2020

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT
環境、社會及管治報告

HHGrace | 華虹宏力

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)
(Stock Code: 1347)
(股份代號：1347)

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Introduction

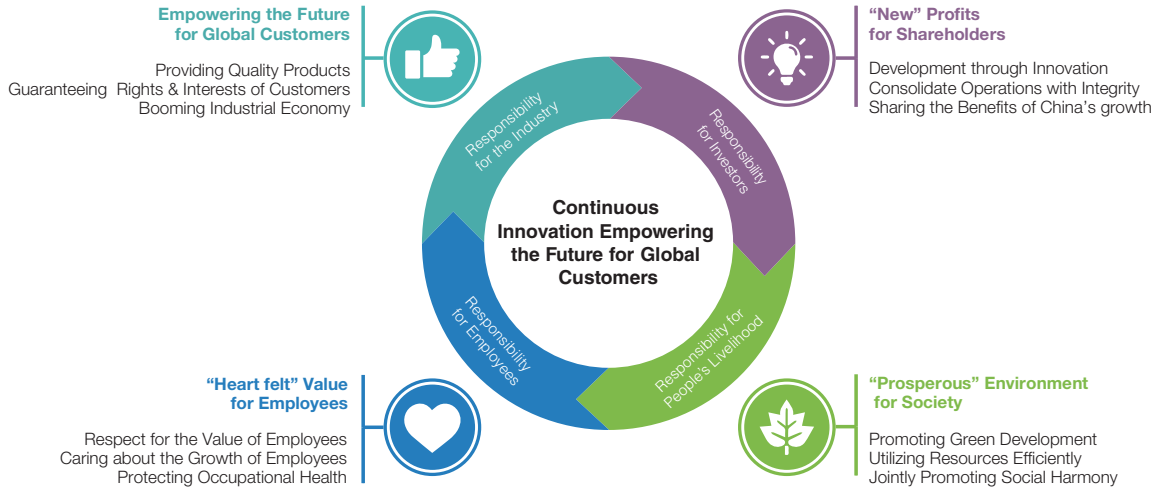
Our concept of sustainable development and the pursuit of long-term performance is to achieve these under consideration of economic, environmental, and social aspects, as these aspects interact with and support each other, enabling long-term, sustainable performance. We strictly comply with all local applicable laws and meet social expectations in our operations, and we align our standards for environmental protection to those of the leaders in international industry. We devote ourselves to sustainable cities and communities. In following our corporate vision of Continuous Innovation and Empowering the Future for Global Customers, we promptly respond to Stakeholders, including customers, employees, investors, communities, and countries where we operate, toward the goal of sustainable development of enterprises and society.

1 Social Responsibility Management System

1.1 Social Responsibility Management Policy

We believe fulfillment of corporate social responsibility first requires pro-active adherence to and implementation of the highest international standards of business and social ethics, while creating value for and sharing value with all Stakeholders. To this end, in addition to compliance with all laws, regulations, and rules of the state in terms of operation, we also incorporate environmental and social responsibilities directly into our business strategies and operations. We take a prudent approach to manage our environmental and social risks by perfecting our management system, improving supply chain performance, and reducing resource consumption and environmental emissions. We encourage innovation-driven development and foster innovative talents, thereby promoting social harmony.

Provided by the Board of Directors as the CSR Decision Maker, the following four aspects summarize the social responsibility of the corporate vision Continuous Innovation and Empowering the Future for Global Customers.



Implementation Concentration of CSR Planning for Hua Hong Semiconductor Limited

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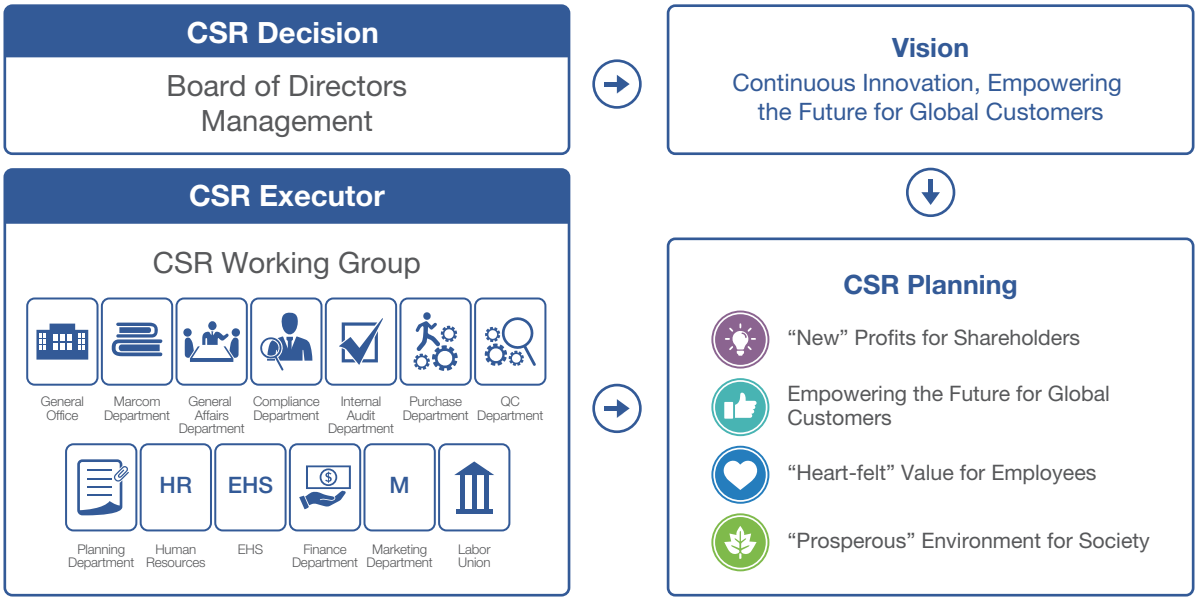
1.2 Social Responsibility Management Structure

Effective social responsibility management requires the ongoing attention of senior management and the involvement of all employees. We established a Corporate Social Responsibility ("CSR") working group to set up a CSR organization system that enables management to participate in and coordinate with functional departments horizontally and member companies vertically. The working group comprises responsible officers from diverse functional departments.



Structure for CSR Management

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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, we have determined the following to be our Stakeholders: our shareholders; customers; employees; government agencies and regulators; partners; communities; and the public. Our Company actively communicates with all of these Stakeholders via various channels and methods, including websites, media, meetings, reports, and other business and social activities.

Expectations and Responses 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	Risk management, economic performance, industrial development, customer communication and satisfaction	Shareholders' meetings, financial reports, performance reports, results road shows, etc.
Customers	IDMs, systems and fabless semiconductor companies	Protection of customer rights and information, product and service quality, customer communication and satisfaction	Product exhibitions, customer research, technical seminars, B2B (such as E-tapeout systems, WIP report and WAT report, etc.), customer service hotlines and complaints, customer satisfaction surveys, etc.
Employees	Our employees and contract personnel who serve our Company on a continuous basis	Employee interests and welfares, employee health and safety, employee development and training	Employee activities, Employee Representatives Congress, Intranet, trainings, self-service systems and employee manuals, internal publications, etc.
Government and regulators	Industry, tax, environmental protection, security and other departments, local governments, SFC and other governmental or regulatory authorities	Compliant operation, green products, emissions management and energy utilization	On-site visit, official correspondences, policy enforcement, information disclosure, etc.
Partners	Suppliers, research institutions, industry associations, etc.	Industrial development, compliant operation, product and service quality, customer satisfaction and communication	Public tender conferences, strategic cooperation negotiations, exchanges and visits, etc.
Communities and the public	Communities in which we operate, the public and media, etc.	Green products, emissions management, community and public benefit	Community activities, employee volunteer activities, public welfare activities, social cause campaigns, etc.

