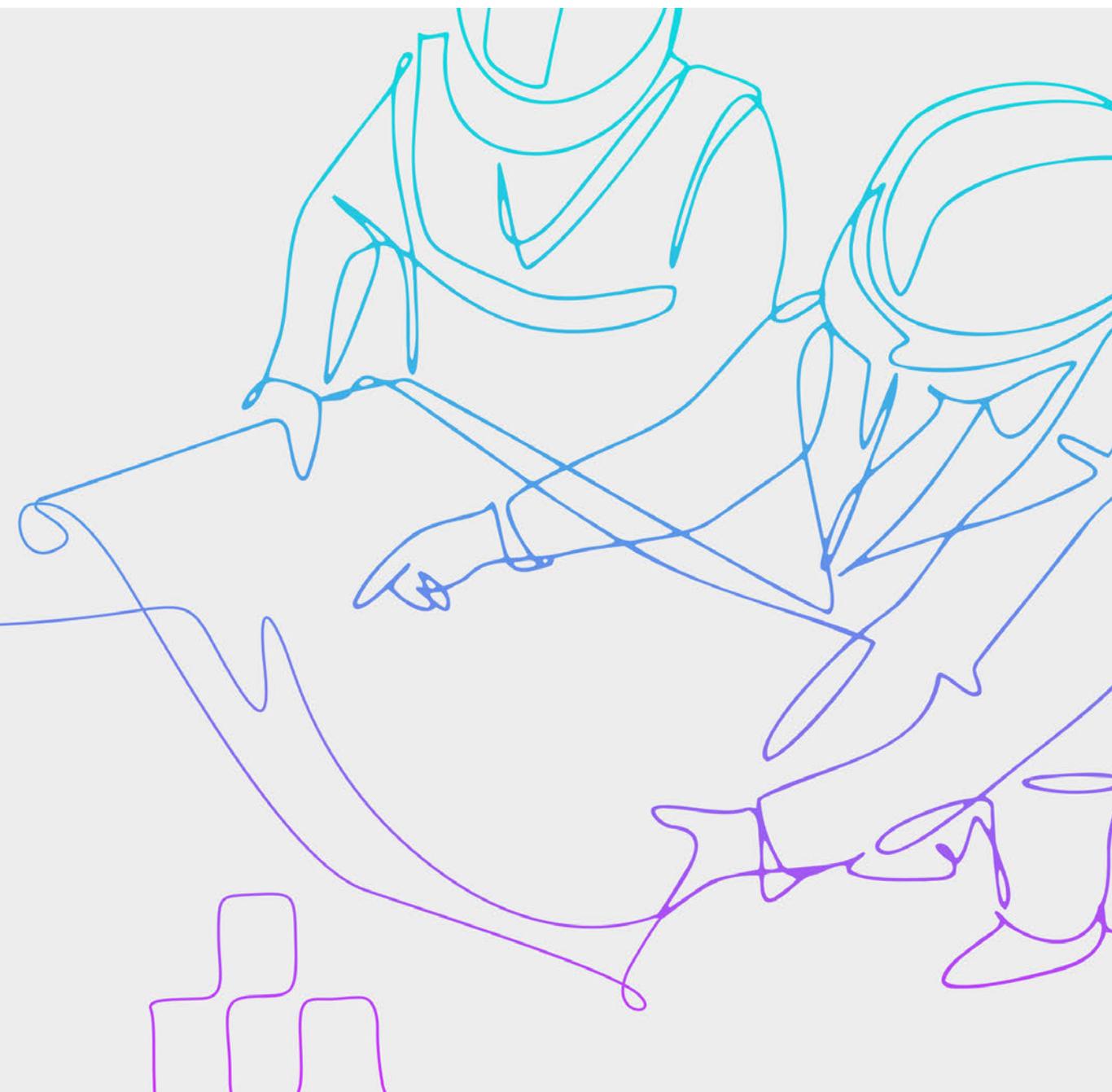




A Responsible Purchaser

TSMC strives for sustainable management and responsible purchases. We ask our suppliers to make advancements in the following areas: technology, quality, delivery, environmental protection, human rights, safety, and health. We also take climate risks into consideration, actively trying to strengthen our climate resilience so that we can develop a low-carbon, sustainable semiconductor supply chain.



100%

Committed to the responsible sourcing of minerals and purchases only conflict-free minerals

340 GWh

Cumulative energy conserved by suppliers with TSMC's support

>200,000

Certificates awarded for completing the annual TSMC Supplier Sustainability Academy program

Sustainable Supply Chain



Sustainable Supply Chain ^{Note 1}

Strategies & 2030 Goals

2022 Targets

2021 Achievements

Improve Sustainability Risk Management

TSMC requires all suppliers to adhere to the TSMC [Supplier Code of Conduct](#), taking actions to improve labor rights, safety and health, environmental protection, business ethics, and the efficiency of the management system; the Company has also taken the initiative to help suppliers continue to improve their core capabilities to reduce risks of disruption to business operations

Ensure 100% Tier 1 suppliers ^{Note 2} complete the Sustainability Management Self-Assessment Questionnaire

Ensure 100% critical suppliers receive Code of Conduct audits by RBA-certified agencies every 3 years ^{Note 3}

Ensure 980 critical high-risk suppliers receive S.H.A.R.P. audits at a pace of 100 suppliers a year **NEW**

Supplier due diligence on responsible mineral sourcing: 100% of the minerals used are sourced responsibly

Audit a cumulative total of 30 suppliers (≥ 3 suppliers per year) for due diligence on responsible mineral sourcing

Continue to diversify production plant sites and assess new suppliers; develop 145 multi-source supply solutions (Base year: 2018)

Ensure a cumulative total of 145 local raw materials suppliers receive consultation on process advancement and quality improvement (Base year: 2016)

Ensure a cumulative total of 300 raw materials suppliers ^{Note 5} participate in the annual emergency response drill (Base year: 2016)

Ensure 100% Tier 1 suppliers complete the Sustainability Management Self-Assessment Questionnaire

Ensure 60 critical suppliers receive third-party audits

Ensure 100 critical high-risk suppliers receive S.H.A.R.P. audits

Supplier due diligence on responsible mineral sourcing: 100% of the minerals used are sourced responsibly

Complete audits on ≥ 3 suppliers for due diligence on responsible mineral sourcing

Develop 130 multi-source supply solutions for raw materials

Ensure ten local raw material suppliers receive consultation on process advancement and quality improvement, reaching a cumulative total of 65 suppliers

Ensure a cumulative total of 150 suppliers participate in the annual emergency response drill

