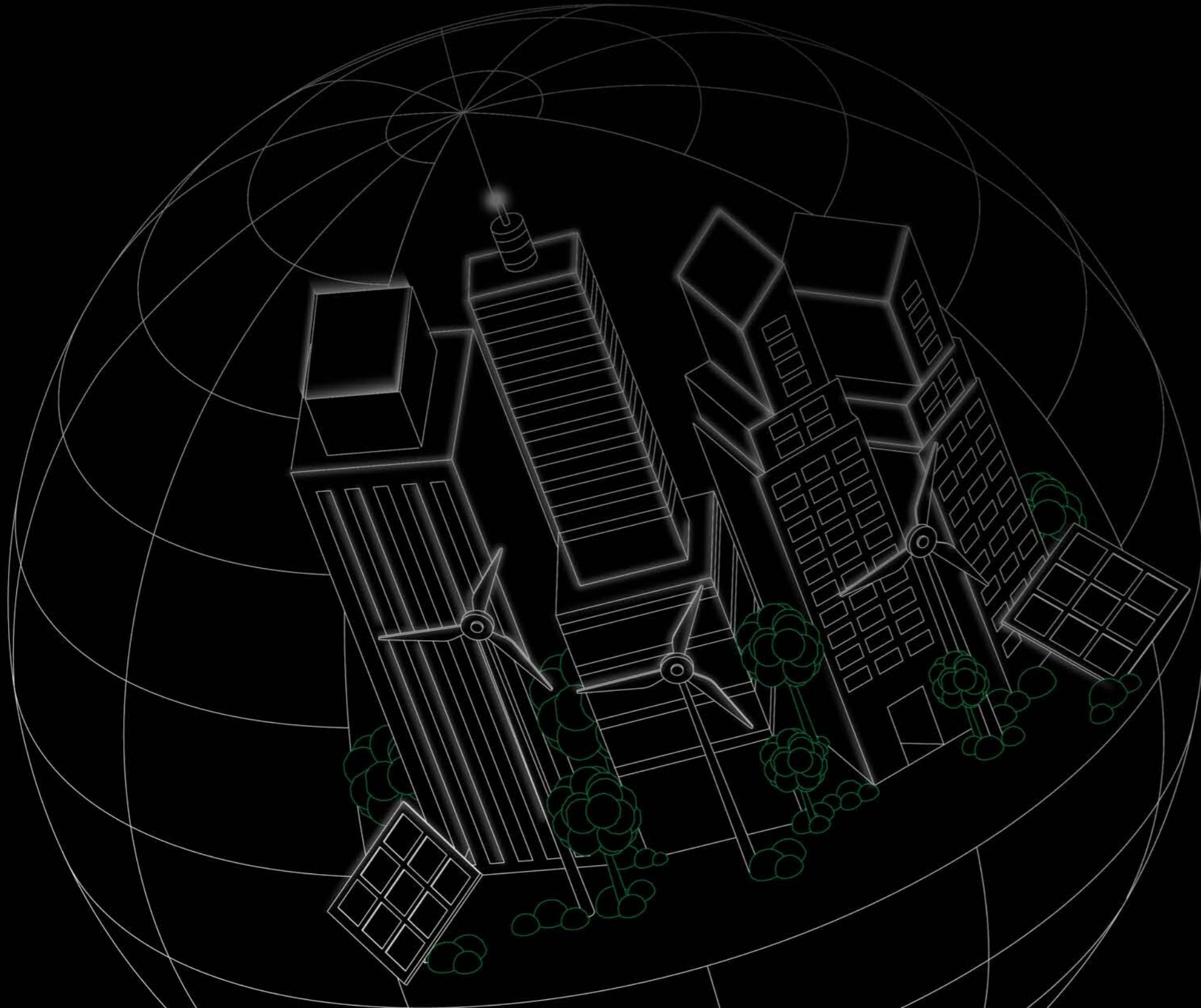


7 ENVIRONMENTAL, SOCIAL & *Governance* (ESG)



TSMC is the only semiconductor company to be selected as a component of the Dow Jones Sustainability Indices for 22 consecutive years.

7.1 Overview

As a long-term trusted technology and capacity provider of the global logic IC industry, TSMC is dedicated to environmental, social and governance (ESG) issues. The Company collaborates with all stakeholders – employees, shareholders/investors, customers, suppliers/contractors, government/industry associations and society – to create sustainability value by pursuing three primary missions: acting with integrity, strengthening environmental protection, and caring for the disadvantaged.

Guidance for the Implementation of ESG

In keeping with its vision of Uplifting Society, TSMC's ESG policy is the overarching guiding principle for sustainable development. The ESG Matrix, set by TSMC's founder Dr. Morris Chang, clearly defines the scope of the Company's ESG responsibility. Echoing the goal of "Bettering the Society," TSMC strives to demonstrate its ESG commitment in seven areas including morality, business ethics, economy, rule of law, sustainability, work-life balance and happiness, and philanthropy. Actions that TSMC has taken to fulfill these commitments are integrity, law compliance, anti-corruption/anti-bribery/anti-cronyism, environmental protection/climate control/energy conservation, corporate governance, providing well-paying jobs, good shareholder return, employees' work-life balance, encouraging innovation and good work environment. TSMC also devotes to social participations through TSMC Charity Foundation and TSMC Education and Culture Foundation.

TSMC ESG Matrix

TSMC \ Society	Morality	Business Ethics	Economy	Rule of Law	Sustainability	Work/Life Balance Happiness	Philanthropy
Integrity	V	V					
Law Compliance				V			
Anti-Corruption Anti-Bribery Anti-Cronyism	V	V		V			
Environmental Protection Climate Control Energy Conservation				V	V		
Corporate Governance		V	V	V			
Provide Well-Paying Jobs			V			V	
Good Shareholder Return			V				
Employees' Work-Life Balance						V	
Encourage Innovation		V	V				
Good Work Environment						V	
TSMC Charity Foundation					V	V	V
TSMC Education and Culture Foundation					V	V	V

ESG Management

The ESG Steering Committee is chaired by TSMC's Chairman, while the Chairperson of the ESG committee serves as Executive Secretary, and senior executives from a wide variety of functions – all work together to examine ESG material issues in relation to the Company's operations, set the short-, medium- and long-term strategic directions that link to the UN Sustainable Development Goals (SDGs).

The ESG Committee functions to coordinate and integrate resources, and facilitate the communications among different divisions, implementing the resolutions of the Company's ESG Steering Committee. The ESG Department, on behalf of the ESG Committee, works together with cross-organizational representatives to identify key sustainability issues in relation to the Company's operations and stakeholders' concern. Task forces are formed based on various issues to frame adaptive strategies, goals and action plans. The committee holds quarterly meetings to track progress and ensure the strategies are implemented effectively in daily operations.

The Board of Directors supervises and guides the Company's sustainability management, strategies, and goals. The ESG Committee Chairperson reports quarterly to the Board of Directors on the implementation of plans and results. In 2022, TSMC focused primarily on green manufacturing and supply chain management (including net zero emission, renewable energy access and use, and low-carbon value chain management), workplace diversity & inclusion and talent development (including employee resource groups, diversity and inclusion practices for R&D talents, Science, Technology, Engineering, and Mathematics (STEM) programs for high school girls), sustainability disclosures in sustainability report, theme reports such as TCFD Repot, UN SDGs Action Report and Materiality Analysis Report, sustainable culture advocacy (i.e., TSMC ESG awards), empowerment projects in remote areas and 2021 ESG spending updates, etc.

Stakeholder Engagement

TSMC respects all stakeholders' rights and interests in sustainability issues. The Company thus deploys multiple communication venues including a dedicated ESG website, ESG mailbox, Investor mailbox, Employee Feedback Channels, Irregular Business Conduct Reporting System, and the Supply Chain Worker Grievance Channel, etc. Through identification, prioritization and validation, TSMC manages and addresses stakeholders' concerns.

Stakeholders and Communication Channels in 2022

Stakeholders	Communication Channels
Employees	<ul style="list-style-type: none"> Corporate intranet (myTSMC), internal emails, and other announcement channels (such as promotion posters at facilities), TSMC Newsletter eSilicon Garden Human resources team Employee training Communication meetings for various levels of managers and employees; e.g. the executives communication meeting, skip levels and communication meetings in individual functions/divisions Employee suggestion channels, such as the Fab Caring Circle, Employee Opinion Box, Wellness Center, wellness website, employee PIP & IT Security mailbox and hot line, etc. Ombudsman system, whistleblower reporting system, irregular business conduct reporting system, and sexual harassment investigation committee Employee Opinion Survey on Company Core Values, Employee Engagement Survey, employee pulse surveys and service satisfaction surveys, and employee welfare committee event questionnaire survey Silicon Garden Meetings (labor-management meetings)
Shareholders/Investors	<ul style="list-style-type: none"> Annual general meeting of shareholders Quarterly earnings conference call Investor conferences Face-to-face meetings, video conference call and telephone conference call Emails Annual reports, Sustainability reports, 20-F filings to US SEC Material announcements to Taiwan Stock Exchange, and corporate press releases on the Company's website
Customers	<ul style="list-style-type: none"> Customer satisfaction survey Customer meetings Customer audits Business and technology assessment Email responses to the issues that customers are concerned
Suppliers/Contractors	<ul style="list-style-type: none"> Supplier meetings Supply Chain Security Association Meetings Environmental, Safety, and Health Training Program - Experience Sharing Workshops Supplier Ethics and Code of Conduct Promotion On-site consult and audit Supply Online 360 - Global responsible supply chain management platform Supplier self-assessment questionnaire (SAQ) Supplier ethics survey Supply Chain Worker Grievance Channel
Government	<ul style="list-style-type: none"> Official correspondence and visits Industry experience and advice sharing, and keynote speeches Meetings (such as communication meetings, public hearings, forums, seminars or social gatherings) Communication platforms of the industry associations and NGOs
Society	<ul style="list-style-type: none"> Arts events in the communities Sponsorship of youth development events Sponsorship of charity projects and emergency aid Sponsorship of non-profit organizations to support educational projects Professorship endowments and student scholarships at universities Project collaboration and visits Support of non-profit organizations and institutions via monetary and in-kind donation, as well as providing necessary manpower for a good cause Volunteer activities and services TSMC ESG website, newsletters, mailbox and social media (Facebook and LinkedIn page) TSMC Education and Culture Foundation and TSMC Charity Foundation websites "Sending Love" charity platform

Responsibilities of ESG Steering Committee and ESG Committee Members

Committee Members	Responsibilities	Stakeholders
Legal	Corporate governance, code of conduct, legal compliance (including fair competition, privacy and personal information, and protection for whistle-blowers), intellectual property, protection of confidential information	Employees Government/Industry Associations Society (Note)
Customer Service	Customers' service and satisfaction, customer trust, customer confidentiality, Responsible Business Alliance and its code of conduct	Customers Government/Industry Associations
Information Technology and Materials & Risk Management	Information security, materials and supply chain risk management, supplier management, conflict minerals, Responsible Business Alliance and its code of conduct; risk management, crisis management, emergency response and action plan	Employees Shareholders/Investors Customers Suppliers/Contractors Government/Industry Associations Society
Quality and Reliability	Product quality and reliability, product recall mechanism	Customers Suppliers/Contractors
Research and Development	Innovation management, green products	Employees Customers Suppliers/Contractors Government/Industry Associations
Business Development	Shaping an energy-efficient technology roadmap; building alliance with customers to foster smarter and greener product innovations; establishing & promoting TSMC as a responsible technology thought leader, and sharing its experiences and achievements	Employees Customers Society
Finance	Financial disclosure, dividend policy, tax strategy	Employees Shareholders/Investors Customers Suppliers/Contractors Government/Industry Associations
Investor Relations	Resolving issues of stakeholder concern, establishing trusting long-term relationships, effective two-way communication, annual report production	Shareholders/Investors
Operations	Operational eco-efficiency, pollution prevention, water resource risk management, green manufacturing	Customers Shareholders/Investors Suppliers/Contractors
Environment, Safety and Health	TSMC Environmental Policy and management system, climate change mitigation and adaption, pollution prevention, energy consumption efficiency, carbon emissions and carbon rights management, product environmental responsibility, response mechanism for environmental issues, environmental spending, green supply chain, policy and management systems for occupational health and safety, workplace health and safety, occupational disease prevention and health promotion, communication of ESH regulations	Employees Shareholders/Investors Customers Suppliers/Contractors Government/Industry Associations Society
Human Resources	Diversity and inclusion, talent attraction and retention, talent development, human rights	Employees Government/Industry Associations Society
TSMC Education and Culture Foundation	Cultivate young generation, educational collaboration, promote arts and culture	Society
TSMC Charity Foundation	Philanthropy, community relations	Society
Public Relations	Stakeholder engagement, mechanism for reflecting issues of social concern, media relations	Society

Note: Society includes community, non-governmental organizations, non-profit organizations and the public.