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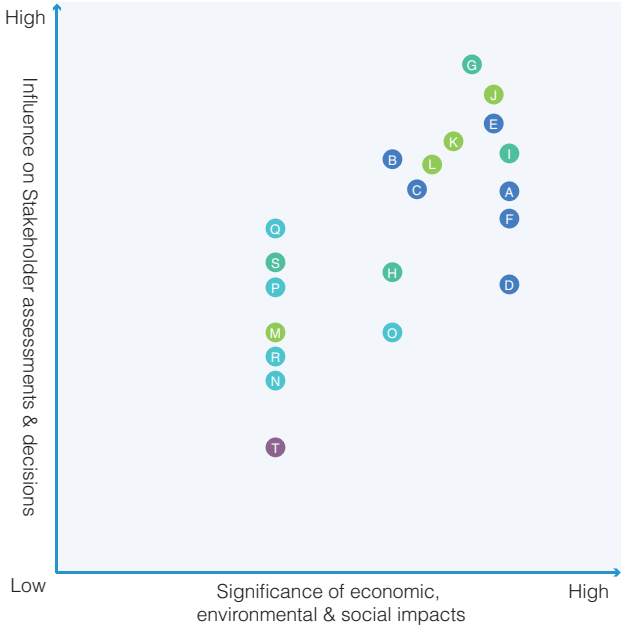
1.4 Identification and Analysis of Substantive Issues

We check social responsibility issues on a regular basis and identify the more substantive ones on which to focus our operations, reporting, and disclosures through periodic identification, evaluation, and screening. We consider both internal and external factors, such as our strategic and operational direction, Stakeholders' concerns and expectations, as well as national and international standards and policies.

In 2020, we have identified 20 substantial issues by reference to the Sustainability Reporting Standards (2016) issued by the Global Reporting Initiative (GRI) and according to focuses of internal and external stakeholders, policy researches and peer benchmarking analysis. Among them, the importance of energy consumption and water use has increased compared with the previous year.



Economy	A	Risk management
	B	Compliance management
	C	Anti-corruption
	D	Economic performance
	E	Innovative operation
	F	Industry development
Products	S	Sustainable development management of supply chain
	G	Product/service safety
	H	Green products
	I	Customer communication and satisfaction
Environment	J	Customers' interests and information protection
	K	Energy utilization
	L	Water resource utilization
	M	Emissions management
Employees	N	Reduction of and adaptation to climate changes
	O	Labor standards
	P	Employee interest and benefits
	Q	Employee health and safety
	R	Employee development and training
Community	T	Community and social welfare

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2 Environmental Responsibilities

The Company takes environmental protection as its own duty; complies with laws, regulations, and industry standards in relation to environmental protection; makes efficient use of energy and other resources; attaches great importance to pollution prevention; continuously invests in the development and promotion of green products; reduces the negative impact of its own operation on the environment; and strives for the sustainable development of enterprises and society.

2.1 Environmental Management

The Company gradually shifted its focus from production management to control of product full-life cycles and risks; committed to improving environmental performance at every step of the process, including procurement of raw materials, production, and waste management; and passed the new ISO 14001:2015 environmental management system certification. In terms of supervision and management, we added a review and follow-up system to the security management system in the Company's intranet. This system collects and lists matters violating environmental protection regulations, which are identified daily by management, following up and recording subsequent actions through regular system reminders.

As of the end of the reporting period, the Company was not subject to any environmental complaints or penalties, or involved in any environmental pollution incidents.

Certification in Relation to Environmental Responsibilities

Environmental Management	Certification Authority	Date of First Certification
ISO 14001:2015 Environmental Management System	British Standards Institutions (BSI)	26 April 2002

Green Building	Certification Authority	Date of First Certification
"Leadership in Energy and Environmental Design" (LEED v4) Gold Award	U.S. Green Building Council (USGBC)	October 2019
Two-Star Green Building Design Label Certificate	Chinese Society for Urban Studies (中國城市科學研究院)	December 2019

Green Products	Certification Authority	Date of First Certification
QC 080000 Hazardous Substance Process Management System	BSI	18 November 2009

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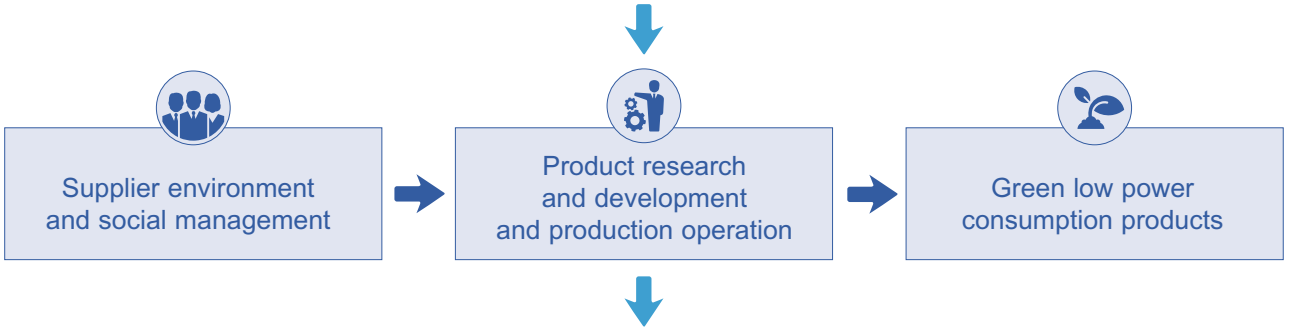
Overview on Environmental Management Performance

The Company's production and operation requires the use of such resources as energy, water, and other raw materials and generates emissions such as air emission, wastewater, and waste. In addition, we are planning to promote supplier environmental management and to provide low power consumption green products in an effort to achieve better environmental management performance throughout the value chain.

Water Resources	
Total water consumed	9,907,631 m^3
Of which: Water from municipal water supply	7,035,272 m^3
Wastewater reused	2,872,359 m^3
Water consumed per unit product	2.89 m^3 per 8-inch wafer
Volume of recycled water	4,042,020 m^3
Energy	
Total electricity consumed	720,840 MWh
Electricity consumed per unit product	313 kWh per 8-inch wafer
Natural gas consumed	10,312,006 m^3
Natural gas consumed per unit product	4.49 m^3 per 8-inch wafer
Packaging Materials	
Total packaging materials used for finished products	128 tons
Other Raw Materials	
Silicon slice, quartz, target material, gas, chemicals, and other raw materials for production	



Waste	
Total hazardous waste	9,262 tons
Hazardous waste produced per unit product	3.96 kg per 8-inch wafer
Total non-hazardous waste	6,143 tons
Non-hazardous waste produced per unit product	2.67 kg per 8-inch wafer
Air Emissions	
Total air emissions	17,737.40 million m^3
Nitrogen oxide (NOx) emissions	19,688 kg
Sulfur Dioxide (SO_2) emissions	338 kg
Greenhouse gas	
GHG emissions	448,614 tCO_2e
Of which: Direct GHG emissions	18,135 tCO_2e
Indirect GHG emissions	430,479 tCO_2e
GHG emissions per unit product	0.23 tCO_2e per 8-inch wafer
Wastewater	
Total wastewater discharge	6.03 million m^3

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Green Culture

We continuously promote the environmental protection concept inside and outside the Company. We make good use of science and technology in our daily operations to implement the concept of sustainable development and environmental protection measures.

Practice in Green Culture

Saving paper around the office	• 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	• Turning off the power supply when leaving work or for a long time. • Reasonably setting air conditioning temperature above 26℃ in summer and below 20℃ in winter.
Saving water	• Developing employees' awareness of saving water and posting water saving tips.
Waste disposal	• Classifying domestic waste in each factory into 4 categories, namely dry, wet, recyclable, and harmful waste, and requiring all employees to answer online waste classification questions. • Participating in E-waste recycling activities at alah.com.
Commuting	• Encouraging employees to commute by public transport. • Using new energy vehicles as shuttle buses for the Company.

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2.2 Cleaner Production

Air Emissions

We follow the regulations and relevant requirements related to environmental protection and have formulated improved management measures for the air emissions discharged during production, including sulfuric acid mist, hydrogen chloride, nitric oxide, ammonia, and volatile organic compounds.

Air Emissions Discharge Management

Type		Treatment Method
Air Emissions	Acid air emission	Up-to-standard discharge after removing most of the components through a 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 particulate matters of silicon dioxide)	Removal through a dust-extraction unit

Waste Discharge

Wafer production generates liquid hazardous waste, such as waste acid and isopropanol. We authorized a qualified third-party company for treatment of this waste, mainly by means of incineration, physical-chemical treatment and recycling. The Company has formulated a Waste Management Procedure to standardize waste management operations and recorded and managed waste treatment through the unified environmental protection management system of the government to ensure all transportation records are traceable and controllable. Non-hazardous solid waste, such as sludge generated in wastewater treatment, was treated by the waste disposal agency using landfill. Since 2017, the Company has carried out work to reduce the discharge of various hazardous wastes every year. In 2020, the Company carried out projects such as the recycling and reuse of sulfuric acid waste liquid and sodium hydroxide waste liquid, to constantly reduce the impact of hazardous waste emissions on the environment.