100% Tier 1 suppliers completed the Sustainability Management Self-Assessment Questionnaire ✓
Target: 100%

A total of 36 critical suppliers completed third party supplier audits and annual completion rate is 60% ^{Note 4} —
Target: 60 critical suppliers

Completed S.H.A.R.P. Audits of 86 Critical Suppliers **NEW**

100% responsible mineral sourcing ✓
Target: 100%

Completed audits on ≥ 3 suppliers for due diligence on responsible mineral sourcing ✓
Target: ≥ 3 suppliers

Developed 109 multi-source supply solutions ↑
Target: 105

Ten suppliers received consultation on process advancement and quality improvement, reaching a cumulative total of 55 suppliers ✓
Target: 10 suppliers this year, 55 in total

21 raw materials suppliers participated in the annual emergency response drill, reaching a cumulative total of 132 suppliers ↑
Target: 130 in total

Note 1: In 2021, TSMC adjusted the strategies for this subject from Sustainability Risk Management and Local Procurement Optimization to Improving Sustainability Risk Management and Promoting Green and Low-carbon Supply Chains to follow the Company's direction for supply chain management

Note 2: Tier 1 suppliers: Suppliers trading directly with TSMC with more than three orders per year, with order amount exceeding NT\$5 million. In 2021, 1,065 suppliers met the criteria.

Note 3: Critical suppliers: Suppliers accounting for top 85% of the purchasing expenses or of a single source of purchase, or suppliers recognized as critical by TSMC after assessing multiple risk indicators, including the suppliers' market share, inventory levels, and other characteristics; set annual goal as 60 suppliers site

Note 4: Due to safety measures put in place to prevent the spread of COVID-19, TSMC lowered the target number for on-site audits in 2021

Note 5: Mainly focused on suppliers based in Taiwan

↑ Exceeded ✓ Achieved — Missed Target



Strategies & 2030 Goals

2022 Targets

2021 Achievements

Ensure a cumulative total of 1,500 suppliers^{Note 5} participate in the Environmental Safety and Health (ESH) training program (Base year: 2016)

Ensure 100% critical high-risk suppliers complete Safety and Health consultation^{Note 6}

Ensure a cumulative total of 900 suppliers participate in the ESH training program

Ensure 100% critical high-risk suppliers complete Safety and Health consultation

A cumulative total of 759 suppliers participated in the ESH training program

Target: 680 in total

100% critical high-risk suppliers completed Safety and Health consultation

Target: 100%



Promote Green and Low-carbon Supply Chains

Continued to reduce environmental impact and its external cost and minimize the effects of climate change and resource depletion by leading suppliers in establishing reduction targets on power and water consumption, waste generation, and carbon emission, propelling the sustainable development of supply chains

Increase local sourcing^{Note 7}
- 64% for indirect raw materials
- 60% for spare parts

Provide consultation on power reduction for suppliers^{Note 5} and reduce energy consumption by a total^{Note 9} of 1,500 GWh (Base year: 2018)

Provide consultation on water reduction for suppliers^{Note 5} and reduce water consumption by a cumulative total of 35 million metric tons (Base year: 2020)

Ensure 100% high energy consumption^{Note 10} suppliers receive ISO 14064 Greenhouse Gas Emission verification^{Note 11}

Reduce waste production among local major suppliers^{Note 12} by 35% (Base year: 2014)

Source 60.5% of indirect raw materials locally
Source 50% of spare parts locally

Reduce supplier energy consumption by a cumulative total of 430 GWh

Reduce supplier water consumption by a cumulative total of 20 million metric tons

Ensure 55% high energy consumption suppliers receive ISO 14064 Greenhouse Gas Emission verification

Reduce waste production among local major suppliers by 32%

Sourced 60.4% of indirect raw materials locally
Sourced 46.4 % of spare parts locally

Target: 60.5% / 50%

Reduced supplier energy consumption by a cumulative total of 340 GWh

Target: 320 GWh

Reduced supplier water consumption by a cumulative total of 19.71 million metric tons

Target: 4.5 million metric tons

51% high energy consumption suppliers received ISO 14064 Greenhouse Gas Emission verification

Target: 50%

Reduce waste production per unit among local major suppliers by 31%

Target: 30.4%



Note 8



Note 8



Note 6: In 2020, TSMC audited 33 critical high-risk suppliers, among which five suppliers scored below 70 for Safety and Health and had received consultation in 2021, having made necessary improvements and passing follow-up assessments

Note 7: Mainly focused on suppliers based in Taiwan, which is the main operation region of TSMC

Note 8: For indirect raw materials and spare parts, since the proportion of advanced packaging increased, the quality requirement became stricter. Currently, suppliers in Taiwan have not been able to meet TSMC requirements, and since TSMC had to increase inventory levels due to COVID-19, it missed the annual local sourcing target

Note 9: The cumulative total of power reduced included the existing achievement of past efforts and the newly achieved reduction results

Note 10: Definition for high energy consumption suppliers: Suppliers in Taiwan whose energy consumption at a single site exceeds 5 GWh per year

Note 11: ISO 14064-1 is one of the sub-standards of ISO 14064. In 2021, it will be described as the official name of the ISO 14064 series of standards.

Note 12: Focusing on suppliers in Taiwan producing 80% of the waste in raw materials. Calculation formula: A/(A+B)(%); A: waste reduced by the factory in the underlying month (tons); B: waste produced by the factory in the underlying month (metric tons).

↑ Exceeded ✓ Achieved — Missed Target

TSMC is dedicated to building an environmentally and socially responsible operation model, exerting influence towards sustainability as the global leader

of the semiconductor industry. In 2021, TSMC re-structured the guidelines for Supplier Sustainability Management to respond to current trends in supply