Being dedicated in driving positive change, TSMC has issued an annual non-financial annual report for the 24th consecutive year and incorporated stakeholders' feedback into daily operations. The TSMC Sustainability Report (formerly the Corporate Social Responsibility Report) aligns with the global sustainability standards and identifies ESG material issues in accordance with Global Reporting Initiative (GRI). Integrating Enterprise Risk Management (ERM) with ESG management, TSMC demonstrates how the Company evaluates ESG risk trends and impacts, mitigates accordingly through innovative thinking and practices, and operates sustainably at TSMC Taiwan Facilities (headquarters, wafer fabs, back-end packaging fabs, and testing fabs located in Taiwan), TSMC China, TSMC Nanjing, TSMC Arizona, Japan Advanced Semiconductor Manufacturing, Inc., WaferTech, VisEra and other subsidiaries. In addition to GRI, the report also adopts TCFD Recommendations, Sustainability Accounting Standards Board (SASB) reporting standards, AA1000 Accountability Principle and is assured by DNV GL Business Assurance Co. Ltd. in accordance with DNV VeriSustain™ protocol, GRI standards, SASB indicators, and TCFD framework.

TSMC is the only semiconductor company selected for the Dow Jones Sustainability World Indices for the past 22 consecutive years. As a responsible corporate citizen with a strong sense of purpose, TSMC adopts nine UN SDGs based on the Company's five ESG directions, Drive Green Manufacturing, Build a Responsible Supply Chain, Create a Diverse and Inclusive Workplace, Develop Talent, and Care for the Disadvantaged, sets 2030 long-term goals, and implements approaches accordingly. Anchored in the concept of SDG 17 Partnerships for the Goals, TSMC collaborates with internal and external stakeholders to create sustainable value in ESG aspects through mutual dialogue, cooperation and participation.

2022 ESG Awards and Ratings

Category	Organization	Awards and Ratings
Overall ESG	Dow Jones Sustainability Indices (DJSI)	•Dow Jones Sustainability World Index for the 22 nd consecutive year •Dow Jones Sustainability Emerging Markets Index
	MSCI ESG Indexes	•MSCI ACWI ESG Leaders Index component •MSCI ESG Research – AAA Ratings •MSCI ACWI SRI Index component •MSCI ACWI Islamic Index component •MSCI Emerging Markets ESG Leaders Index
	Sustainalytics	•Company ESG Risk Ratings: Low ESG Risk – Semiconductor Industry
	ISS ESG	•"Prime" Rated by ISS ESG Corporate Rating
	FTSE4Good Index	•FTSE4Good Emerging Index component •FTSE4Good All-World Index component •FTSE4Good TIP Taiwan ESG Index component
	Corporate Knights	•2022 Global 100 Most Sustainable Corporations
	World Benchmarking Alliance (WBA)	•SDG 2000 – The 2,000 Most Influential Companies
	RobecoSAM (S&P Global)	•The Sustainability Yearbook Award 2022 – Bronze Class
	CommonWealth Magazine	•Excellence in Corporate Social Responsibility Award – Honorable Legion of Corporate Sustainability Top 100
	Taiwan Institute for Sustainable Energy	•Taiwan Top 10 Sustainability Exemplary Awards for the 7 th consecutive year •Corporate Sustainability Report Awards •Circular Economy Leadership Awards •Information Security Leadership Awards •Supply Chain Leadership Awards •Growth Through Innovation Leadership Awards •Sustainable Water Management Leadership Awards •Climate Leadership Awards •English Report – Gold Award (Global Corporate Sustainability Award, GCSA)
	Morningstar	•The Best Sustainable Companies to Own in 2022

(Continued)

Category	Organization	Awards and Ratings
Economy and Governance	Institutional Investor Magazine	<ul style="list-style-type: none"> •Most Honored Company (Technology/Semiconductors) – All-Asia •Best Overall ESG (Technology/Semiconductors) – 1st Place (buy-side and sell-side)- All-Asia •Best CEO (Technology/Semiconductors) – 1st Place (buy-side and sell-side) – All-Asia •Best CFO (Technology/Semiconductors) – 1st Place (buy-side and sell-side) – All-Asia •Best Investor Relations Program (Technology/Semiconductors) – 1st Place (buy-side and sell-side) – All-Asia •Best Investor Relations Professional (Technology/Semiconductors) – 1st Place (buy-side and sell-side) – All-Asia •Best Investor Relations Team (Technology/Semiconductors) – 1st Place (buy-side and sell-side) – All-Asia
	IFI Claims Patent Services	•Ranked as 3 rd in 2022 Top 50 US Patent Assignees
	Forbes	<ul style="list-style-type: none"> •The World's Top 10 Largest Technology Companies in 2022 •Global 2000
	PricewaterhouseCoopers (PwC)	•FutureBrand Index component
	FORTUNE	<ul style="list-style-type: none"> •2022 World's Most Admired Companies •Fortune Global 500
	Brand Finance	•Tech 100 2022
	Asiamoney	•2022 Asia's Outstanding Companies – Semiconductors & Semiconductor Equipment Sector for the 5 th consecutive year
	Business Today	•Top 1,000 Enterprises in Taiwan, Hong Kong and Mainland China
	Taiwan Stock Exchange	•Top 5% in Corporate Governance Evaluation of Listed Companies for the 8 th consecutive year
	PricewaterhouseCoopers	•Global Top 100 Companies by Market Capitalization for the 10 th consecutive year
	R.O.C. Ministry of Economic Affairs Intellectual Property Office	<ul style="list-style-type: none"> •Ranked No.1 in Taiwan Patent Applications for the 7th consecutive year •Ranked No.1 in Taiwan Patent Grants for the 3rd consecutive year
	Germany Federal Office for Information Security	•Common Criteria, ISO/IEC 15408- EAL6 Site Certification – Fab 15A
	Corporate Synergy Development Center	<ul style="list-style-type: none"> •Taiwan Continuous Improvement Award – Gold Tower Award – Fab 2 & Fab 5, Fab 8, Fab 14A, Fab 15B, APTS •Taiwan Continuous Improvement Award – Silver Tower Award – Fab 15B, APTS, Q&R, ACCT •Taiwan Continuous Improvement Award – Best Improvement Innovation Award – Fab 2 & Fab 5, Fab 15B, APTS
	Clarivate	•2022 Top 100 Global Innovators
	CommonWealth Magazine	•Top 100 Semiconductor Enterprises
LexisNexis	•Innovation Momentum 2022: The Global Top 100	
The Asset	•The Asset Triple A Country Awards for Sustainable Finance 2022: Best corporate bond	
Environment, Safety and Health	Corporate Knights & As You Sow	•2022 Carbon Clean 200™ List
	CDP	<ul style="list-style-type: none"> •2022 CDP Supplier Engagement Leader •Water Security A Ratings •Climate Change A- Ratings
	Alliance for Water Stewardship (AWS)	•"Platinum" Class Certification with the Highest Score for the 3 rd consecutive year
	U.S. Green Building Council	•Leadership in Energy and Environmental Design (LEED) – "Gold" Class Certification – Fab 18 P4 & P5 Manufacturing Facility, Advanced Backend 2C
	Environmental Protection Administration, Executive Yuan, R.O.C.	•National Enterprise Environmental Protection Award
Society	Forbes	•2022 World's Best Employers
	Occupational Safety and Health Administration, Ministry of Labor, R.O.C.	<ul style="list-style-type: none"> •National Occupational Safety and Health Award – Enterprise Benchmarking Award •Occupational Safety and Health Sustainability Report Award

7.2 Environmental, Safety and Health (ESH) Management

TSMC believes its environmental, safety and health practices must not only meet legal requirements but should also align with internationally recognized best practices. The Company's ESH policies aim to achieve "zero incidents" and "environmental sustainability" and to make TSMC a world-class organization in environmental, safety and health management. The Company's strategies for attaining these goals are to comply with regulations, promote safety and health, strengthen recycling and pollution prevention, manage ESH risks, instill an ESH culture, establish a green supply chain, and fulfill its related corporate social responsibilities.

All TSMC and its subsidiaries' manufacturing facilities have received ISO 14001: 2015 certification for environmental management systems and ISO 45001: 2018 certification for occupational safety and health management systems. TSMC and its subsidiaries' fabs in Taiwan have each been certified by the Taiwan Occupational Safety and Health Management System (TOSHMS). All the above certifications are maintained valid. Per TSMC policy, all new facilities are required to attain the aforementioned certifications within

18 months of receiving their facility license. In 2022, all TSMC fabs in Taiwan completed the renewal of ISO 14001, ISO 45001, and TOSHMS certificates with three year validity. At the same time, three new fabs, Fab 12 Phase 8, Fab 18B and Advanced Backend Fab 6, also passed third-party verification and obtained certificates.

To reduce overall environmental, safety and health risks, TSMC strives for continuous improvement and actively seeks to enhance climate-change management, pollution prevention and control, power and resource conservation, waste reduction and recycling, safety and health management, and fire and explosion prevention as well as to minimize the impact of earthquake damage.

In order to meet regulatory and customer requirements for the management of hazardous materials, TSMC has adopted the IECQ QC 080000 hazardous substance process management (HSPM) system. All TSMC Fabs have been QC 080000 certified and maintained validity since 2007. Through the establishment of QC 080000, TSMC ensures that its products comply with international regulatory and customer requirements, including the European Union's "Restriction of Hazardous Substances (RoHS) Directive," the EU's "Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)," the "Montreal Protocol on Substances that Deplete the Ozone Layer," the "halogen-free in electronic products" initiative, perfluorooctane sulfonates (PFOS), perfluorooctanoic acid (PFOA) and related substances restriction standards. In addition, in 2016 TSMC started a project to minimize usage of the hazardous substance N-methylpyrrolidinone (NMP) and as a result by the end of 2022 NMP use in the Company's Taiwan fabs had been reduced by 97.2% compared to 2016, and achieved 2022's 95% reduction goal. TSMC will continue to further reduce NMP usage in its subsidiary fabs.

In 2011, TSMC began implementing the ISO 50001 energy management system for continuous improvement in energy conservation. As of 2022, all TSMC and its subsidiaries' manufacturing facilities had received ISO 50001 Energy Management System certification except for one. The Company's WaferTech subsidiary in the U.S. was originally scheduled to receive this certification in 2021 but it has been postponed to 2023 due to the impact of the COVID-19 pandemic.

Aiming to establish the healthiest possible workplace, in 2017 TSMC formed a corporate-level health promotion committee led by managers at the vice president level to meet on an

ad-hoc basis depending on occupational disease cases or other issues. The committee members include site directors, managers of safety and health department, and representatives from wellness, HR and legal affairs divisions. External experts have also been invited to discuss the potential risks of occupational diseases in the semiconductor manufacturing process and prevention plans for such diseases. To mitigate health risks to employees, suppliers and contractors in the workplace, TSMC has adopted rigorous safety and health control measures focused on preventing occupational injuries and diseases and promoting employee safety, physical and mental health.