Management of Waste Discharge

Categories		Treatment Method
Non-hazardous waste	Domestic waste and kitchen garbage	Entrusting municipal environment and sanitation departments for unified disposal on a regular basis.
Hazardous waste	Such as waste acid, waste isopropanol, and waste phosphoric acid	Recycling
	Such as waste glass bottles, 200L chemical barrels, and waste liquid from laboratory	Physical-chemical treatment
	Such as cleaning cloths, plastic bottles, organic waste liquid, waste activated carbon, waste resin, and arsenic-containing waste	Incineration

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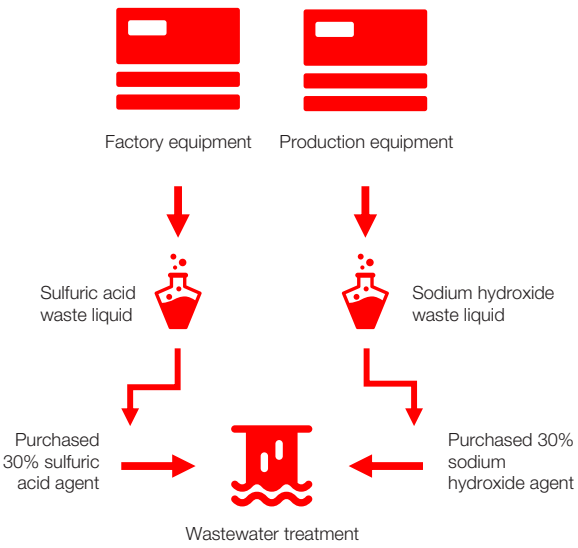
2020 Cleaner Production Work and Achievements

Measures	Achievements
• Improving FIN control methods to reduce the use and emission of hydrogen fluoride	**1,800 L/year** Reduction of hydrogen fluoride emission
• Use new burners to reduce nitrogen oxide emissions from boilers	**1,170 kg/year** Reduction of NOx emission

Recycling and reuse of sulfuric acid waste liquid and sodium hydroxide waste liquid

The Company adheres to the concept of environmental protection and started in 2020 to implement a sulfuric acid waste liquid and reuse project. The sulfuric acid waste liquid treated as waste is reused as an industrial agent for the drainage system through recycling devices, thus reducing the discharge of waste liquid.



Achievements

Reducing discharge of sulfuric acid waste liquid by 205 tons per year

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2.3 Sustainable Water Management

In the semiconductor manufacturing process, the Company uses ultrapure water containing no ions, particles, chlorine or silicon dioxide to manufacture semiconductors free of any impurities. Only after treatment can the used water be properly discharged or recycled. Therefore, the sustainable management of the utilization, recycle, treatment and discharge of water resources is a top priority for the Company.

Identification of water footprint

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

In 2020, the Company conducted water footprint measurement of its 8 -inch fabs by reference to the Water Footprint Assessment Manual issued by the Water Footprint Network.

The Company is committed to optimizing its water-saving technologies and recycling of wastewater during the production and operation processes. It requires cooperative direct suppliers to disclose information with respect to sustainable management of water resources in supplier questionnaires, including water-saving measures and water-saving targets, so as to continuously reduce the water footprint of products.

For more information on the sustainable water management, please refer to “Management of Water Risks” and “Prevention of Water Pollution”.

Management of Water Risks

In order to constantly monitor water risks, the Company assesses water pressure in Shanghai and Wuxi where we operate through the Aqueduct Water Risk Atlas, an external tool from the World Resources Institute (WRI). According to WRI data, the Company’s Shanghai and Wuxi fabs are located in areas with high water stress. 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 of each fab and record the flow, volume and recycle 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. In addition, the Company has formulated the Emergency Plan for Tap Water Rationing to regulate emergency response in case of any interruption in the municipal tap water supply network, so as to prevent impacts on its production and operation.

In order to effectively relieve the pressure in relation to the use of water, the Company has set the water saving target for 2030, and improved the water utilization efficiency through technical improvement and other methods, so as to ensure the achievement of the target. Moreover, the Company has used recycled water for the production process and air conditioning condensate water for replenishing the water in cooling towers, with a total recycled water consumption of over 2 million m^3 for the year.

Water-saving Target in Operation for 2030

Water consumed per unit of product (m^3/8-inch wafers) in 2030 will decrease by 12% as compared with 2015.

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2020 Water Efficiency Measures and Achievements

Measures	Achievements
• Reducing water consumption of washing tower for waste gas	**50,000 tons** Water saving for the year
• Using diluted RO concentrated water for disposing chemicals	**15,000 tons** Water saving for the year
• Optimizing the recycle and washing time of the pure water system	**8,400 tons** Water saving for the year
• Optimizing the MMF back-washing settings for the pure water system	**5,000 tons** Water saving for the year

Prevention of Water Pollution

In terms of waste water discharge, the Company has adopted the Grade B Standard of GBT 31962-2015 (Waste Water Quality Standards for Discharge to Municipal Sewers) since 2017 and reduced the discharge through recycling washing water used for production in the factory.

In terms of pollution discharge and information disclosure, the Company carried out online monitoring of waste water, with relevant data disclosed on the Environmental Information Disclosure Platform for Shanghai Enterprises and Public Institutions, thus improving transparency of environmental information for the Company.

Wastewater Discharge Management

Categories		Treatment Method
Wastewater	Such as pH, COD, ammonia nitrogen, fluorine ion	Discharged through a pipeline into a designated urban sewage pipe network after treatment and meeting relevant standards

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2.4 Energy Use and Climate Change

The emission of large amounts of greenhouse gases such as CO_2 is the main contributor to global climate change. We realize that climate change mitigation is of great importance to enterprises and the globe. We actively took part in carbon emission trading by the Shanghai Municipal Development & Reform Commission to cut greenhouse gas emission and slow down climate change. In 2020, the Company completed settlement of carbon credits of approximately 448,614 tons for 2019. The Company also set an emission target according to the carbon trading management measure of the Shanghai Municipal Development & Reform Commission and reduced greenhouse gas emissions through energy saving and emission reduction projects. In 2020, it invested a total of approximately RMB6.51 million to improve energy saving and emission reduction technologies.

Energy Use Management

The energy consumed by the Company is mainly electric power, heat, natural gas, and a small amount of gasoline and diesel. It has formulated the Resource and Energy Management Procedure, clearly defining the principle of resource and energy management. Based on the principle of energy saving and emission and waste reduction, the Company shall carry out source control and continuous improvement while satisfying production requirements and improving productivity. These actions will reduce our impact on the environment while reducing production cost. Our efforts will promote sustainable development in harmony with the environment. In response to the 2020 goal of the Shanghai Municipal Government to control the total amount of energy and improve energy utilization efficiency, the Company has set its energy-saving target for the "13th Five-Year Plan" period. In 2020, the Company's comprehensive energy consumption per RMB10 thousand of revenue was 12% lower than that of 2015, and the energy consumption for 8-inch integrated circuit wafer production was 13% lower than that of 2015. The Company has engaged a third-party organization to conduct its energy audit and put forward a technical upgrade plan for energy conservation.

In addition, in order to build factories that meet domestic and international standards for green building, the Company introduced the ecological and environmental protection concept in the design stage to reduce resources consumption in the construction and operation stages. For example, the 12-inch IC production line (HH Fab 7) undertaken by Hua Hong Semiconductor (Wuxi) Co., Ltd. has been designed and constructed in strict compliance with LEED certification requirements and has won the "Leadership in Energy and Environmental Design" (LEED v4) Gold Award certified by the U.S. Green Building Council (USGBC) due to the green and energy-saving features of the building and supporting facility design. In the design and construction of the engineering building (E1), it adhered to the concept of green and energy conservation; made greater effort in innovation; and enhanced the promotion and application of new materials, new equipment, and new technologies. Finally, it won the "Two-Star Green Building Design Label Certificate" certified by the Chinese Society for Urban Studies, with its excellent environmental performance, such as the renewable energy utilization rate of 100% for domestic hot water, the building energy saving rate of 65%, and the non-traditional water utilization rate of 56.19%.

2020 Energy Saving Work and Achievements

Measures	Achievements
• Renovating LED lamps for FAB1A 2F Power Room	**160,000 kWh** Electricity saving for the year
• Transforming drying machines for the CDA system from non-thermal regeneration technology to thermal regeneration technology to reduce power level	**148,900 kWh** Electricity saving for the year

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2.5 Green Products

Facing risks arising out of global climate change and the increasingly vigorous demand for energy conservation and emission reduction in society, reducing the high energy consumption of electronic and electrical products has become a focus in industry. In the field of professional integrated circuit manufacturing services, the Company is committed to implementing full-life cycle environmental management covering processes from raw material procurement and production to disposal, so as to reduce the environmental impact of the products.