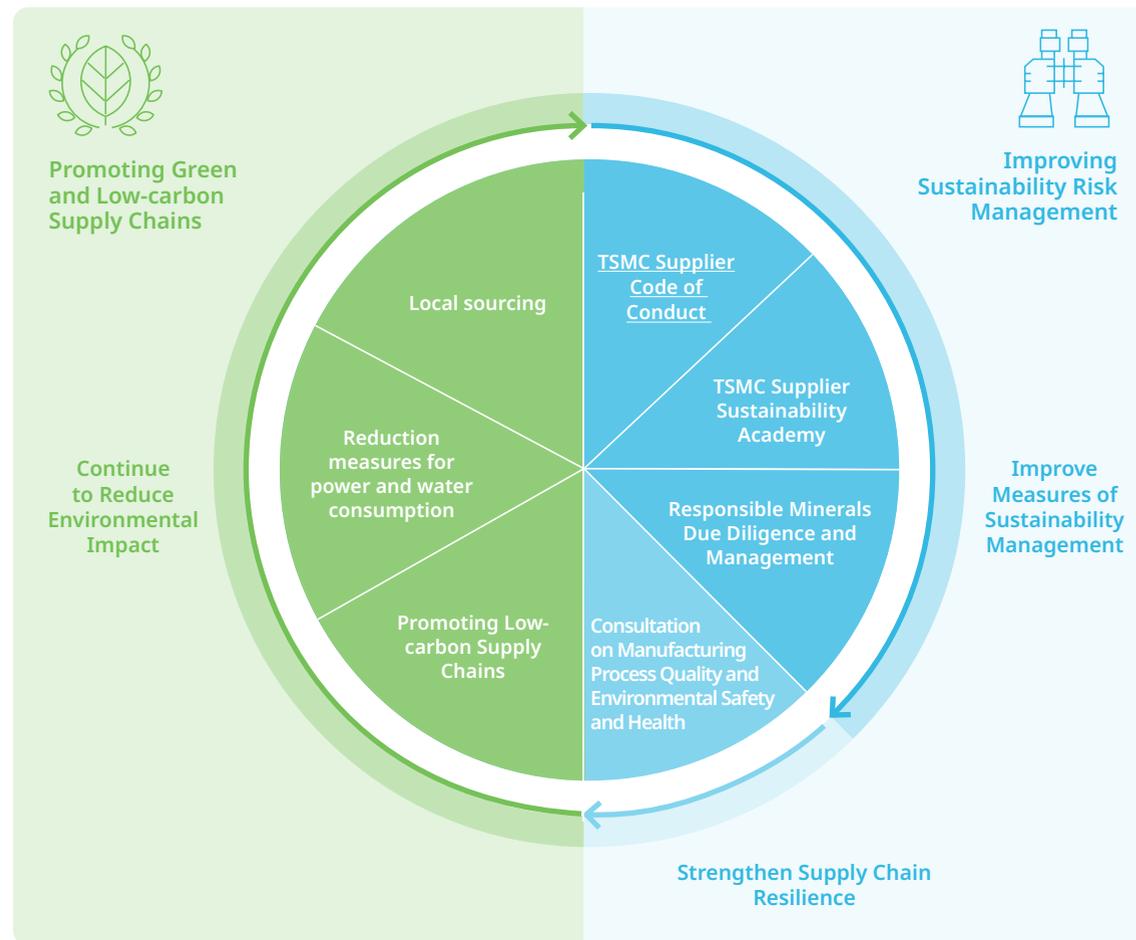
chain sustainability and previous years' management experience, changing to two main strategies - Improving Sustainability Risk Management and Promoting Green and Low-carbon Supply Chains. The Company continued to require suppliers to adhere to the TSMC Supplier Code of Conduct in operations, taking actions to improve safety in the workplace, dignity for labor, ethical operations, and comprehensive protection of the environment, and continued to reduce risks of disruption to business operations. Additionally, to answer the calls for green manufacturing, TSMC has taken the initiative to reduce the environmental impact of supply chains, prompting suppliers to set reduction targets for power and water consumption, waste generation, and carbon emission. TSMC aims to mitigate climate change's impact on society and lay the foundations for sustainable development for supply chains.

Improve Sustainability Risk Management

Improve Measures of Sustainability Management

TSMC worked closely with supplier partners through the four guiding principles: Compliance guidance, Risk Assessment, Audit Participation, and Continuous Improvement, to urge suppliers to continue improving, commit to values, and take the initiative to promote sustainable practices to their upstream suppliers. To prompt common growth among supplier partners worldwide, TSMC established the global responsible supply chain management platform, [Supply Online 360](#). It serves as an integrated communication channel with all suppliers, propelling tangible change with virtual data monitoring and bringing sustainable semiconductor supply chain practices into reality.

Supplier Sustainability Management Framework



Four Guiding Principles of Sustainable Supply Chain Management

<p>Compliance Guidance</p> <p>Suppliers comply with the TSMC Supplier Code of Conduct and extend the scope of management to their upstream suppliers</p>	<p>Risk Assessment</p> <p>Suppliers determine the level of Code compliance via Sustainability Self-Assessment Questionnaire or Sustainability Risk Assessment by the TSMC Team</p>	<p>Audit Participation</p> <p>Critical Suppliers are audited by RBA-certified third-party institutions or the TSMC Supplier Healthiness Assessment Rectification Program team, conducting on-site audits</p>	<p>Continuous Improvement</p> <p>Suppliers implement improvement measures according to the audit results and receive relevant consultation or follow-up evaluation</p>
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• Code Compliance

As a member of the Responsible Business Alliance (RBA), TSMC sets up its Supplier Code of Conduct according to RBA's [Code of Conduct](#). TSMC requires Tier 1 suppliers to comply with the Code of Conduct while encouraging them to ask their upstream

Supply Chain Three-phase Risk Assessment



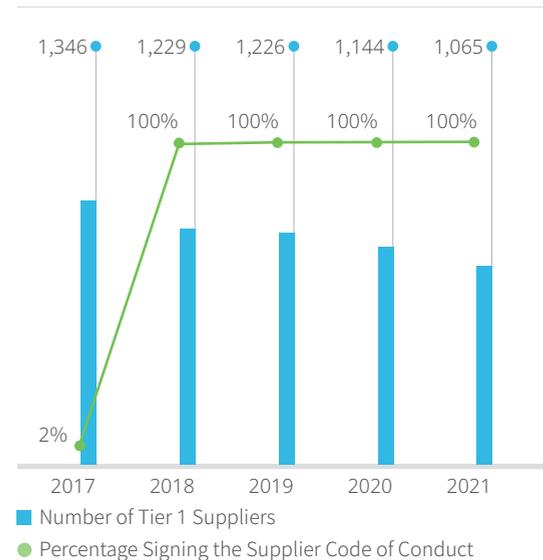
suppliers, contractors, and service providers to adopt the same Code in practices and management. New suppliers must sign the TSMC Supplier Code of Conduct to be eligible for partnership.

• Risk Assessment

To have an in-depth understanding of the current status of supply chain development and potential risks, TSMC conducts a three-phase risk assessment in supplier management, identifying the improvement measures required for the suppliers according to supplier classification.

