy and business development, the Company, together with the Board of Directors and the ESG Working Group, evaluates and ranks identified substantive issues in collaboration with external experts from two dimensions: materiality to the Company; and materiality to stakeholders. In 2023, the Company identified 22 substantive issues, of which 9 were of high substantive significance to both the Company and its stakeholders.

Substantive Issue Analysis Process



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Matrix of Substantive Issues

Materiality to stakeholders	High	<ul style="list-style-type: none">• Responsible marketing• Community and social welfare• Risk management• Industry development	
			<ul style="list-style-type: none">• Business ethics• Corporate governance• Compliant operations• Environmental management• Emissions and waste management• Intellectual property right protection• Climate change mitigation and adaptation• Employee health and safety• Employee interests and benefits
		Low	High

Materiality to the Company

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Descriptions on Adjustment of Issues in 2023

Issues for 2022	Issues for 2023	Explanation	Descriptions on Adjustment
—	Environmental management	In accordance with laws, regulations, and its own business nature, the Company has established a systematic management system and adopted scientific management methodologies to minimize the environmental impacts caused by its activities, aiming to achieve environmental protection.	A new issue, which better responds to stakeholders' concerns and is more in line with the Company's actual conditions.
—	Intellectual property right protection	The Company's administrative system, measures, and results pertaining to protection of its own intellectual property rights and non-infringement on others' intellectual property rights.	A new issue, which better responds to stakeholders' concerns and is more in line with the Company's actual conditions.
Anti-corruption	Business ethics	The Company's business ethics management system includes the establishment of systems and training related to anti-corruption and anti-bribery, as well as practices to regulate conduct of unfair competition, anti-trust, or anti-monopoly.	The description is adjusted to broaden the scope of issue management, including business ethics and anti-unfair competition management, which better responds to stakeholders' concerns and is more in line with the Company's actual conditions.
—	Corporate governance	The Company has established an effective governance structure to promote diversity and independence within the Board, ensuring the Company's compliant operations, as well as scientific, standardized, and transparent corporate governance.	A new issue, which better responds to stakeholders' concerns.
Emissions management	Emissions and waste management	The Company's management system and measures for the classification and treatment of wastewater, air emissions, and hazardous and non-hazardous waste, as well as reduction in discharge of wastewater, air emissions, and hazardous and non-hazardous waste, including management methods and emission data.	The description is adjusted to broaden the scope of issue management, including emissions and waste management, which better responds to stakeholders' concerns and is more in line with the Company's actual conditions.

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2 Environmental Responsibilities

Main Progress in 2023

Measures	Achievements
Technical transformation related to safety and environmental protection	A total of 46 special technical transformation projects related to safety and environmental protection An investment of RMB111.96 million in safety and environmental protection and technological transformation
Development of energy-efficient projects	The preparation of energy audit reports and clean production audit reports completed Development of 21 energy-efficient projects

2.1 Environmental Management System

Environmental Management

The Company adheres to the philosophy of environmental friendliness and sustainable development, strictly abides by the Environmental Protection Law of the People's Republic of China and other laws and regulations, and has formulated administrative systems, including the Resource and Energy Management Procedure, the Management Regulations for Water, Electricity, Steam, and Gas Metering, the Exhaust Gas Emission Management Policy, and the Waste Management Procedure. Furthermore, the Company is actively developing a number of environmental management measures, and continues to optimize environmental management procedures covering the whole life cycle, thereby improving its environmental management system.

Hua Hong Semiconductor's production and manufacturing fabs include the Shanghai Production Base¹ and the Wuxi production base².

Hua Hong Semiconductor Environmental Management System

Management Structure	<ul style="list-style-type: none"> The management team is responsible for overseeing and managing environmental tasks The EHS department is responsible for executing environmental management projects, and delivering regular reports on the project progress to the management
Scope of Management	<ul style="list-style-type: none"> Environmental management including energy management, resource management, and emissions and waste management
Management System	<ul style="list-style-type: none"> Regulations such as Resource and Energy Management Procedure, Management Regulations for Water, Electricity, Steam, and Gas Metering; Operating Norms for Industrial Waste Management; and Standard Operating Procedures for Industrial Water Supply System
Management Measures	<ul style="list-style-type: none"> Relevant environmental management systems are revised according to laws and regulations to regulate environmental management procedures Regular identification and assessment are performed over environmental risks at production bases and environmental protection and technical transformation projects are carried out, thereby reducing the environmental impacts of operation and production activities Certification of environmental management systems is performed to actively improve our environmental management capabilities

¹ The Shanghai production base includes Fab 1, Fab 2, and Fab 3.

² The Wuxi production base includes Fab 7 and Fab 9 (under construction).

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The Company's EHS Department is responsible for coordinating its environmental management system, including formulation of management regulations, performance analysis and evaluation with respect to energy and resource use, emissions management, etc. It also assists external agencies in the audit and testing of the Company's environmental management system. Furthermore, the Company uses safety management auditing and tracking system to analyze, sort out, and list the nonconforming items against environmental protection regulations found in daily management, then follow up and record subsequent rectifications through the regular reminder function of the system.

In 2023, the Company invested RMB111.96 million in 46 safety, environmental protection, and technical transformation projects, as part of our continuing commitments to improving environmental management facilities. All plant facilities under the Company have passed ISO 14001 system certification. During the Reporting Period, no Company violation against environmental laws and regulations occurred. During the Reporting Period, the Company fully paid relevant taxes with respect to environmental protection. In the meantime, the Company experienced no incident in violation of the relevant law and regulations with respect to environmental protection.

Certification in Relation to Environmental Management of Hua Hong Semiconductor

Certified Entity	Certification Name	Validity of Certification
Hua Hong Shanghai Production Base	ISO 14001: 2015 Environmental Management System	18 April 2024
Hua Hong Wuxi Production Base	ISO 14001: 2015 Environmental Management System	18 April 2024

Green Culture

The Company continuously promotes the environmental protection concept, regularly holds environmental management sharing sessions, and organizes each production plant to share excellent environmental management cases and measures at sharing sessions, so as to strengthen employees' awareness of environmental protection and the economical use of office resources and energy.

Practice in Green Culture

Saving paper around the office	<ul style="list-style-type: none"> Implementing office informatization to reduce paper consumption. Making efforts to promote the use of recycled paper, including for printing business cards of employees, to support recycling.
Saving electricity	<ul style="list-style-type: none"> Turning off the power supply when leaving work or for a long time absence. Reasonably setting air conditioning temperature above 26°C in summer and below 20°C in winter.
Saving water	<ul style="list-style-type: none"> Developing employees' awareness of saving water and posting water saving tips.
Waste disposal	<ul style="list-style-type: none"> Classifying domestic waste in each factory into 4 categories, namely dry, wet, recyclable, and harmful waste and putting up posters for waste classification to raise employees' awareness.
Commuting	<ul style="list-style-type: none"> Encouraging employees to commute by public transport. Using new energy vehicles as shuttle buses for the Company.

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2.2 Energy Management

Types of energy consumed by the Company are mainly electric power, heat, natural gas, gasoline, and diesel. The production operations of the Company have no significant impact on the environment and natural energy resources. The Company strictly complies with the Energy Conservation Law of the People's Republic of China and other laws, regulations, and relevant provisions; sets energy conservation management goals; and formulates energy management systems. The Company continues to optimize and improve its energy management system, constantly enhancing energy efficiency by carrying out various energy-saving technical transformation projects and by using energy-saving equipment.

Energy Management System

- Carrying out source control and continuous improvement while satisfying and improving productivity and reducing the impact on the environment while reducing production costs.

- By 2030, the Company's comprehensive energy consumption per unit product will decrease by 7% compared with 2015.

- Resource and Energy Management Procedure
- Management Regulations for Water, Electricity, Steam, and Gas Metering

- Carrying out technical transformation for energy-saving.
- Regularly engaging third-party agencies to conduct energy audits of the Company.
- Organizing energy-saving publicity, implementation activities, and post energy-saving signs.

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To ensure the stable supply of electricity and smooth production, the Company developed the Administrative Rules for Electricity Safety, the Emergency Response Plan for Anomalies in External Power Supply, the On-site Treatment Plan of the Power Department for Power Cut, and the Emergency Plan for Power Circuit Breaker Tripping and carried out emergency plan training and emergency drills in fabs on a regular basis. The power supply is secured through daily inspection, special system investigation, and emergency drills.

In 2023, by continuing to respond to the “One Percent” Energy Conservation and Carbon Reduction Initiative in Shanghai Industrial and Communication Industry, all factories at the Shanghai Production Base executed 15 energy-saving projects and completed preparation of energy audit reports and clean production audit reports, reinforcing the outcomes of the “energy conservation project plan of 3,000 tons of standard coal”.

Energy Saving Work and Achievements in 2023

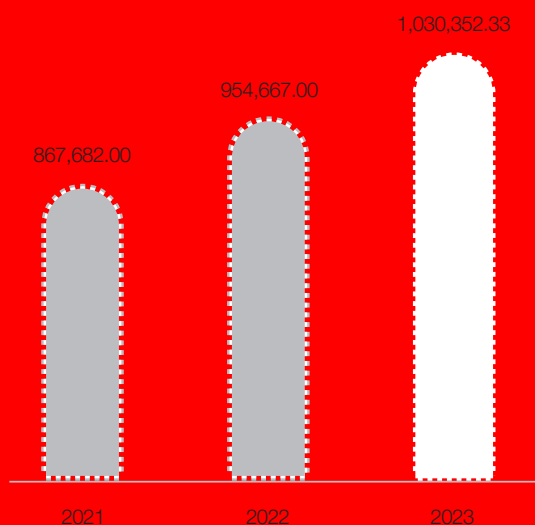
Fabs	Measures	Annual Reduction in Energy Consumption
Fab 1	<ul style="list-style-type: none"> Undertaking high-efficiency refrigeration unit renovation projects, replacing old refrigeration units to improve energy efficiency Utilizing energy-efficient LED lighting Renovating the high-pressure pumps in the pure water system 	<ul style="list-style-type: none"> Saved a total of approximately 800,000 kWh of electricity in 2023 Saved a total of approximately 30,000 kWh of electricity in 2023 Saved a total of approximately 100,000 kWh of electricity in 2023
Fab 2	<ul style="list-style-type: none"> Replacing the refrigeration unit for the refrigeration system to improve energy efficiency Completing heat recovery renovations for chilled water in the refrigeration unit 	<ul style="list-style-type: none"> Saved a total of approximately 3.144 million kWh of electricity in 2023 Saved a total of approximately 188,000 cubic meters of natural gas in 2023
Fab 3	<ul style="list-style-type: none"> Undertaking energy-efficient renovations for high-efficiency refrigeration units 	<ul style="list-style-type: none"> Saved a total of approximately 2 million kWh of electricity in 2023
Fab 7	<ul style="list-style-type: none"> Optimizing the number of operating facilities for organic waste gas treatment Installing new RO concentrate water recycling equipment Reducing water makeup volume by regulating the RO makeup water bypass of the MAU under the summer mode of a MAU 	<ul style="list-style-type: none"> Saved a total of 175,200 kWh of electricity and 474,500 cubic meters of natural gas in 2023 Saved a total of 26,000 tons of water in 2023 Saved a total of 32,898 tons of water in 2023

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During the Reporting Period, the Company's primary energy consumption was as follows:

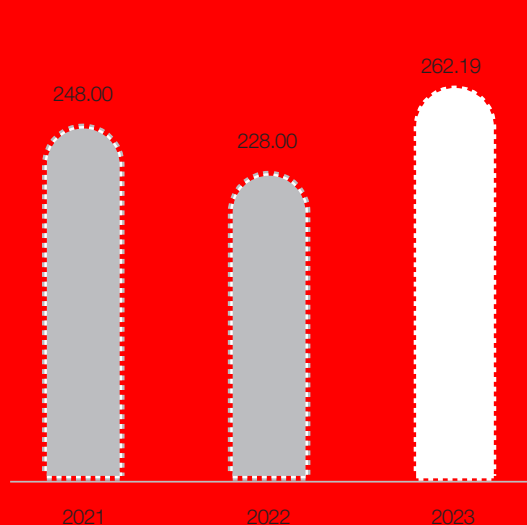
Total power consumption

Unit: MWh



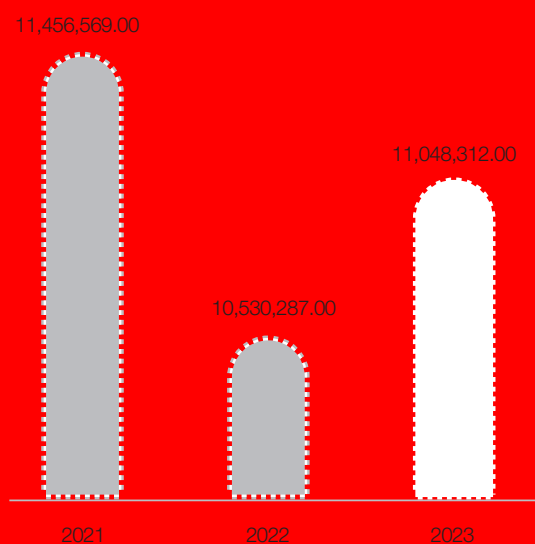
Power consumption intensity

Unit: kWh per 8-inch wafer



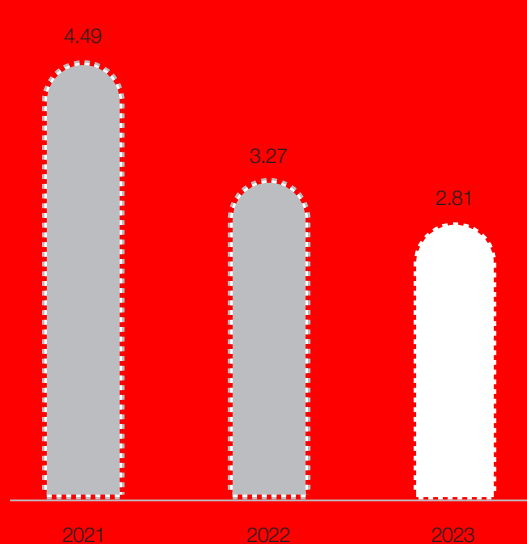
Total natural gas consumption

Unit: m³



Natural gas consumption intensity

Unit: m³ per 8-inch wafer

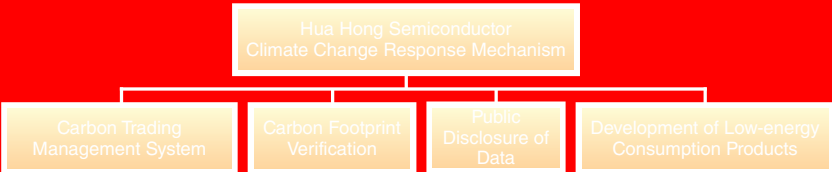


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2.3 Climate Change Mitigation and Adaptation

Hua Hong Semiconductor recognizes the importance of mitigating climate change for both the Company and the world. In 2023, the Company improved its management system for addressing climate change with reference to the International Sustainability Standards Board (ISSB)'s Sustainability Disclosure Standards of IFRS 2 – Climate-Related Disclosures (ISSB Climate Standards), regularly identified climate risks and opportunities, and piloted carbon emission verification. While continuing to improve energy use efficiency in production and business operations, the Company disclosed information about energy use and carbon emissions in its ESG Report. In the meantime, the Company actively developed low-energy consumption products, as part of our endeavor to facilitate achievement of China's "30 • 60" carbon peaking and carbon neutrality goals.

Hua Hong Semiconductor's Climate Change Management System

Governance	<ul style="list-style-type: none"> A top-down governance framework is established, where the Board takes responsibility for formulating and coordinating climate change response strategies. This includes regular reviews over the progress of climate change management work to ensure the effectiveness of strategies and management measures, as well as reviewing target progress. The ESG Working Group takes responsibility for implementing climate change strategies, whereby assessing, managing, and monitoring climate change management work, as well as regularly reporting work progress and related performance to the Board. Each business department actively participates in climate change management work, contributing to the Company's efforts to reduce carbon emissions.
Strategies	 <pre> graph TD A[Hua Hong Semiconductor Climate Change Response Mechanism] --> B[Carbon Trading Management System] A --> C[Carbon Footprint Verification] A --> D[Public Disclosure of Data] A --> E[Development of Low-energy Consumption Products] </pre>
Risk management	<ul style="list-style-type: none"> Based on the identification results of climate risks and opportunities, the Company develops corresponding management measures to enhance its capability to respond to climate change and capture green product opportunities.
Indicators and targets	<ul style="list-style-type: none"> Scientific and reasonable climate change management targets are set with related performance and target progress disclosed in the annual ESG report, details of which are available in the section headed "ESG Management Strategy and Targets".

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The Company regularly undertakes identifications of climate change risks, so that the climate change response mechanism can be constantly improved, as part of our active response to the risks and opportunities brought by climate change.