Environmental Management for the Full Life Cycle of Products

Warehousing of Raw materials	• 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.
Product Production	• According to the pollution discharge permit management, promote material reduction projects; • From the perspective of resource recycling, carry out allocation among systems in waste chemical plants to reduce the use of external resources; • Implement water recovery projects to improve the overall recycling rate and reduce the water supply pressure of the pipe network.
Product Transportation	• Recycle and reuse product packaging materials to reduce the consumption of packaging materials and waste generation.
End-user Products	• By helping customers produce low energy consumption products, reduce the environmental impact of the use of end-user electronic products.
Disposal	• Wafers produced by the Company are monitored for harmful substances, which means that the end-user electronic products manufactured by using the chips from these wafers have less impact on the environment after disposal.

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Development of Low-power Products
By continuously optimizing its wafer manufacturing technology, reducing product volume; improving the energy efficiency of end-user products, and reducing the impact of scientific and technological progress on the environment, the Company is supporting construction of a low-carbon and environment-friendly society while creating competitive advantages in power consumption, efficiency, and chip size optimization for customers.

Control of Hazardous Substances
In accordance with: the regulation Restriction of Hazardous Substances (RoHS); the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) as formulated by the EU; as well as customer requirements, the company has established a hazardous substances management system and standard.

The Company has established an electronic system to manage different raw materials at different levels. Suppliers are required to provide a signed Commitment on Nonexistence of Hazardous Substances and relevant test reports on a regular basis, so as to ensure that their products comply with laws, regulations, and customers' requirements on the management of harmful substances, assuring control from the source.

The Company entrusted Société Générale de Surveillance S.A. (SGS) to conduct tests for hazardous substances and achieved 100% compliance for control of hazardous substances in 2020. All manufactured devices of the Company are verified to comply with the standards and requirements of QC 080000 for reducing hazardous substances in electronic elements, apparatus, and products.

3 Employee-Related Responsibilities

Employees are valuable resources of the Company. We are committed to creating a harmonious, friendly, and win-win cultural atmosphere in accordance with relevant laws and regulations. In order to protect the rights and interests of our employees, we take various measures to ensure the occupational health and safety of employees. We build diversified career development paths and provide a warm and comfortable working environment to promote the realization of personal goals and corporate values.

As of the end of the reporting period, the Company did not infringe the rights and interests of its employees and was not subject to complaints or penalties by a regulatory authority.

3.1 Rights and Benefits of Employees

We strictly followed related laws and regulations such as the Labor Law of the People's Republic of China and the Special Rules on Labor Protection of Female Employees and resolutely prevented any compulsory labor practices. Furthermore, we have formulated and follow the guidelines described in "Employment Procedures and the Management Procedures for Trainees". We strictly check the identity information of our employees and do not employ children or adolescents under the age of 16 years. As of the end of the reporting period, the Company had 5,682 regular employees.

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Overview of Employee Rights and Interests and Benefit System

Recruitment and Dismissal
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.

Remuneration
The Company provides competitive salaries for employees, which are higher than the minimum wage in the place of operation.

Benefit
The Company provides endowment insurance, medical insurance, unemployment insurance, employment injury insurance, maternity insurance and housing provident fund, accident insurance and other commercial supplementary medical insurances, employee rehabilitation, festival gift, assistance in household registration of non-local employees, etc.

Working hours
The standard working hours system is adopted. The comprehensive working hours system or flexible working hours system is adopted for certain positions with the approval of the labor and personnel authority of the government.

Vacation
Based on holidays and festivals specified by the government, supplementary annual leaves are provided for employees.

Democratic Participation
Labor union, employee congress, etc.

Diversified and equal employment

Diversified and equal employees are the cornerstone of the Company, which enables us to provide valuable products and services for our customers. As of the end of the Reporting Period, 27% of the Company's workforce was female employees.

We insist on fair, equal, and open recruitment and employment. We are committed to providing equal opportunity in all our human resources activities such as employee selection, recruitment, promotion, transfer, and remuneration. We do not implement or engage in discriminatory policies or injurious actions for any reason, in particular nationality, region, color of skin, ethnicity, religion, age, family conditions, or other factors.

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Harmonious Relation

An unblocked communication channel and sincere care are vital for the establishment of harmonious labor relations. The Company has formulated the Employee Communication Rule and encouraged the fair, straight-out, and multi-way communication between the Company and employees, between officers and subordinate officers, and among employees through the creation of multiple communication channels.

In addition, we 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. We care for the welfare and development of female employees, annually organizing a special physical examination, continuously improving human-based management of lactating employees, and providing relevant service facilities to ensure convenience for pregnant employees and lactating employees at work.

3.2 Health, Safety and Employee Welfare

The Company has established an occupational health and safety system that meets the requirements of the ISO45001 standard, defining the occupational health and safety management policy, so as to provide its employees with a good working environment and ensure their occupational health.

Occupational Health and Safety Management System

Occupational Health and Safety Management Policy							
The Company strictly complies with safety, health, and environmental protection regulations; makes efforts for clean production; carries out continuous improvement; creates a safe, healthy, and comfortable working environment for employees; and strenuously pursues the highest goal of "zero accidents" and sustainable operation, becoming a model citizen in the world.							
Organizations	Establish a safety manufacturing committee and implement a regular safety meeting system.	**System Construction**	Require employees to sign the Safety Responsibility Statement and the Safety Commitment Letter to ensure the performance of the responsibilities for safe production.	**Management Items**	Emergency response to hazards/ risks and opportunities; Chemicals management; Special equipment and positions; Construction operations; Occupational health, etc.	**Publicity and Education Safety**	Safety education and training; Emergency drill; "ANKANG" labor competition events, etc.

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Safe Production

The Company mainly eliminated or controlled safety risks in production activities of employees from four major aspects, namely, fire-fighting equipment, alarm monitoring system, personal protection, and emergency measures.

In 2020, the Company carried out the "Safe Production Month" activity for all employees, and organized review, question bank learning and online assessment relating to safe production as well as training on labor protection and CPR & AED first aid, so as to constantly enhance employees' safety awareness and create a sound safety culture.

RMB44.82 million
Safety-related investment for the year

100%
Rectification rate of potential safety hazards

100%
Percentage of employees receiving safety trainings

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Measures for Prevention of Employee Safety Risks

Fire-fighting Equipment

- A perfect fire-fighting system and an automatic alarm system have been established.

Alarm Monitoring System

- There are toxic, harmful and inflammable gas warning systems, liquid leakage detectors and ultra-high-sensitivity smoke detectors in the clean workshop.

Personal Protection

- Providing necessary personal protective equipment and emergency protective equipment; Regularly checking whether there is a complete set of equipment and whether the equipment is effective.

Emergency Measure

- Establishing an emergency rescue team and formulating emergency plans for different disasters;
- Annually organizing special disaster prevention drills, and in a timely manner, correcting problems identified.

Chemicals, including nitric acid and ammonia water, are used in the Company's operation. We have formulated relevant management policies, including the Chemicals Management Procedure and the Chemical Material Review Procedure. We regularly complete annual detection of harmful factors in workplaces, evaluation of current conditions, and carry out various emergency drills for safety production accidents. As of the end of the Reporting Period, the Company had no safety production accidents.

Employee health

In terms of protecting employees' health, we provide an annual health check-up for all employees, including multiple cancer screenings and other items, and we establish employee health records to systematically track the changes in employees' health status. In addition, the Company engages external organizations to test its production environment every year, analyze and rectify nonconformities, so as to ensure that the occupational exposure limits for harmful factors are not exceeded in the production environment, and the Company informs all employees of the test results.

During the COVID-19 outbreak in 2020, the Company formed an emergency management team for pandemic prevention and control and established an internal prevention and control system. We have undertaken a series of measures including adopting scientific measures, strengthening prevention and control education and carrying out massive prevention and control activities, with a view to comprehensively ensuring the health and safety of employees.

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Anti-pandemic Actions

Protection of employee health	Arranging employees to work from home; distributing masks and other anti-pandemic supplies to employees on a regular basis.
Prevention and control measures for workplace	Formulating prevention and control policies on entering and leaving the factory during the outbreak; conscientiously implementing specific prevention and control measures including personnel management, detection of body temperature and on-site disinfection.
Staff recognition	Launching a labor competition programme titled "United for a Hundred-Day Anti-pandemic Action"; commending and recognizing 70 advanced units and 320 advanced individuals for their anti-pandemic work.

High-quality Working Environment

The Company is committed to creating better office and service facilities for employees and improving their happiness.