First, TSMC investigates and analyzes all suppliers

Self-Assessment Questionnaire Results



it has businesses with and requires Tier 1 Suppliers to conduct Self-Assessment Questionnaire (SAQ) to evaluate their performance on sustainability. In 2021, Tier 1 Suppliers in Taiwan, where TSMC headquarters is located, completed 1,065 SAQs, in which the [five major](#) categories of the TSMC Supplier Code of Conduct are covered. The assessment results show that, for the Labor category, suppliers often lack management rules for the work environment. For Health, Safety and Environmental Standards, 7% of the suppliers did not conduct identification for risks of operations in confined spaces and environmental protection laws. For the Code of Business Ethics, SAQ results show that 17% of the suppliers do not have a management system for business ethics.

TSMC categorizes critical suppliers according to indicators such as procurement expenses, product criticality, and business relations with TSMC and determines the risk levels based on SAQ results and supplier records of priority incidents. Using the two dimensions, criticality and risk levels, TSMC establishes a Supplier Risk Matrix that classifies suppliers annually. Such classification is then used in determining exclusive management measures to effectively understand the supply chain's overall risk. In 2021, TSMC included two new categories in the SAQ for raw materials suppliers, Supply Chain Risk Management and Process Reliability. Suppliers that scored below 70 have to receive on-site audits to ensure the supply chain's resilience.

Critical High-risk Suppliers Assessment Process



• Audit Participation and Continuous Improvement

After identifying risks using the Supplier Risk Matrix, TSMC conducts on-site or remote audits focusing on the six major categories: Supply Chain Risks, Quality and Reliability, Environmental Safety and Health, Fire Safety System, Labor Ethics, and Management System, which was added in 2021, to enhance supply chain resilience. In the audits, TSMC looks for potential risks and ways to improve them, requires suppliers to propose improvement plans and schedules, and assigns the TSMC S.H.A.R.P. Team to follow

up on improvements regularly. The Company constantly updates benchmark practices in the six major categories and prompts the continuous improvement of the supply chain by conducting topical consultations and follow-up evaluations. In 2021, TSMC conducted 122 on-site audits of Critical High-risk Suppliers, including 15 follow-up evaluations, to properly track the risk status of the suppliers and improve their operational sustainability. By doing so, TSMC can ensure stable materials supply and services, provide a safe and healthy work environment for workers, and reduce environmental and social impact.

Problems and Challenges	TSMC Consultation Measures	2021 Performance
 Records of supplier/contractor employees working at TSMC sites for seven consecutive days	<ul style="list-style-type: none"> Monthly review on whether supplier/contractor employees work at TSMC sites for seven consecutive days 	<ul style="list-style-type: none"> ✓ The new online badge application system automatically generates monthly reports; any workers working for seven consecutive days would trigger an alert requiring adjustments

TSMC Supplier Risk Matrix, Classification and Management Measures

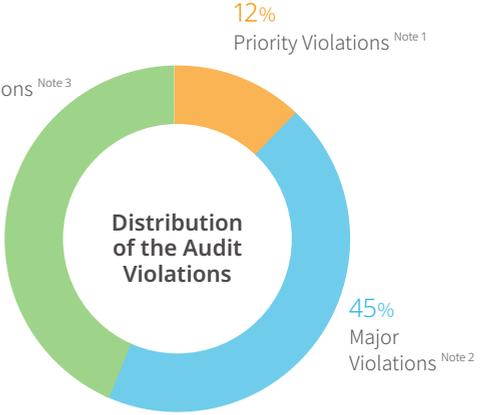
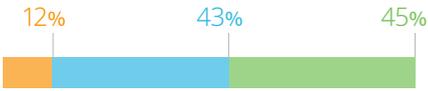
	Critical	Non-critical	Supplier Classification and Management Measures	Critical High-risk Suppliers	Critical Low-risk Suppliers	Non-critical High-risk Suppliers	Non-critical Low-risk Suppliers
High risk							
Low risk							
			Signing the TSMC Supplier Code of Conduct	✓	✓	✓	✓
			Risk Assessment via SAQ	✓	✓	✓	✓
			Completion of the TSMC Supplier Code of Conduct Program of the Supplier Sustainability Academy	✓	✓	✓	
			On-site Audit	✓			

Risk Level  High  Medium  Low

TSMC Supplier Healthiness Assessment Rectification Program



2021 Critical High-risk Suppliers Audits and Areas for Improvement

On-site Audit	Category/ Distribution of the Audit Violations	Major Violations Audited	Key Achievements of TSMC Suppliers
<p>Auditor TSMC S.H.A.R.P. Team and RBA-certified Third-Party Institutions</p> <p>Suppliers Audited Factories of 122 Critical High-risk Suppliers, including 15 follow-up evaluations</p> <p>Audit Methods 97 on-site audits and 25 remote audits conducted virtually</p>	<p>Supply Chain Risks</p> 	<ul style="list-style-type: none"> Fail to establish multiple sources or safety stock for raw materials or finished goods Lack of water and electricity backup plans in response to climate change Fail to manage the inventory of critical parts and components 	<ul style="list-style-type: none"> Established and verified multiple sources for raw materials and finished goods, and have safety stock in place Established water and electricity backup plans and compiled the plans in advance when building new production lines Created a management system of critical parts and components
<p>Distribution of the Audit Violations</p> 	<p>Quality and Reliability</p> 	<ul style="list-style-type: none"> Fail to establish a regular equipment maintenance mechanism Fail to implement abnormality management 	<ul style="list-style-type: none"> Established a regular equipment maintenance mechanism and a maintenance log Established a platform for documenting abnormalities, properly investigate the root causes and prevent recurrences
<p>Note 1: Priority violations may present higher risks of production halt, life, serious illegal affairs, or systematic failure. For example: lacking response mechanism for an unexpected halt in production lines, environmental pollution, hiring child labor, or forced labor</p> <p>Note 2: Major violations refer to significant differences between implementation and proper ESH procedures, such as daily operations not adhering to ESH procedures</p> <p>Note 3: Minor violations refer to risks other than priority or major violations, such as incomplete training records or incomplete ESH procedures</p>	<p>Environmental Safety and Health</p> 	<ul style="list-style-type: none"> Fail to establish a stormwater drainage protocol and lack separated sewage systems for rainwater and wastewater Fail to fully recognize ergonomic risks An incomplete list of confined spaces 	<ul style="list-style-type: none"> Established a stormwater drainage protocol and ensure separated sewage for rainwater and wastewater Established a control list and protocols for ergonomic risks Established a compliant list of confined spaces
	<p>Fire Safety System</p> 	<ul style="list-style-type: none"> Fail to establish an effective fire safety management system Fail to comply fire safety equipment with relevant regulations and TSMC requirements Fire safety equipment lacking maintenance 	<ul style="list-style-type: none"> Assigned designated fire safety management personnel Implemented management rules for hot work and fire safety equipment Set up compliant fire safety equipment and received expert consultation from TSMC Established checklists for fire safety maintenance and organized fire safety equipment drills
	<p>Labor Ethics</p> 	<ul style="list-style-type: none"> New employees have to pay for pre-employment physical exams, which violated the zero-cost requirement stipulated in the TSMC Supplier Code of Conduct Fail to establish protocols to prevent retaliation and protect the whistle blower's identity 	<ul style="list-style-type: none"> Ensure employers pay costs of employment of employees Established a whistleblower protection mechanism and strictly forbid retaliation
	<p>Management System</p> 	<ul style="list-style-type: none"> Fail to communicate the TSMC Supplier Code of Conduct requirements to the upstream suppliers 	<ul style="list-style-type: none"> Required and supervised upstream suppliers to adhere to the TSMC Supplier Code of Conduct