Identification and Response to Climate Change Risks and Opportunities

Major Risks and Opportunities of Climate Change as Identified			Potential Financial Impacts	Response Measures
Risks	Transition Risks	Reputation Risks Transitioning to a low-carbon economy, the PRC government and various stakeholders expect companies to take active actions in response to climate change and to enhance the transparency of information disclosure. As a result, any company that fails to respond effectively to these propositions from the stakeholders would be exposed to negative impacts on its own reputation.	Decreased Business Revenue	<ul style="list-style-type: none"> – Categorizing climate change mitigation and adaptation into work priorities for all business departments. – Actively participating in the Shanghai Development and Reform Commission's carbon emissions trading work and conducting regular carbon accounting work.
		Policy and Legal Risks The PRC has set carbon neutrality targets, and regulatory scrutiny on corporate carbon emissions will continue to intensify in the future. If the Company fails to meet regulatory requirements in environmental management, it may face risks of litigation and fines, which could lead to defaults.	Increased Operating Costs	<ul style="list-style-type: none"> – Developing a climate change management system in reference to the ISSB Climate Standards. – Communicating with stakeholders about climate change as a substantive issue through channels such as ESG reports.
		Market Risks In recent years, customers and consumers have become increasingly conscious about product sustainability, which is constantly changing the external market environment in which businesses operate. If the Company's products and services cannot effectively and timely adapt to these market changes, our operations will be impacted.	Decreased Business Revenue	<ul style="list-style-type: none"> – Developing low-power consumption products and actively communicating with customers and consumers about the green attributes of said products.
	Physical Risks	Acute Physical Risk The increase in natural disasters including typhoons and floods caused by climate change may affect the Company's wafer fab operations, resulting in economic losses.	Increased Operating Costs; Reduced Value of Fixed Assets	<ul style="list-style-type: none"> – Formulating emergency response plans for extreme weather events. – Regularly conducting emergency drills and training for natural disaster incidents.
		Chronic Physical Risks Persistent high-temperature weather and sea-level rise caused by climate change may lead to disruptions in business operations, resulting in financial losses.	Increased Operating Costs; Reduced Value of Fixed Assets	

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Major Risks and Opportunities of Climate Change as Identified		Potential Financial Impacts	Response Measures
Opportunities	Resource Use Efficiency Resource use efficiency shall be improved, including the efficiency of energy and water resources, which can help the Company reduce costs during operations.	Reduced Operating Costs	<ul style="list-style-type: none"> – Actively adopting green office and operations measures. – Integrating ecological and environmental concepts into the design stage of new plant premises to reduce the use of various resources during construction and operation.
	Energy Sources A higher utilization rate of more low-emission/clean energy in operational activities can help reduce the risk of rising energy prices in the future.	Reduced Operating Costs	<ul style="list-style-type: none"> – Continuously increasing investment in green research, development, and innovation.
	Products and Services Amid the transition to a low-carbon economy, the Company is presented with new market opportunities as demand is increasing for green, low-power consumption products among customers and consumers.	Increased Business Revenue	<ul style="list-style-type: none"> – Continuously improving the environmentally friendly and green attributes of products. – Reducing the generation of hazardous substances with green technologies and materials, minimizing environmental impact. – Developing products with lower power consumption and higher efficiency to help downstream industries improve energy efficiency and reduce carbon emissions. – Providing integrated services in product design, research and development, and production.

The Company's GHG emissions mainly come from direct GHG emissions, generated from the use of natural gas, small amounts of petroleum and diesel, and indirect GHG emissions from outsourced electricity and thermal power. The Company carries out GHG emission reduction work from the management level and the technical level to reduce carbon emissions generated in its operation activities, thereby lessening the impact on climate change.

The Shanghai Production Base is recognized as a "carbon emission quota management unit" by the Shanghai municipal government and actively responds to government policies by conducting regular carbon investigations. During the Reporting Period, the Company undertook third-party verification of the 2022 carbon emission data for Fab 1, Fab 2, and Fab 3 at the Shanghai Production Base to enhance our carbon emission data management capability.

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2.4 Resource Management

Sustainable Water Management

The Company sets water management goals and formulates water management strategies in strict accordance with laws and rules and other relevant regulations, including the Water Law of the People's Republic of China, the Shanghai Administrative Measures for Water Conservation, and the Jiangsu Water Conservation Ordinance. It also introduces higher-efficiency equipment and processes, continuously optimizes water resources management measures, and enhances its water consumption efficiency.

Water Resource Management System

- By 2030, the Company aims to reduce water consumed per unit product by 12% as compared to 2015.

- Management Regulations for Water Use
- Standard Operating Procedures for Industrial Water Supply System
- Tap Water Anomaly Handling Procedure

- Monitor the supply and quality of water resources in operating areas.
- Establish and maintain comprehensive ledger management, regularly conducting statistics, analysis, and improvement of utilisation.
- Implement water-saving technological upgrades and wastewater reuse.
- Organize water-saving promotion activities and post water-saving signs.

Semiconductor manufacturing process necessitates adherence to water quality standards and involves substantial water consumption, resulting in a significant impact on the availability of natural water resources. The Company constantly monitors the risk of water resources in areas where we operate through the "Aqueduct Water Risk Atlas", an external tool from the World Resources Institute (WRI). We analyze the rationality of water consumption for production and the operation of our fabs and the possible impact of the water intake and formulate effective measures to reduce risks and ensure that water resources can support the Company's sustainable development.

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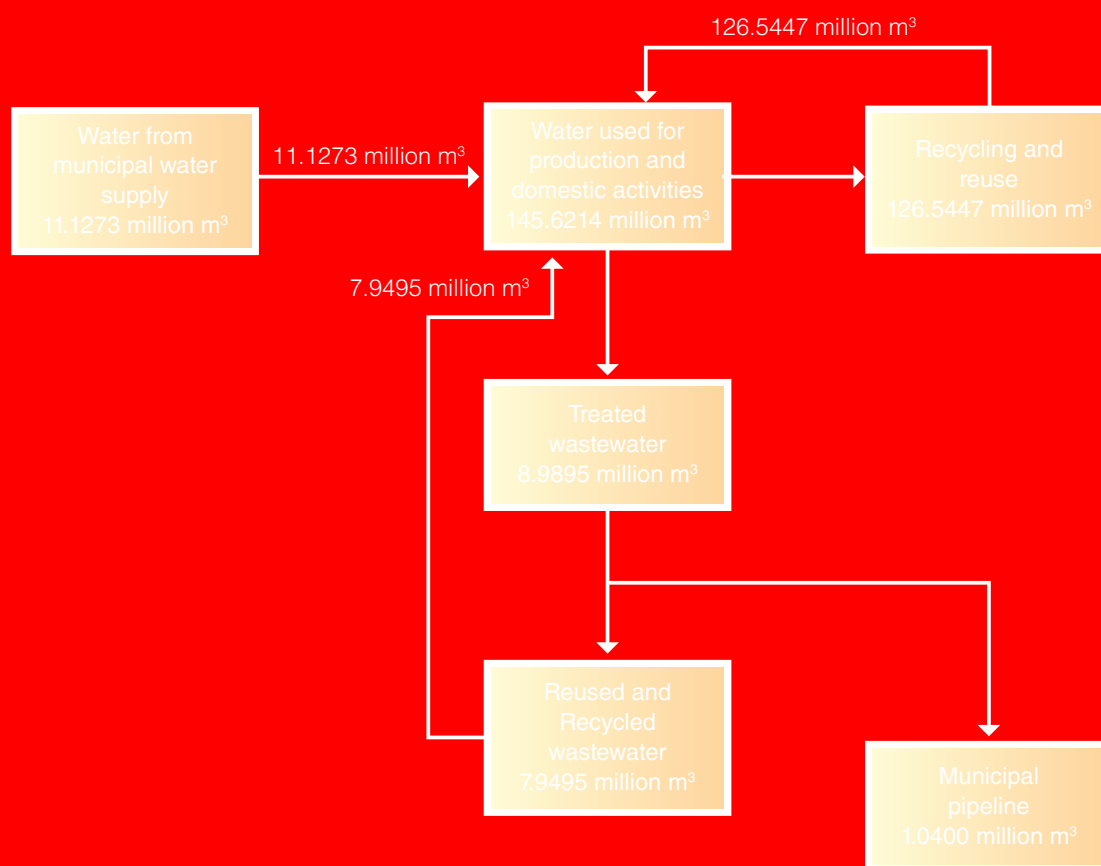
WRI Risk Monitoring Results and Countermeasures of the Company

Water risk monitoring indicators	<ul style="list-style-type: none"> • Type of physical risks: Water consumption risk, drought, decline of groundwater water level, etc.. • Condition of physical risks: Coastal erosion, untreated water. • Laws, regulations and reputation risks: Quality of drinking water, sanitary conditions, etc..
Monitoring results	<ul style="list-style-type: none"> • High-risk area: Wuxi Fab and Shanghai Fab.
Countermeasures	<ul style="list-style-type: none"> • Relying on water monitoring sites for each fab, the Company has conducted water balance tests on a regular basis to calculate the process water, recycled water, wastewater, and domestic water use of each fab. • The Company records the flow, volume, and recycling of water resources, so as to analyze whether there is any abnormal utilization of water resources and predict the reasonable allocation of water resources among water-consuming units. • Build green buildings, upgrade or replace equipment with high water consumption, and enhance water consumption efficiency. • Expand the sources of water resources, recycle air-conditioning condensate, organic wastewater, etc., and transform recycled water into industrial water. • Carry out water-saving awareness publicity activities and post water-saving signs.

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Water used by the Company comes to a large extent from the municipal water supply in addition to a smaller amount of recycled water and air conditioning condensate from the pure water manufacturing process.

Overview of Water Used for Production and Operation of the Company in 2023



During the Reporting Period, the Company undertook several water-saving and wastewater reuse activities. In 2023, it was awarded the medal and certificate of honor titled as "Water Efficiency Leader of Key Water-Using Enterprises in Shanghai" jointly issued by the Shanghai Municipal Commission of Economy and Informatization and the Shanghai Water Authority. In addition, it received the second prize for "Shanghai Industrial Water Reuse Excellent Case" jointly awarded by the Labor Union of Shanghai Water Authority, the Shanghai Office for Water Saving, and the Shanghai Water Supply Management Office.

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Water Resources Management Work and Achievements in 2023

Action	Measures	Achievements
<ul style="list-style-type: none"> Reclaimed water reuse project 	<ul style="list-style-type: none"> Additional reclaimed water recycling facilities were installed, and turbidity removal membranes and special RO membranes were used to improve the quality of water output from the system, ensuring the requirements for use in the pure water system are met 	In 2023, a total of 275,940 tons of water was saved
<ul style="list-style-type: none"> Saving RO makeup water 	<ul style="list-style-type: none"> Water makeup volume was reduced by regulating the RO makeup water bypass of the MAU without affecting the indoor AMC in the cleanroom 	In 2023, a total of 32,898 tons of water was saved
<ul style="list-style-type: none"> Recycling of RO concentrated water 	<ul style="list-style-type: none"> Additional RO concentrated water recycling equipment was installed to increase the treatment amount of recycled water 	In 2023, a total of 26,000 tons of water was saved
<ul style="list-style-type: none"> Recycling of sampling water from the online instrument 	<ul style="list-style-type: none"> The sampling water from the online water quality testing instrument was collectively recovered in the intermediate water tank and reused for the spray water system 	In 2023, a total of 9,125 tons of water was saved
<ul style="list-style-type: none"> Adjusting OAC unit makeup water flow 	<ul style="list-style-type: none"> Diaphragm valves and flow meters were installed to adjust the makeup water amount according to actual needs, saving water 	In 2023, a total of 55,845 tons of water was saved
<ul style="list-style-type: none"> RCM product water reuse project 	<ul style="list-style-type: none"> The organic reclaimed water pipeline was installed to substitute reclaimed water for tap water for washing 	In 2023, a total of 14,600 tons of water was saved

Raw Materials Management

The Company primarily uses raw materials including silicon slices, quartz, target materials, and chemicals. To streamline management, the Company has established management systems, including the Raw Materials Shelf Life Control Policy, the Risk Identification and Response Measures for Key Materials, the Key Materials Risk Analysis Table, and the Materials Management Department's Management Standards for Chemical Storage and Gas-based Operations, to standardize the raw materials management procedures. The Company encourages employees to reduce waste rates by means of technical innovation, constant optimization, and recommendations on optimization, thereby enhancing the efficient utilization of raw materials.

2.5 Emissions and Waste Management

In order to meet emission standards and reduce impact on the environment, the Company has standardized the management of air emissions, wastewater, and waste discharge in strict accordance with the Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution, the Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Wastes, Law of the People's Republic of China on the Prevention and Control of Soil Pollution, Law of the People's Republic of China on the Prevention and Control of Water Pollution, as well as other laws and regulations and relevant provisions. During the Reporting Period, no incident of excessive or illegal discharge of pollutants by the Company has occurred, nor has any litigation case arising from the above types of incidents occurred.

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Air Emission Discharge Management

The Company strictly complies with national and local discharge requirements, such as the Discharge Standards of Pollutants for Semiconductor Industry (DB31/374-2006) and Jiangsu Discharge Standards for Semiconductor Industry (DB32/3247-2020), and sets a management goal of achieving 100% compliance on discharge. The Company has formulated improved testing plans and management measures for air emissions discharged during production, including sulfuric acid mist (H_2SO_4), hydrogen chloride (HCl), nitric oxide (NO_x), ammonia (NH_3), and volatile organic compounds (VOCs). The Company has further developed testing plans for major air emissions according to the production situation and regularly carried out testing and evaluation to ensure compliance of air emissions.

Air Emissions Management

Type	Treatment Method	
Air Emissions	Acid air emission	Up-to-standard discharge after removing most of the components through pretreatment and centralized treatment of the washing tower.
	Alkaline air emission (mainly ammonia gas)	Purification through a washing tower.
	Organic air emission	Purification through activated carbon adsorption, or combustion after concentration.
	Air Emissions containing dust (mainly small particulates of silicon dioxide)	Removal through a dust-extraction unit

The Company has standardized the requirements for online monitoring and management of organic waste gas and improved on-site supervision capacity of its fabs. The Company's waste gas treatment facilities are maintained at a high level of treatment efficiency through annual overhaul and other measures. In addition, the Company optimized and improved the treatment technology of its organic waste gas treatment system, constantly enhanced the treatment efficiency of the system, and reduced the emission of organic waste gas.

Waste Management

The Company adheres to the principles of "reduction from the source" and "circular economy". Besides standardizing the identification and strict classification of generated waste, the Company adopts proper management methods to handle waste, aiming to maximize the waste recycling rate.

The Company maintains consistently high standards and strict requirements in the implementation of the waste management system by formulating the Waste Management Procedure, the Code of Practice for Industrial Waste Management, and other management regulations, as well as crafting all-around management procedures for waste management to standardize waste management operations. Through the unified environmental protection management system of the government, waste treatment is recorded and managed to ensure all transportation records are traceable and controllable. In every year since 2017, the Company has carried out work to reduce the discharge of various hazardous wastes to constantly reduce the impact of hazardous waste emissions on the environment.

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Classification and Treatment Methods of Waste

Categories		Treatment Method
Non-hazardous waste	Domestic waste and kitchen garbage	Entrusting the environmental sanitation departments in the places where we operate for unified disposal on a regular basis
	Raw materials for production and office supplies	Recycling within plant premises
	Such as sludge	Landfilling, and brick manufacturing
Hazardous waste	Such as waste acid, waste isopropanol, waste phosphoric acid, and organic waste liquid	handled by suitable enterprises, or reused in other industries, for a higher reuse rate
	Such as waste glass bottles, 200L chemical barrels, and waste liquid from laboratory	Physical-chemical treatment
	Such as cleaning cloths, plastic bottles, waste activated carbon, waste resin, and arsenic-containing waste	Incineration

Wastewater Discharge Management

The Company strictly complies with the relevant laws and regulations governing wastewater discharge for all of the jurisdictions in which its factories operate and sets a management goal of achieving 100% compliance on discharge. The Shanghai Production Base is in compliance with the Discharge Standard of Water Pollutants for Electronic Industry (GB39731-2020), the Integrated Wastewater Discharge Standard (DB31/199-2018), and the Waste Water Quality Standards for Discharge to Municipal Sewers (GBT 31962-2015) – Grade B Standard. The Wuxi Production Base is in compliance with the Jiangsu Discharge Standards for Semiconductor Industry (DB32/3247-2020), the Integrated Wastewater Discharge Standard (GB8978-1996), and the Waste Water Quality Standards for Discharge to Municipal Sewers (GB/T31962-2015) and formulates the Management System for Drainage and Waste. The Company also reduces the generation of wastewater by continuously optimizing manufacturing processes and wastewater recovery.