Office

- An air purification system was installed to improve office air quality;
- The green space was increased in office areas.

Diet

- There are staff canteens and coffee shops in factory zones;
- Establishing a food safety supervision team and the mode of centralized purchasing of food materials and qualified supplier 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

- 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

- 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.

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3.3 Training and Career Development

Employee Training

The Company has impeccable training facilities (special training rooms and equipment), learning and sharing platforms (including 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 addition, the Company has established a complete employee education and training system; formulated the Operating Procedure of Internal Training System Review, the Education and Training Procedure and department-level training procedures; and continuously enhanced the training effect according to the training cycle. The Company continuously carried out improvements according to strategic development and employees' needs.

In 2020, the Company organized the "Sailing Together for a Shared Future" Training Camp for newly-hired recent college graduates, which provided a variety of courses covering corporate culture, innovation era, innovation development, innovation talents and outward bound training. This helped its new employees quickly integrate into the team, preliminarily and comprehensively master semiconductor-related knowledge, and meet the challenges of their future work with full enthusiasm.

Employee Training Programs

Trainees	Training Contents	2020 Performance
Grass-roots managers	Role recognition, self-management, management of others, and working management	**100%** **Percentage of employees trained**
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	**100.1 hours** **Average training hours per employee**
Front-line employees	Courses about theory and practical training of the semiconductor manufacturing module	

Career Development

According to industrial characteristics, the Company has set three professional categories, namely, management, technology and functional support and has established corresponding positions. Employees may continuously develop their careers in a single professional title category according to their own specialties, potential, and desires, and in other professional title categories, such as a shift from technology to management, or function to technology.

In order to further enhance the overall quality of employees, the Company provides its employees with education allowances for on-the-job learning and vocational skills programs.

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4 Products and Customers

The Company keeps track of international treaties, local and foreign laws, and regulations that are relevant to our products and customers in places where our business operates; regularly updates our management policies governing products and services in terms of health, safety, labels, privacy, and other areas; and establishes quality assurance systems and customer service systems. As of the end of the reporting period, the Company had not been involved in any litigation regarding infringement of the interests of customers, nor did the Company receive any litigation from customers regarding product quality.

4.1 Product Responsibility

Quality Control

According to the philosophy of "quality is vital for the existence of an enterprise", the Company has formulated the Quality Management Policy, and successfully passed ISO9001 quality management system and IATF 16949 automotive quality management system certifications.

The Company comprehensively carries out performance excellence management; strenuously promotes the integration of industrialization and informatization; actively fulfills corporate social responsibility; strictly adheres to the concept of zero defects; delivers green and high-quality products on time; continuously delivers competitive services; fully meets customer requirements; unremittingly improves customer satisfaction; and realizes mutual benefit with win-win results.

The Company implemented an inclusive quality management model in accordance with the Quality Management Policy covering the five far-reaching departments and sections of: quality systems and customer satisfaction; supplier management and raw materials analysis; quality engineering; reliability assurance; and failure analysis. To reduce human error, we established multiple management systems, such as personnel management, equipment management, supply chain management, environment management, systems management, process management, and customer quality control. With these reliable management systems, we are able to achieve real-time monitoring and testing over our entire product cycles from product R&D to production and after-sales feedback; carry out failure analysis on anomalies that may arise during the production and application processes; dig out the nature of problems; and work out corresponding corrective and preventive measures. The Company has established an optimal product recall system, and our customers may return to us within the warranty period non-conforming products whose prescribed functions or hazardous substances fail to meet our specifications. As of 2020, the failure rate of the Company's products on the end-user side was less than one in a billion.

Product Responsibility-related Certification

Product Quality		Certification Authority	Date of First Certification
ISO	ISO 9001 Quality Quality Management System	BSI	6 November 2001
	IATF 16949 Automotive Quality Management System	BSI	2 August 2005

Information Security		Certification Authority	Date of First Certification
ISO	ISO 27001 Information Security Management System	BSI	2 July 2004

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Technological Innovation

The Company has always focused on technological innovation and a willingness to cooperate in the creation of ICs under independent innovation. The Company has established the first Academician Expert Workstation in the integrated circuit industry in Shanghai and the first Enterprise Association for Science and Technology. Through introducing high-end intelligence, deepening project cooperation, cultivating compound talents and actively developing technology exchange platforms, the Company endeavors to establish an industry-university-research system for technology innovation to promote the transformation of scientific and technological achievements into actual productivity.

Intellectual Property Protection

As a science-oriented enterprise, we advocate independent innovation and respect for intellectual property rights in our research and development of application-specific integrated circuits, including intelligent chips and information security chips. According to the Company's System for the Management of Intellectual Property, we actively filed applications for patents and investigated responsibility for any potential breaches of intellectual property rights. At the same time, we promise that we will never infringe upon the intellectual property rights of any enterprise or individuals and will keep confidential all technological information regarding products of upstream and downstream partners.

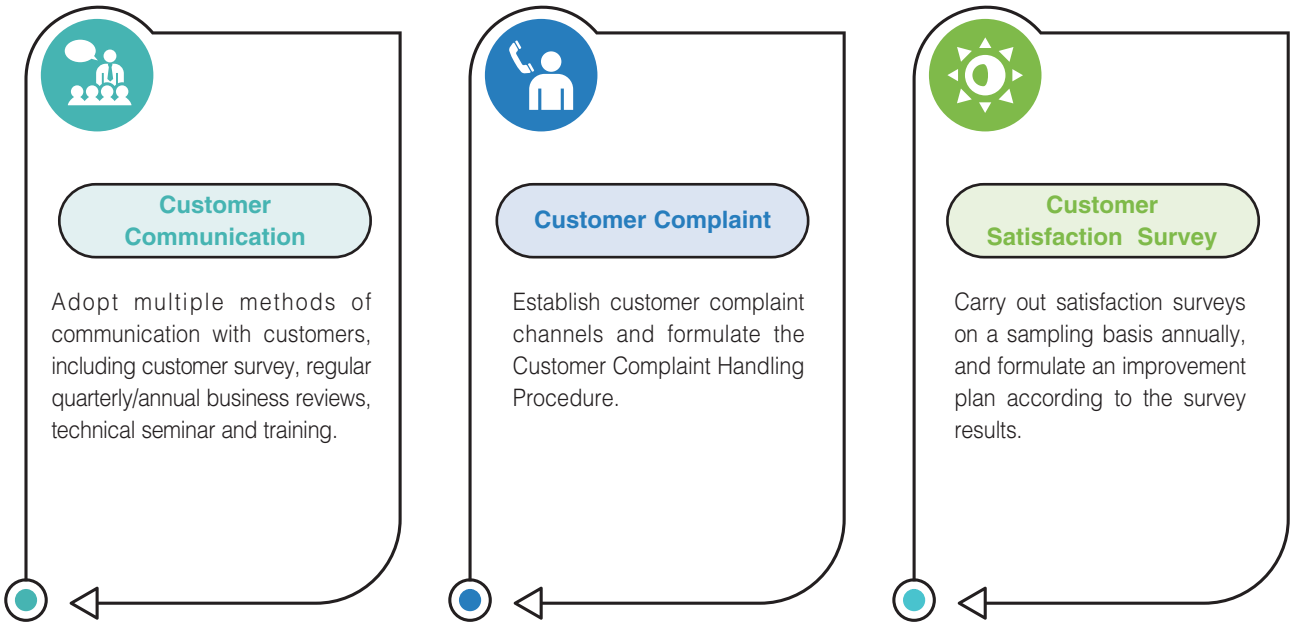
To reduce the risk of claims of infringement of third-party intellectual property rights against our manufacturing of semiconductor devices or end-user products, we only accept orders from reputable customers with no known potential risk of infringement. We have entered into several technology licensing agreements with major technology companies.

4.2 Customer Service and Protection of Customers' Interests

Customer Service System

According to the philosophy of "providing customers with more convenient and safer services", the Company has established an impeccable customer service system, including three main aspects: customer communication; customer complaint; and customer satisfaction.

Customer Service System



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The Company has formulated the Customer Complaint Handling Rules to standardize customer complaint handling and the implementation of corrective and preventative measures. Customers may make a complaint and give feedback to the Company through e-mail, hotline, letter, fax, and other channels.

Customer Complaint Handling Process

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 preventative measures will be proposed according to the investigation results and a reply will be given to customers.

Correction and Prevention

- Relevant departments are required to implement corrective and preventative measures, and the rectification effect is supervised and evaluated by regularly sorting out and analyzing relevant information given in customer complaints.