TSMC values people above all else and establishes a public reporting channel for supplier employees on Supply Online 360. This offers protection for supplier employees, extends and deepens TSMC's management practices, and builds a more inclusive workplace for the supply chain. In 2021, a total of nine reports were collected, among which five were erroneous claims, and four involved business disputes and unfair treatment and pay. TSMC has

required the suppliers reported to adhere to the TSMC Code of Conduct immediately. To expand the availability of the reporting channel, TSMC invites base-level employees of the suppliers during supplier audits to communicate and informs them of the purposes and operation of the supplier employee reporting channel. In 2021, TSMC completed interviews with more than 360 supplier employees.

Reporting Procedure



Case Study

TSMC Supplier Sustainability Academy Systematically Shares Experiences to Drive Supply Chain Excellence

TSMC supply chains have a global reach. Therefore, TSMC set up the TSMC Supplier Sustainability Academy on the Supply Online 360 platform to improve supplier capabilities. As a pioneering open-source educational platform for industry peers in Taiwan, the Academy produces and puts out educational animation videos on the cloud platform, systematically sharing TSMC manufacturing and operational experiences with suppliers. TSMC designates mandatory courses for the suppliers to ensure effective learning. Furthermore, the Academy is available for the general public to register and access, promoting the common good in society. In 2021, TSMC Supplier Sustainability Academy was connected to the construction management system for internal contractors, moving the contractor badge application process online and imposing stricter qualification requirements for high-risk operations to reduce potential construction safety risks. Please refer to the section [Digitizing Contractor Training Programs at a 100% Completion Rate](#) for further information.

External Collaboration - Expanding Sustainability Impacts

Intending to improve supply chain capabilities, the TSMC Supplier Sustainability Academy continues to provide diverse training courses and seeks to expand influence. In 2021, TSMC invited non-semiconductor industries, including the medicine, electrical engineering, chemicals, machining, transportation, food, and textile industries, to use the training materials via the Corporate Synergy Development Center (CSD). TSMC also showcased the Academy resources at SEMICON Taiwan 2021, which TSMC co-hosted with SEMI, exerting influence on TSMC suppliers, the upstream suppliers, and beyond.



Responsible Minerals Sourcing

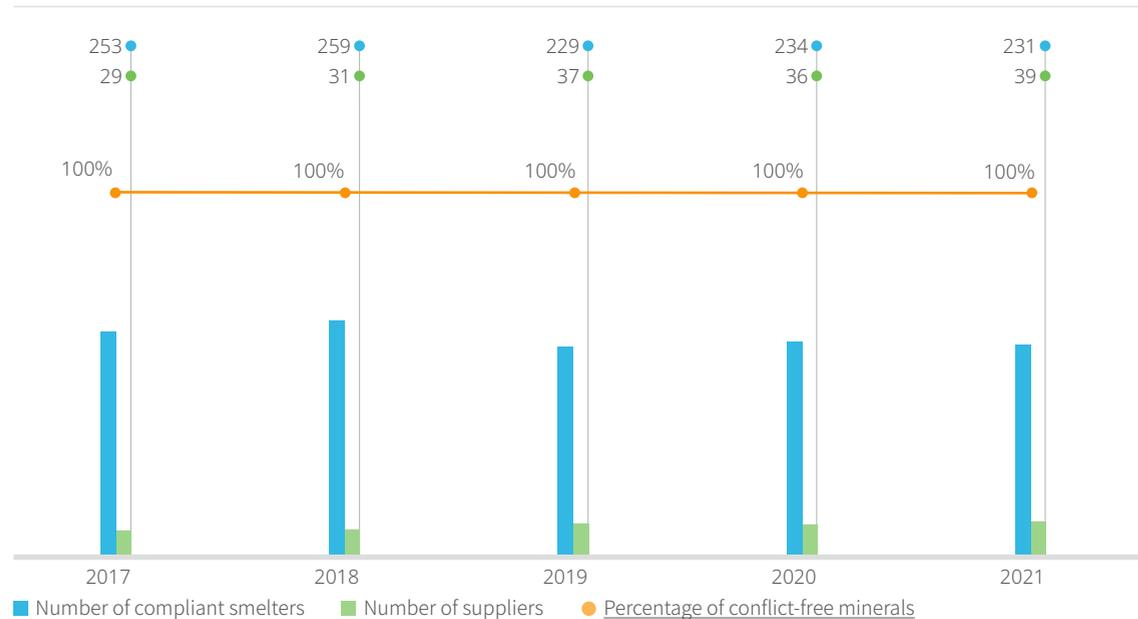
TSMC supports sourcing conflict-free raw materials as a practice of humanitarianism and compliance with the ethical code of the society. Based on such beliefs, TSMC incorporated a series of industry benchmark practices into its compliance measures, including establishing a due diligence framework following the Model Supply Chain Policy for a Responsible Global Supply Chain of Mineral from

Conflict-Affected and High-Risk Areas published by the Organization for Economic Cooperation and Development (OECD). Meanwhile, TSMC is an RBA member and one of the staunchest supporters of the Global e-Sustainability Initiative (GeSI). The Company adheres to the Responsible Minerals Assurance Process (RMAP), requiring suppliers to procure conflict-free raw materials. TSMC

requires suppliers to comply with responsible minerals sourcing policy and sign the statement of responsible minerals for products containing tantalum, tin, gold, and tungsten. Since 2017, TSMC has also disclosed the source smelters for the cobalt used in TSMC products to the clients. In 2021, TSMC audited at least three suppliers of tantalum, tin, gold, and tungsten annually, ensuring that

these suppliers formulate and implement Conflict-free Minerals Management Processes and conduct due diligence on upstream suppliers. For the latest TSMC disclosure documents, please visit [TSMC's official website](#) or [the US Securities and Exchange Commission website](#).