To minimize the supply chain risk and fulfill corporate social responsibility, TSMC not only follows ESH best practices internally but also strives to improve the ESH performance of its suppliers and contractors through audits and counselling.

TSMC uses priority work management and self-management to govern services provided by contractors. The Company requires contractors performing level-one high-risk operations to complete certification for technicians and to establish their own ISO 45001 safety and health management system. The emphasis on self-management nurtures the sense of responsibility, with the goal of promoting safety awareness and technical improvement for all contractors in the industry. For onsite contractor personnel, TSMC has standardized courses on safety and health and increased the frequency of such courses to improve training effectiveness and safety awareness. To ensure the Company's safety protocols are accurately delivered to contractors on a timely basis, TSMC has established a digital platform for mutual communication so that onsite operational risks can be mitigated.

TSMC collaborates with suppliers to manage the sustainability of the supply chain, including formulating supplier sustainability standards, drawing up audit plans, performing audits and tracking improvements, coaching and training, and re-coaching for suppliers with poor performance. Strengthening the professional capabilities of suppliers in environmental protection, safety and health, fire response, and carbon inventory were key focuses in 2022, as the Company held the environmental protection, safety and health workshops (56 participants from 50 suppliers), fire emergency response workshops (58 participants from 50 suppliers), and product carbon footprint inventory workshop (24 participants from 20 suppliers). In addition, for the past seven years suppliers have been invited to observe TSMC's annual emergency response drills (166 participants from 161 suppliers)

and the Company's environmental, safety and health sustainability forum focused on successful case sharing (354 participants from 116 suppliers). TSMC also conducts environmental, safety and health audits at suppliers' manufacturing sites and actively assists suppliers in improving their ESH performance. Finally, the Company requests that suppliers conduct a carbon emissions inventory and encourages them to implement measures to save energy, reduce carbon emissions, conserve water and reduce waste.

7.2.1 Environmental Protection

Climate Change and Energy Management

• Task Force on Climate-related Financial Disclosures (TCFD)

In view of the potential financial risks of climate change on operations, in 2018 TSMC adopted TCFD recommendations released by the Financial Stability Board (FSB) to identify risks and opportunities and further establish metrics and target management based on the results identified.

Management Structure of TSMC Climate-related Risks and Opportunities

Category	Management Strategy and Actions
Governance	Board of Directors periodically reviews climate change related risks and opportunities <ul style="list-style-type: none"> ESG steering committee led by the Chairman is the Company's top organization dealing with climate change management. The chairperson of ESG committee serves as the executive secretary. The ESG steering committee reviews TSMC's climate change strategies and goals every quarter and reports to the Board of Directors. The energy and carbon reduction committee, led by the vice president of fab operations, deals with action implementation on climate change risks and opportunities at TSMC. This committee develops management plans, reviews the execution status and discusses future plans on a quarterly basis.
Strategy	Identify short-, medium- and long-term climate risks and opportunities through cross-departmental discussion Use scenario analysis to assess the potential operational and financial impact of significant climate risks and opportunities to the Company Promote low carbon manufacturing to approach net zero emissions and strengthen climate resilience Enhance suppliers' awareness and responsiveness to climate risks through counseling and promote their active carbon reduction efforts
Risk Management	Use the TCFD framework to establish TSMC's climate risk identification process Follow the risk identification and ranking on climate change to develop relevant responding projects Integrate climate risk identification and assessment into the enterprise risk management (ERM) process
Metrics and Targets	Set management metrics related to climate change Develop carbon emission reduction targets for TSMC and its suppliers and regularly review the progress on achieving the targets

Financial Impact Analysis of Climate Risks and Opportunities

Climate Risks	Potential Financial Impact	Climate Opportunities	Potential Financial Impact	2022 Actions
Greenhouse Gas (GHG) Emissions Cap and Carbon Tax/Carbon Fee	Restrictions on capacity expansion, increases in operation costs	<ul style="list-style-type: none"> Participation in renewable energy plans Participation in carbon trading market 	Early purchases of renewable energy, successfully increasing production capacity	<ul style="list-style-type: none"> Power purchasing agreements for renewable energy totaled 2.9 GW (Gigawatts) Used 2,190 GWh in renewable energy, and increased the proportion of renewable energy use to 10.4% Achieved 100% of renewable energy used in overseas subsidiaries and offices for the fifth consecutive year Purchased 350,000 tons of carbon credits to achieve net zero emissions from overseas plants
Trend to Net Zero Emission	<ul style="list-style-type: none"> Increased cost of installation and operation of carbon reduction equipment Increased cost of purchasing carbon offset products 	Win public recognition and carbon emissions offset cooperation Develop low-carbon product services to improve product energy efficiency	Accumulate carbon credits in preparation for future carbon emissions offset Satisfy customers' needs for energy-saving products and increase revenue	<ul style="list-style-type: none"> Received carbon credit for fluorinated-GHG and nitrous oxide reduction offset project about 600k ton 100% use of carbon neutral natural gas from Chinese Petroleum Corporation in TSMC Taiwan fabs TSMC global offices used carbon credits to achieve net zero emissions Developed energy saving products for the 5nm, 3nm and more advanced manufacturing process
Commitment of Environmental Impact Assessment (EIA)	The development of advanced technologies potentially hampered by inability to obtain renewable energy and reclaimed water	Use reclaimed water	Smooth construction of advanced production lines	TSMC reclaimed water plant in Southern Taiwan Science Park began to operate

(Continued)

Climate Risks	Potential Financial Impact	Climate Opportunities	Potential Financial Impact	2022 Actions
Uncertainty of Development of New Energy Saving Technology	Rising electricity consumption in advanced technology production lines increases production costs	Construct green buildings	Lower utility costs	Received six green building certifications
Impact on the Company's Reputation	Inability to satisfy the expectations of stakeholders, negatively impacting the Company's reputation	Improve the Company's reputation	Upgrade TSMC performance in stakeholders' sustainability ranking	<ul style="list-style-type: none"> Led the industry as the only semiconductor company chosen for the Dow Jones Sustainability Indices (DJSI) for the 22nd consecutive year Ranked as CDP A- list on climate and A list on water security (Leadership)
Drought (TSMC Operation)	Production negatively affected, causing financial losses and a decrease in revenue	Increase resilience and ability to cope with natural disasters	Strengthen resilience in coping with climate change impact, lower risk of operations disruption, and reduce potential losses	<ul style="list-style-type: none"> Raised the building base of Fab 18 Phase 6 and Phase 7 two meters higher Fab 18 Phase 6 and Phase 7 committed to using and developing reclaimed water Required suppliers to assess drought and flooding risk in operating facilities and implement related risk reduction actions Implemented drills based on drought emergency procedures
Drought (Supply Chain)				
Flooding (TSMC Operation)				
Flooding (Supply Chain)				
Rising Temperatures	Increase in electricity consumption, cost, and carbon emissions	Strive for low-carbon, green manufacturing	Save energy and cut costs	Conserved 700 GWh of electricity through energy-saving projects

Greenhouse Gas (GHG) Emission Reduction and Energy Management

In response to threats presented by extreme weather, TSMC sets strategies and targets, ensures sound execution and strives to build a sustainable culture. In 2021, TSMC announced its long-term goal of net zero emissions by 2050, while setting the short-term goal of zero growth in emissions by 2025. By actively implementing emission reduction measures, the Company is working to return its carbon emissions to 2020 levels by 2030. TSMC remains committed to becoming a global leader in green manufacturing.

TSMC actively participates in the initiatives of the World Semiconductor Council (WSC) and has leveraged its past experience to develop best practices to reduce perfluorinated compounds (PFC) emissions, measures that have been fully adopted and implemented since 2012. In 2013, in accordance with the "EPA Early Actions for Carbon Credit of Greenhouse Gases Reduction" regulation, TSMC applied for recognition of GHG reduction from 2005 to 2011 and received 5.28 million tons of carbon dioxide credits in 2015. Those carbon credits can be used to offset GHG emissions of new manufacturing facilities regulated by Environmental Impact Assessment (EIA) Act, which can support the Company's sustainable operations and mitigate climate-change risk.

Since 2005, TSMC has completed the GHG inventory program and taken a complete inventory of its GHG emissions to gain ISO 14064 certification. The inventory shows that the major direct GHG emissions are PFCs, which are widely used in the semiconductor manufacturing process. The primary indirect GHG emission is electricity consumption. The analysis of the inventory data is not only to meet domestic regulatory reporting requirements but also to serve as a baseline reference for the Company's strategy to reduce GHG emissions. Since 2005, TSMC has also participated in the international disclosure and rating agency – CDP to publicly disclose climate change information for 18 consecutive years and to continuously review and improve related management practices.

In response to the commitment of global climate summit "Paris Agreement" and the Republic of China's "Greenhouse Gas Reduction and Management Act" promulgated in 2015, TSMC initiated a cross-functional platform for carbon management in 2016. The three areas of focus of this platform are legal compliance, emission reduction, and carbon credit acquisition. In addition to participating in official regulatory consultation and communications meetings, the Company also sets short-, medium- and long-term reduction targets through the energy and carbon reduction committee led by the fab operations vice president. The measures are carried out by energy and carbon reduction teams of individual fabs. Because more than 75% of TSMC's GHG emissions come from electricity consumption, the Company emphasizes energy conservation and carbon reduction initiatives. TSMC has not only implemented energy-conserving designs in its manufacturing fabs and offices but has also continuously improved the energy efficiency in operating its facilities. These efforts simultaneously reduce carbon dioxide gas emissions and costs. As a result, TSMC has conserved 3.1 billion kilowatt hours (kWh) of power since 2016. In February 2023, Taiwan renamed the "Greenhouse

Gas Reduction and Management Act” to the “Climate Change Response Act” and amended the provisions. Relevant laws and regulations will be formulated in the future. TSMC will continue to pay attention to and evaluate the company’s impact, so as to respond early.

From 2015 to 2017, TSMC voluntarily participated in the R.O.C. Ministry of Economic Affairs’ green power purchasing program and became the largest buyer in Taiwan, purchasing 400 million kilowatt hours (kWh) of green power. Although the Taiwan Power Company stopped selling green power in 2018, TSMC still aggressively negotiates the purchase of renewable energy with other suppliers in Taiwan. Targeting a long-term commitment of 100% renewable energy, TSMC has committed to achieving 40% renewable energy by 2030. Since 2018, the overseas manufacturing fabs and offices have purchased renewable energy, REC and carbon credits to offset all carbon emissions caused by power consumption. All TSMC overseas sites achieved zero carbon emission of electricity consumption in 2022 again. TSMC also used carbon credits to offset carbon emissions of natural gas consumption in kitchens, achieving the milestone of net zero emissions for TSMC global offices. Although development of renewable energy in Taiwan is in an early stage, TSMC has established a renewable energy task force and continues to communicate closely with government through the Association of Science Park Industries and Taiwan Semiconductor Industry Association. The Company has made recommendations to the government in the hope that the collaboration would speed up renewable energy development in Taiwan. The recommendations include expanding the development of offshore wind power and increasing the supply of the renewable energy trading platform. TSMC continues to find renewable energy. By the end of 2022, the total installation capacity of renewable energy contracted reached 2.9 GW (Gigawatts). The renewable energy will be provided to TSMC gradually after the related business process has been completed. This is a clear manifestation of the Company’s active support of the UN Sustainable Development Goals (SDGs).

In 2020 TSMC became the first semiconductor company to join RE100 (the global corporate renewable energy initiative) and pledged that power consumption of all the Company’s manufacturing plants and offices will be 100% supplied from renewable energy by 2050.