Protection of Customer Information

The Company attaches great importance to maintaining customer information security. We have established an ISMS information security management system, 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. An Information Security Committee was established within the Company with main responsibilities including: responding to and making decisions on major emergency safety accidents; regularly reviewing the information security management system; auditing our photomask partners to ensure the security of their data management and storage; returning to customers or destroying waste masks generated during the production process, thus preventing to the utmost disclosure of customer information on such waste masks. No incidents of infringement against laws or regulations concerning customer privacy occurred within the Company during the year.

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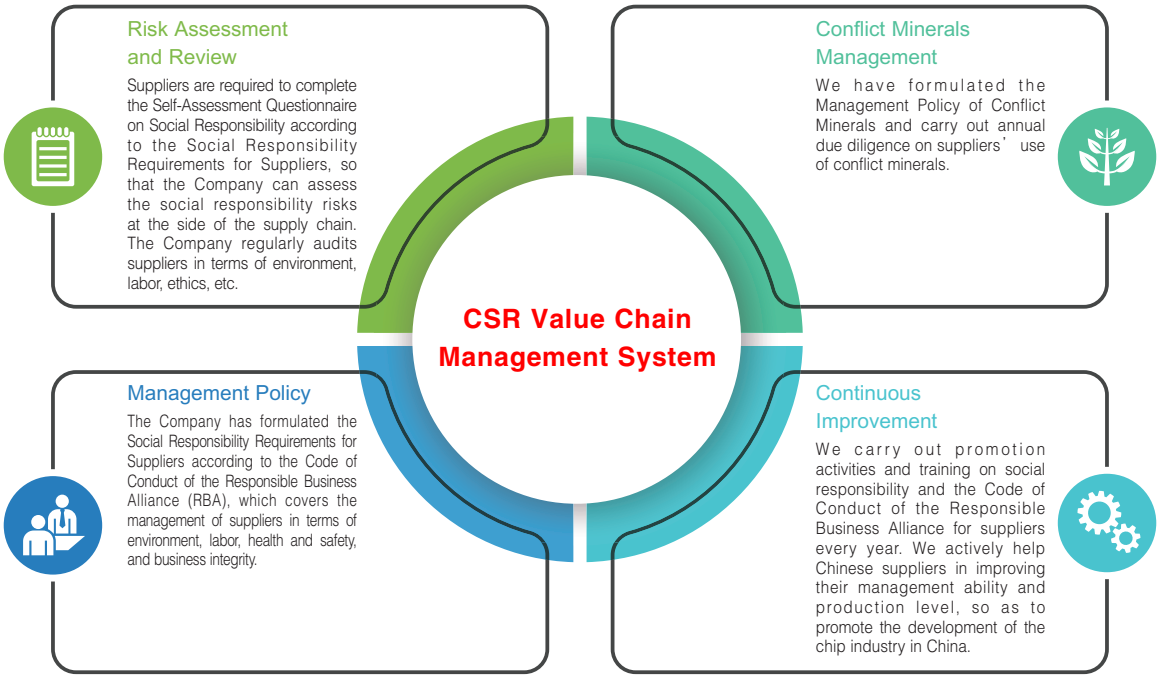
5 Compliance in Business Operation

The Company is in strict compliance with laws and regulations with respect to compliance in business operations including the Criminal Law of the People's Republic of China, the Civil Code of the People's Republic of China, and the Anti Unfair Competition Law of the People's Republic of China. We thereby strengthen the implementation of supplier review work and proactively engage in the promotion of clean and honest industrial practices and anti-corruption governance. As of the end of the reporting period, the Company had not been involved in any litigation with respect to any commercial bribery or corruption.

5.1 Responsible Value Chain

Creating the CSR value chain is an important strategy for long-term development of the Company. It has established an excellent value chain management system and has conducted comprehensive assessment, management, and control of the environmental and social risks of suppliers. It is committed to supporting the growth of suppliers to promote development of the chip industry in China.



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Management Policy

The Company has formulated the Social Responsibility Requirements for Suppliers according to the Code of Conduct of the Responsible Business Alliance (RBA), which covers five requirements for suppliers in terms of labor, health and safety, environmental protection, business integrity and management system.

In addition to the Social Responsibility Requirements for Suppliers which shall be complied with by all suppliers, the Company also requires its upstream suppliers to recognize and implement management measures according to the Social Responsibility Requirements for Suppliers.

Responsible Business Alliance
Advancing Sustainability Globally

The Code of Conduct of the Responsible Business Alliance aims to establish various standards for the electronics industry or industries with electronic products as a key element as well as their supply chains, so as to ensure the workplace safety, respect for and dignity of workers, and compliance with environmental and ethical requirements in business activities.

For more information, please refer to:
http://www.responsiblebusiness.org/

Overview of the Social Responsibility Requirements for Suppliers

Labor	• Free choice of occupation • Youth employees • Working hours	• Salaries and benefits • Humane treatment • Non-discrimination	• Free association
Health and Safety	• 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 for implementation plans and measures • Training • Communication	• Employee feedback, participation and complaints • Review and assessment • Corrective measures

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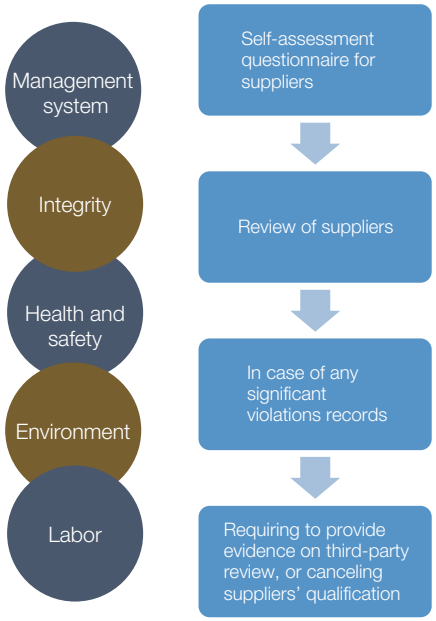
Risk Assessment and Review

The Company has established sound assessment and review procedures for supplier risks to assess suppliers' performance with respect to health and safety, labor, and environment.

For suppliers with a record of significant violations, the Company will require such suppliers to conduct a third-party social responsibility risk assessment and to provide compliance evidence, or the Company will cancel qualifications of such suppliers.

In 2020, the Company's risk assessment and monitoring covered 100% of suppliers. For problems identified in the risk assessment and review, the Company required suppliers to take corrective measures. As of the end of the Reporting Period, suppliers have implemented and completed all corrective measures.Assessment, Control and Review Procedures for Supplier Risks

Assessment, Control and Review Procedures for Supplier Risks



Conflict Minerals Management

Conflict minerals refer to illegally mined and traded gold (Au), tantalum (Ta), tungsten (W), tin (Sn) and cobalt (Co) from the Democratic Republic of Congo and its neighboring countries. These metals 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 non-governmental organizations, such minerals are likely to be used for electronic and electrical products, such as mobile phones and computers, in ICT industries.

In order to effectively reduce the Company's risk in relation to conflict minerals, the Company has formulated the Conflict Minerals Management Policy, requiring all suppliers to verify that raw materials they used do not come from conflict minerals regions.

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HHGrace has always taken global social and environmental responsibility as our goal and carried out green procurement and has promised to undertake the following responsibilities in its metal supply chain:

1) We undertake to assume social and environmental responsibilities.
2) We undertake to not use gold (Au), tantalum (Ta), tungsten (W), tin (Sn) and cobalt (Co) from conflict minerals regions.
3) We undertake to cause our product 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 carry out an investigation into conflict minerals, and complete the Conflict Minerals Reporting Template (CMRT) under the Responsible Minerals Initiative (RMI).

The Company has conducted due diligence on the use of conflict minerals by suppliers, and requires suppliers to disclose information on sources of minerals and smeltery, so as to ensure that our suppliers comply with the Company's management policies of conflict minerals. According to our review, we have found no use of conflict raw materials by suppliers in 2020.

Continuous Improvement

The Company carries out promotion activities and training on social responsibility and the Code of Conduct of the Responsible Business Alliance for suppliers every year. In 2020, such trainings were completed as planned.

In addition, we proactively support growth and development of our suppliers in China and constantly assist suppliers in improving their management capabilities and production levels. Meantime, we proactively encourage small and medium-sized enterprises to participate in the local supply of key raw materials, including, gases, chemicals, and silicon wafers. Therefore, we've cultivated a growing group of local raw material and equipment suppliers, thereby significantly promoting the development of the chip design industry in China.