In terms of pollution discharge and information disclosure, the Company carried out online monitoring and management of wastewater, with relevant data of the Shanghai Production Base and the Wuxi Production Base disclosed on the environmental information disclosure platform, thus improving transparency of environmental information for the Company.

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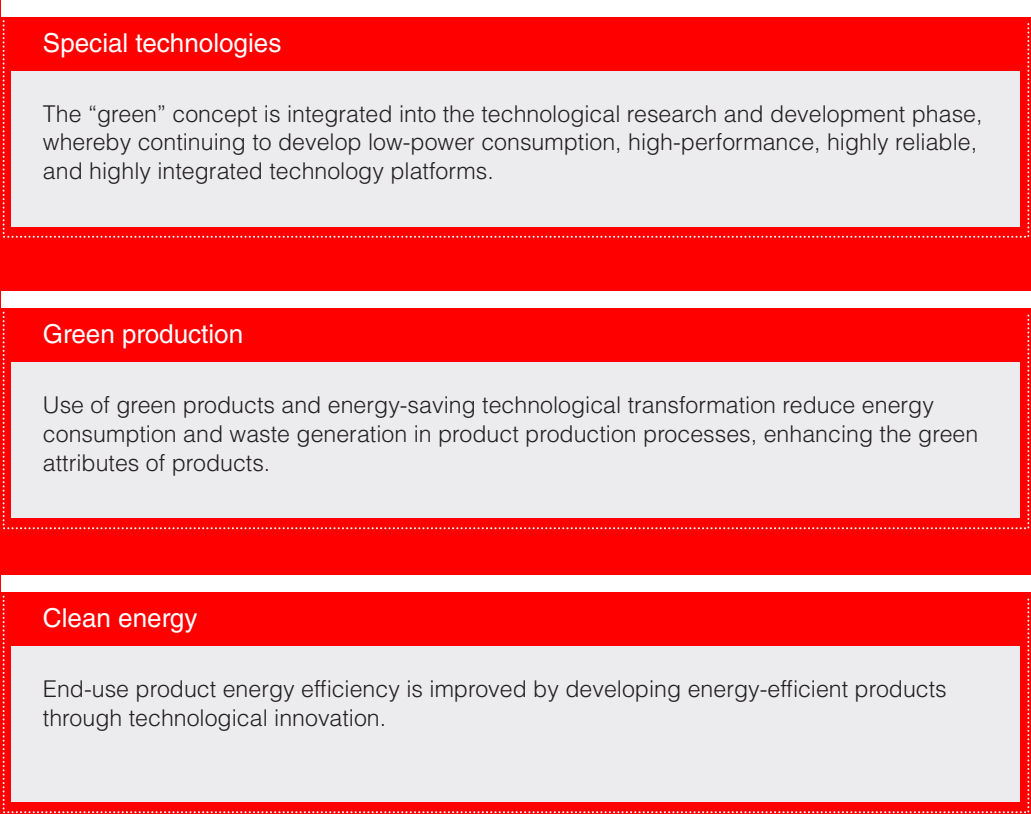
Wastewater Discharge Management

	Testing Indicators	Treatment Method
Wastewater	pH, COD, ammonia nitrogen, fluorine ion, etc.	Discharged through a pipeline into a designated urban sewage pipe network after treatment and meeting relevant standards

2.6 Green Products

Green products refer to safe, environment-friendly, and high-quality products manufactured in the closed-loop process of product design, manufacturing, use, scrapping, and reuse during which the green concept is always considered. Green products are also characterized by low resource and energy consumption, low pollutant emissions, low toxicity and less harm, and easy recycling, treatment, and reuse. Through special technologies, green production, and the use of clean energy, the Company creates green “core” products and continues to improve product efficiency with reduced energy consumption and waste production during manufacturing, thereby minimizing environmental impact.

Pathway to Green Products








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Green Product Production

Based on the environmental footprint of the full life-cycle of a product, the Company identifies the potential improvement links for the green attributes during raw materials procurement, product production, and product transportation. By adhering to the philosophy of lean manufacturing management, implementing green procurement principles, improving technological processes, and other measures, the Company continues to reduce the environmental impact of product production and enhance the green attributes of its products.

Environmental Management for the Full Life Cycle of Products

				
Warehousing of Raw Materials	Product Production	Product Transportation	End-user Products	Disposal
<ul style="list-style-type: none"> Carry out hazardous substance examination and systematic control on raw materials Review the qualification and environmental compliance of suppliers and require suppliers to sign the Environmental Protection Undertaking 	<ul style="list-style-type: none"> Choose production equipment with low energy consumption and high performance Implement water recovery projects to improve the overall recycling rate of water Adhere to the philosophy of lean manufacturing management, minimizing the generation of waste 	<ul style="list-style-type: none"> Recycle and reuse product packaging materials to reduce the consumption of packaging materials and waste generation 	<ul style="list-style-type: none"> By helping customers produce low energy consumption products, reduce the environmental impact of the use of end-user electronic products 	<ul style="list-style-type: none"> The wafers produced by the Company are monitored for harmful substances, which means that the end-user electronic products manufactured by using the wafers have less impact on the environment after disposal Recyclable waste during production is handed over to qualified third parties for recycling

Seizing the Clean Energy Opportunity

With the accelerated adjustment of the global energy structure, promoting the use of clean energy has become the focus of development for more and more enterprises. Hua Hong Semiconductor has actively seized the opportunity of clean energy and applied its main process platforms in different application fields to facilitate the development of green products in the downstream supply chain.

The Company has accumulated substantial technology and experience in the manufacturing process for upstream components in the new energy application field, such as new energy power generation, etc., which can effectively support its energy transformation and development. The Company's semiconductor components for new energy, which are already at the international advanced level, utilize the technology and reliability of the 8-inch wafer production platform, with gradual transitioning to the 12-inch process platform. Hua Hong Semiconductor focuses on development of the "8-inch + 12-inch" wafer production strategy, vigorously implementing core development of the advanced "Specialty IC + Power Discrete" product mix, and fully supporting the high-quality supply capacity of components for the new energy infrastructure and application fields. Hua Hong Semiconductor's power discrete, non-volatile memory, and analog and power management processes play an important role in supporting the development of end-user products in new energy application fields, such as new energy vehicles, photovoltaic energy storage, energy-saving household appliances, etc.

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Products for Supporting Clean Energy Development

Power discrete are important devices for new energy power generation and new energy applications. For example, a large number of IGBTs, MOSFETs, and other devices are required for PV and wind power generation equipment, electric vehicles, and electric two-wheelers.

The Company has accumulated a large number of customers in this field and has maintained good partnerships with leading enterprises in the field for a long time to conduct in-depth development and cooperation together. So far, the revenue of power discrete devices has contributed a significant part of the Company's revenue.

Non-volatile memory processes are widely used in chip applications such as MCUs and ASICs, and these chips are also widely applied to new energy-based power generation equipment.

According to IC Insights, the automotive market accounts for more than 30% of the global MCU consumption market. All of Hua Hong's fabs have passed the IATF 16949 automotive quality management system certification, making important contributions to supporting the local manufacturing of automotive semiconductors.

New Energy Components Involved in Development Projects and Application Areas

Product	Application Area	Proportion of Revenue
Power Discrete	Photovoltaic and wind power generation equipment, electric vehicles, electric bicycles, etc.	39.4%
Non-volatile Memory Process	New energy generation equipment, electric vehicles, etc.	35.9%

In 2023, the Company held the “Core Connectivity, Vehicle Connectivity, and Chain Connectivity” Automotive Chip Ecosystem Cooperation Conference, joining forces with nearly a hundred businesses in the integrated circuit, automotive component, and vehicle assembly sectors, to promote cooperation in the automotive chip ecosystem and foster collaborative industry development under the spirit of “identifying opportunities in industrial development by amassing the power of technical innovation”. Pursuant to the “8-inch + 12-inch” and forward-looking “Special IC + Power Discrete” strategies, the Company's automotive electronics business has been expanding, with products continuing to expand in the new energy sector, propelling the low-carbon green development.

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Development Progress of Technologies Boosting New Energy Transformation in 2023

Automotive Electronics	Industrial New Energy	High-end Consumer Electronics
<ul style="list-style-type: none"> • Collaboration along the supply chain assists customers in accelerating introduction of their products into related module factories and vehicle manufacturing enterprises. • Direct collaboration is established with mainstream domestic automotive manufacturers, focusing on mature chip substitution for key and challenging projects. This partnership aims to build a sustainability ecosystem that ensures multi-dimensional cooperation. Recommended mature chip types cover various areas, including the automotive power system, body control, cabin, chassis and safety, remote control and communication, ADAS, and charging stations, thereby achieving mass supply. • A company-level automotive electronics database is established and continuously improved. 	<ul style="list-style-type: none"> • Key power device products have achieved mass supply, significantly increasing market share. With the government enacting a national strategy and rendering strong support for the dual-carbon economy, the new energy market is poised for promising growth in the future. 	<ul style="list-style-type: none"> • Collaboration with well-known domestic appliance brands aims to increase the domestic substitution rate and continue the push for expansion of high-end consumer electronics business. • Well-known domestic appliance brands, manufacturing products such as IGBT, display touch control chips, fingerprint lock chips, and motor control on the Company's process platform, have gradually expanded into the market for large household appliances, including air conditioners and refrigerators.

In the future, the Company will further promote the development of silicon-based power devices capable of achieving higher energy efficiency and initiate development of compound semiconductor power devices characterized by high power density and low energy consumption. This will provide continuously optimized solutions for products applied to the clean energy sector, such as variable frequency household appliances, new energy vehicles, and further improve energy efficiency.

3 Employee-Related Responsibilities

Major Developments in 2023

Measures	Achievements
Safe Production	100% of our employees and contractors signed the Safety Responsibility Letter and the Letter of Commitment on Safety and Environmental Protection, respectively.
Employee training	100% employee training coverage. 135.6 training hours per person.

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3.1 Rights and Benefits of Employees

Rights and Interests of Employees

Hua Hong Semiconductor strictly complies with laws and regulations including the Labor Law of the PRC and the Law on Employment Contracts of the PRC. We insist on fair employment, implement the principle of equal pay for equal work, and ensure that employees are not discriminated against or treated differently based on non-work factors including age, gender, place of birth, religious belief, marital status, or disability. We prohibit the employment of child labor or forced labor.

The Company has formulated relevant management regulations, including the Employment Procedures and the Management Procedures for Trainees. The Company strictly checks the identity information of employees and never employs adolescents under the age of 16. If such a situation is identified and verified, it will be immediately suspended and investigated for rectification, targeting at the omission of links around the recruitment review process so that such process can be improved. As at the end of the Reporting Period, the Company had 6,863 regular employees. The Company has experienced no illegal or non-compliant incidents in connection with employee recruitment and dismissal, work hours and holidays, job promotion and equal opportunities, anti-discrimination and diversity, the employment of child labor or forced labor, nor had any litigation in connection with the aforesaid matters.

Overview on Employee Rights and Interests

Recruitment and Dismissal	Salaries and Wages	Working Hours and Holidays	Employee Union and Participation
<ul style="list-style-type: none"> Recruitment: Adhering to the principle of fairness, equity and openness; Dismissal: The Company and employees go through the dismissal procedure according to relevant laws, regulations, and the Dismissal Management Procedure. 	<ul style="list-style-type: none"> The Company provides competitive salaries for employees, which are higher than the minimum wage in the place of operation. 	<ul style="list-style-type: none"> A standard working hours system is adopted. A comprehensive or flexible working hours system is adopted for certain positions with the approval of the government labor and personnel authorities; Based on holidays and festivals specified by the government, supplementary annual leaves are provided for employees. 	<ul style="list-style-type: none"> Establishing labor union, employee congress, etc. to ensure the democratic participation of employees in the Company's decision-making.

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Employee Diversity

The Company attaches great importance to the diversity of employees and believes that a diversified talent pool can enhance dynamics in the team, which will constantly improve the efficiency of research and production, driving business growth of the Company. Through diverse recruitment channels, the Company provides employment opportunities for talent from different cultural backgrounds, educational backgrounds, and technical specialties.

Practice of Employee Diversity

- ▶ Upholding the principle of “gender equality” in recruitment, employment, and promotion, the Company incorporates employee aptitude and performance assessments into the standards of employment and promotion.

- ▶ Upholding the principle of “age equality”, the Company provides job and promotion opportunities for employees of different age groups.

- ▶ The Company offers various positions and levels in management, technology, and functional support, allowing employees to choose based on their own development plans.

The Company formulates relevant regulations and procedures and continues to create an open, inclusive, respectful, and diverse employment environment. We respect the lifestyle of all kinds of employees and try to provide them with convenient conditions to meet their living habits. The Company is also committed to creating better office and service facilities for employees and improving their happiness.

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Employee Care

The Company persistently cares about the well-being of its employees by integrating employee care into its daily practices, including provision of fringe benefits and caring initiatives in areas such as office environment, diet, accommodation, and transportation, as part of our commitments to creating a warm, loving, and vibrant working environment for them.

Measures for Employee Care

Office	<ul style="list-style-type: none"> • The ventilation system is installed in all offices and additional air purification devices added to improve office air quality.
Diet	<ul style="list-style-type: none"> • Green space increased in office areas. • There are staff canteens and coffee shops in factory zones. • Establishing a food safety supervision team, adopting the mode of centralized purchasing of food materials and qualified supply chain management, and inviting employees and department representatives to carry out supervision. • Publishing the canteen food cooking guideline to manage balanced nutrition, oil and salt control, for the employees' diet in the canteens.
Accommodation	<ul style="list-style-type: none"> • Construction of dormitory with private bathrooms, 24-hour supply of hot water, and WIFI network, etc. • The dormitory area has a library, computer room, snooker room, laundry, TV room, HIVE BOX, and other facilities.
Travel	<ul style="list-style-type: none"> • Providing all employees with travel allowance. • Providing free commuter bus services between the park, subway stations, and the dormitory. • Creating a commuting route for employees living in the transit-challenged areas and arranging commuter bus services for departments which need to have such services on weekends.
Extending solicitude	<ul style="list-style-type: none"> • Organizing holiday celebrations and activities during festive periods as a gesture of extending our solicitude.
Health checkup	<ul style="list-style-type: none"> • Offering annual health check-ups for all employees, including screenings for multiple types of cancer.

In addition, the Company established the Employee Assistance Mechanism, under which we provide assistance for needy employees at special festivals such as Spring Festival, Labor Day, and Mid-Autumn Festival, in addition to routine expression of sympathy and solicitude to injured or families of diseased employees; and we give timely care and support to employees who suffer a significant misfortune and help them overcome their plight as soon as possible through multiple forms of assistance including donation, support, care, and nursing.

In terms of care for female employees, the Company organizes a special physical examination every year, continuously improving human-based management of lactating employees, and providing relevant service facilities to ensure convenience for pregnant employees and lactating employees at work.

Employee Communication

An unblocked communication channel is favorable to the establishment of harmonious labor relations. The Company is committed to building and improving employee communication and feedback mechanisms, has formulated the Employee Communication Rules, and encouraged multi-way communication between the Company and employees, between officers and subordinate officers, and among employees.


The Company utilizes various communication channels, including satisfaction surveys, forums for young employees, an OA online platform, and one-on-one departmental communications, to understand the feedback and suggestions of employees. Meanwhile, the Company has established a labor union, and employee representative meetings are regularly convened as part of our active efforts to communicate with employees.

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3.2 Employee Health and Safety

The Company attaches great importance to occupational health and safety of employees and strictly complies with the Law of the People's Republic of China on Prevention and Control of Occupational Diseases, the Production Safety Law of the People's Republic of China, the Regulation on Work-Related Injury Insurances, as well as other laws, regulations, and provisions. The Company has established a complete occupational health and safety system that meets the safety goal of "zero accident for production safety", defining the occupational health and safety policy, to provide employees with a good working environment and ensure their occupational health. During the Reporting Period, there were zero work-related injuries or deaths, occupational diseases, or fire accidents.

Occupational Health and Safety Management System

			
System Construction	<ul style="list-style-type: none"> The Company has established the Safe Production Committee; implemented the Committee's Safe Production Responsibility System; and implemented the Regular Safety Meeting System. All employees at all levels are required to sign the Safety Responsibility Letter, so as to implement the Safe Production Responsibility System for the staff. 	Management Factors	<ul style="list-style-type: none"> Emergency response to hazards/ environmental factors. Special equipment and posts. Chemicals management. Occupational health monitoring and Protection.
Internal Audit, Inspection, and Hazard Identification	<ul style="list-style-type: none"> Safety technology transformation. Establishing a dual prevention work mechanism of hierarchical control of safety risks and management or hazard identification. 	Construction of a Safety Culture	<ul style="list-style-type: none"> Safety awareness and safety training. Emergency drills.