TSMC GHG Emissions in Recent Two Years

Unit: Metric ton CO₂ equivalent

Year	Scope	Scope 1		Scope 2		Verification Party	Verification Status
		Total Emissions (Metric Ton CO ₂ e)	Intensity (Metric Ton CO ₂ e / K NTD)	Total Emissions (Metric Ton CO ₂ e)	Intensity (Metric Ton CO ₂ e / K NTD)		
2022	Parent Company	1,669,738	0.0007	9,540,171	0.0042	DNV	Under Verification
	VisEra Technologies Company Ltd.	5,845	0.0006	29,683	0.0033	DNV	Under Verification
	TSMC China Company Limited	187,181	0.0066	0	0	DNV	Under Verification
	TSMC Nanjing Company Limited	46,209	0.0011	0	0	DNV	Under Verification
	WaferTech, LLC	109,784	0.0107	0	0	AWN	Under Verification
2021	Parent Company	1,808,427	0.0011	8,116,439	0.0052	DNV	Reasonable Assurance
	VisEra Technologies Company Ltd.	7,282	0.0008	39,057	0.0043	DNV	Reasonable Assurance
	TSMC China Company Limited	196,834	0.0093	0	0	DNV	Reasonable Assurance
	TSMC Nanjing Company Limited	29,778	0.0011	0	0	DNV	Reasonable Assurance
	WaferTech, LLC	105,346	0.0136	0	0	AWN	Limited Assurance

Note 1: GHG includes CO₂, CH₄, N₂O, HCFCs, PFCs, SF₆, NF₃

Note 2: Scope 1: Direct emissions, i.e. sources owned or controlled by the Company; according to the 2019 Refinement to the Guidelines for National Greenhouse Gases Inventories of the United Nations; and use the Global Warming Potential (GWP) referring to the Intergovernmental Panel on Climate Change (IPCC) AR5 for calculation

Scope 2: Indirect emissions, i.e. those arising from externally purchased electricity, heat or steam. The calculation is according to market-based method.

TSMC GHG Reduction Target and Achievement Status

Strategy	2030 Goal	2022 Target and Achievement	Achievement Status
Continue to use best available technology to reduce emissions of GHG and become an industry leader in low-carbon manufacturing	Reduce GHG emissions per unit product (metric ton of carbon dioxide equivalent (MTCO ₂ e)/12-inch equivalent wafer mask layer) by 30% (Base year: 2010)	Reduced GHG emissions per unit product (metric ton of carbon dioxide equivalent (MTCO ₂ e)/12-inch equivalent wafer mask layer) by 6% (Target: 6%)	Achieved

Air and Water Pollution Control

The Company has installed effective air and water pollution control equipment in each wafer fab to meet regulatory emissions standards. In addition, TSMC maintains backup pollution control systems, including emergency power supplies, to lower the risk of pollutant emissions in the event of equipment failure. The Company centrally monitors the operations of its air and water pollution control equipment 24 hours a day by rotating staff and treats system effectiveness as an important tracking item to ensure the quality of emitted air and discharged water.

TSMC uses an intranet website to collect and measure water recycling volumes company-wide. To make the most effective use of Taiwan’s limited water resources, all TSMC fabs strive to increase water reclamation by adjusting the water usage of manufacturing equipment and improving wastewater reclamation. The long-term target is a 30% decrease by 2030. By 2022, TSMC’s unit product water consumption had decreased by 2.6% from 2010 levels. Challenges in 2022 included new wafer fab (Fab 18B), which was in the process of setting up, so water conservation rate decreased as the production line was still in the testing stage and production had not yet reached economic scale. Excluding the aforementioned new wafer fab, the Company’s water consumption per unit of product decreased by 15.6% compared with the base year, and the annual target was achieved. All TSMC fabs meet or exceed the process water reclamation rate standard of the Science Park Administration. Some fabs are able to reclaim more than 90% of process water, outperforming most semiconductor fabs around the world. The Company also makes every effort to reduce non-manufacturing-related water consumption, including water used in air conditioning systems, sanitary facilities, wall cleaning and landscaping activities and in kitchens.

Since water resources are restricted by geographical conditions, TSMC shares its water saving experience and expertise with other semiconductor companies through the Association of Science-Based Industrial Park to promote water conservation in order to achieve Science Park’s goals and ensure a long-term balance of supply and demand. In addition, TSMC has committed to further recycling water resources and supporting the government policy and promotion of reclaimed water. TSMC’s Southern Taiwan Science Park Reclaimed Water Plant began operation on September 19, 2022, the first private reclaimed water plant in Taiwan. Introducing reclaimed water into the manufacturing process is pioneering work in the semiconductor industry. TSMC promises to continue to increase the utilization of reclaimed water in newly constructed fabs in the future.

To further enhance water resources management, TSMC has adopted and followed the Alliance for Water Stewardship (AWS) standard, the world’s only sustainable water management standard. Early in 2022, Fab 12A, Fab 12B, Fab 5, located in Hsinchu Science Park, and Advanced Backend Fab 3 in Longtan Science Park passed a third-party verification audit and also obtained AWS platinum level certification. TSMC’s advanced product fabs in Taiwan’s three major Science Parks have all achieved AWS platinum certification. TSMC is the world’s first to do so in the semiconductor industry.

TSMC Water Usage in Recent Two Years

Year	Total Water Usage (m ³) (Note 1)	Unit Product Water Usage (L/12-inch wafer-e-layer)
2022	104,681,272	137.3
2021	82,674,982	119.7

TSMC Water Usage Reduction Target and Achievement Status

Strategy	2030 Goal	2022 Target and Achievement	Achievement Status
Enforce climate change mitigation policies, implement water conservation and water shortage adaptation measures	Reduce unit water consumption (liter/12-inch equivalent wafer mask layer) by 30% (Base year: 2010)	Reduced unit water consumption by 2.6% (Target: 16%)	Unachieved (Note 2)

Note 1: Includes TSMC fabs in Taiwan and Subsidiaries

Note 2: Excluding the impact of new plants (Fab 18B) not yet optimized, TSMC reduced water consumption per unit of product by 15.6%.

Waste Management and Recycling

In recent years, as TSMC continued to develop advanced processes and expand capacity rapidly both at home in Taiwan and overseas, waste production has increased due to the complexity of new process development, demand for reliable yield rates, and increasing use of raw materials.

To achieve the goal of sustainable resource utilization, TSMC has a designated unit responsible for waste recycling and disposal. The priorities are process waste reduction, onsite and offsite recycling and regeneration, with incineration and landfill as least desirable final options. In 2017, TSMC amended its articles of incorporation to add four business items for chemical materials to ensure waste flow and reduce risks of improper waste disposal by commissioned agencies. It also set up onsite resource activation facilities to convert waste resources produced by processing activities into products to be used onsite or to sell to other factories. In 2021, TSMC recycled waste copper sulfate, cobalt-containing liquid, waste sulfuric acid and waste ammonium sulfate, all of which were regenerated into products. The Company also developed the system of cryolite synthesis whereby waste hydrogen fluoride (HF) is recycled and regenerated into raw material used in other industries. As a result, the Company has become a leader in waste resources regeneration. In 2022, TSMC became the first company in the semiconductor industry to use anaerobic digestion technology to reuse organic sludge in order to generate green electricity and implement green manufacturing. At the same time, TSMC's fabs in Taiwan achieved a 95% waste recycling rate for the eighth consecutive year, with a landfill rate below 1% for the thirteenth consecutive year. Furthermore, Fab 12 earned the platinum UL 2799 certification, the highest grade for zero landfill in 2021. All TSMC facilities in Taiwan plan to obtain UL 2799 certification in 2023.

TSMC Waste Quantity and Outsourced Unit Waste Disposal in Recent Two Years (Note 1)

Year	Outsourced General Waste (ton) (Note 2)	Outsourced Hazardous Waste (ton) (Note 2)	Outsourced Unit Waste Disposal (Note 3) (kg/12-inch equivalent wafer mask layer)
2022	342,804	401,215	0.99
2021	335,080	339,623	0.99

Note 1: The data in the table are preliminary results collected by TSMC and have not yet been verified by a third party

Note 2: Totals include Taiwan and subsidiary facilities

Note 3: Taiwan facilities

TSMC Waste Reduction Target and Achievement Status

Strategy	2030 Goal	2022 Target and Achievement	Achievement Status
Promote waste reduction by source separation and require vendors to provide low chemical consumption equipment	Outsourced unit waste disposal per wafer ≤ 0.50 (kg/12-inch equivalent wafer mask layer)	Outsourced unit waste disposal per wafer 0.99 (kg/12-inch equivalent wafer mask layer) (Target: $\leq 0.99\%$)	Exceeded

In order to ensure that all waste is treated and recycled properly, TSMC closely tracks the recycling and reuse practices of its cleanup and disposal vendors. The Company carefully selects waste disposal and recycling vendors that have certificates and permits, regularly checks the onsite operational status, disposal declaration forms, operational records, etc., compares with actual reuse and disposal, and takes proactive steps to strengthen vendor auditing. For example, all waste transportation contractors have agreed to join the GPS Satellite Fleet so that the cleanup transportation routes and abnormal stays for all trucks can be traced. All waste recycling and disposal vendors have installed closed-circuit TV systems at operating sites to monitor and audit waste handling. At the same time, to further guarantee proper waste handling, TSMC built the system of waste intelligent fast track (S.W.I.F.T) and completed five different types of waste treatment vendors for pilot testing in 2022. TSMC intends to roll out SWIFT to all waste treatment vendors in 2025. By using Artificial Intelligent technology replacing in-person on-site spot checks, the Company increases inspections efficiency by 65 times and reduces manual inspection by 13,000 hours each year. In addition, TSMC also conducts ongoing surveys of recycled product tracking and requires all recycling contractors to report their recycled product sales monthly to track waste flow and ensure that actions are taken to adhere to lawful and proper waste recycling and treatment.

Environmental Accounting

The purpose of TSMC's environmental accounting system is to identify and quantify environmental costs for internal management. At the same time, the Company also evaluates the savings or economic benefits of environmental protection programs so as to continuously promote economically effective programs. While environmental expenses are expected to continue to rise, environmental accounting can help manage these costs more effectively. TSMC's environmental accounting measures various environmental costs, establishes independent environmental account codes, and provides the data to all units for use in annual budgeting. The Company's economic

benefit evaluation calculates cost savings for energy conservation, water or waste reductions and recycling benefits in accordance with its environmental protection programs. The benefits disclosed in this report include real income from projects such as waste recycling and savings from major environmental projects. In 2022, the total benefits of environmental protection programs of TSMC fabs including waste recycling exceeded NT\$3,720 million.