5.2 Anti-corruption and Business Ethics

The Company is committed to the development of a business ethics culture, and has formulated the Undertaking System on Anti-Corruption and Business Ethics, explicitly specifying that companies having business dealings with the Company shall sign the Undertaking Against Commercial Bribery and that relevant internal personnel shall sign the Undertaking on Business Ethics, whether for external customers, manufacturers and stakeholders, or for employees, cadres and key personnel.

In terms of anti-corruption management for suppliers, the Company requires all suppliers who have a business relationship with the Company sign the Undertaking against Commercial Bribery, explicitly specifying that suppliers shall not give any commercial bribes in any form or conduct any conspiracy in any form seeking personal gains or harming the interests of the Company.

The Company carries out audits on anti-corruption and business ethics on a regular basis. In 2020, the Company has completed audits of internal management on anti-corruption and business ethics, and found no violation.

In addition, the Company is committed to creating a sound business ethics culture by regularly introducing warning articles and cases in internal publications and providing training activities on anti-corruption and business ethics for all employees.

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

(i) prohibiting commercial bribery and maintaining fair competition order;
(ii) prohibiting seeking for illegitimate benefits through taking advantage of influence in position and work;
(iii) never violating financial management and operation regulations, or seeking personal gains in the name of the Company; prohibiting practicing fraud to undermine the legitimate interests and reputation of the Company;
(iv) prohibiting any receipt of presents, cash gifts, securities and finances that may cause a negative influence on work.

Complaint and Reporting Management

The Company has set up convenient reporting channels and handled reported cases in a standardized and orderly manner. Through defined reporting channels including E-mail, hotline and mailbox, the Company can receive and properly handle reporting calls and letters at any time to achieve early detection, resolution, and control. In addition, the Company takes measures to protect the whistle-blower, including personal information and all reporting materials of the whistle-blower are kept strictly confidential.

Business Ethics Supervision and Report Handling Procedures

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5.3 Risk Management

We continuously improve our risk management system by upgrading relevant processes and policies, thereby effectively enhancing our risk management abilities. Since 2016, the Company has established procedures for risk management through the Internal Audit Department, which issued the guideline "Rules about Comprehensive Control of Risks", and launched related projects.

In 2020, the Company updated the existing risk management system according to the latest three-line model issued by the Institute of Internal Auditors (IIA). The Company carried out an annual comprehensive risk assessment covering Shanghai and Wuxi; interviewed management with regard to risks through risk questionnaires; identified major risk areas; and formed an annual risk management report. In addition, the Company carried out risk management training including discussing typical risk events.

Key Operational Risks and Countermeasures

Risk Category	Content	Countermeasures
Strategy	Strategic planning	The Company formulated strategic objectives from top to bottom, appropriately deconstructed and implemented such objectives in specific business models of corporate operation, to ensure the accomplishment of strategic objectives
	Investment decision	We conduct prudent pre-investment analysis, continuous process supervision, and effective post-investment evaluation to control the investment risk to an acceptable level in a multi-pronged manner
	Supervising and management system	Our well-organized systems and processes, together with the risk management system based on the three-line model, can efficiently assure accomplishment of strategic objectives
Operation	Reserve of Talents	We set up the talent resume database, carried out a talent inventory, continuously explored recruitment channels, optimized the salary structure, and comprehensively enhanced the Company's attraction and employee satisfaction by combining the synergies of brand building and cultural promotion
	Information security	Based on our Management Rules about Information Security, the Company established its information security framework and management policy. We implement the risk evaluation procedure for information security every year to maintain the optimal interests of all Stakeholders
	Research and development	The structured R&D closed-loop mechanism conducts comprehensive monitoring on R&D initiation, implementation and post-evaluation, and helps develop new products with commercial value continuously and in a timely fashion
	Intellectual property rights	Comprehensive intellectual property protection awareness and management procedures protect the intellectual property rights of the Company and customers

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Risk Category	Content	Countermeasures
Finance	Cash flow	Monthly cash flow statements record cash flows and dispatch the same to relevant departments for follow-up actions
	Exchange fluctuations	Transactions denominated in foreign currencies are settled in the same foreign currency whenever possible to reduce the need for foreign currency exchange, thus reducing risks arising from exchange rate fluctuations
Environment and Safety	Environment	We design management procedures based on our observation, assessment and control of environmental factors, and list major environmental factors
	Safety check	Safety checks focusing on troubleshooting and fault diagnosis are carried out continuously
	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")
Project risk (Huahong Wuxi)	Wuxi project management	The Company's management has always attached great importance to Wuxi projects and has given priority to the allocation of resources. Special personnel have been appointed to continuously monitor the project progress, investment expenditure, procurement compliance, follow-up measures and other important control points to ensure that the project progress, quality, and cost control meet established targets

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6 Anti-pandemic and Public Welfare

During the sudden outbreak of COVID-19 in 2020, the Company cared for the life and health of everyone, the safety and happiness of every family, and the stability and development of society in the anti-pandemic war without gunpowder. The Company initiated a prevention and control mechanism and formed a pandemic prevention and control task organization in a timely manner. We strictly deployed and promptly implemented various prevention and control measures in line with the goal of "Protecting ourselves, our families, our employees and our Company", so as to ensure the safety and health of our employees and orderly production as well as fulfill our commitments to all customers.

The Company encourages employees to actively participate in voluntary services. The trade union department takes the lead in organizing various employee volunteer activities, which are specified in the Trade Union Member Benefit Policy.

Targeted Poverty Alleviation
In response to the call of Huahong Group for partner assistance, the Company established a partner assistance relationship with Youqiao Village, Shuxin Town, Chongming District. We visited local villagers regularly to understand its progress in people's livelihood, Party building and comprehensive governance and to define the focus of our partner assistance work, so as to establish a long-term, stable and comprehensive partner assistance relationship and effectively promote Youqiao Village's development in all respects.

In our efforts to care for children in mountainous areas and consolidate achievements of poverty alleviation, we helped realize 123 small aspirations of 123 children in Tanwan Primary School, Yangbi County, Yunnan Province, and donated books to a library of a local junior high school.

Anti-pandemic Action and Production Resumption
In the normal anti-pandemic action and production resumption in 2020, all employees attached great importance to the normal anti-pandemic work and were fully prepared for work and production to ensure the successful completion of our main responsibilities and targets and our work relating to Four Protections. Our employees took the lead in anti-pandemic actions, fought for our country and family and spared no effort in fulfilling responsibilities. Our employees contributed our part to society in the ordinary work, and showcased an excellent and touching image. Our frontline employees worked day and night in the production line, and our security and logistics employees made tireless effort to ensure the safety of our employees and factories.

Volunteer Service
We encourage our employees to serve the local community and express their solicitude, and we have established a volunteer team, with a total of 449 of volunteer services provided in 2020.

In 2020, our anti-pandemic voluntary service team participated in measuring body temperature and inspecting vehicles at checkpoints and providing convenience services for community residents in Chaoyang Community, Qitaihe, Heilongjiang Province. Our volunteers regularly visit nursing homes in Shanghai every year, and hold chatting meetings and parties to bring comfort to the elderly. In addition, volunteers from our factories have established public welfare teams to sort out shared bicycles and clean surrounding roads during lunch breaks.

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7 2020 Social Recognitions

No.	Awards
	National and Industrial Awards
1	China Benchmarking Enterprise in Quality
2	Low-power MCU (Process) Solution Award
3	Golden Ant Award of National Golden Card Project
4	China Semiconductor Innovation Product and Technology Award
5	Wafer OEM Enterprise with Outstanding Performance for the Year in 2019 China IC Design Achievement Award
6	The 14th (2019) China Semiconductor Innovation Product and Technology Award
	Provincial and Departmental-level Awards
7	2019 Shanghai Benchmarking Enterprise in Energy Saving and Emission Reduction
8	2019 Shanghai Top 100 Foreign-invested Enterprises in Terms of Import and Export Volume
9	2019 Shanghai Top 100 Foreign-invested Enterprises in Terms of Job Creation