Safe Production

The Company pays great attention to safety assurance of employees in the production process, strictly abides by the Production Safety Law of the People's Republic of China, and formulates the Implementation Measures for the Production Safety Responsibility System of the Production Safety Committee. We also established the safe production committee and the weekly production safety meeting system to continue the optimization of various management procedures and facilitate construction of the corporate safety culture, ensuring stable operation of the Company's safe production system. So far, the Shanghai Production Base and the Wuxi Production Base both have passed certification of the ISO 45001 International Occupational Health and Safety Management System.

Name of production base	ISO 45001 Certification	Term of Validity
Shanghai Production Base and Wuxi Production Base	Certified	18 April 2024

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The Company actively implemented standardization, systematization, and intelligent construction of safety work and optimized the production safety responsibility system of all employees. In accordance with the principle of "one post with one responsibility" and "whoever takes charge and uses shall take the responsibility", the Company has compiled a Safety Responsibility Letter covering all staff by combining the post functions. Meanwhile, contractors of the Company are required to sign the "Letter of Commitment on Safety and Environmental Protection", so as to make every department and every employee take their respective responsibility and optimize the production safety responsibility system of all employees. In 2023, 100% of our employees and contractors signed the Safety Responsibility Letter and the Letter of Commitment on Safety and Environmental Protection, respectively.

In addition, the Company improved systematic procedure management based on its operation experience, established and perfected safety management systems such as safety accident/incident/hidden danger troubleshooting and tracking system, and implemented a special equipment registration system, equipment terminal infrared detection and recording system, etc. Data records are kept to ensure implementation of corrective measures, thereby standardizing implementation of procedures and enhancing the Company's safety management efficiency and safety operation level.

Safety Risk Prevention Facilities and Measures for Employees

Comprehensive systems are installed, including automatic fire extinguishing system, automatic fire alarm system, smoke control system, fire broadcasting system, evacuation indications, and emergency lighting system.

Our clean work areas are equipped with toxic, hazardous, and flammable gas alarming systems, liquid leakage detection system, and extremely early smoke detection systems.

An emergency response team (ERT) is established and receives specialized skill training, and emergency response plans are formulated for different disasters. Furthermore, special action drills are regularly organized and identified issues are promptly rectified.

In 2023, Hua Hong Semiconductor advanced the Three-Year Special Rectification Action Plan for Production Safety (2023-2025), covering hazardous chemicals, construction projects, fire safety, gas, electricity, and special equipment, with a total of 397 safety hazards successfully rectified.

Chemical Safety Management

With regard to safety protection of chemicals, the Company has formulated a number of management policies and operation procedures, including the Chemicals Management Procedure, the Chemical Substance Review Procedure, the Special Emergency Plan for Chemical Leakage, the Inspection and Registration System for Chemicals Coming In and Out of the Warehouse, the Safety Management Rules for Hazardous Chemicals, the Management Measures for Chemical Turn-on, etc., to regulate the chemical management procedures as well as to enhance chemical safety compliance.

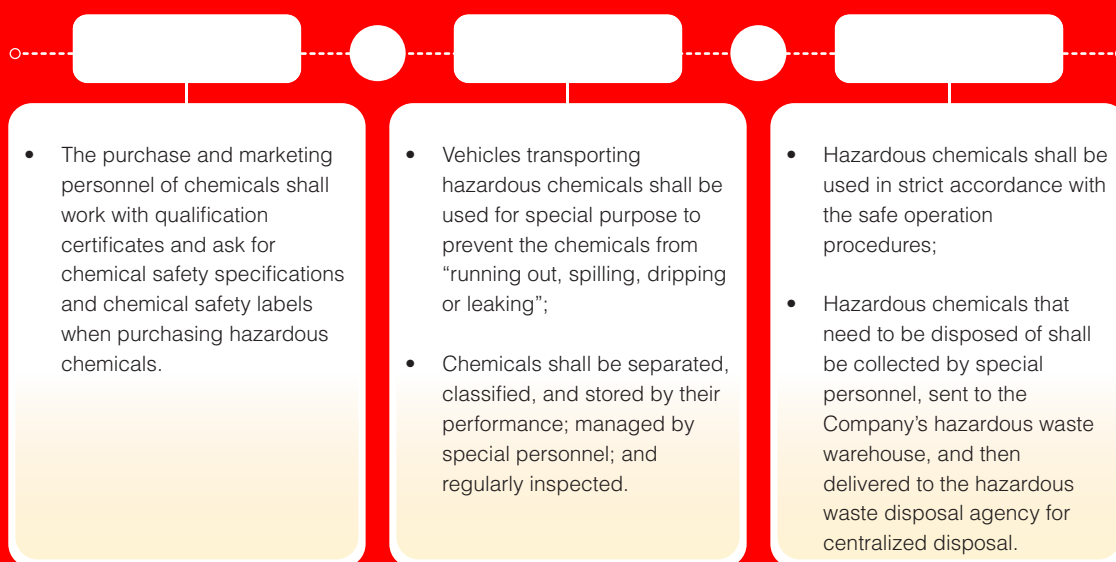
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Hazardous Chemicals Used in the Manufacturing of Hua Hong Semiconductor Chips

Type	Name
Flammable liquid	Isopropanol, photoresist, and diesel
Oxidants and organic peroxides	Hydrogen peroxide
Toxic chemicals	Phosphine and fluorine
Corrosive chemicals	Sulfuric acid, hydrochloric acid, hydrofluoric acid, phosphoric acid, mixed acid, ammonia water, and sodium hydroxide
Compressed and liquefied gas	Hydrogen, methane, silane, nitrogen, oxygen, argon, helium, ammonia, and chlorine

The Company has established a factory chemical review committee to comprehensively evaluate the environmental protection and safety qualifications as well as the risk prevention and control capabilities of chemical suppliers in advance. The Company employs the chemical substance management system to: manage the handling, storage, and disposal of chemicals; control the maximum storage quantity of chemicals; and dynamically monitor their use and consumption. In addition, the Company endeavors to eliminate on-site hazard sources and reduce safety risks from the source by giving priority to the use of new technologies and by replacing toxic and flammable hazardous chemicals with non-toxic chemicals.

Hazardous Chemicals Management Procedure



Protection of Employees' Occupational Hazard Factors

In order to provide occupational health protection for employees, the Company identifies occupational hazard factors of employees and formulates corresponding countermeasures in strict accordance with the Law of the People's Republic of China on Prevention and Control of Occupational Diseases and other laws and regulations. The Company's job positions involving occupational hazard factors mainly include ion implantation, diffusion, etching, chemical mechanical grinding, power gasification, and other positions involving equipment operation.

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Identification and Protection of Employees' Occupational Hazard Factors

Job Positions with Occupational Hazards	Occupational Hazard Factors	Countermeasures	Occupational health monitoring
Ion implantation, diffusion, etching, chemical mechanical grinding, power gasification, and other positions involving equipment operation.	Fluorine and its inorganic compounds, hydrofluoric acid, hydrochloric acid, nitric acid, sulfuric acid, phosphoric acid, ammonia water, hydrogen peroxide, arsenic and its compounds, phosphorus and its compounds, isopropanol, etc.	<ul style="list-style-type: none"> The equipment in the clean room is automatically operated in a closed space and is equipped with a closed process exhaust system. Provide employees with personal protective articles and emergency response devices, regularly checking such articles and devices to ensure their effectiveness. 	<ul style="list-style-type: none"> Annual occupational health monitoring and assessment of current occupational hazards. Strict pre-employment, on-the-job, and post-employment medical examinations for employees at positions exposed to occupational disease hazards.

In addition, the Company engages external organizations to test the occupational hazards in its production environment every year, so as to ensure that the occupational exposure limits for harmful factors are not exceeded in the production environment. The Company informs all employees of the test results. Over the course of research, development, and production, the Company persistently has upheld the green chemistry philosophy, thereby continuously reducing the occupational hazard exposure risk of employees.

The Company provides an annual health check-up for all employees, including multiple cancer screenings and other items, and establishes employee health records to systematically track changes in employees' health status. In 2023, the Company established the "Health Defense Column", while simultaneously carrying out various activities to promote a healthy lifestyle for employees, such as health lectures on the theme of "How to stay away from the risk of "hypertension, hyperlipemia and hyperglycemia", "Guidelines for People Infected with COVID-19 at Home", and "Prevention of facial paralysis in alternate seasons", to encourage the employees to live and work in a healthy way.

Construction of Production Safety Culture

In order to carry out the construction of a production safety culture and strengthen the staff's awareness of the safety culture, the Company organized a series of activities such as "Production Safety Month", "Safety & Health Cup", and "Fire Protection Month" and carried out activities such as production safety publicity, education, and training, as well as safety knowledge and skills competitions. Various safety publicity and demonstration activities have effectively enhanced the safety awareness and safety knowledge reserve of employees and motivated all staff to fulfill their safety commitments and responsibilities.

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Actions for Construction of Production Safety Culture in 2023

Action Name	Content and Effect
Strengthening safety training	<ul style="list-style-type: none"> 131 safety education and training sessions were organized and held on the primary responsibility for production safety, enrolling over 28,000 participants with the participation rate in safety education and training reaching 100% and the certificate holding rate for employees reaching 100%.
Enhancing emergency response capability	<ul style="list-style-type: none"> Each production base organized and implemented more than 385 comprehensive and special emergency plan drills, enrolling more than 29,770 participants. Complete the expert review and filing of production safety emergency plans, establish and improve the required documents, such as rapid emergency response procedures to abnormal conditions for production base, as well as organize weekly training, quarterly practice, and annual competition. Hold ERT personal skills and ERT firefighting skills competitions and build an emergency management system communication platform by carrying out activities. Organize and carry out the "Fire Protection Month" fire knowledge display board publicity, firefighting skill training, evacuation and escape drills for all staff, and enhance the staff's safety awareness and emergency response ability.
Safety Technical Transformation Assessment	<ul style="list-style-type: none"> Conduct annual evaluation of required safety and technical skills, and organize learning and exchange activities. Conduct assessment activities to select typical investigation cases for hidden hazards.

3.3 Employee Development and Training

Employee Training

The Company has established a sound employee education and training system and formulated the Operating Procedure of Internal Training System Review, the Education and Training Procedure, and department-level training procedures, which are constantly adjusted according to strategic development and employee needs, to meet the all-round and multi-level training needs of employees in different positions.

The Company has established training facilities (with special training rooms and equipment for each plant site), learning and sharing platforms (including an online training registration management platform, training material, and position-specific question bank and multimedia learning courseware, etc.) and where necessary, uses external resources for ensuring employees learning and development.

In 2023, the Company continuously carried out a "Special Training Camp for Newly-hired Recent College Graduates" training program. In addition to the refining and concentration of professional theory and practical training in three major series of courses, namely "new era", "new revelation" and "new talents", the Company offered courses regarding corporate culture and political literacy as well as organized visits to bases of Chinese revolution, which helped its new employees quickly integrate into the team and meet the challenges of their future work with full enthusiasm.

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Employee System

Trainees	Training Contents	2023 Performance
Grass-roots managers	Role recognition, self-management, management of others, and working management	<ul style="list-style-type: none"> Percentage of employees trained: 100%
Front-line managers	Develop management skills of front – line shift and team leaders, cultivate a front-line management team with high quality and high business ability, and lay a solid foundation for the Company's management	
Newly-employed university students	Career quality, corporate culture, introduction to special skills, and other courses	<ul style="list-style-type: none"> Average training hours per employee: 135.6 hours
Front-line employees	Courses about theory and practical training of the semiconductor manufacturing module	

Career Development

The Company has clear and transparent promotion channels for employees, regularly evaluates employee performance providing employees with feedback on individual performance, and offers personal career development plans for the development of employees. According to industrial practice, the Company has set three professional categories, namely, management, technology, and functional support and has established corresponding job training. Employees may continuously develop their careers in a single professional title category according to their own specialties, potential, and desires. In addition, they are able to shift from technology to management.

In continuing to push forward with high-quality development and improve its high-quality talent pool, the Company focuses on refining its comprehensive capabilities through specialized training, technical exchanges, and lectures, so as to constantly improve the talent cultivation mechanism.

In addition, the Company has formulated the Implementation Measures for Academic Education Subsidy, which encourages employees to improve their professional and technical knowledge and provided 18 employees with on – the-job academic education subsidies in 2023, so as to promote work performance and efficiency improvement, continuously training high-quality talent that meets the current and future needs of the Company, further improving its comprehensive competitiveness.

As of the end of the reporting period, the overall employee turnover rate of the Company³ was approximately 10.0%. Specifically, the employee turnover rates by gender, age and region are as follows.

Employee Turnover Rate of Hua Hong Semiconductor in 2023

Category	Turnover rate (%)
Male employees	11.3%
Female employees	7.1%
Employees aged below 30	14.0%
Employees aged 30 to 50	7.5%
Employees aged above 50	1.9%
Employees in mainland China	10.0%
Employees from overseas	9.7%

3 Employee Turnover Rate= number of resigned employees in the category/total number of employees in the category * 100%

SOCIAL AND GOVERNANCE REPORT

4 Products and Services

Main Progress in 2023

Measures	Achievements
Innovation and R&D	<ul style="list-style-type: none"> 672 patent applications 12 approved papers
Product quality	<ul style="list-style-type: none"> Selected as a shortlist for the nomination award of the 5th China Quality Award Awarded 2022 Shanghai Key Product Quality Improvement Achievement Award (Second Prize)
Customer service	<ul style="list-style-type: none"> Average score of customer satisfaction in the questionnaire of 8.97 (full score: 10 points)

4.1 Product R&D and Innovation

Construction of an Innovative Technology R&D System

Continuous innovation and R&D are crucial requirements for the sustained growth of an enterprise and serve as strategic support for promoting high-quality development. The Company abides by the Law of the People's Republic of China on Progress of Science and Technology, the Patent Law of the People's Republic of China, and the requirements of other laws and regulations. Guided by its vision of "Continuous Innovation and Empowering the Future for Global Customers", the Company consistently benchmarks itself against international standards, promotes integrated innovation in processes, devices, design, and products and strives to build industry-leading specialized technological capabilities.

In 2023, the Company embarked on a patent layout for "Automotive-Grade Memory" and continued to promote integrated innovation in processes, devices, design, and products. We concentrated our efforts on key research and development projects, accelerating the development of differentiated advanced technologies. We also made continuous progress in the development of new power discrete devices, leveraging patents as barriers to proactively position itself in industry-leading research areas.

R&D System of Hua Hong Semiconductor in 2023

R&D Strategy	R&D Achievements
<ul style="list-style-type: none"> "8-inch +12-inch" and advanced "Specialty IC + Power Discrete" strategies. To deepen the high-quality development of diversified specialized process platforms, such as Embedded/ Standalone Non-Volatile Memory, Power Device, and Analog & PM, and Logic & RF. 	<ul style="list-style-type: none"> Completed the development of a number of advanced specialty ICs and high-end power discrete devices, and achieved mass production of over 200,000 wafers of new products. Achieved significant breakthroughs in the indicators and product performance of key devices, such as image sensors and embedded flash memory, enabling the Group to gradually expand in the automotive electronics supply chain.

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R&D Innovation Honors of Hua Hong Semiconductor in 2023

- √ Successfully listed on the **list of “2022 Excellent Intelligent Manufacturing Scenarios”** jointly announced by the Ministry of Industry and Information Technology, the National Development and Reform Commission, the Ministry of Finance, and the State Administration for Market Regulation.
- √ “A new type of mirror floating gate flash memory storage unit and application (一種新型鏡像浮柵閃存存儲單元及應用)” was awarded the **first prize of the Shanghai Science and Technology Award** by the Shanghai Municipal People’s Government.
- √ The “Development and Industrialization of 12-inch IGBT Complete Manufacturing Process” project won the **“15th China Semiconductor Award for Innovative Products and Technologies”** award by the China Semiconductor Industry Association.
- √ Successfully selected as one of the **“100 Intelligent Factories in Shanghai”** by the Shanghai Economic and Information Commission.

Intellectual Property Protection

The Company complies with the Patent Law of the People’s Republic of China, the Copyright Law of the People’s Republic of China, the Trademark Law of the People’s Republic of China, and other laws and regulations and places equal emphasis on both quantity and quality when it comes to promoting intellectual property rights. We have formulated the Management Regulations for Intellectual Property, to regulate the management of our intellectual property rights.

The Company sets annual targets for patent applications and actively maintains its own intellectual property rights. At the same time, the Company promises that it will never infringe upon the intellectual property rights of any enterprise or individual and will keep confidential all technological information regarding products of upstream and downstream partners. To avoid infringement of third-party intellectual property rights, the Company conducts reputational and potential risk audits on customers before accepting product orders and has entered into several technology licensing agreements with major technical companies.

As at the end of 2023, the Company has applied for a total of 8,969 patents in China and overseas and has obtained 4,427 patents.