Conflict-free Minerals Due Diligence



Responsible Minerals Management Process



Note: Figures from Tier 1 Suppliers of TSMC fabs in Taiwan, WaferTech, TSMC (China), TSMC (Nanjing), and VisEra

Strengthen Supply Chain Resilience

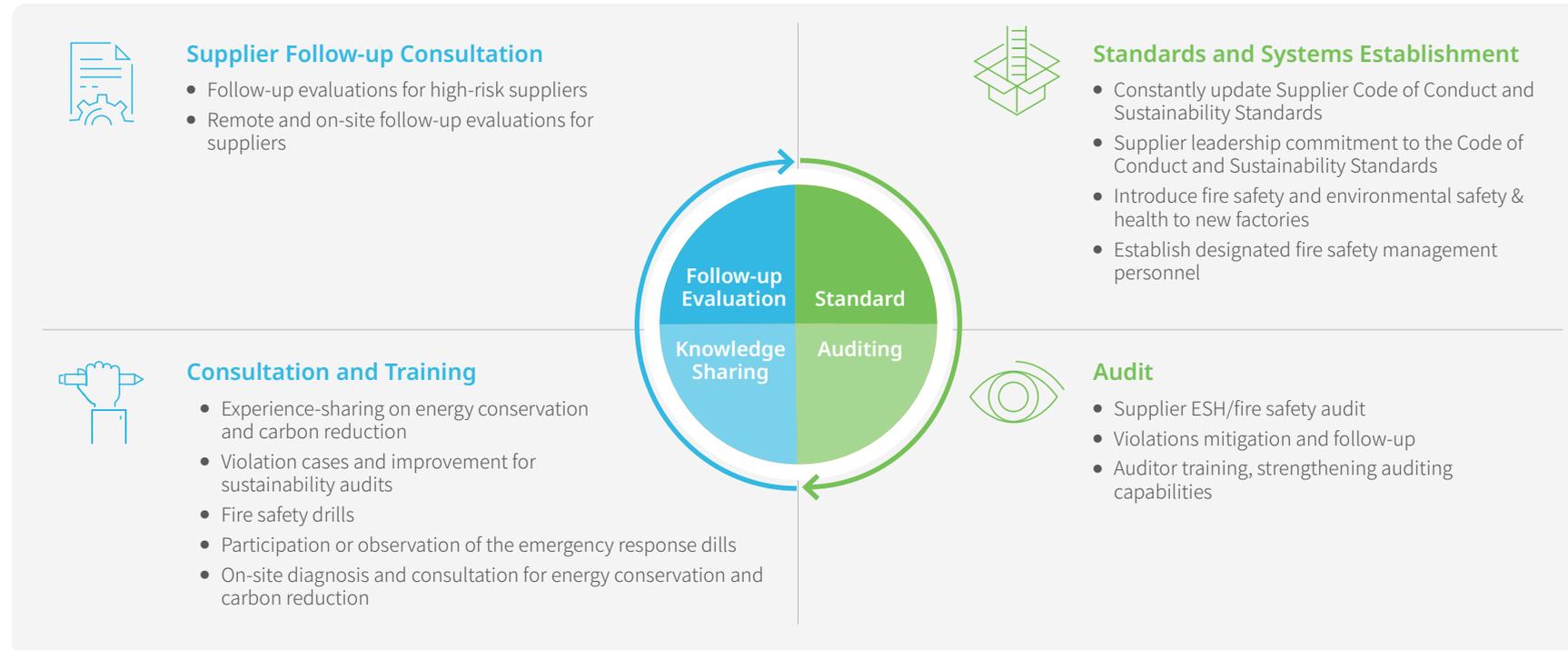
Through practical leadership examples and detailed requirements, TSMC propels suppliers to progress together with the Company. TSMC works with suppliers to build a workplace with dignity and ethics, offering consultations on capacity expansion, process and quality advancement, as well as implementing safety and health management rules for the work environment. Using various auditing and consultation methods, TSMC forms a close and comprehensive partnership with suppliers to maintain a supply chain that is resilient against disruption.

● Improve Environmental Safety and Health and Loss Prevention Capabilities of the Supply Chain

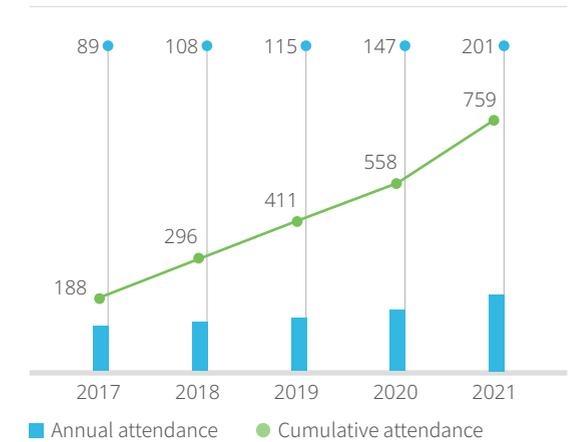
TSMC ensures sustainable supply chain management on environmental safety and health with four separate steps - establishing standards and systems, auditing and follow-ups, consultation and training, and supplier follow-up consultation. In 2021, consultation and training were the priorities of the year. TSMC offered training courses and visited

supplier sites for consultation. Furthermore, the Company included environmental safety and health as indicators of the comprehensive supplier evaluation, recognizing suppliers with awards. The 2021 Supplier Environmental Safety and Health Best Performance Award went to MGC Pure Chemicals Taiwan, while the Supplier Environmental Safety and Health Improvement Award went to Sunlit Fluo & Chemical. In the future, TSMC will continue its suppliers' leadership in improving the performance on environmental safety and health, fire safety, and emergency response.