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8 Performance Data

Environment

Performance Indicators[1]	Unit	2018	2019	2020
Emissions				
Total air emissions	10,000 m^3	1,145,074	1,257,074	1,773,740
Nitrogen oxide (NOx) emissions	Kg	26,821	19,383	19,688
Sulfur dioxide (SO_2) emissions	Kg	68	72.5	338
Total wastewater discharge	10,000 m^3	473	431	603
GHG emissions[2]	Ton of CO_2 equivalent	434,834	449,343	448,614
Of which: Direct GHG emissions[3]	Ton of CO_2 equivalent/ 8-inch wafers	15,783	16,954	18,135
Indirect GHG emissions[4]	Ton of CO_2 equivalent/ 8-inch wafers	419,051	432,389	430,479
GHG emissions per unit output	Ton of CO_2 equivalent/ 8-inch wafers	0.21	0.23	0.23
Total hazardous waste	Ton	5,122	5,013	9,262
Hazardous waste produced per unit output	Kg/8-inch wafers	2.47	2.57	3.96
Total non-hazardous waste[5]	Ton	4,017	3,595	6,143
Non-hazardous waste produced per unit output	Kg/8-inch wafers	2	1.80	2.67
Use of Resources				
Total electricity consumed	MWh	528,402	528,044	720,840
Electricity consumed per unit product	kWh/8-inch wafers	259	271	313
Natural gas consumed	m^3	7,481,586	8,138,435	10,312,006
Natural gas consumed per unit product	m^3/8-inch wafers	3.66	4.18	4.49
Total water consumed	m^3	9,267,637	7,724,830	9,907,631
Of which: Water from municipal water supply	m^3	6,325,999	4,791,336	7,035,272
Wastewater reused	m^3	2,941,638	2,933,494	2,872,359
Water consumed per unit product[6]	m^3/8-inch wafers	3.10	2.46	2.89
Recycled/reused water	m^3	2,923,067	2,823,278	4,042,020
Total packaging materials used for the shipment of finished products	Ton	78	110	128
Total recycled packaging materials used for the shipment of finished products	Ton	16	8	22

Note:

1 In addition to the GHG emission data, the scope of the environmental performance data in 2020 covers Huahong Semiconductor (Wuxi) Co., Ltd. (HH Fab 7), which was not covered in the previous two years.

2 In accordance with the requirements of local regulatory authorities, the GHG emissions of the Company in the previous year are submitted to a third-party institution for verification every year.

3 Sources of direct GHG emissions include natural gas and diesel.

4 Sources of indirect GHG emissions include electricity and steam.

5 Non-hazardous waste is sludge produced in wastewater treatment.

6 In calculation, water consumed per unit product only includes water from the municipal water supply.

2020 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

Employment and Labor Practice

Performance Indicators	Unit	2018	2019	2020
Employment				
Total number of employees	Individual	4,512	5,138	5,682
Including: Number of male employees	Individual	3,227	3,720	4,164
Number of female employees	Individual	1,285	1,418	1,518
Number of employees working under a labor contract with the employer	Individual	4,512	5,138	5,682
Number of employees working under a labor contract with a labor dispatch company	Individual	209	130	113
Part-time employees	Individual	0	0	0
Number of employees aged under 30	Individual	2,129	2,354	2,542
Number of employees aged between 30 and 50	Individual	2,284	2,676	3,018
Number of employees aged above 50	Individual	99	108	122
Number of employees from Mainland China	Individual	4,503	5,129	5,673
Number of foreign employees	Individual	9	9	9
Health and Safety				
Occupational disease incidence	%	0	0	0
Number of work-related fatalities	Individual	0	0	0
Lost days due to work injury	Day	206	23	235
Employee Training				
Average training hours completed per employee	Hour	77.0	99.5	100.1
Including: Average training hours completed per non-management employee	Hour	78.0	100.5	101.4
Average training hours completed per management member	Hour	13.0	33.6	18.3
Average training hours completed per female employee	Hour	66.0	87.7	96.8
Average training hours completed per male employee	Hour	82.0	104	101.3
Percentage of employees trained	%	100	100	100
Including: The percentage of non-management employees trained	%	100	100	100
Percentage of management member 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	2018	2019	2020
Product Responsibility				
Product return rate	%	0.104	0.05	0.07
Percentage of products sold subject to recalls for safety and health reasons.	%	0	0	0
Customer Service				
Customer complaint event	Case	8	3	8
Percentage of customer complaints resolved	%	100	100	100

Supply Chain Management

Performance Indicators	Unit	2018	2019	2020
Supply Chain Management				
Total number of suppliers	Supplier	520	532	540
Number of local suppliers	Supplier	393	399	402
Number of foreign suppliers	Supplier	127	133	138
Number of suppliers assessed[1]	Supplier	112	110	110
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[2]	%	26	28	29

Note:

1 The number of suppliers which were assessed by the Company in terms of labor, health and safety, environment, and business ethics.

2 Raw materials purchased include silicon slices, quartz, target materials, gases, chemicals, and other raw materials for production.

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Anti-corruption

Performance Indicators	Unit	2018	2019	2020
Anti-corruption				
Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period	Case	0	0	0

Community Investment

Performance Indicators	Unit	2018	2019	2020
Community Investment				
Number of employees participating in volunteer services	Individual	176	245	449
Total hours of volunteer activities	Hour	352	659	450

Compliance

Fields	Names of Major Laws and Regulations
EHS	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, Production Safety 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, Law of the People's Republic of China on Prevention and Control of Occupational Diseases, 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, Registration, Evaluation, Authorization, and Restriction of Chemicals ("REACH"), Waste Electrical and Electronic Equipment (WEEE) and Restriction of Hazardous Substances ("RoHS") etc.
Information Security	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, Cyber Security Law of the People's Republic of China, Cryptography Law of the People's Republic of China, Accounting Law of the People's Republic of China, and Regulation on the Administration of Commercial Cipher Codes, etc.
Quality	Company Law of the People's Republic of China, Constitution of the PRC, Law of the People's Republic of China on Product Quality, Customs Law of the PRC, Metrology Law of the People's Republic of China, and Foreign Trade Law of the PRC, etc.
RBA	Anti-unfair Competition Law of the People's Republic of China, 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.

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9 Preparation

Report Overview

The 2020 ESG Report of Hua Hong Semiconductor Limited (hereinafter referred to as the "Report") discloses its principles in fulfilling CSR and the work carried out in 2020. It mainly addresses our Stakeholders about sustainable development regarding the relevant economic, environmental, and social issues.

Basis of Preparation

The Report was prepared in accordance with the Environmental, Social and Governance Reporting Guide published by The Stock Exchange of Hong Kong Limited, and by reference to the Sustainability Reporting Standards (2016) issued by the Global Reporting Initiative (GRI).

Scope of the Report

Organizational Scope:	The Report covers Hua Hong Semiconductor Limited and its subsidiaries (collectively the "Company" or "we"), and is in consistent with the scope of the annual consolidated financial statements of the Company.
Reporting Period:	From 1 January 2020 to 31 December 2020.
Report Cycle:	This is an annual report.

Notes on the Data

Data and cases in the Report originate from original records and financial reports of the Company generated in actual operations. In case of any inconsistency, data in the financial reports shall prevail.

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KPI A1.1	8 Performance Data
KPI A1.2	8 Performance Data
KPI A1.3	8 Performance Data
KPI A1.4	8 Performance Data
KPI A1.5	2.2 Cleaner Production
KPI A1.6	2.2 Cleaner Production
A2.Use of Resources	
General Disclosure A2	2.2 Sustainable Water Management 2.3 Use of Energy and Climate Change 8 Performance Data
KPI A2.1	8 Performance Data
KPI A2.2	8 Performance Data
KPI A2.3	2.3 Use of Energy and Climate Change
KPI A2.4	2.2 Sustainable Water Management
KPI A2.5	8 Performance Data
A3.The Environment and Natural Resources	
General Disclosure A3	2.4 Green Products
KPI A3.1	2.4 Green Products
A4.Climate Change	
General Disclosure A4	2.3 Use of Energy and Climate Change
KPI A4.1	2.3 Use of Energy and Climate Change
B1.Employment	
General Disclosure B1	3.1 Rights and Benefits of Employees 8 Performance Data
KPI B1.1	8 Performance Data
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B2.Health and Safety	
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KPI B2.3	3.2 Health, Safety and Employee Welfare
B3.Development and Training	
General Disclosure B3	3.3 Training and Career Development
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B4.Labor Standards	
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KPI B4.1	3.1 Rights and Benefits of Employees
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B5.Supply Chain Management	
General Disclosure B5	5.1 Responsible Value Chain
KPI B5.1	8 Performance Data
KPI B5.2	5.1 Responsible Value Chain
KBI B5.3	5.1 Responsible Value Chain
B6.Product Responsibility	
General Disclosure B6	4.2 Customer Service and Protection of Customers' Interests 8 Performance Data
KPI B6.1	8 Performance Data
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B7.Anti-corruption	
General Disclosure B7	5.2 Business Ethics 8 Performance Data
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B8.Community Investment	
General Disclosure B8	6 Social Welfare Causes and Public Communities
KPI B8.1	6 Social Welfare Causes and Public Communities
KPI B8.2	8 Performance Data

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