2022 Environmental Cost of TSMC Fabs in Taiwan

Unit: NT\$ thousands

Classification	Description	Expense	Investment
1. Direct Costs for Reducing Environmental Impact			
(1) Pollution Control	Fees for air pollution control, water pollution control, and others	9,210,702	9,251,097
(2) Resource Conservation	Costs for resource (e.g. water) conservation	0	4,127,825
(3) Energy Conservation	Costs for electricity consumption saving	0	1,349,951
(4) GHG Reduction	Include: (1) Process GHG emissions abatement equipment; (2) Premium for purchasing renewable energy; (3) Costs for purchasing carbon credits; (4) Other costs for direct GHG emissions reduction	1,369,799	6,134,888
(5) Industrial Waste Disposal and Recycling	Costs for waste treatment (including recycling, incineration and landfill)	3,528,155	0
2. Indirect Costs for Reducing Environmental Impact (Environmental Managerial Costs)			
	(1) Cost of training (2) Environmental management system and certification expenditures (3) Environmental impact measurement and monitoring fees (4) Environmental protection product costs (5) Environmental protection organization fees	597,111	817,235
3. Other Environmental Costs			
	(1) Costs for soil decontamination and natural environment remediation (2) Environmental damage insurance fees and environmental taxes and expenses (3) Costs related to environmental settlement, compensations, penalties and lawsuits	0	0
Total		14,705,767	21,680,996

2022 Environmental Efficiency of TSMC Fabs in Taiwan

Unit: NT\$ thousands

Category	Description	Efficiency
1. Cost Savings of Environmental Protection Projects	Energy savings	1,735,282
	Water savings	41,845
	Waste reduction	1,102,000
2. Economic Efficiency for Industrial Waste Recycling	Recycling of used chemicals, wafers, sputter targets, batteries, lamps, packaging materials, paper cardboard, metals, plastics, and other waste	844,000
Total		3,723,127

Green Building and Green Factory

Since 2006, TSMC has adopted standards from both the Taiwan Green Building and the U.S. Green Building Council – Leadership in Energy and Environmental Design (LEED) for new fab and office building designs to achieve better energy and resource efficiency than conventional designs. The Company has also continued to upgrade existing office buildings to comply with the LEED standard each year. From 2008 to 2022, 40 of TSMC's fabs and office buildings achieved LEED certifications: three platinum and 37 gold. During this time, the Company also received six Taiwan Intelligent Building diamond-class certifications and 28 Taiwan Ecology, Energy saving, Waste reduction and Health (EEWH) certifications: 21 diamond, five gold and two silver. Since 2009, the Company has been a leading supporter of the Taiwan government's Green Factory Label standard, including the Clean Production and Factory Green Building evaluation systems. TSMC received Taiwan's first Green Factory Label and 14 labels in total as of the end of 2022 and is the most awarded company in Taiwan.

Environmental Audit Results in Violation of Environmental Regulations

In 2022 and as of the date of this Annual Report, TSMC has had no environmental regulation violations.

7.2.2 Sustainable Products

TSMC collaborates with its upstream material and equipment suppliers, design ecosystem partners and downstream assembly and testing service providers to minimize environmental impact. Reducing the resources and energy consumed for each unit of production allows the Company to provide customers with more advanced, power efficient, and ecologically sound products. These include ultra-low power (ULP) and low operating voltage (low Vdd) chips for wearables and IoT devices, low-power chips for mobile devices, high-efficiency LED driver chips for flat panel display backlighting, indoor/outdoor solid state LED lighting, Energy Star certified low standby AC-DC adaptor chips, high-efficiency DC brushless motor chips, electric vehicle chips and low-power server chips. By leveraging TSMC's superior energy-efficient technologies, these chips support sustainable city infrastructure, greener vehicles, smart grids, more energy efficient servers and data centers and other applications. In addition to helping customers design low power, high performance products to reduce resource consumption over the product's life cycle, TSMC's green manufacturing practices provide further green value to customers and other stakeholders.

TSMC-manufactured ICs are used in a broad variety of applications in various segments of the computer, communications, consumer, industrial, electric vehicle, server and data center, and other electronics markets. Through TSMC's manufacturing technologies, customers' designs are realized and their products are incorporated into people's lives. These chips, therefore, make significant contributions to the progress of modern society. TSMC endeavors to achieve profitable growth while providing products that add environmental and social value. Listed below are several examples of how TSMC-manufactured products make significant contributions to the environment and society.

Environmental Contributions by TSMC Foundry Services

1. Continue to Drive Technology to Reduce Power Consumption and Save Resources

- To play its part for sustainability, TSMC continues to drive the development of advanced semiconductor process technologies to support customers with creating more advanced, energy-efficient and environmentally friendly products. In each new technology generation, circuitry

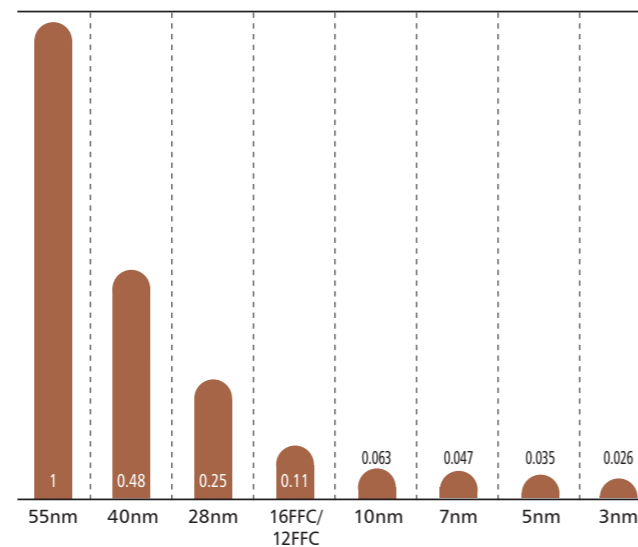
line widths shrink, making transistors smaller and reducing product power consumption for completing the same tasks or achieving the same level of performance. In addition, calculations using the Industry, Science, and Technology International Strategy Center's model reveal that in 2020 TSMC helped the world conserve 4 kWh of energy for each 1 kWh spent in production – a testimony to TSMC's commitment to green manufacturing both internally and externally. (Please refer to "Sustainable Products by TSMC Facilitates Global Energy Conservation" on page 11 of TSMC's 2020 Corporate Social Responsibility Report.)

- As TSMC quickly ramped up its 7nm and newer generation technologies, combined wafer revenue contribution grew significantly from 9% in 2018 to 53% in 2022. TSMC's objective is to continue R&D investment and increase wafer revenue contribution in 7nm and beyond technologies, helping the Company achieve both profitable growth and sustainability.

TSMC Wafer Revenue Contribution from 7nm and Beyond Technologies

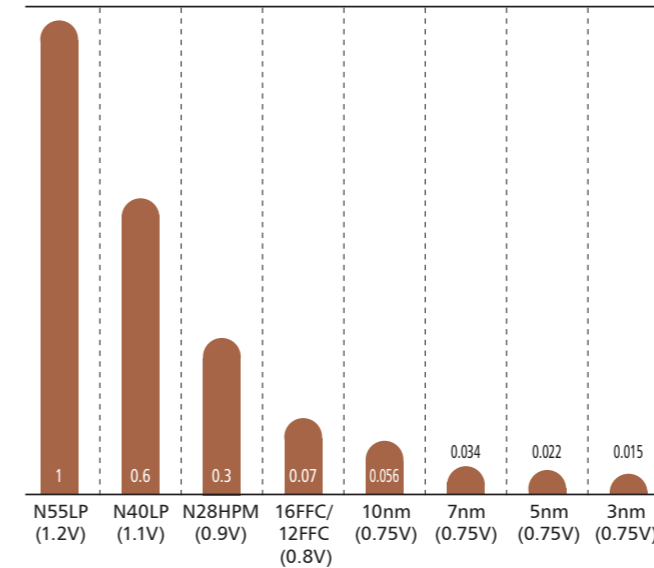
2018	2019	2020	2021	2022
9%	27%	41%	50%	53%

Chip Die Size Cross-Technology Comparison
Die size reduces as line width shrinks



Note: The logic chip/SRAM/IO (input/output) ratio, which affects die size and power consumption, was re-aligned.

Chip Total Power Consumption
Cross-Technology Comparison
More power is saved as line width shrinks



Note: The logic chip/SRAM/IO (input/output) ratio, which affects die size and power consumption, was re-aligned.

2. Provide Customers Leading Power Management IC Process with the Highest Efficiency

- TSMC's leading manufacturing technology helps customers design and produce green products. Power management chips, the key components that supply and regulate power to all other IC components within electronic devices, are the most notable green IC products. TSMC helps customers produce industry-leading power management chips with more stable and efficient power supplies and lower energy consumption. Power management ICs manufactured by TSMC for customers are widely used in computer, communication, consumer, electric vehicle, server and data center, and other systems around the globe.

3. Drive Industry-leading, Comprehensive ULP Technology Platform

- To meet low-power consumption requirements for IoT markets, such as wearable, smart home, and health care products, TSMC continues to invest in expanding and enhancing its ultra-low power processes. The Company provides industry's leading and most comprehensive ultra-low power (ULP) technology platform to support smart edge devices that demand increased computing capabilities, including smart watches, smart speakers, smart cameras, hearing aids, pacemakers and various other smart appliances. TSMC's industry-leading ULP offerings

include FinFET-based 12-nanometer technology, N12e™, featuring energy efficiency with high performance that results in more computing power and AI inferencing, 22nm Ultra-low leakage (ULL), 28nm ULP, 40nm ULP, and 55nm ULP, which have been widely adopted by various edge AI system-on-a-chip (SoC), battery-powered applications. TSMC has also extended its low Vdd offerings with simulation program with integrated circuit emphasis (SPICE) models with a wide-range of operating voltages for extreme low-power applications.

4. Develop Greener Manufacturing to Lower Energy Consumption

- TSMC continues to develop more advanced and efficient technologies to reduce energy/resource consumption and pollution per unit during the manufacturing process, as well as power consumption and pollution during product use. In each new technology generation, circuitry line widths shrink, making chips smaller for the same circuit designs and lowering the energy and raw materials consumed for per chip in manufacturing. In addition, the Company continuously provides process simplification and new design methodology based on its manufacturing excellence to help customers reduce design and process waste so as to produce more advanced, energy-saving and environmentally friendly products. For total energy savings and benefits realized in 2022 through TSMC's green manufacturing, see Environmental Accounting on page 160-161 in this Annual Report.

Social Contributions by TSMC Foundry Services

1. Unleash Customers' Mobile and Wireless Chip Innovations that Enhance Mobility and Convenience

- The rapid growth of smartphones and tablets in recent years reflects strong demand for mobile devices, which accelerates innovations for IC products such as baseband, RF transceivers, application processors (AP), wireless local area networks (WLAN), CMOS image sensors (CIS), near field communication (NFC), Bluetooth, and global positioning systems (GPS), organic light-emitting diode (OLED) display drivers and power management ICs (PMIC) among others. These mobile devices offer remarkable convenience in daily living, and TSMC contributes significant value to these devices in the following ways: (1) new TSMC process technologies help chips achieve faster computing speeds in smaller sizes, leading to smaller form factors for these electronic devices. In addition, TSMC SoC technology integrates more functions into one chip, reducing the total number of chips in electronic

devices, again resulting in a smaller system form factor; (2) new TSMC process technologies also help chips reduce power consumption, allowing mobile devices to be used for a longer period of time; and (3) TSMC helps spread the growth of more convenient wireless connectivity such as 3G/4G/5G and WLAN/Bluetooth, meaning people can communicate more efficiently and “work anytime and anywhere,” significantly increasing the productivity and mobility of modern society.

2. Unleash Customer Innovations in CMOS image sensors (CIS) and micro-electromechanical systems (MEMS) that enhance human health and safety and create green products

- To make machines smarter, safer and more user and environmentally friendly, sensors are a must. Optical, acoustic, motion, and environment sensors are mostly made using either CIS or MEMS technologies. TSMC continues to put substantial effort into developing more advanced CIS and MEMS technologies to enable customers to create new products for new applications. For CIS, TSMC and customers have extended applications from traditional RGB (red, green, blue) sensing to 3D depth sensing, optical fingerprint, and near infrared (NIR) machine vision, etc. For MEMS, TSMC and customers have extended applications from traditional motion sensing to microphone, bio-sensing, micro-speakers, medical ultrasound actuators and more. TSMC customers’ sensing devices are used in consumer electronics, mobile communication, automotive electronics, industrial, and medical devices, and so on. They are increasingly smaller, faster, more accurate and more energy efficient, greatly enhancing human convenience, health and safety, and contributing to sustainability. TSMC customers’ CIS and MEMS products are used in a number of advanced medical treatments as well as in preventative health care applications. Examples include early warning systems to minimize the injury from falls for the elderly, systems to detect physiological changes, car safety systems and other applications that significantly improve human health and safety. Moreover, by monitoring the working environment and conditions, advanced sensors can make equipment smarter so that it can operate in a more energy efficient way.