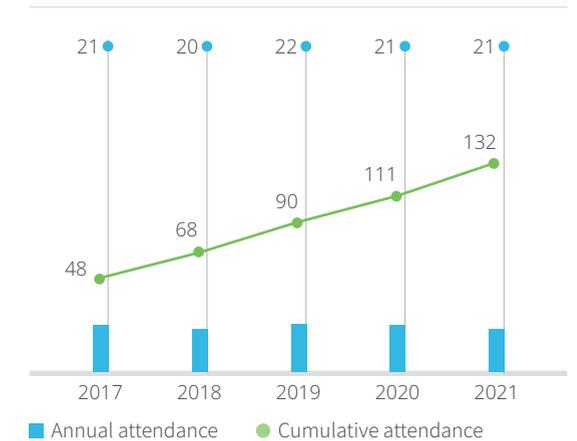
Sustainable Management of the Supply Chain on Environmental Safety and Health



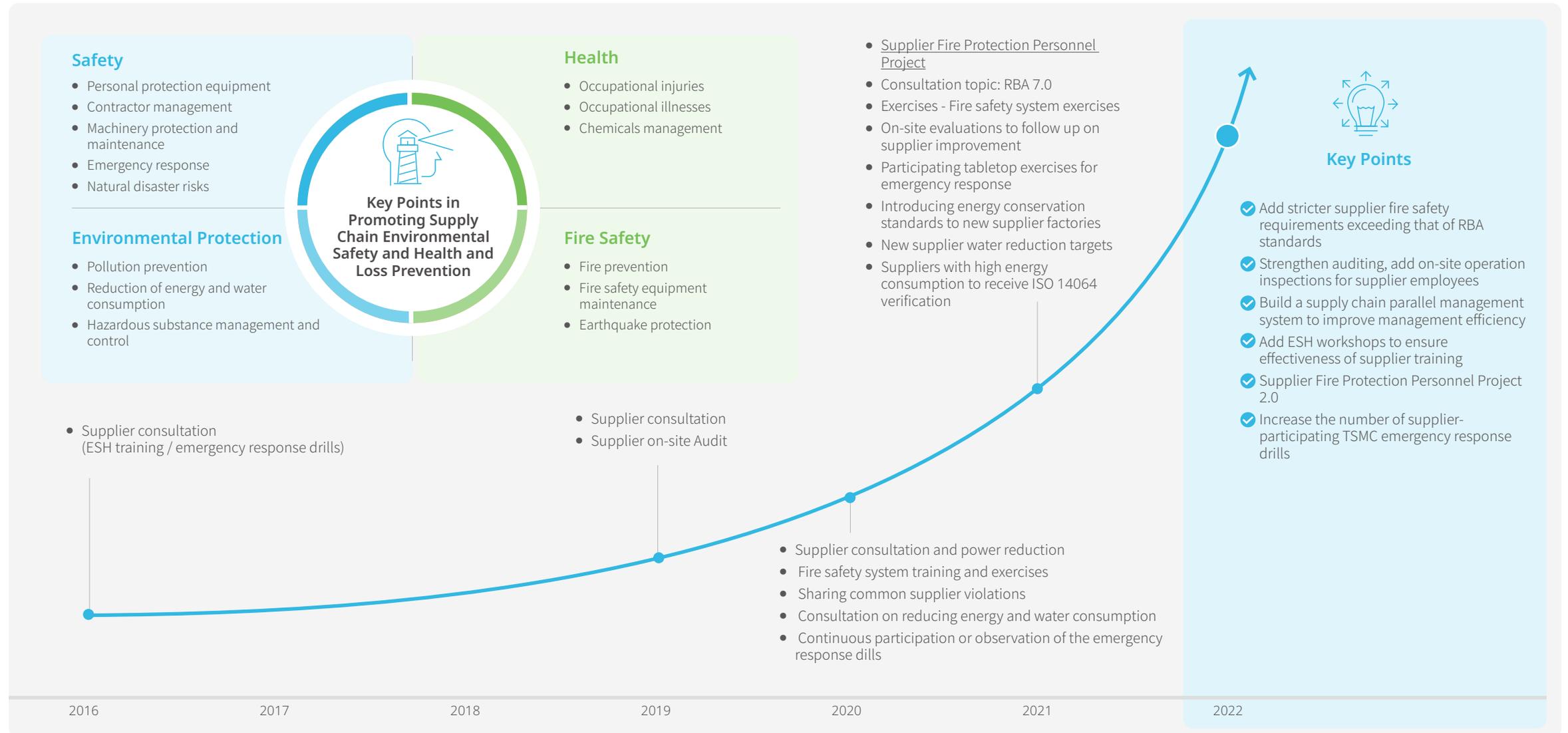
Number of Suppliers Participating in the ESH Training Programs



Number of Suppliers Observing TSMC Annual Emergency Response Drills



Key Points in Promoting Supply Chain Environmental Safety and Health and Loss Prevention



Problems and Challenges	TSMC Consultation Measures/Number of Suppliers	2021 Performance
 <p>Suppliers lack awareness of climate change and environmental safety and health</p>	<ul style="list-style-type: none"> Organize workshops exchanging practices and experiences on Environmental Safety and Health <p>201</p>	<ul style="list-style-type: none"> Required company leadership of the suppliers to recognize the impact of climate change, sharing TSMC experiences on power and water conservation, environmental safety and health, and fire safety. TSMC provided case studies on <u>common violations</u> in sustainability audits and improvement recommendations. In 2021, a total of 298 participants from 201 suppliers attended these workshops
 <p>Suppliers lack awareness of emergency response and fire safety</p>	<ul style="list-style-type: none"> Participation or observation of the emergency response drills <p>21</p>	<ul style="list-style-type: none"> For the sixth consecutive year, TSMC required raw materials suppliers to participate in or observe the annual emergency response drills, tabletop exercises, and fire safety drills, to enhance environmental safety and health, fire safety, and emergency response capabilities among the suppliers. In 2021, a total of 21 suppliers participated
 <p>Percentage of imported high-level spare parts for several advanced processes is still too high, as local suppliers lack critical technologies</p>	<ul style="list-style-type: none"> Assemble a team of experts to provide consultation for local suppliers, offer technical support, and assist in certification, ensuring that supplier technology progresses in steps with TSMC business needs <p>7</p>	<ul style="list-style-type: none"> Provided consultation for developing 141 spare parts for advanced processes
 <p>The parts of specific advanced machinery have to be sent abroad for repair and maintenance, which affects production schedules</p>		
 <p>Capacity insufficient to meet advanced process requirements</p>	<ul style="list-style-type: none"> Production line expansion and process advancement <p>10</p>	<ul style="list-style-type: none"> New factories supplied sufficient amount of raw materials upon volume production, meeting TSMC quality requirements Assisted new suppliers to establish the Best Known Method (BKM) for quality insufficiency improvement
 <p>Measurement technology insufficient to meet advanced process requirements</p>	<ul style="list-style-type: none"> Add analytical instruments Introduce advanced instruments <p>9</p>	<ul style="list-style-type: none"> Zero return of goods Assisted new suppliers to increase the detection threshold Assisted new suppliers to acquire the capability for IC material analysis
 <p>The supply chain lacks emergency response capabilities and may lead to disruption risk in supply</p>	<ul style="list-style-type: none"> Publish Supplier Transportation Management White Paper Require raw materials suppliers to formulate specific regulations on vehicles, drivers, and management of transportation operations <p>121</p>	<ul style="list-style-type: none"> Required raw materials suppliers to sign the compliant statement of Supplier Transportation Management White Paper Organized Seminar on Supplier Transportation Management, attended by 354 people from 121 suppliers Added courses relevant to TSMC Supplier Transportation Management White Paper on the TSMC Supplier Sustainability Academy platform, providing training materials for supplier transportation service providers

Promote Green and Low-carbon Supply Chains

Continue to Reduce Environmental Impact

TSMC is committed to mitigating the impact of climate change and resource depletion; the Company conducts an annual [Supplier Environmental Profit and Loss \(EP&L\) assessment](#) to quantify the impact. In 2021, TSMC inspected 30 raw materials suppliers, prompting suppliers to investigate their carbon emissions and follow up on key indicators, including the suppliers' performance of meeting their reduction targets of energy and water consumption, waste generation, and carbon emission. TSMC also requires suppliers to receive external verification for their greenhouse gas emissions.