Intellectual Property Achievements and Honors of Hua Hong Semiconductor in 2023

- √ 672 patent applications
- √ 270 patents granted
- √ Hua Hong Wuxi was listed on the “Wuxi High-Tech Zone Intellectual Property List” for 2023
- √ Hua Hong Wuxi ranked 2nd in the “Top 20 New Invention Patents in 2022”
- √ Hua Hong Wuxi ranked 6th in the “Top 30 Accumulated Invention Patents in 2022”

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4.2 Product Quality and Safety

Quality Management System

The Company has been deepening and improving its quality management system to enhance management efficiency of the “R&D – Mass Production – Quality Control” process, especially in the face of challenging market fluctuations. We have formulated the Quality Manual, Quality Management Procedures, Code of Practice for Quality Objective Management, Supplier Management Regulations, and other rules to carry out quality management work. In 2023, the Company carried out evaluation activities with the theme of “Zero Defect of Characteristic Processes and High-quality Development of Hua Hong”, during which a total of 2,578 projects were reviewed and completed. The outcomes have been remarkable in terms of efficiency improvement, supply chain safety, energy conservation and emission reduction, talent development, and safety production.

Certified Subject	Certification	Term of Validity
Hua Hong Shanghai Production Base	ISO 9001 Quality Management System	21 May 2024
	IECQ QC 080000 Hazardous Substances Process Management System	11 December 2026
	IATF 16949 Quality Management System for Automotive Industry	21 May 2024
Hua Hong Wuxi Production Base	ISO 9001 Quality Management System	11 November 2025
	IECQ QC 080000 Hazardous Substances Process Management System	11 December 2026
	IATF 16949 Quality Management System for Automotive Industry	7 May 2026

The Company strictly adheres to the Zero Defects concept, with the quality assurance department responsible for overall planning, execution, and implementation of product quality and safety management, reporting to management and the Board on the relevant work. By organizing regular quality management review meetings, promoting the implementation of product quality monitoring, and strengthening customer communication, the Company aims to ensure that product quality meets expectations and provide high-quality products to the market.

In 2023, the quality assurance department collaborated with the research and development, production, safety and environmental protection, and marketing departments to conduct monitoring and testing over our entire product lifecycle covering “R&D – Production – After-sales”, so as to predict and analyze potential anomalies, take timely corrective actions, and prevent product quality risks.

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Achievements in Quality Management in 2023

Quality Management	Achievement
Customer Certifications	<ul style="list-style-type: none"> ✓ Successfully passed audits from 14 automotive customers and 25 key customers, completing pre-qualification for leading global automotive electronics manufacturers. ✓ Made breakthroughs in the construction of financial IC card security system, passed EMVCO certification audits, and obtained customer recognition in terms of the quality system.
Reliability Management	<ul style="list-style-type: none"> ✓ Established comprehensive process assessment schemes for 40nm and below advanced process nodes, laying the theoretical foundation for subsequent process verification.
Yield Management	<ul style="list-style-type: none"> ✓ Resolved 15 systematic issues in process baselines across various platforms throughout the year, achieving stable yields of 97% or higher for major production platforms.
New Product Quality Management	<ul style="list-style-type: none"> ✓ Introduced over 500 new products throughout the year, with more than 30 products meeting automotive-grade specifications. ✓ Completed the transition of 8 products and technologies from R&D to mass production throughout the year.

In 2023, the Company organized both the theme activity of “Zero Defect of Characteristic Processes and High-quality Development of Hua Hong” and the Quality Month activity. With the goal of “Building the Foundation of Quality, Pursuing the Path of Excellence (築質量之基，行卓越之路)”, all departments and employees in Shanghai and Wuxi worked together to carry out a series of activities such as executive lectures, quality knowledge training, knowledge competitions, quality-themed essay submissions, and quality-themed debate competitions, to promote the Company’s high-quality development and pursuit of excellence in quality.

To further enhance its quality management level and inspire employee engagement in learning, the Company organized a series of online activities such as “Zero Defects Quality Awareness Training” and “Quality Knowledge Competition” for all employees, so as to instill the concept of “High Quality and Zero Defects” in the minds of every employee and solidify their quality consciousness.

Quality Management Awards and Honours of Hua Hong Semiconductor in 2023

- ✓ Second Prize for 2022 Shanghai Key Product Quality Improvement Achievement Award
- ✓ Manufacturing Department of Fab 1 received the “Excellent Level” award in the Shanghai On-site Management Innovation Activity
- ✓ Fab 2 was selected as a shortlist for the nomination award of the 5th China Quality Award
- ✓ Fab 3 was awarded the title of Shanghai Intelligent Factory and recognised as a national-level demonstration site

Product Safety Assurance

In terms of product safety assurance, the Company has established a hazardous substance management system, conducted regular risk assessments of hazardous substances and compliance evaluations with applicable laws and regulations, and formulated the Hazardous Substances Management Procedure and the three-level management system to effectively control the hazardous substances in products.

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Hazardous Substance Control System

Process	Measures
Product R&D	The Company incorporates the management of hazardous substances into the product R&D process to reduce the risk of using hazardous substances from the source.
Raw materials testing	Suppliers are required to provide the product test report for hazardous substances, sign the Letter of Commitment on Product and Environmental Protection. We conducted sampling tests on certain raw materials to ensure the safety of raw materials.
Product hazardous substance control certification	A third-party organization is entrusted to carry out testing in accordance with the Directive on Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations ("RoHS") and the Regulation concerning the Registration, Evaluation, Authorization and Restriction of Chemicals ("REACH") on a yearly basis to ensure that our products meet the requirements of relevant certification standards.

Management of Nonconforming Products

For nonconforming products, the Company has formulated the policy of Nonconforming Product Control Procedure for management and has established an optimal product recall system. For products that meet the warranty conditions, our customers may return or exchange any nonconforming products within the warranty period. During the reporting period, the failure rate of the Company's products on the end-user side was less than one in a billion.

4.3 Customer Relationship Management

Customer service system

The Company adheres to the concept of "providing customers with more convenient and safe services" and consistently follows the Law of the People's Republic of China on the Protection of Consumer Rights and Interests. It has formulated the Customer Complaint Handling Procedure, listened to customer feedback, and employed various methods, including proactive communication, establishing complaint channels, and conducting satisfaction surveys, to continuously enhance customer service effectiveness.

Customer Service System



Customer Communication

- Adopt multiple methods of communication with customers, including customer survey, regular quarterly/annual business reviews, technical seminar and training.



Customer Complaint

- Establish customer complaint channels and formulate the Customer Complaint Handling Procedure, handle and feed back customer complaints in a timely manner.



Customer Satisfaction Survey

- Carry out satisfaction surveys on a sampling basis annually and formulate an improvement plan according to the survey results. Satisfaction Survey.

The Company maintains smooth customer complaint channels and has formulated the Customer Complaint Handling Rules to standardize the process and response measures for customer complaint and the implementation of corrective and preventative measures. Customers may make a complaint and give feedback to the Company through e-mail, hotline, letter, and other channels. During the Reporting Period, the Company received 4 complaints from customers, all of which were properly handled and resolved to the satisfaction of the customers.

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Customer Complaint Handling Procedure



Occurrence of a Complaint

Normally, communicate and confirm with the customer within 24 hours after the occurrence of a complaint and give a preliminary reply.



Investigation into Failure Causes

Complaints requiring product failure analysis will be submitted to relevant departments for handling. Corrective and preventive measures will be proposed according to the investigation results and a reply will be given to customers.



Prevention and Correction

Supervise the implementation of corrective and preventive measures, and verify the correction results by regularly sorting out and analyzing relevant information fed back by customers.

The Company conducts customer satisfaction surveys on a regular basis. In 2023, the Company carried out a customer satisfaction survey in the form of questionnaire to collect customer opinions. The average score of customer satisfaction in the questionnaire was 8.97 (full score: 10 points), representing an increase of 0.11 points compared to 2022. Overall, customer satisfaction has remained relatively stable. The management of the Company reviews the annual satisfaction survey results, organizes the difference analysis and implements improvement measures, and feeds corresponding improvement measures and results back to customers.

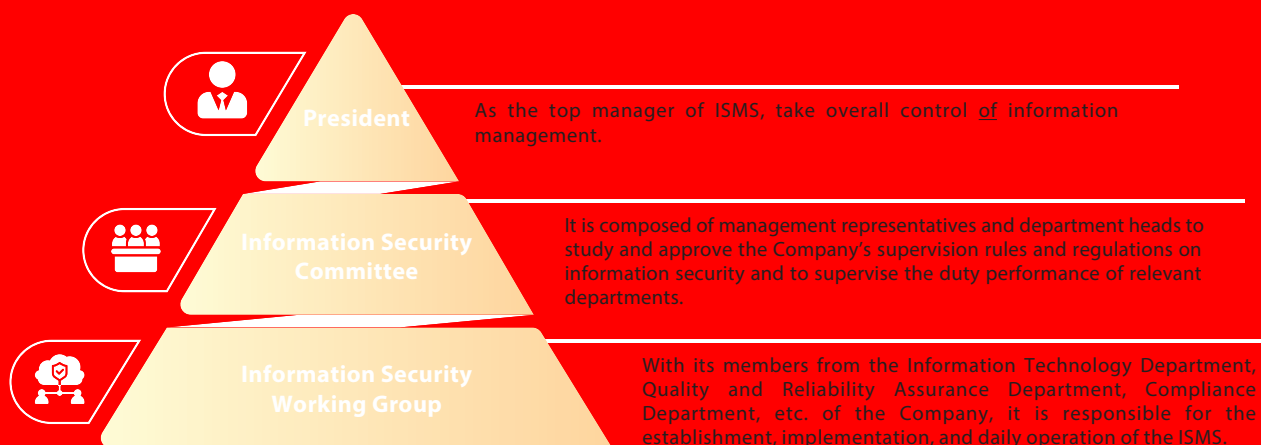
Information Security and Privacy Protection

The Company strictly complies with the Cyber Security Law of the People's Republic of China, the Cryptography Law of the People's Republic of China, the Regulation on the Administration of Commercial Cipher Codes, and other laws, regulations, and provisions and has developed information security management rules such as the Information Security System Manual and the Statement of Applicability (SOA). Meanwhile, we continuously optimize our organizational structure and management processes. We implement measures such as organizing centralized learning for employees, conducting publicity and warning education, and ensuring the implementation of relevant measures to continuously enhance their awareness and further strengthen the protection and control of data and information, so as to prevent any incidents of unauthorized disclosure.

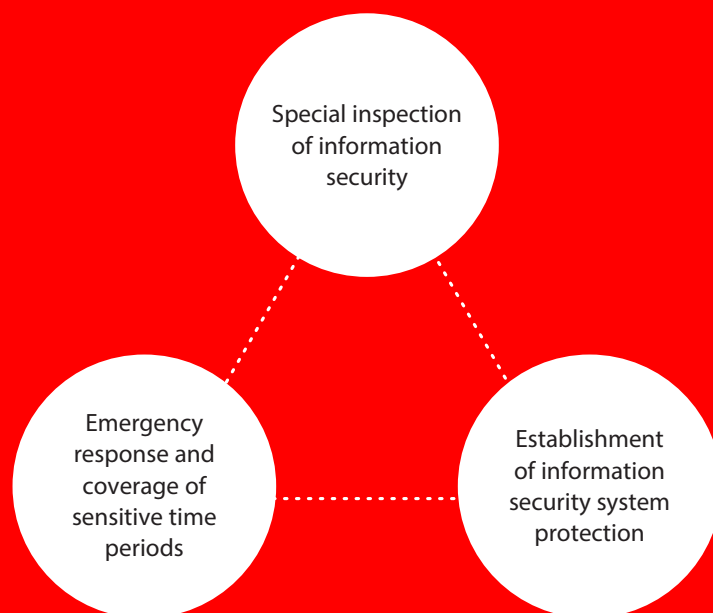
The Company established the Information Security Committee, which is fully responsible for the information security protection work of the Company. The Company has established an Information Security Management System (ISMS), which controls information security risks from information asset management, personnel security, physical control, logic control, and other aspects to ensure information security and is ISO 27001 certified (valid until February 2025). In 2023, the Company did not experience any complaints or incidents related to the infringement of customer privacy or loss of customer data.

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ISMS Structure



Hua Hong Semiconductor's Key Initiatives in Information Security in 2023



In 2023, the Company carried out a series of trainings in relation to information security protection in various production and operation bases to enhance employees' knowledge and capabilities in preventing information leaks and strengthen their ability to respond effectively. By doing so, we have built a strong workforce that serves as a solid foundation for ensuring information security.

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Information Security Protection Training in 2023

Theme	Coverage	Participants
ISMS Training 2023Q1	Shanghai & Wuxi Production Bases	8,233
ISMS Training 2023Q2		6,554
ISMS Training 2023Q3		6,476
ISMS Training 2023Q4		6,919
Confidentiality and Information Security Compliance Training		6,802
Enterprise Information Security and Trade Secret Protection Training		1,044

Responsible Marketing

Integrity, accuracy, and fact-based communication and promotion are the company's responsibilities towards its customers. The Company strictly abides by the Trademark Law of the People's Republic of China, the Advertising Law of the People's Republic of China, and other laws and regulations. We execute product label management in accordance with compliant procedures and establish unified and regulated product labeling standards with our customers. We ensure compliance awareness is integrated throughout the whole process of contract formulation, business development, and both internal and external marketing activities, thereby eliminating the possibility of improper marketing due to subjective factors.

No incidents of violations concerning the use of labels and promotional information occurred within the Company during the Reporting Period.

5 Responsible Business Operation

Main Progress in 2023

Measures	Achievements
Responsible Supply Chain	Through multi-dimensional risk assessment, multi-channel research, scientific planning, and categorization, the Group has made every effort to promote supply chain management. For example, 69 suppliers of raw materials/equipment/components were audited.
Conflict Minerals	A total of 11 suppliers were involved in the due diligence, covering 100% of suppliers that are involved in "conflict minerals". No supplier was found to be involved in "conflict minerals" during the due diligence. The suppliers who do not use conflict minerals account for 100%, as verified by the third-party organization.
Economic Performance	Social contribution per share for 2023 was RMB3.59.

5.1 Responsible Value Chain

Sustainable Supply Chain Management

The Company primarily relies on suppliers of silicon wafers, chemicals, and gases. The Company is committed to reducing supply chain risks by complying with industry standards of conduct, such as the Code of Conduct of the Responsible Business Alliance (RBA), and formulating supply chain management systems, such as the Supplier Risk Identification, Planning, and Control Management Procedure and the Social Responsibility Requirements for Suppliers. By leveraging the Group's advantages of integration, the Company conducts multi-dimensional supplier risk assessment, multi-channel research, scientific planning, and categorisation.

Major Suppliers of Hua Hong Semiconductor

Type of Suppliers	Numbers
Silicon wafers	16
Chemicals	54
Gases	33

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Cooperation with suppliers that demonstrate good social responsibility performance is a prerequisite for the Company to achieve stable production and operation. The Company has established a management system applicable to all suppliers and covering supplier selection and access, supplier review and evaluation, support for supplier growth, and supplier elimination.

Supply Chain Management System

Supply Chain Management	Actions
Supplier selection and access	<ul style="list-style-type: none"> • The Company formulated the Social Responsibility Requirements for Suppliers in accordance with the RBA and put forward requirements for suppliers in five aspects: labor, health and safety, environmental protection, business ethics, and management system; • Suppliers with outstanding performance in terms of environment, labor, and ethics will be preferred in supply and procurement; • In addition to requiring all cooperating suppliers to comply with the Social Responsibility Requirements for Suppliers, the Company also requires its upstream suppliers to recognize and manage in accordance with the Social Responsibility Requirements for Suppliers.
Supplier review and evaluation	<ul style="list-style-type: none"> • The Company has formulated the Supplier Risk Identification, Planning, and Control Management Procedure to carry out comprehensive evaluation and control on the environmental and social risks of suppliers every year, so as to identify the environmental and social risks of suppliers and formulate corresponding countermeasures; • Suppliers with major violation records are required to carry out a third-party risk audit in terms of their social responsibilities and provide the certificate of passing the audit, or they may be disqualified as suppliers; • The Company's anti-corruption policy covers all suppliers, requiring them to comply with anti-corruption requirements and confirming their compliance at the time of annual evaluation.
Support for supplier growth	<ul style="list-style-type: none"> • The Company carries out regular publicity trainings on the theme of "CSR" and "RBA Code of Conduct" for suppliers every year, including environment, labor, ethics, etc.; • The supplier training program carried out in 2023 covered suppliers of silicon wafers, chemicals, gas, target materials, and other categories. The Company conducts on-site audits and assessments and collaborates with relevant departments to organize presentations for suppliers, ensuring that they are aware of the Company's product quality requirements and standards, while providing technical support to suppliers to help them improve their product quality.
Supplier elimination	<ul style="list-style-type: none"> • The Company urges the suppliers with poor performance in terms of environment, labor, and ethics to rectify and confirm that their rectification meets the requirements. Suppliers who fail to meet the rectification requirements will be disqualified.