7.2.3 Safety and Health

Safety and Health Management

TSMC’s safety and health management is compliant with local and international standards and adheres to the management approach of “Plan, Do, Check, Act” to prevent accidents, promote employee safety and health, and protect Company assets. All TSMC fabs in Taiwan have received Taiwan Occupational Safety and Health Management System (TOSHMS) certification since 2009. In 2018, the International Organization for Standardization released ISO 45001: 2018, replacing OHSAS 18001, with major changes in the expansion of the scope, support and participation of the leadership, collection and planning of internal and external issues, the expectations and demands of stakeholders, the assessment of risk inspections, communication and consultation with non-managers, the application of performance indicators, and the evaluation of corrective and preventive actions. Meanwhile, ISO 45001 ensures the spirit of the system can be effectively implemented at the management level through management review, internal audit, automatic check, and security patrol to identify safety concerns and opportunities for improvement. All Company fabs in Taiwan received ISO 45001 certification for occupational health and safety in 2019 and all TSMC subsidiaries obtained the certification in 2020. All the above certifications have been maintained. New facilities are required to receive aforementioned certifications within 18 months after receiving facility license per TSMC’s internal policy.

Besides accident prevention, TSMC has established emergency response procedures to protect employees and contractors if a disaster should occur, as well as to prevent and/or reduce the negative impact on the community and the environment. TSMC communicates regularly with suppliers to ensure that potential risk in the operation of production equipment is minimized and that safety control procedures are followed rigorously during installation. The Company places stringent controls on high-risk operations and also evaluates the seismic tolerance of its facilities and equipment to reduce the risk of earthquake damage.

For epidemics, TSMC has established corporate-level prevention committees and procedures for emergency response to outbreaks of infectious diseases.

Working Environment and Employee Safety and Health Protection

The Company’s ESH policy is focused on establishing a safe working environment, preventing occupational injury and illness, keeping employees healthy, enhancing every employee’s awareness and sense of accountability to ESH, and building a strong ESH culture.

There were a total of 35 occupational injuries at TSMC in 2022, involving 35 people, representing approximately 0.04% of the total number of employees. The disabling injury frequency rate (FR) was 0.27, under the 0.4 target, and the disability injury severity rate (SR) was 3, meeting the target of less than 4. In response, TSMC is reviewing potential improvement measures, such as interlocking devices for machine safety, as well as standard safety operation procedures. In addition to regular reviews, the caring program for employees has been enhanced and managers have been directed to pay closer attention to the physical and mental state of employees to ensure their safety and health during their work.

TSMC safety and health management operations apply to the following:

• Equipment Safety and Health Management

In addition to meeting regulatory requirements and internal standards, as well as mitigating ESH-related risks when building or expanding facilities, TSMC also maintains procedures governing new equipment and raw materials, requires safety approvals for bringing new tools online, updates safety rules, and implements seismic protection and other safety measures.

TSMC requires that all new tools meet SEMI-S8 requirements and that appropriate supplementary control measures be taken to reduce ergonomic risk. Moreover, the Company endeavors to automate the transportation of 300mm front-opening unified pods (FOUPs) to prevent accumulative physical damage caused by repetitive manual handling of this equipment. TSMC 300mm fabs have all converted to automatic transportation control.

• Environmental, Safety and Health Evaluation of New Tools and New Chemical Substances

As a technology leader in the global semiconductor industry, TSMC operates increasingly diversified process tools and introduces new chemicals in the R&D stage. Before using new tools or new chemicals, they are reviewed carefully by

the new tools and new chemical review committee. The purpose is to ensure that new tools are compliant with the semiconductor industry’s safety standards (such as SEMI-S2) and that environmental, safety and health concerns about new chemicals are addressed and controlled including the use of engineering controls and personal protection equipment, as well as operational safety training during storage, transportation, usage and disposal. A total of 434 cases of new tools and chemical substances were passed by the new tool and new chemical review committee in 2022, and they were evaluated and reviewed in accordance with the aforementioned standards before entering TSMC.

• General Safety Management, Training and Audit

All TSMC manufacturing facilities hold environmental, safety and health committee meetings on a monthly basis. TSMC has adopted multiple preventive measures such as controls on high-risk work, contractor management, chemical safety management, personal protective equipment requirements, and safety audit management. In addition, the Company maintains detailed disaster response procedures and performs regular drills designed to minimize injuries to employees and damage to property, as well as the impact on society and the environment in the event of a disaster.

TSMC Safety-related Training and Promotion in the Recent Two Years

Year	Total Number of Employees who have Completed Safety-related Training
2022	271,702
2021	289,398

• Working Environment Hazardous Factors Management

TSMC conducts workplace hazard assessments to provide a comfortable, safe workplace to employees. The Company also educates employees and requires them, when appropriate, to use personal protective equipment (PPE) to prevent hazardous exposures.

The Company performs semi-annual workplace environment assessments of physical and chemical hazards, including CO₂ concentration, illumination, noise, and hazardous chemical substances as regulated by local laws. In addition, TSMC performs exposure assessments and uses hierarchy management control for chemicals with potential health hazards. If abnormal measurements occur, events happen, or an exposure assessment indicates there is an adverse health

effect on employees, ESH professionals immediately conduct onsite observation and intervention to reduce the risk of hazardous factors exposure to acceptable levels.

● Health Promotion Program

In order to establish the healthiest possible workplace and reduce the incidence of occupational disease, TSMC formed a corporate-level committee to carry out health promotion programs covering three key areas:

1. Exposure and health risk assessment: develop an exposure assessment system to identify high health risk employees.
2. Hazardous training and notification: use standardized training materials for employees and contractors in all TSMC fabs. Inform them of the health risks and prevention measures at the workplace before working or providing any services there.
3. Strengthen management of chemicals with significant health risks: request suppliers that all materials they provide to TSMC must comply with applicable laws including clear disclosure of any hazardous substances. Perform sampling of raw materials used in the manufacturing process to confirm that they do not contain any carcinogenic, mutagenic or toxic-reproductive materials as claimed in supplier's safety data sheet (SDS).

● Emergency Response

The planning and execution of an effective emergency response requires identifying potential high-risk events via risk assessment and being prepared for various scenarios. It should focus on continuous improvements and drills covering all potentially serious events. TSMC's emergency response plans include procedures for rapid-response crisis management and disaster recovery for potential incidents.

All TSMC fabs conduct major annual emergency response exercises and evacuation drills. TSMC's onsite service contractors are also required to participate in emergency response planning and exercises to ensure cooperation in handling accidents and to effectively minimize any damage caused by disasters. In 2022, the Company held 109 evacuation drills and 53 fire drills. At least every two years, each fab director invites fab management and support functions to participate in business continuity drills for potentially high-risk events such as earthquake, fire and flood (at the Tainan site). Since 2018, TSMC has conducted complex accident emergency response drills, which include simultaneous scenarios for earthquake, fire and chemical spills to ensure rapid response

to emergencies so that losses can be minimized in the event of a real disaster. In 2020, TSMC took lead in the industry to introduce the all-hazard approach recommended by the Federal Emergency Management Agency (FEMA) to conduct disaster prevention exercises.

In response to the COVID-19 pandemic, TSMC added tabletop exercises to disaster prevention training in an effort to minimize the risks of group infections that may arise as a result of full-scale exercises. The inclusion of tabletop exercises also aids in the verification of full-scale exercise procedures to make disaster response more comprehensive, thus effectively mitigating the impact of various types of disasters on business continuity in the future. As of 2022, 428 sessions of tabletop exercises had been completed in addition to 235 full-scale exercises.

In addition to the regular emergency response drills held by engineering and facilities departments each quarter, the Company's laboratory, canteen, dormitory, and shuttle bus personnel also hold emergency response drills to prepare for events such as earthquakes, chemical spills, ammonia release, fires and traffic accidents.

● Emerging Infectious Disease Response

TSMC has a dedicated corporate ESH organization to monitor emerging infectious diseases around the world, to assess any potential impact on the workplace, and to provide an appropriate strategic response plan. In previous outbreaks such as SARS in 2003, H1N1 influenza in 2009, and MERS in 2015, as well as with the current COVID-19 threat, TSMC followed the Taiwan CDC's (Centers for Disease Control) rules and convened the corporate influenza response committee to develop the Company's strategies. These strategies included educating employees in prevention and response, publishing guidelines for managers, establishing guidelines for employee sick leave due to flu, and installing alcohol-based hand sanitizers at appropriate locations. The Committee also monitors the status of employee leave due to illness and, at the same time, develops a continuity plan to address manpower shortages and minimize business impact. In order to protect the health of TSMC employees, their families, and work partners, employees are encouraged to be fully vaccinated if in healthy condition. In addition, TSMC reviews the situation from time to time and formulates appropriate preventive measures such as daily body temperature checks and updated vaccination information before entering Company facilities and

continues to follow epidemic prevention recommendations such as mask wearing, frequent hand washing and social distancing.

● Employee Physical and Mental Health Enhancement

TSMC believes that employee physical and mental health is not only fundamental to maintaining sound business operations but is also an important part of a corporation's responsibility. To preserve and promote the physical and mental health of its employees, TSMC fosters collaboration among the onsite industrial safety and environmental protection department, the onsite medical personnel of the health center, and physicians of occupational medicine. TSMC strives to reduce cerebral and cardiovascular conditions or injuries that might be induced or aggravated by overwork, night work or shift work. The Company conducts programs for maternal health protection and for prevention of cumulative trauma disorders as well. TSMC devotes significant resources to mental health awareness, focused not only on hazards at work but also on employee health in general. In 2022, through planned personal health management, (1) 543 female employees participated in the maternal health program, and the completion rate was 100%. All but one of them were at first degree risk, where there was no potential harm to the mother or infant. One woman was assessed as second degree risk, with potential harm to the mother or infant, but after proper adjustments to her work duties, her risk was downgraded to first degree. (2) Through analysis of historical cerebral and cardiovascular cases of its employees, TSMC has sharpened the disease assessment criteria used by contracted doctors, and, in combination with internal annual health examination reports and work scheduling information, the Company was able to identify 4,485 employees with middle to high risk for cerebral and cardiovascular diseases. These employees were provided with health education and medical assistance. Also, they and their managers received recommended changes in working hours and shifts to reduce health risks. (3) 201 employees were identified as high risk for cumulative trauma disorders, including one who might also have job-related risks, and the Company adjusted working conditions accordingly to reduce potential risks. (4) As obesity has been considered as a precursor to hyperglycemia, dyslipidemia, and hypertension and insomnia, TSMC has held health promotion programs for several consecutive years. In 2022, in light of the COVID-19 pandemic and catering to the younger generation's preference for social and video media, apart from physical weight loss activities (6,458 participants; total weight loss reached

5,322.9kg), TSMC conducted a series of online interactive activities including: three sessions of "Health Lecture Online" with 2,876 attendees in total; three health education promotion materials about Weight-loss Diets, with a total of 25,776 person-times; four sessions of online quizzes on the topics of insomnia and improving sleeping, with a total of 16,656 attendees; and one-on-one sleep counseling 93 attendees in total. The above activities have all received positive feedback from employees. In the future, we will continue to implement relevant health promotion activities to take care of the health of employees.

7.2.4 Supplier Management

Management Aspect

For better supply chain management, TSMC is committed to communicating with and encouraging its suppliers, including contractors, to increase their quality, cost effectiveness and delivery performance, and make continuous improvement in environmental protection, safety and health. Through regular communication with senior managers, site audits and experience sharing, the Company collaborates with major suppliers and contractors to enhance partnerships and ensure continued improvement of performance and increased joint contributions to society. As noted above, contractors performing high-risk activities must lay out clearly defined safety precautions and preventative measures. In addition, contractors working on high-risk engineering projects must establish ISO 45001 or OHSAS 18001 systems and the workers must successfully complete work-related skill training. All contractors performing high-risk activities have obtained ISO 45001 certification before the end of 2021.