Promote Constant Upgrade of Local Supply Chain

TSMC's main production site is located in Taiwan. Its procurement can be divided into six categories: equipment, spare parts, raw materials, facility services, IT, and goods. Besides promoting local sourcing in Taiwan, TSMC also set up independent procurement organizations for TSMC subsidiaries, including TSMC (China), TSMC (Nanjing), and WaferTech. Such organizations extend the TSMC global supply chain, which helps local suppliers improve technology and quality, reduce costs and carbon emissions to build a highly effective and competitive semiconductor industry chain.

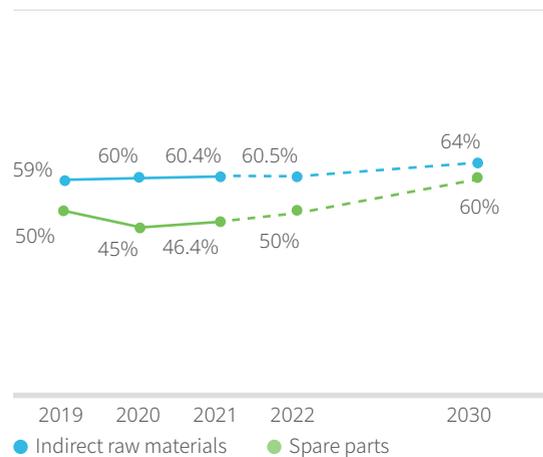
2021 Supply Chain Management Activities From Taiwan Fabs

	Set procurement targets Increase or maintain the percentages of local sourcing to meet long-term goals
	Improve technology quality Proactively improve the technology and quality of critical equipment, spare parts, and raw materials and increase local sourcing
	Invite international companies to set up factories in Taiwan Invite foreign suppliers to set up manufacturing, R&D, and training sites in Taiwan

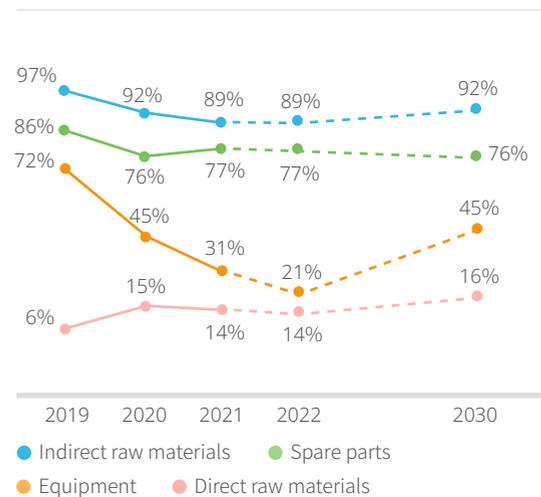
Promote Low-carbon Supply Chains

In 2021, TSMC declared that the Company will achieve Net Zero Emissions by 2050. Since the supply chain plays a [critical role](#) in TSMC's [roadmap to Net Zero Emissions](#), the Company will continue to lead suppliers in improving low-carbon operating capabilities. TSMC's supply chain carbon emission management working group signed a Memorandum of Understanding with the [CDP](#) to collaborate on supply chain climate change and water resource initiatives. With comprehensive data collection and analysis, TSMC expects to publish the reduction targets for the supply chain in 2022 to push forward sustainability efforts.

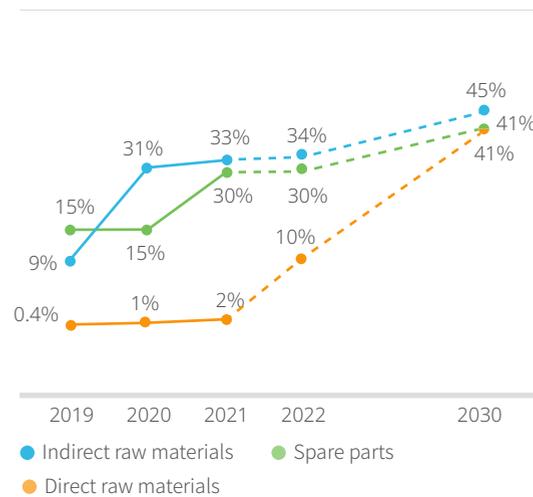
Percentage of Local Sourcing in Taiwan



Percentage of Local Sourcing in the US



Percentage of Local Sourcing in China



In 2021, TSMC continued to require and assist suppliers to improve their performance [in making the supply chain greener](#). The annual total of energy reduction reached 130 GWh, and the accumulative total reached 340 GWh (base year: 2020). The annual total of water reduction reached 17.58 million metric tons, and the cumulative total reached 19.71 million metric tons (base year: 2020). Additionally, 51% of the high energy consumption suppliers received ISO14064 verification. TSMC also required suppliers to introduce energy conservation assessments when building new factories. The waste production per unit among major waste-producing suppliers reduced by 31%, exceeding the annual target of 30.4%.

TSMC complies with the Energy Conservation and Carbon Reduction program put forth by the Industrial Development Bureau, MOEA, encouraging eligible suppliers to participate in the efforts to establish an energy consumption baseline by the Foundation of Taiwan Industry Service. The goal is to identify opportunities to conserve energy and reduce carbon emission at factory sites. In 2021, 18 suppliers participated in the program, identifying 37 cases of potential energy conservation via document evaluation and on-site diagnosis. TSMC has actively provided improvement recommendations, contributing to energy conservation and carbon reduction among suppliers to achieve Net Zero Emissions of the value chain by 2050.

Four Directives of Low-carbon Supply Chain Management



Targets and Achievements of Suppliers' Efforts to Reduce Energy and Water Consumption, Waste, and Carbon Emission