In addition, the manufacturing process of semiconductor silicon wafers requires a significant amount of water resources and semiconductor manufacturing is associated with high levels of pollution. Failure to address issues such as pollution emissions and wastewater treatment during the production process further threatens water resource sustainability. Therefore, the Company has undertaken actions and performance assessments related to water resource management for its silicon wafer suppliers to mitigate the impact of their production operations on water sources. In 2023, the Company achieved a 100% coverage rate for water resource investigations conducted on its silicon wafer suppliers.

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Overview of the Social Responsibility Requirements for Suppliers of Hua Hong Semiconductor



Labor

- Free choice of occupation
- Youth employees
- Working hours
- Salaries and benefits
- Humane treatment
- Non-discrimination
- Free association



Occupation and Health

- Occupational safety
- Emergency plan
- Occupational injuries and diseases
- Hygiene management
- Physically demanding work
- Machine-related protection
- Public health, canteen, and dormitories
- Communication of health and safety



Environmental Protection

- Environment-related permits and reports
- Preventing pollution and saving resources
- Hazardous substances
- Solid waste
- Air emissions
- Material restrictions
- Management of water resources
- Energy consumption and greenhouse gas emissions



Business Integrity

- Operation with integrity
- No illegitimate interests
- Information disclosure
- Intellectual property rights
- Fair trade, advertisement, and competition
- Confidentiality on identities
- Responsible procurement of minerals
- Privacy



Management System

- Duties and responsibilities of management
- Legal and customer requirements
- Risk assessment and management
- Performance indicators with implementation plans and measures
- Training
- Communication
- Employee feedback, participation, and complaints
- Review and assessment
- Corrective measures

In 2023, the Company further enhanced its automotive electronic supply chain management system, fostering collaborative cooperation among upstream and downstream enterprises within the ecosystem, with an aim to establish a reliable and efficient automotive electronic chip supply chain.

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Supply Chain Management Initiatives at Hua Hong Semiconductor in 2023

Supplier Access	Supplier Evaluation	Supplier Diversity
<ul style="list-style-type: none"> Introduced 28 new domestic suppliers to strengthen the cooperation with excellent domestic suppliers in width and depth. 	<ul style="list-style-type: none"> Conducted more than 500 investigations on related enterprises, including more than 100 on-site visits, and established contacts with nearly 20 domestic key suppliers. Conducted water resource management assessment on its silicon wafer suppliers with 100% coverage. 	<ul style="list-style-type: none"> Made every effort to promote supply chain diversification, resulting in an increase of 20.2% in the diversification rate of "8-inch + 12-inch" raw material suppliers to 65.4% as compared with that of 2022. Increased the diversification rate of 8-inch raw material suppliers by 20.1% to 72%, of which the diversification rate of target materials and silicon wafers exceeded 90%. Increased the diversification rate of 12-inch raw material suppliers by 20.4% to 55%

The external environment affects the stability of raw material supply. To mitigate supply chain risks, the Company has implemented various measures to improve the percentage of raw materials purchased from local suppliers through on-site research and increased sourcing efforts. In addition, the Company has established an effective emergency response system. To ensure sustained, safe, and stable operations, the Company has taken various measures, including improving equipment self-maintenance capabilities, cultivating more sources of income while reducing expenditure, cutting costs while increasing efficiency, closely monitoring market demand, continuously optimizing its product portfolio, and further enhancing the production flexibility of its advanced manufacturing platforms.

Responsible Minerals Management

"Conflict Minerals" are obtained by local armed militias by way of long-time forced labor, child labor, and damaging the environment and ecology. Such metals are also the main capital source of illegal armed organizations. According to the Dodd-Frank Wall Street Reform and Consumer Protection Act and research reports of certain international nongovernmental organizations, such minerals are likely to be used for electronic and electrical products, such as mobile phones and computers, in ICT industries.

Metal mineral resources such as gold (Au), tantalum (Ta), tungsten (W), tin (Sn) and cobalt (Co) will be involved in the Company's production and operation process. The Company has formulated the Conflict Minerals Management Policy in accordance with the Dodd-Frank Wall Street Reform and Consumer Protection Act, to avoid the procurement and financing of minerals that have significant negative social and environmental impacts.

In addition to self-management, the Company carries out traceability and due diligence on its suppliers in accordance with internationally recognized investigation frameworks such as the Responsible Minerals Initiative (RMI) and the Organization for Economic Co-operation and Development (OECD) Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas and requires all suppliers to promise not to purchase "conflict minerals" in conflict-affected and high-risk areas, so as to ensure the safety of minerals in the supply chain.

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Conflict Minerals Management Policy of Hua Hong Semiconductor

The Company takes global social and environmental responsibility as its goal and follows green procurement principles and has promised to undertake the following social and environmental responsibilities in its metal supply chain:

1. Suppliers whose raw materials contain gold (Au), tantalum (Ta), tungsten (W), and tin (Sn) are required to purchase materials according to the Responsible Minerals Policy, while suppliers whose raw materials contain cobalt (Co) are required to disclose the smelters of cobalt.
2. We undertake to cause our suppliers to provide the declaration that they do not use gold (Au), tantalum (Ta), tungsten (W), tin (Sn), and cobalt (Co) from "conflict minerals" and to issue the Conflict Minerals Reporting Template (CMRT) and the Extended Minerals Reporting Template (EMRT) to suppliers as part of our conflict minerals investigation questionnaire.

More than 50% of gold, tin, tantalum and tungsten used by the Company in its production process are from Asia, with over 33% from Europe, and the remaining portion from the Americas. Two-thirds of the cobalt used comes from Asia, while one third is from Europe. During the Reporting Period, none of the gold (Au), tantalum (Ta), tungsten (W), or tin (Sn) used by the Company was from the regions with armed conflict.

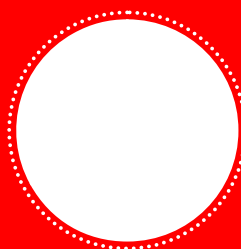
Types and Sources of Minerals Used

Gold (Au), tin (Sn), tantalum (Ta) and tungsten (W)



■ Asia ■ Europe ■ The Americas

Cobalt (Co)



■ Asia ■ Europe

In 2023, the Company conducted conflict minerals questionnaire surveys on 11 suppliers involving minerals, achieving a 100% response rate and coverage. The Company requires its suppliers to trace the origin of minerals and provide information about smelters. If it is determined that the conflict minerals used by a supplier originate from illegal sources in conflict-affected and high-risk areas, the Company discontinues the procurement of non-compliant materials from that supplier and requires that supplier to rectify within a specified timeframe, ensuring that both the supplier and its upstream raw materials comply with the Company's conflict minerals management requirements.

In 2023, no major issues concerning child labor, human rights violations, forced labor, ecological damage, etc. were found during the supply chain due diligence. 100% of the Company's suppliers do not use conflict minerals, as verified by the third-party organization.

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5.2 Anti-Corruption and Bribery

The Company is committed to fostering a corporate culture of integrity, honesty, fairness, and transparency. It strictly complies with the laws and regulations, such as the Anti-Unfair Competition Law of the People's Republic of China and the Interim Provisions on Prohibition of Commercial Bribery, as well as relevant provisions, and has formulated the Undertaking System on Anti-Corruption and Business Ethics, the Anti-Corruption and Anti-Bribery Policy, and other internal management regulations, specifying that all partners and suppliers shall sign the Undertaking Against Commercial Bribery and that all employees shall sign the Undertaking on Business Ethics.

All employees (including part-time employees), senior management, and Board members are required to abide by relevant laws and regulations and practice and behave with integrity, diligence, and self-discipline. Corruption and bribery in all forms are prohibited, including:

Anti-Corruption and Anti-bribery Policy of Hua Hong Semiconductor

prohibiting commercial bribery and maintaining fair competition order;

prohibiting seeking for illegitimate benefits through taking advantage of influence in position and work;

never violating financial management and operation regulations, or seeking personal gain in the name of the Company; prohibiting practicing fraud to undermine the legitimate interests and reputation of the Company;

prohibiting any receipt of presents, cash gifts, securities and monetary items that may cause a negative influence on work.

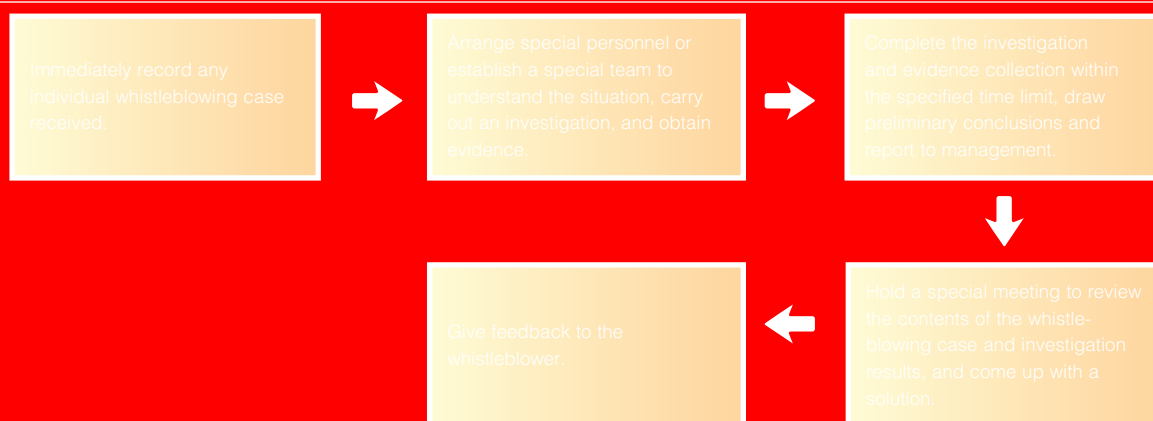
The Company is committed to creating a sound business ethics environment by regularly introducing warning articles and cases in internal publications and providing training activities on anti-corruption and business ethics. The Company focuses on creating a strong foundation for an ethical culture, nurturing the values of integrity and ethics among its employees. In May 2023, Signing Ceremonies for the "Undertaking on Business Ethics" were held in Shanghai and Wuxi, targeting the department heads and above, to further reinforce the commitment to ethical conduct and create a positive and transparent atmosphere within the Company.

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The Company supports employee self-supervision and reporting to maintain a clean and ethical working environment. It provides defined whistle-blowing channels, including E-mail, hotline, and mailbox, to allow employees to make real-name or anonymous complaints and whistle-blowing. The Company comprehensively handles whistle-blowing calls and letters at any time to achieve early detection, resolution, and control, as well as appropriate treatment.

The Company has established comprehensive business ethics supervision and whistle-blowing case handling procedures. Whistle-blowing is thoroughly investigated and evidence is collected, and after review, feedback is provided to the whistleblower regarding the course of action taken. In terms of whistleblower protection, all information related to whistleblowers will be kept strictly confidential. The Company protects the employees or external personnel from unfair treatment such as dismissal, demotion, suspension, intimidation, harassment, or any other form of retaliation for whistle-blowing through legal channels.

Business Ethics Supervision and Whistle-blowing Case Handling Procedures



During the Reporting Period, no corruption, bribery, extortion, fraud, or money-laundering event has occurred to the Company, nor has any litigation case arising from the above matters occurred.

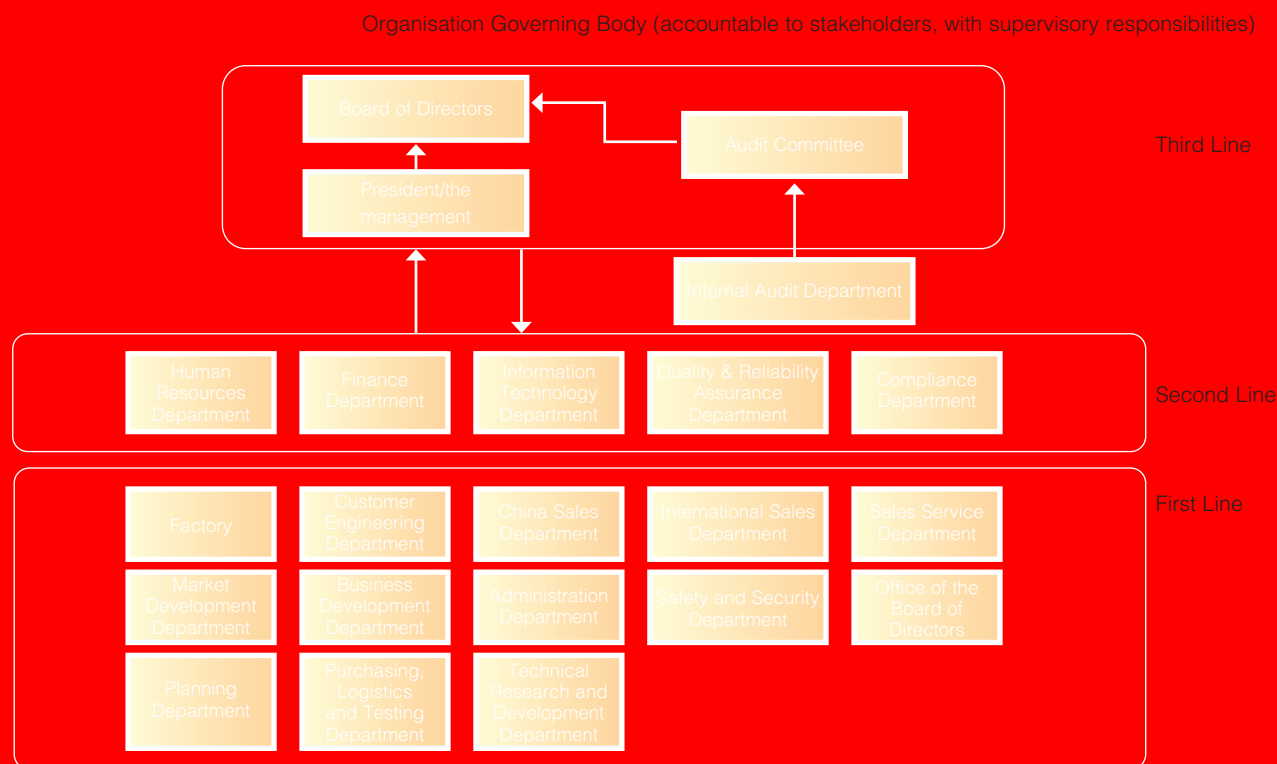
5.3 Risk Management

The Company has established the Rules about Comprehensive Control of Risks that covers all business processes, and conducted regular identification, analysis, and assessment of risk lists to form a long-term mechanism. The Company employs a layered and business line-based approach to prevent its major risks in various areas and implements the control and management of major risks in a targeted manner.

At the organizational level, under the authorization of the Audit Committee and management, the Company has established a risk management organizational structure that aligns with the latest "Three-Line Model" of risk management by the Institute of Internal Auditors (IIA). This structure incorporates the Company's specific characteristics and clearly defines the division of responsibilities for addressing major risks, including the responsible leaders, leading departments, and their respective roles. The internal audit department reports annually to the Audit Committee on key aspects of internal controls, risk management priorities, risk assessments, and corresponding control measures, to ensure a closed-loop approach to addressing major risks.

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Hua Hong Semiconductor's Three Lines of Defence for Risk Management in the Economic Sector



Functions of the First Line:

to provide products/services to customers and manage risks;

Functions of the Second Line:

to provide expertise, support, monitoring, and challenge on risk-related matters;

Functions of the Third Line:

to provide independent and objective confirmation and advice on all matters related to the achievement of objectives.

Based on the "three-line model" of risk management and taking into account the principle of comprehensiveness and importance, the Company continuously optimizes its risk map by consolidating certain similar risk factors, resulting in the identification of 59 key risk factors. The Company also comprehensively prevents and supervises its internal and external risks. In 2023, the Company conducted annual risk assessments at its Shanghai and Wuxi bases. Through methods such as questionnaires, interviews, seminars, on-site inspections, and data analysis, the Company identified and analysed risk areas, with focuses on R&D, product quality, supply chain management, and talent reserves and development, to generate an annual risk management report.

Risk Management System of Hua Hong Semiconductor

We identify and analyze risk areas through methods such as questionnaires, interviews, and seminars and score the risk areas to generate an annual risk management report.

We implement a quarterly risk communication and reporting mechanism, where each business unit collects and reports risk events within their respective areas on a quarterly basis or as needed.

From time to time, we organize risk line management meetings, conduct risk training, and communicate risk issues across business units and at the company level.