Supply Chain Sustainability

TSMC works with suppliers in several fields of sustainable development, such as greening the supply chain, carbon management for climate change, mitigation of fire risk, ESH management and business continuity plans in the event of a natural disaster.

Since becoming a full member of the Responsible Business Alliance (RBA) in 2015, TSMC has completed implementation of the RBA code of conduct throughout the Company by performing self-assessments at its facilities worldwide and reviewing policies and procedures in the areas of labor, health and safety, environment, ethics and management systems.

To enhance supply chain sustainability and streamline risk management, the Company is committed to collaborating with its suppliers to maintain full compliance with Taiwan's environmental, safety, health and fire protection regulations. TSMC developed a supplier's code of conduct, which affirmed basic labor rights and standards for health, safety, environment, ethics and management systems. TSMC works with suppliers to evaluate the risk and impact on the economy, the environment, and society and to make continuous improvement. The Company has helped boost suppliers' performance of sustainability through experience sharing and training and hopes to establish a world-class semiconductor supply chain that exceeds international standards and serves as a global benchmark.

TSMC is subject to the U.S. Securities & Exchange Commission (SEC) disclosure rule on conflict minerals released under Rule 13p-1 of the U.S. Securities Exchange Act of 1934. As a recognized global leader in the high-tech supply chain, the Company acknowledges its corporate social responsibility to strive to procure conflict-free minerals in an effort to recognize humanitarian and ethical social principles that protect the dignity of all people. To this end, TSMC has implemented a series of compliance safeguards in accordance with leading industry practices such as adopting the due diligence framework in the Organization for Economic Cooperation and Development (OECD)'s Model Supply Chain Policy for a Responsible Global Supply Chain of Minerals from Conflict-Affected and High Risk Areas issued in 2011.

TSMC is a strong supporter of the Responsible Business Alliance and the Global e-Sustainability Initiative (GeSI), which will help the Company's suppliers source conflict-free minerals through their jointly developed Responsible Minerals Initiative (RMI). Since 2011, TSMC has asked its suppliers to disclose information and make timely updates on smelters and mines. The Company encourages suppliers to source minerals from facilities or smelters that have received a "conflict free" designation by a recognized industry group (such as the RBA) and also requires those who have not received such designation to become compliant with Responsible Minerals Initiative or an equivalent third-party audit program. TSMC requires the use of conflict-free tantalum, tin, tungsten and gold in its products.

TSMC will continue to conduct the supplier survey annually and require suppliers to improve and expand their disclosure to fulfill regulatory and customer requirements. For further information, see the Company's Form SD filed with the U.S. SEC. (https://www.tsmc.com/english/investorRelations/sec_filings.htm)

7.3 TSMC Education and Culture Foundation

In 2022, the COVID-19 pandemic persisted, affecting every sector in Taiwan. During this time, the TSMC Education and Culture Foundation (the Foundation) responded by infusing more resources into the arts and holding numerous educational and cultural events. In addition, the Foundation teamed up with educational partners to empower teachers in rural areas; invited TSMC employees to accompany young college students to pursue their dreams; encouraged female high school students to go into Science, Technology, Engineering and Math (STEM) fields; sponsored courses that pass on traditional theater and micro courses teaching Peking opera appreciation; and joined forces with the power of science and technology to hold online cultural events. The Foundation invested over NT\$99 million in 2022 to provide resources in three main areas: cultivate the young generation, educational collaboration, and promote arts and culture, thereby bringing about the positive cycle for the common good of the society and for the sustainable development.

Narrowing the Gap in Resources; Supporting Education of the Economically Underprivileged

As part of the COVID-19 prevention measures taken in Taiwan, instruction at schools of all levels went online. Such a measure, while lessening the impact of the reduced in-person teaching, also exposed the glaring gap in educational resources between urban and rural areas. In response, the Foundation worked in tandem with the CommonWealth Magazine Education Foundation and the Prof. Hwawei Ko Reading Research Center of National Tsing Hua University to launch the "Teaching & Learning Project", which was implemented in 48 primary schools in rural areas. This project provides first and second grade teachers, free of charge, well-researched teaching plans for reading and writing, thereby reducing the teachers' preparation load. Moreover, a complementary online support system allowed teachers to discuss various issues with the staff at the Prof. Hwawei Ko Reading Research Center, thus

strengthening and broadening the quality of their instruction. In May 2022, testing of the pupils who had attended the "Teaching & Learning Project" showed that their literacy skills had improved markedly.

In addition to the "Teaching & Learning Project" aimed at empowering primary school teachers, the Foundation collaborated with Chengzhi Education Foundation to sponsor the KIST education scheme at the Emei Junior High School in Hsinchu, a program that strives to bring positive change to the school. Also, together with Unitas Literary, the Foundation held the TSMC Youth Literature Camp, providing junior high school students from rural areas the opportunity to appreciate the beauty of literature in the setting of youth camps. Moreover, the Foundation continued to offer scholarships and computers to 98 outstanding students of underprivileged backgrounds at five national universities in Taiwan, freeing these students of financial burden and offering them the opportunity to study at college. The Foundation's scholarship program truly helps students transform their lives.

Nurturing ESG Talent, Empowering Women in STEM Fields

In 2022, the Foundation continued to hold the "TSMC Udreamer" project, encouraging college students all over Taiwan to take the first step in pursuing and realizing their dreams. The project's theme in 2022 was sustainability, chosen to encourage young college students to pay attention to issues of sustainability and contribute to the common good of the society while pursuing their dreams. The 2022 competition received proposals from 161 teams composed of 516 college students from all over Taiwan. At the final stage of the competition, eight teams of college students won the dreamer's prize of NT\$300 million and started a year-long dream-building journey. In addition, the Foundation launched the "TSMC Udreamer Mentorship" project in 2022, inviting TSMC employees to be mentors to the young dreamers by offering guidance and moral support. In total, 98 employees registered for the project, of which 15 were selected and specially trained to assist the dreamer teams to realize their dreams. In 2022, the Foundation also joined forces with National Museum of Natural Science to hold the "TSMC Female Scientists Tour" for the third consecutive year. Since the first tour, more than a thousand female high school students have

participated. The tour consists of a two-day, one-night camp with activities such as a visit to the National Museum of Natural Science, a forum with female scientists, and a printed circuit board (PCB) practice workshop. Through diverse scientific activities, the students learn about the design, manufacturing and application of semiconductors. In addition to broadening their knowledge of popular science, the attendees learn more about opportunities for women in STEM fields and their unique roles through the forum with female scientists and the exchange with the Women@tsmc society. Through the tour, the Foundation hopes to encourage more female students to go into STEM fields, thereby nurturing more female science and technology talent.

Further demonstrating its commitment to promoting science education, in 2022 the Foundation continued its partnership with Center for the Advancement of Science Education of National Taiwan University to hold the "TSMC Cup: Competition of Scientific Short Talk". The two competitions, the "Competition of Scientific Innovation Presentation" and the "Essay Awards for Introducing Popular Science Books to the Public" were held online. During the competition, the Foundation organized online classes to enhance the attendees' presentation skills and also invited university professors and popular science writers to write columns of sample introductory essays to help the students with their writing skills. More than 750 attendees participated in the 2022 competition.

In addition to its dedication to nurturing talent in STEM fields, the Foundation also encourages young students to create literary works and practice calligraphic arts. The two major literary and arts competitions for the senior high school students, the "TSMC Youth Literature Award" and the "TSMC Youth Calligraphy and Seal-Carving Competition" have been held since 2004 and 2008 respectively. During this time more than 10,000 people have entered the two competitions designed. Apart from encouraging the younger generation to create literary works and practice the art of calligraphy through the format of competitions, the Foundation aims to elevate the public's appreciation for literature and traditional calligraphic and seal-carving art through various types of promotional events.

Passing on the Heritage of Classical Theater; Injecting New Blood into Arts and Culture

Peking opera, the treasure of Chinese performing arts, has been inscribed on the representative list of the Intangible Cultural Heritage of Humanity by UNESCO. In recent times, however, Peking opera has all but vanished from the horizon of today's youth. In order to rekindle interest in the heritage of this beautiful theatrical culture, the Foundation began the "Passing on Traditional Theatre Heritage on Campus" project with GuoGuang Opera Company, funding a two-semester course at National Tsing Hua University and Tunghai University. The content of the course includes knowledge of theater, appreciation and analysis of plays, and workshop and stage performances. The lectures guided 93 college students to personally experience the performance of Peking opera step by step and in depth and to appreciate the charm of Peking opera aesthetics. In addition to university courses, the Foundation also organized four "TSMC Theater Lectures" specifically for senior high school students in the Hsinchu area and focused on the theme of major maid characters in Peking opera. There were professional introduction lectures by Wang An Chi, emeritus professor at the Department of Drama and Theatre of NTU, by the Taipei Culture Awards winner Zhu An Li and by the young actors at GuoGuang Opera Company, who demonstrated the use of makeup art, the art of recitation and hand gestures as basic techniques of Peking opera. The lecture series broadened the younger generation's artistic horizon and helped them appreciate the scenes on stage and behind the stage. Furthermore, the Foundation commissioned a radio program, "Telling Stories of Peking Opera" at *IC: the Sound of Hsinchu Science Park*, to stimulate public interest in the art of Peking opera by presenting various topics about theater and interesting stories of the plays.

The theme of the annual TSMC Hsinchu Arts Festival in 2022 was "Feast of the Gods," as the Contemporary Legend Theater performed "Metamorphosis," a play adapted from Franz Kafka's novella by the Peking opera maestro Wu Hsing-kuo, and a brand new production of a traditional play "Eight Gods Crossing the Sea." In addition to live performances, the Arts Festival also combined various formats of arts events in different media such as streaming platforms and television, including "Like a Rolling Poem – a Documentary on Music and Poetry" and "Film & Mythology," an online film festival. The 2022 TSMC Hsinchu Arts Festival organized 42 exquisite art exhibitions and cultural events, inviting more than 15,000 community members to attend. Along with the TSMC Hsinchu Arts Festival, the Foundation continued to support

major performing arts groups in Taiwan by sponsoring the production of Mozart's *Die Zauberflöte (The Magic Flute)* at the National Taichung Theater and conducting and composing masterclasses at the National Symphony Orchestra (NSO) in hopes of bringing a fresh perspective to Taiwan's arts environment during the pandemic and keeping the arts' flame burning bright.

7.4 TSMC Charity Foundation

Under the guidance of Chairperson Sophie Chang, the TSMC Charity Foundation (the Foundation) strives to address social inequalities through volunteer onsite/online services. Established in 2017, the Foundation focuses on the four pillars of public welfare in its charitable programs and projects: care for the disadvantaged, taking care of the elderly, filial piety promotion, and protection of the environment. In 2022, the Foundation's focus on assisting the disadvantaged honed in on rural empowerment as part of an initiative to correlate with social trends in rural education and employment integration. In rural areas, the Foundation offers various educational development resources to schools and after-schools. As for eldercare and care for the socioeconomically disadvantaged, the Foundation endeavors to improve their quality of life through both economic support and medical services. The Foundation continued to operate the "Sending Love" platform to strengthen the cooperation among enterprises, local governments and universities so as to strengthen local services and jointly uplift society.

In 2022, the Foundation demonstrated its dedication to investing in public welfare and expanding projects to improve its scope of services:

- **Rural Empowerment:** The Foundation continuously provides education and living assistance to institutes in need and to children in rural areas, including volunteer services, economic support, food supplies and the purchase of digital learning equipment and materials. In 2022, the Foundation focused on rural students' employability. By collaborating with 104 JOB BANK on the "World of Jobs, Road to Employment" plan, the Foundation published 104 career exploring videos in 2022 to give rural students a broader outlook on future careers and encourage them to develop their potential. In helping rural students to obtain the skills to work locally, two enterprises, Chi Mei Frozen Food Co., Ltd. and Lohas Biotech Development Corp., joined this year to give training to two vocational high schools and extended job offers to 14 students. While the expanded plan of job placement was

released in 2022, the Foundation partnered with SEMI to hold a conference session in 2022 SEMICON Taiwan and to establish a job-matching platform with 30 TSMC suppliers and semiconductor-related enterprises providing 600 jobs for rural vocational students.