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Risk Response Mechanism of Hua Hong Semiconductor

Risk Category	Risk Factor	Countermeasures
Strategy	Strategic planning	The Company formulated strategic objectives from top to bottom and appropriately deconstructed and implemented such objectives in specific business models of corporate operation, to ensure the accomplishment of strategic objectives.
Operation	Research and development	The Company continuously improves the R&D project management system, conducts comprehensive monitoring on R&D project initiation, implementation, and post-evaluation, constantly enhances the ability of project managers, and develops new technologies and products with commercial value in a timely manner.
	Product quality	Relying on the production quality system, we comprehensively implement excellent performance management, strictly adhere to the Zero Defects concept and ensure the delivery of green and high-quality products in a timely manner to ensure the quality stability of all products, especially automotive-grade products, and continuously improve customer satisfaction.
	Talent reserve and development	We set up the talent resume database, carried out a talent inventory, continuously explored recruitment channels, optimized the salary structure, and improved the supporting welfare policies to comprehensively enhance the Company's attraction and employee satisfaction.
	Supply chain	The Company enhances its right to speak in the industry supply chain through its technological advantages, signs medium- and long-term strategic agreements with suppliers, sets a safe inventory level for each production material, regularly reviews the rationality of the safe inventory level, makes timely adjustments according to market changes, and continuously evaluates suppliers' capacity and product quality to ensure stability of the supply chain.
	Information security	The Company has established its information security framework and management policy; implements the risk evaluation procedure for information security every year; and continuously monitors all kinds of key information through the data protection system (DLP), so as to maintain the optimal interests of the Company, its shareholders, its customers, its suppliers, and its employees.
	Environment	We design management procedures based on our observation, assessment, and control of environmental factors and list major environmental factors.
Environment and Safety	Safety check	Safety checks focusing on troubleshooting and fault diagnosis are carried out continuously and regularly.
	Occupational health	We have developed the goals, indicators, and program management forms for our environmental and occupational health and safety programs, in accordance with the Company's established goals, indicators, and program management procedures for health, safety, and environment ("HSE").

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5.4 Compliance in Business Operation

The Company respects and complies with applicable local laws and regulations. For details of specific laws, regulations, and related policies, please refer to the "List of Laws, Regulations, and Relevant Policies Observed by the Company" in the Appendix. The Company closely monitors the promulgation and amendment of laws and regulations, identifies regulations relevant to its operations and production, and promptly improves internal policies and management systems to ensure that its operations are in compliance with laws and regulations. The Company has established an internal audit department, which conducts regular audits of the supply chain procurement, business ethics, anti-corruption, and other areas to ensure the compliance of business activities.

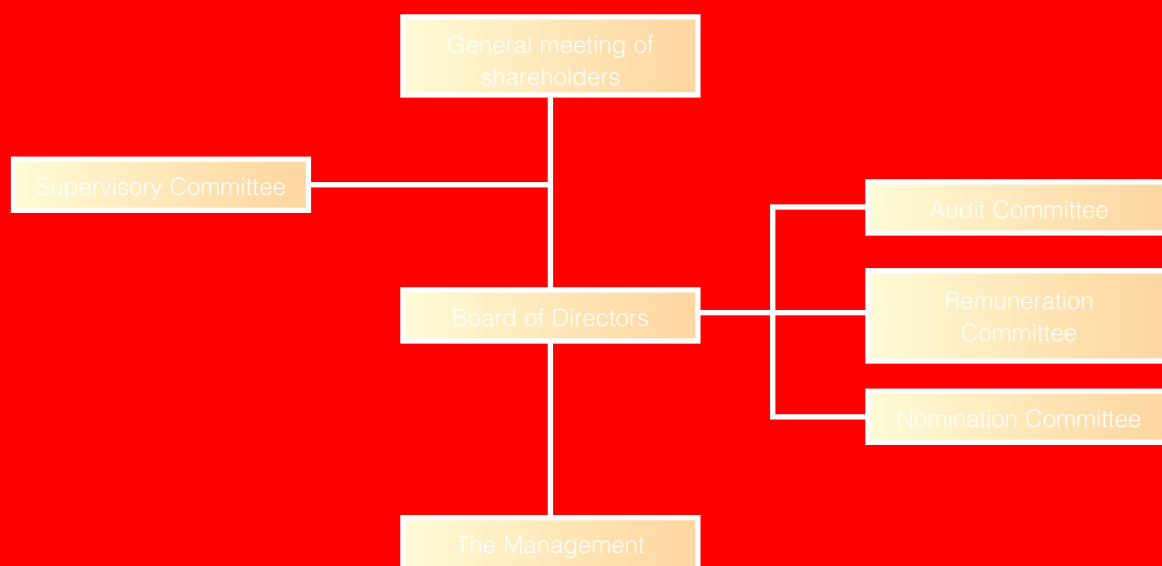
5.5 Corporate Governance

Corporate Governance

The Company has established various regulations and systems, including the Articles of Association, Rules of Procedure for Shareholders' General Meeting, and Rules of Procedure for the Board of Directors, in accordance with laws and regulations, such as the Company Law of the People's Republic of China and the Securities Law of the People's Republic of China. In 2023, the Company was listed on the STAR Market of the Shanghai Stock Exchange. To comply with legal requirements, such as the Guidelines for Corporate Governance of Listed Companies and the Administrative Measures for the Disclosure of Information of Listed Companies, the Company updated the Articles of Association and other corporate governance rules, ensuring standardized operations within the Company.

The Company has established a well-structured governance structure consisting of the general meeting of shareholders, the Board, their respective specialized committees (including the Audit Committee, Remuneration Committee, and Nomination Committee), and the management personnel, leading to a governance mechanism of checks and balances where powers and responsibilities of the organs of control, decision-making, and execution are clearly defined and well-coordinated with each other.

Corporate Governance Structure



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Composition of the Board of Directors and Supervisory Committee and data of related meetings held

Composition of the Board and Supervisory Committee	Data of related meetings held
7 Directors on the Board	5 general meetings held A total of 18 proposals considered
Among them, 3 are independent Directors	10 meetings of the Board held A total of 31 proposals considered

In terms of the regulation of information disclosure, the Company has formulated the Information Disclosure Management System and other management documents to ensure the truthful, accurate, timely, fair, and complete disclosure of relevant information, thereby ensuring that stakeholders have access to the necessary information. During the Reporting Period, the Company promptly reported relevant matters and ensured the quality of information disclosure in accordance with the requirements of information disclosure standards.

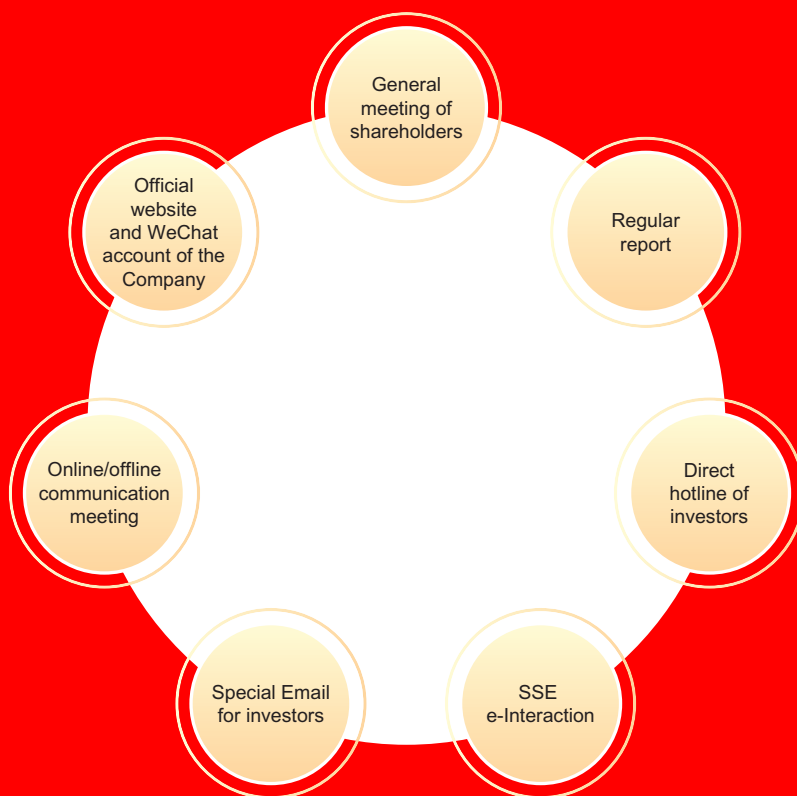
Protection of Investors' Rights and Interests

As a listed company on the Main Board of the Stock Exchange of Hong Kong Limited and the STAR Market of the Shanghai Stock Exchange, the Company strictly complies with the requirements of the Companies Ordinance of Hong Kong, the Main Board Listing Rules of the Hong Kong Stock Exchange, the Administrative Measures for the Disclosure of Information of Listed Companies of the China Securities Regulatory Commission (CSRC), the Rules Governing the Listing of Stocks on the Science and Technology Innovation Board of Shanghai Stock Exchange, and other laws, regulations, and relevant policy requirements. The Company has established an investor relations management team to maintain communication and interaction with various stakeholders, ensuring that investors' reasonable demands are addressed.

The Company communicates with the capital market through multiple channels about the Company's business operation and management status, financial position, product technology, major issues, and other information, based on the principle of "equal treatment of all investors", the requirement on "compliance information disclosure", and the standard of "honest and trustworthy operation and interactive communication". The Company also proactively discloses information related to the Company of concern by investors and fully protects the legitimate rights and interests of investors.

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Investor Communication Channel



To ensure the protection of shareholders' rights and interests, the Company has formulated reasonable profit distribution policies and dividend plan to proactively return to shareholders and provide sustainable and steady returns to investors.

In 2023, the Company held one annual general meeting and four special general meetings of shareholders, at which 18 resolutions were passed by voting. All shareholders of the Company were invited to participate in the above meetings, including all small and medium-sized investors, ensuring the participation rights of small and medium-sized investors. Furthermore, the Company held four performance exchange meetings during the Reporting Period.

6 Industry and Community

Main Progress in 2023

Measures	Achievements
Industry Development	<ul style="list-style-type: none"> Held the "Core Connectivity, Vehicle Connectivity, and Chain Connectivity" Automotive Chip Ecosystem Cooperation Conference to promote the cooperation and high-quality development of the automotive chip ecosystem
Volunteer Service and Charity	<ul style="list-style-type: none"> Conducted welfare visits to nursing homes for 18 consecutive years Organized four sessions of integrated circuit-themed science popularization activities

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6.1 Industry Development

The Company actively participated in the industry co-development activities to facilitate high-quality development of the IC industry and actively attended the industry summit to jointly promote high-quality development of the industry.

In 2023, the Company held the "Core Connectivity, Vehicle Connectivity, and Chain Connectivity" Automotive Chip Ecosystem Cooperation Conference, joining forces with nearly a hundred businesses in the integrated circuit, automotive components, and assembled vehicles sectors to promote cooperation of the automotive chip ecosystem and foster collaborative industry development under the spirit of "identifying opportunities in industrial development by amassing the power of technical innovation".

6.2 Volunteer Service and Charity

In order to enhance safety awareness of community residents, for six years the Company has provided the "First Aid Course for Accidents" in the community where the headquarters operates, including First Aid knowledge and cardiopulmonary resuscitation.

The Company is enthusiastic in public welfare undertaking and has organized employees to regularly visit the elderly in the community nursing home every year, to chitchat, make wontons, and carry out activities, so as to entertain and care for the elderly. The Company has been visiting the Meixin Nursing Home for 18 consecutive years, demonstrating its commitment to volunteer service. Furthermore, the Company encourages employees to utilize their mornings by volunteering at community kindergartens, to actively embody the "Hua Hong 520 Spirit" through practical actions.

The Company is dedicated to youth education. During the Zhangjing Science Hall Science Festival themed "Enlightening with Light, Exploring with Children (以光育光, 探索'童'行)", the Company organized four sessions of integrated circuit-themed science popularization activities. Through informative lectures and educational courses, over 130 children were introduced to the process of chip manufacturing and the everyday applications of chips in daily life. The Company also donated school bags and sporting goods to Lada Primary School in Temuli Town, Butuo County, Liangshan Yi Autonomous Prefecture, Sichuan Province *(四川省凉山彝族自治州布拖縣特木里鎮拉達小學), and the students. In 2023, the Company launched a paired-up assistance in poverty alleviation program and donated RMB50,000 to Youqiao Village, Chongming District, Shanghai.

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7 Appendix

7.1 Quantitative Performance

Environment

Performance Indicators	Unit	2021	2022	2023
Emissions				
Total air emissions	10,000 m ³	2,319,307	2,391,024	2,747,929
Nitrogen oxide (NOx) emissions	Kg	36,857	32,650	33,719
Sulfur dioxide (SO ₂) emissions	Kg	2,239	3,546.12	5,251.56
Total wastewater discharge	10,000 m ³	704	832	898
Total hazardous waste ¹	Ton	17,363	20,385	20,797
Hazardous waste produced per unit output	Kg/8-inch wafers	4.96	4.88	5.29
Total non-hazardous waste ²	Ton	8,981	9,864	9,269
Non-hazardous waste produced per unit output	Kg/8-inch wafers	2.57	2.36	2.36
Use of Energy and Resources				
Total electricity consumed ¹	MWh	867,682	954,667	1,030,352
Natural gas consumed ¹	m ³	11,456,569	10,530,287	11,048,312
Gasoline consumed ¹	L	/	/	43,949
Diesel consumed ¹	L	/	/	15,911
Heat purchased ¹	GJ	/	/	134,940
Hydrogen ¹	m ³	/	/	1,149,860
Integrated energy consumption ³	MWh	991,663	1,065,002	1,168,170
Integrated energy consumed per unit output	MWh/8-inch wafers	0.28	0.25	0.30
Total water consumed ⁴	m ³	15,707,212	18,010,226	19,076,734
Of which: Water from municipal water supply	m ³	8,928,040	10,284,063	11,127,266
Wastewater reused	m ³	6,788,287	7,726,163	7,949,468
Water consumed per unit product ⁵	m ³ /8-inch wafers	2.55	2.46	2.83
Recycled/reused water	m ³	86,119,337	107,163,560	126,544,660
Total packaging materials used for the shipment of finished products	Ton	253.5	313.32	336.92
Packaging materials used for the shipment of per unit finished product	Kg/8-inch wafers	0.07	0.07	0.09
Recycled packaging materials used for the shipment of finished products	Ton	48.5	54.9	66.33
GHG Emission				
GHG emissions ⁶	Ton of CO ₂ equivalent	713,649	497,938	537,070
Of which: Direct GHG emissions	Ton of CO ₂ equivalent	24,803	24,877	22,881
Indirect GHG emissions ⁷	Ton of CO ₂ equivalent	697,899	473,060	514,189
GHG emissions per unit output	Ton of CO ₂ equivalent/8-inch wafers	0.21	0.12	0.14

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Notes:

- 1 In 2023, the expansion project of the Wuxi Production Base was put into operation, resulting in an increase in energy consumption, waste gas, waste water, hazardous and non-hazardous waste generation.
- 2 Non-hazardous waste include sludge produced in wastewater treatment and general waste.
- 3 Integrated energy consumption included electricity purchased, natural gas, gasoline, diesel, heat purchased, and hydrogen.
- 4 Total water consumption = water consumption from municipal water supply + wastewater reuse.
- 5 In calculation, water consumed per unit product only includes water from the municipal water supply.
- 6 GHG emissions are calculated in accordance with the GB/T 32150 General Guideline for Calculation and Reporting of GHG Emissions from Industrial Enterprises and the GB/T 32151 Requirements on Calculation and Reporting of GHG Emissions published by the Standardization Administration of China.
- 7 In 2022 and 2023, the indirect GHG emissions in Shanghai and Wuxi plants were calculated according to the Guidelines for Accounting and Reporting of Greenhouse Gas Emissions in Shanghai (Trial) (Hu Fa Gai Huan Zi [2012] No. 180) and the Notice on the 2023-2025 Corporate Greenhouse Gas Emission Reporting Management in Power Generation Industry, respectively, among which, Shanghai plant uses a default value of electricity emission factor of $4.2\text{tCO}_2/10^4\text{kWh}$, and Wuxi plant uses the national average grid emission factor of $0.5703\text{tCO}_2/\text{MWh}$ when calculating.

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Employment and Labor Practice

Performance Indicators	Unit	2021	2022	2023
Employment				
Total number of full-time employees	Person	6,084	6,760	6,863
Including: Number of male employees	Person	4,426	4,932	5,039
Number of female employees	Person	1,658	1,828	1,824
Number of employees working under a labor contract with the employer	Person	6,084	6,760	6,863
Number of employees working under a labor contract with a labor dispatch company	Person	85	81	53
Part-time employees	Person	0	0	0
Number of employees aged under 30	Person	2,676	2,983	2,894
Number of employees aged between 30 and 50	Person	3,271	3,624	3,811
Number of employees aged above 50	Person	137	153	158
Number of employees from Mainland China	Person	6,075	6,751	6,855
Number of foreign employees	Person	9	9	8
Health and Safety				
Occupational disease incidence	%	0	0	0
Number of work-related fatalities	Person	0	0	0
Percentage of work-related fatalities	%	0	0	0
Lost days due to work injury	Day	367	83	61
Employee Training				
Average training hours completed per employee	Hour	119.9	122.2	133.7
Including: Average training hours completed per non-management employee	Hour	121.5	123.7	135.6
Average training hours completed per management member	Hour	23.5	26.5	31.6
Average training hours completed per female employee	Hour	123.8	124.3	125.1
Average training hours completed per male employee	Hour	118.5	121.4	136.8
Percentage of employees trained	%	100	100	100
Including: The percentage of non-management employees trained	%	100	100	100
Percentage of management members trained	%	100	100	100
Percentage of female employees trained	%	100	100	100
Percentage of male employees trained	%	100	100	100

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Product Responsibility and Customer Service

Performance Indicators	Unit	2021	2022	2023
Product Responsibility and Customer Service				
Product return rate	%	0.05	0.11	0.087
Percentage of products sold subject to recalls for safety and health reasons	%	0	0	0
Customer Service				
Number of complaints received in relation to products and services	Case	0	0	4
Performance for percentage of customer complaints resolved	%	/	/	100%

Supply Chain Management

Performance Indicators	Unit	2021	2022	2023
Total number of suppliers ¹	Supplier	545	551	561
Total number of local suppliers	Supplier	410	413	420
Total number of foreign suppliers	Supplier	136	138	141
Number of suppliers assessed ²	Supplier	115	112	114
Number of suppliers subject to rectification	Supplier	0	0	0
Percentage of raw and auxiliary material suppliers signing the Environmental Protection Undertaking	%	100	100	100
Percentage of raw materials purchased from local suppliers ³	%	29	31	32

Notes:

- 1 The reviewed data for the last three years for the relevant performance indicators for the total number of suppliers is based on the data disclosed in the table of the annual report.
- 2 The number of suppliers which were assessed by the Company in terms of labor, health and safety, environment, and business ethics.
- 3 Raw materials purchased include silicon slices, quartz, target materials, gases, chemicals, and other raw materials for production.

Anti-corruption

Performance Indicators	Unit	2021	2022	2023
Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period	Case	0	0	0
Total hours of anti-corruption training received by employees	Hour	/	/	2,542

Community Investment

Performance Indicators	Unit	2021	2022	2023
Number of employees participating in volunteer services	Person	1,324	4,189	1,108
Total hours of volunteer activities	Hour	1,986	6,283	1,364
Community investment	RMB	/	/	50,000

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Economic Performance

Performance Indicators	Unit	2021	2022	2023
Social contribution per share ¹	RMB	3.31	5.46	3.59

Note:

- 1 Social contribution per share = (net profit of the Company + tax paid to the state during the year + salaries paid to employees + interest on borrowings paid to banks and other creditors + value created for other stakeholders, e.g. donations – other social costs due to environmental pollution)/total number of shares of the Company.

7.2 List of Laws, Regulations and Relevant Policies Observed by the Company

Fields	Names of Laws and Regulations
Environmental Protection	Environmental Protection Law of the People's Republic of China, Law of the People's Republic of China on Prevention and Control of Atmospheric Pollution, Urban and Rural Planning Law of the People's Republic of China, Marine Environment Protection Law of the People's Republic of China, Energy Conservation Law of the People's Republic of China, etc.
Product and Service	Accounting Law of the People's Republic of China, Company Law of the People's Republic of China, Constitution of the People's Republic of China, Law of the People's Republic of China on Product Quality, Customs Law of the People's Republic of China, Metrology Law of the People's Republic of China, Foreign Trade Law of the People's Republic of China, Anti-Unfair Competition Law of the People's Republic of China, Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals ("REACH"), Waste Electrical and Electronic Equipment (WEEE), Restriction of Hazardous Substances ("RoHS"), etc.
Information Security and Privacy Protection	Cyber Security Law of the People's Republic of China, Cryptography Law of the People's Republic of China, Regulation on the Administration of Commercial Cipher Codes, Personal Information Protection Law of the People's Republic of China
Intellectual Property Protection	Patent Law of the People's Republic of China, Copyright Law of the People's Republic of China, Trademark Law of the People's Republic of China, etc.
Employee Employment	Law of the People's Republic of China on Employment Contracts, Law of the People's Republic of China on Protection of Women's Rights and Interests, Employment Promotion Law of the People's Republic of China, Social Insurance Law of the People's Republic of China, Civil Code of the People's Republic of China, Labor Law of the People's Republic of China, Criminal Law of the People's Republic of China, Measures for the Administration of Health Insurance, Measures for Application for and Payment of Unemployment Insurance Money, etc.
Occupational Health and Safety	Law of the People's Republic of China on Prevention and Control of Occupational Diseases, Production Safety Law of the People's Republic of China, Regulation on Work-Related Injury Insurances, etc.
Corporate Governance	Company Law of the People's Republic of China, Securities Law of the People's Republic of China, etc.

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7.3 Benchmarking Index

The Hong Kong Stock Exchange's Environmental, Social and Governance Reporting Guide (effective from 31 December 2023)

Part B: Mandatory Disclosure Requirements

Mandatory Disclosure Items	Section in the Report
Governance Structure	1. ESG Management System
Reporting Principles	7.5 Reporting Principles
Reporting Boundary	7.4 Preparation of the Report

Part C: “Comply or explain” Provisions

Aspects, General Disclosures and KPIs	Disclosure Section
Subject Area A. Environmental	
Aspect A1. Emissions	
General Disclosure A1	2.5 Emissions and Waste Management
KPI A1.1	7.1 Quantitative Performance
KPI A1.2	2.5 Emissions and Waste Management 2.3 Climate Change Mitigation and Adaptation 7.1 Quantitative Performance
KPI A1.3	7.1 Quantitative Performance
KPI A1.4	7.1 Quantitative Performance
KPI A1.5	2.5 Emissions and Waste Management 1.2 ESG management strategies and targets
KPI A1.6	2.5 Emissions and Waste Management 1.2 ESG management strategies and targets
Aspect A2. Use of Resources	
General Disclosure A2	2.2 Energy Management 2.4 Water Resources Management
KPI A2.1	7.1 Quantitative Performance
KPI A2.2	7.1 Quantitative Performance
KPI A2.3	2.2 Energy Management 1.2 ESG management strategies and targets
KPI A2.4	2.4 Water Resources Management 1.2 ESG management strategies and targets
KPI A2.5	7.1 Quantitative Performance
Aspect A3. Environment and Natural Resources	
General Disclosure A3	2.2 Energy Management 2.4 Water Resources Management
KPI A3.1	2.2 Energy Management 2.4 Water Resources Management
Aspect A4. Coping with Climate Change	
General Disclosure A4	2.3 Climate Change Mitigation and Adaptation
KPI A4.1	2.3 Climate Change Mitigation and Adaptation

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Aspects, General Disclosures and KPIs	Disclosure Section
Subject Area B. Social Employment and Labour Practices	
Aspect B1. Employment	
General Disclosure B1	3.1 Employee Interests and Benefits
KPI B1.1	7.1 Quantitative Performance
KPI B1.2	3.3 Employee Development and Training
Aspect B2. Health and Safety	
General Disclosure B2	3.2 Employee Health and Safety
KPI B2.1	7.1 Quantitative Performance
KPI B2.2	7.1 Quantitative Performance
KPI B2.3	3.2 Employee Health and Safety
Aspect B3. Development and Training	
General Disclosure B3	3.3 Employee Development and Training
KPI B3.1	7.1 Quantitative Performance
KPI B3.2	7.1 Quantitative Performance
Aspect B4. Labor Standards	
General Disclosure B4	3.1 Employee Interests and Benefits
KPI B4.1	3.1 Employee Interests and Benefits
KPI B4.2	3.1 Employee Interests and Benefits
Subject Area B. Social Operating Practices	
Aspect B5. Supply Chain Management	
General Disclosure B5	5.1 Responsible Value Chain
KPI B5.1	7.1 Quantitative Performance
KPI B5.2	5.1 Responsible Value Chain
KPI B5.3	5.1 Responsible Value Chain
KPI B5.4	5.1 Responsible Value Chain
Aspect B6. Product Responsibility	
General Disclosure B6	4.2 Product Quality and Safety
	4.3 Customer Relationship Management
KPI B6.1	7.1 Quantitative Performance
KPI B6.2	4.3 Customer Relationship Management
	7.1 Quantitative Performance
KPI B6.3	4.3 Customer Relationship Management
KPI B6.4	4.3 Customer Relationship Management
KPI B6.5	4.3 Customer Relationship Management

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Aspects, General Disclosures and KPIs	Disclosure Section
Aspect B7. Anti-corruption	
General Disclosure B7	5.2 Anti-corruption and Bribery
KPI B7.1	7.1 Quantitative Performance
KPI B7.2	5.2 Anti-corruption and Bribery
KPI B7.3	5.2 Anti-corruption and Bribery
Aspect B8. Community Investment	
General Disclosure B8	6.2 Voluntary Service and Public Charity
KPI B8.1	6.2 Voluntary Service and Public Charity
KPI B8.2	7.1 Quantitative Performance

Rules Governing the Listing of Stocks on the STAR Market of Shanghai Stock Exchange (revised in August 2023)

Disclosure requirement	Report Section
4.4.1 General	1 ESG Management System
4.4.2 Environmental protection responsibilities	2 Environmental Responsibilities
4.4.2(1) Complying with environmental laws, regulations and industry standards	2.1 Environmental Management System
4.4.2(2) Formulating and implementing its environmental plan	2.1 Environmental Management System
4.4.2(3) Efficiently use natural resources such as energy, water and raw materials	2.4 Resource Management
4.4.2(4) Dispose of pollutants in accordance with law	2.5 Emissions and Waste Management
4.4.2(5) Building and operating effective pollution control facilities	2.1 Environmental Management System 2.5 Emissions and Waste Management
4.4.2(6) Fully paying environmental taxes	2.1 Environmental Management System
4.4.2(7) Ensuring the environmental security of the supply chain	5.1 Responsible Value Chain
4.4.2(8) Other due environmental responsibilities	2.1 Environmental Management System
4.4.3 Production and product safety responsibilities	4 Products and Services
4.4.3(1) Complying with product safety laws and regulations and industry standards	4.2 Product Quality and Safety
4.4.3(2) Establishing a safe and reliable production environment and process	4.2 Product Quality and Safety
4.4.3(3) Establishing product quality and safety protection mechanism and product safety emergency plan	4.2 Product Quality and Safety
4.4.3(4) Other due production and product safety responsibilities	4.1 Product R&D and Innovation 4.2 Product Quality and Safety 4.3 Customer Relationship Management
4.4.4 Protection of the rights and interests of employees	3 Employee-Related Responsibilities
4.4.4(1) Establishing management system on employee employment and dismissal, salary and benefits, social insurance, working hours and punishment on violations	3.1 Rights and Benefits of Employees
4.4.4(2) Creating a working environment and supporting safety measures to prevent occupational hazards	3.2 Employee Health and Safety
4.4.4(3) Carrying out necessary expertise and vocational skills training on employee	3.3 Employee Development and Training
4.4.4(4) Other due responsibilities to protect the rights and interests of employees	3.1 Rights and Benefits of Employees
4.4.5 Scientific ethics	4.1 Product R&D and Innovation

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Guidelines for the Application of Self-regulatory Rules for Companies Listed on the STAR Market of the Shanghai Stock Exchange No.2 –Voluntary Disclosure of Information (2022 Revision)

	Terms and Disclosure	Report Section
(VI)-1	Basic Information on Research and Development	4.1 Product R&D and Innovation, 6.1 Industry Development
(VI)-2	Research and Development Feasibility	2.6 Green Products, 4.1 Product R&D and Innovation
(VI)-3	Necessary Risk Warning	5.3 Risk Management
(VI)-4	Impact of Research and Development on the Company	2.6 Green Products, 4.1 Product R&D and Innovation
(XIV)-1	Environmental Responsibility	2.1 Environmental Management System, 2.2 Energy Management, 2.3 Climate Change Mitigation and Adaptation, 2.4 Resource Management, 2.5 Emissions and Waste Management
(XIV)-2	Employee Protection and Development	3.1 Employee Interests and Benefits, 3.2 Employee Health and Safety, 3.3 Employee Development and Training
(XIV)-3	Product Safety, Compliance, Public Welfare Activities	4.1 Product Quality and Safety, 5.4 Compliance in Business Operation, 5.5 Corporate Governance, 6.2 Voluntary Service and Public Charity
(XIV)-4	Corporate Governance and investor protection	5.5 Corporate Governance

7.4 Preparation of the Report

This report represents the 8th Environmental, Social and Governance Report of Hua Hong Semiconductor Limited, which disclose the Company's principles, management approaches, initiatives, and achievements regarding ESG issues in its business operations to investors and other stakeholders.

Scope of the Report

The report covers Hua Hong Semiconductor Limited ("Hua Hong Semiconductor" and the "Company") and its subsidiaries, and unless otherwise specified, is consistent with the scope of the annual consolidated financial statements of Hua Hong Semiconductor (stock code: 01347.HK/688347.SH) for the same period.

Reporting Period

The reporting period is from 1 January 2023 to 31 December 2023. Unless otherwise stated, the data presented in this report are data for that period.

SOCIAL AND GOVERNANCE REPORT

Basis for preparation

This Report is prepared in accordance with Appendix C2 "Environmental, Social and Governance Reporting Guide" (effective from 31 December 2023) of the Listing Rules published by the Hong Kong Stock Exchange with reference to the Rules Governing the Listing of Stocks on the STAR Market of Shanghai Stock Exchange (revised in August 2023) and the "Guidelines for the Application of Self-regulatory Rules for Companies Listed on the STAR Market of the Shanghai Stock Exchange No.2 –Voluntary Disclosure of Information (2022 Revision)".

Data Declaration

The data and cases presented in the report are based on the official records of the Company's actual operations.

All financial data in the report are denominated in RMB. In case of any discrepancies between the financial data in this report and the Company's annual financial report, the latter shall prevail.

Access to the Report

This report is released in electronic form on such platforms as the e Company's official website (<https://www.huahonggrace.com>).

Contact Us

For any inquiries on the Report, please contact us through the following methods:

Address: 288 Halei Road, Zhangjiang Hi-Tech Park, Shanghai, PRC

Email: IR@hhgrace.com

7.5 Reporting Principles

- **Materiality**
The Company identifies the substantive issues in relation to business operation concerned by investors and other stakeholders as the focus of this Report. The reporting on substantive issues in this Report also focuses on the industry characteristics and regional characteristics involved in the Company's operation. The details of analysis process and results of material issues are set out in the section headed "ESG Management System" of this Report. In the meantime, this Report highlights the ESG matters that may have significant influence on investors and other stakeholders.
- **Accuracy**
Best efforts have been made to ensure the accuracy of the information contained in the report. Among them, data caliber, calculation basis, and assumptions have been explained in the calculation of quantitative information, to ensure that the calculation error range will not cause misleading of information users. For quantitative information and notes, please refer to the relevant sections in the report.

The Board guarantees that there are no misrepresentations or misleading statements contained in or material omissions from the report.

SOCIAL AND GOVERNANCE REPORT

- **Balance**
The Report reflects the objective facts and discloses both positive and negative information related to the Company impartially. The Company has searched the objects within the scope of this Report through Shanghai Qingyue Credit Database (data.epmap.org), and did not find any negative events that should be disclosed but not disclosed during the Reporting Period.
- **Clarity**
This report is published in simplified Chinese. This report contains tables and model diagrams as an aid to understanding the textual content of this report. To facilitate quicker access to information for stakeholders, this report provides a table of contents and benchmarking index tables for ESG standards.
- **Quantitative and consistency**
This Report discloses key quantitative performance indicators and historical data as much as possible. The statistical and disclosure methods of the same indicator in this Report are consistent in different reporting periods; Any change, where possible, in the statistical and disclosure methods shall be fully explained in the notes to the Report, so that the stakeholders can conduct meaningful analysis and evaluate the development trend of the Company's ESG performance level. For details, see the section headed "Quantitative Performance" of the Report.
- **Integrity**
The scope of disclosures in this report is consistent with the scope of the Company's consolidated financial statements.
- **Timeliness**
This is an annual report covering the period from 1 January 2023 to 31 December 2023. The Company strives to publish the report as soon as possible after the end of the reporting year to provide timely information for stakeholders' decision-making.
- **Verifiability**
The cases and data in this report are derived from the original records or financial reports of the actual operations of the Company. The Company adopts the HiESG Performance Management System to manage quantitative ESG performance over the years. The source of the disclosed data and the calculation process are traceable and can be used to support the inspection by external assurance works.



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