In 2022, the Foundation assisted 6,358 students at 134 rural care institutes and collaborated with TSMC volunteers to produce tutorial videos of scientific experiments and science education. When classes were suspended due to the pandemic, the Foundation supplied science learning materials to help students study at home and moved physical classes online to ensure students could continue their studies. The Foundation's "Sending Love Platform" initiative visited and screened disadvantaged individuals in need of financial support, and also provided financial assistance and daily necessities made possible by internal and external donations from TSMC to improve the living conditions of highly vulnerable and disadvantaged families. As of 2022, the Foundation has supported a total of 250 families.

- **Taking Care of the Elderly:** The Foundation collaborates with Network of Compassion partners to enhance the health and welfare of solitary elders by connecting them with social welfare groups and medical units. In 2022, the Foundation cooperated with National Yang Ming Chiao Tung University and Guandau Hospital to establish a smart exercise club for the elderly to prevent disability and delay aging through exercise. The Foundation continued to collaborate with the TSMC facility division to repair 285 houses damaged by the earthquake in Hualien, and further ensuring 16 solitary elders a safe and healthy living space after the disaster. Current Network of Compassion partners include Taipei Municipal Gandau Hospital, Taipei Veterans General Hospital, Miao-Li Hospital, Old Five Old Foundation, Fongyuan Hospital, China Medical University Hospital, Taichung City Private Lin Tseng Lien Welfare And Charity Foundation, Taiwan Puli Care Association, Sin-Lau Hospital, Tainan Municipal Hospital, Jianan Psychiatric Center Department of Health, Mennonite Christian Hospital, Mennonite Social Welfare Foundation, Fooyin University, Penghu Hospital, and Cishan Hospital.

- **Promoting Filial Piety:** The Foundation promotes the spirit of filial piety in Eastern culture by spreading awareness to younger generations so as to alleviate social risks and issues related to aging societies. In 2022, the Foundation continued to work with the Filial Piety Resource Center of the K-12

Education Administration, Ministry of Education to promote these concepts and cultural values. This included conducting ten filial piety parent-child workshops at elementary schools, where TSMC volunteers provide long-term care, as well as jointly producing short filial piety films and organizing award ceremonies to recognize excellence in teaching plans, thus encouraging both teachers and students to initiate intergenerational dialogue and to implant a modern spirit of filial piety within the hearts of all participants.

- **Protecting the Environment:** The Foundation helped disadvantaged social welfare institutes to increase the use of green energy and save power, while also continuing to implement the "Cherish Food Program" to reduce resource waste. The "Green Energy for the Disadvantaged" project was launched in 2021, and by 2022 the Foundation had installed solar panels at six social welfare institutes, which can supplement these institutes' operating expenses by selling green energy. The LED Lighting Replacement Program helped 240 schools to reduce electricity costs by at least 30% with energy-saving lights. As for the "Cherish Food Program", the Foundation continued to work with many food companies to donate out-of-spec foods to 130 disadvantaged social welfare institutes to provide the children with after-school snacks, thereby reducing food waste. Current collaborators include Chi Mei Frozen Food Co., Ltd., Hunya Food Co., Ltd., Laurel Corporation, Lian-Hwa Foods Corp., Hsin Tung Yang Co., Ltd., Great Wall Group, and Lao Xie Zhen Co., Ltd.

7.5 TSMC i-Charity

The TSMC i-Charity platform, launched in 2014, is an interactive intranet site that employees use to propose charity projects, share project results, provide suggestions and responses, and conduct timely funding of activities to give back to society.

In 2022, a total of 38,857 people donated more than NT\$51.3 million to help repair earthquake-damaged houses in Hualien, to support the aboriginal elementary school's baseball team, Junyi Academy, and to aid the Teach for Taiwan program and other fundraising projects.

The TSMC i-Charity platform has accumulated more than NT\$271 million in donations since its inception in 2014. TSMC continues to carry out its social commitments and encourages its employees to care for and give back to society in various ways.

7.6 Social Responsibility Implementation Status as Required by the Taiwan Financial Supervisory Commission

Assessment Item	Implementation Status			Non-implementation and Its Reason(s)
	Yes	No	Summary	
1. Does the Company have a governance structure for sustainability development and a dedicated (or ad-hoc) sustainable development organization with Board of Directors authorization for senior management, which is reviewed by the Board of Directors?	V		For the Company's governance structure for sustainability development, please refer to "7.1 Environmental, Social and Governance (ESG) – Overview" on page 150-154 of this Annual Report. For the structure, operations, implementation status and frequency of reporting to the Board of Directors of the Company's dedicated organization for sustainability development, please refer to "7.1 Environmental, Social and Governance (ESG) – Overview" on page 150-154 of this Annual Report. For progress of the Board of Directors' supervision of the Company's sustainability development, please refer to "7.1 Environmental, Social and Governance (ESG) – Overview" on page 150-154 of this Annual Report.	None
2. Does the Company follow materiality principle to conduct risk assessment for environmental, social and corporate governance topics related to company operation, and establish risk management related policy or strategy?	V		For the Company's scope of risk assessment, please refer to "7.1 Environmental, Social and Governance (ESG) – Overview" on page 150-154 of this Annual Report. For the principle, process and result of the Company's materiality analysis of ESG related topics and risk management related policy or strategy, please refer to "7.1 Environmental, Social and Governance (ESG) – Overview" on page 150-154 of this Annual Report.	None
3. Environmental Topic (1) Has the Company set an environmental management system designed to industry characteristics?	V		(1) For the Company's environmental management system and the regulations on which it is based, please refer to "7.2 Environmental, Safety and Health (ESH) Management" on page 154-168 and "6.3.3 Risks Regarding Non-Compliance with Export Control, Environmental and Climate Change Related Laws, Regulations and Accords, and Failure to Timely Obtain Requisite Approvals Necessary for Conducting Business" on page 143 of this Annual Report. For the Company's international certifications and their scope, please refer to "7.2 Environmental, Safety and Health (ESH) Management" on page 154-168 of this Annual Report.	None
(2) Is the Company committed to improving resource efficiency and to the use of renewable materials with low environmental impact?	V		(2) For the Company's improvement of resource efficiency and the use of renewable materials, please refer to "7.2.1 Environmental Protection – Climate Change and Energy Management/Waste Management and Recycling" on page 156-157, 160 of this Annual Report.	
(3) Does the Company evaluate current and future climate change potential risks and opportunities and take measures related to climate related topics?	V		(3) For the Company's evaluation of potential risks and opportunities of current and future climate change and measures taken related to climate topics, please refer to "7.2.1 Environmental Protection – Climate Change and Energy Management" on page 156-157 of this Annual Report.	
(4) Does the Company collect data for greenhouse gas emissions, water usage and waste quantity in the past two years, and set greenhouse gas emissions reduction, water usage reduction and other waste management policies?	V		(4) For the Company's statistical data, intensity and data coverage for greenhouse gas emissions, water usage and waste quantity in the past two years, please refer to "7.2.1 Environmental Protection – Climate Change and Energy Management/Greenhouse Gas (GHG) Emission Reduction and Energy Management/Air and Water Pollution Control/Waste Management and Recycling" on page 156-160 of this Annual Report. For the Company's policies on the reduction of greenhouse gas emissions, water usage and waste management, please refer to "7.2.1 Environmental Protection" on page 156-161 of this Annual Report. For the Company's certification status of each data set and its scope, please refer to "7.2.1 Environmental Protection – Climate Change and Energy Management/Greenhouse Gas (GHG) Emission Reduction and Energy Management/Air and Water Pollution Control/Waste Management and Recycling" on page 156-160 of this Annual Report.	

(Continued)

Assessment Item	Implementation Status			Non-implementation and Its Reason(s)
	Yes	No	Summary	
4. Social Topic (1) Does the Company set policies and procedures in compliance with regulations and internationally recognized human rights principles?	V		(1) For the Company's policies and specific programs in compliance with regulations and internationally recognized human rights principles, please refer to "5.6.1 Human Rights Policy and Specific Actions" on page 110 of this Annual Report.	None
(2) Has the Company established appropriately managed employee welfare measures (include salary and compensation, leave and others), and link operational performance or achievements with employee salary and compensation?	V		(2) For the Company's employee welfare measures, including salary and compensation, diverse and fair workplace, leave, allowance, bonuses, and subsidies, please refer to "5.6.6 Competitive Overall Compensation", "5.6.2 Diversity and Inclusion", "5.6.3 Workforce Structure", and "5.6.7 Employee Benefit System Superior to Statute" on page 112, 110-111, 111, 113-114 of this Annual Report.	
(3) Does the Company provide employees with a safe and healthy working environment, with regular safety and health training?	V		(3) For the Company's status with respect to providing employees with a safe and healthy working environment, with regular safety and health training, please refer to "7.2.3 Safety and Health" on page 164-167 of this Annual Report. For the Company's related certification status and its scope, please refer to "7.2.3 Safety and Health" on page 164-167 of this Annual Report. For a presentation and analysis of the Company's occupational accidents in the current year and the number of employees involved, as well as related improvement measures taken, please refer to "7.2.3 Safety and Health" on page 164-167 of this Annual Report.	
(4) Has the Company established effective career development training plans?	V		(4) For the scope and implementation of the Company's employee training plans, please refer to "5.6.5 Talent Development" on page 111-112 of this Annual Report.	
(5) Does the Company's product and service comply with related regulations and international rules for customers' health and safety, privacy, sales, labelling and set policies to protect consumers' or customers' rights and consumer appeal procedures?	V		(5) Not applicable as TSMC is not an end product manufacturer. For the Company's policy to protect customers' rights, please refer to "5.4.1 Customers" on page 107 of this Annual Report.	
(6) Does the Company set supplier management policy and request suppliers to comply with related standards on the topics of environmental, occupational safety and health or labor right, and their implementation status?	V		(6) For the Company's supplier management policy and related compliance norms, and specific requirements for suppliers in environmental protection, occupational safety and health or labor rights, please refer to "7.2.4 Supplier Management" on page 167-168 and "5.6.1 Human Rights Policy and Specific Actions" on page 110 of this Annual Report. For a description of the implementation of the Company's supplier management policy and related compliance norms, please refer to "7.2.4 Supplier Management" on page 167-168 of this Annual Report.	
5. Does the Company refer to international reporting rules or guidelines to publish Sustainability Report to disclose non-financial information of the Company? Has the said Report acquire third party verification or statement of assurance?	V		For the reporting rules and guidelines that the Company follows in disclosing non-financial information in the Sustainability Report, please refer to "7.1 Environmental, Social and Governance (ESG) – Overview" on page 150-154 of this Annual Report. For third party verification of the Sustainability Report, please refer to "7.1 Environmental, Social and Governance (ESG) – Overview" on page 150-154 of this Annual Report.	None
6. If the Company has established its sustainable development code of practice according to "Listed Companies Sustainable Development Code of Practice," please describe the operational status and differences.			TSMC follows the ESG Policy set by the Chairman, Dr. Mark Liu. For sustainable development operational status, please refer to "7. Environmental, Social and Governance (ESG)" on page 148-173 of this Annual Report and environmental social governance related information on the Company's website: https://esg.tsmc.com/en/index.html	
7. Other important information to facilitate better understanding of the Company's implementation of sustainable development:			Please refer to TSMC's website for its sustainable development implementation status: https://esg.tsmc.com/en/index.html	