

TSMC Supplier Assessment and Development Report

1. Period: 2019-2022
2. Scope: All TSMC suppliers
3. Purpose: Due to the adherence of the ESG report content to the four major topics of the GRI standard, it is not possible to fully present TSMC's supplier assessment and development progress, as well as the trend breakdown of various supply chain KPIs over the years. This report aims to provide a more comprehensive disclosure of various supply chain assessment and development-related indicators for all TSMC suppliers.
4. Content:

Every year, TSMC conducts a thorough review and investigation of supplier location, purchase amount, product category, and production process to conduct a preliminary assessment of suppliers and analyze potential risks. To grasp the sustainable development status of TSMC's supply chain and understand sustainability-related risks, we follow a three-stage approach (including surveys and assessments) to identify the risks in the areas of economy, environment, society, and company governance. For suppliers with high-risk potential, we perform audits and provide counseling to effectively control and reduce their risks.

 - Phase one: Conduct a preliminary assessment by examining the category, industry, and geographical origin of all products and materials based on the business relations TSMC has with the suppliers to analyze potential risks.
 - Phase two: Define the Supplier Risk Matrix and the grading management measures according to the Tier 1 suppliers' SAQ results, resilience of the supply chain, and trading amount.
 - Phase three: Identify the critical suppliers: Suppliers accounting for the top 85% of the purchasing expenses or of a single-source purchase, or suppliers recognized as critical by TSMC after assessing multiple risk indicators, including the suppliers' market shares, inventory levels, geographical origins, sector resilience, specific product categories, and other characteristics which focusing on the six major categories, including Supply Chain Risk, Quality and Reliability, Environmental Safety and Health, Fire Protection System, Labor Ethics, and Management System to determine potential risks and opportunities.

For critical suppliers who require urgent management, TSMC conducts on-site audits to identify the actual risk status and provides constant consultation to reduce risks. The critical suppliers are audited by RBA-certified third-party organizations or TSMC's Supplier Health Assessment Rectification Program (S.H.A.R.P.) team. Based on the audit results, suppliers receive improvement counseling and may undergo or re-inspection audits.

In 2022, a total of 1,230 Tier-1 suppliers (100% of Tier-1 suppliers) completed their Self-Assessment Questionnaires (SAQs).

SAQ consists of the following categories and sub-categories:

1. Supply Chain Risk:

- 1) Upstream management
- 2) Safety inventory management
- 3) Supply chain resilience
- 4) Emergency management
- 5) Climate change risk
2. Quality and Reliability:
 - 1) Production maintenance
 - 2) Abnormal event management
 - 3) Process reliability
 - 4) Laboratory management
 - 5) Quality management
3. Fire Protection System:
 - 1) Fire equipment design and maintenance
 - 2) Process fire risk
 - 3) Personnel professionalism
 - 4) Personnel professionalism
 - 5) Fire safety management
4. Environmental Safety and Health:
 - 1) Working environment safety
 - 2) Operation safety
 - 3) ESH system management
 - 4) Environmental protection
 - 5) Regulatory compliance
5. Green supply chain:
 - 1) ISO certification
 - 2) Carbon reduction
 - 3) Energy saving
 - 4) Water saving
 - 5) Net zero policy

In SAQ, suppliers are asked to provide information to help respectively identify their environmental risks through categories 3, 4 and 5; social risks through 4 and 5; governance risks through 1 and 2. Additionally, SAQ collects detailed information on suppliers' locations, industry sectors, and product categories to further accurately recognize the potential risk of supply chain disruption.

TSMC determines the level of risk based on the SAQ results and priority accident records, and it defines supplier grades according to indicators such as procurement expenses, product criticality, and business relations with TSMC. Using the two dimensions of Risk and Criticality, TSMC establishes a Supplier Risk Matrix to define supplier grades and formulate exclusive management measures accordingly. In 2022, suppliers with physical production lines were targeted for management. Besides the existing SAQ items, two assessment items, Supply Chain Risk Management and Process Reliability, were added, while climate change response measures, fire protection system integrity, and green manufacturing were also considered. Suppliers scoring less than 70 points were included as the priority inspection targets of on-site audits.

In 2022, a total of 96 critical suppliers (account for 42 % of TSMC 2022 total spending) was screened out from Tier-1 suppliers to undergo audit implementation and continuous improvement. And 215 critical suppliers (non Tier-1) were identified outside of Tier-1.

Using the Supplier Risk Matrix, we identify potential risks and conduct on-site or remote audits focusing on six major categories. Our suppliers are then required to propose improvement plans and schedules, and our TSMC S.H.A.R.P. Team provides ongoing guidance and follow-up to ensure progress is made.

TSMC has further extended audit projects such as key guidance and new factory design guidance, and constantly strengthens suppliers' self-management awareness and improvement ability. To ensure suppliers' improvement results, the TSMC S.H.A.R.P. Team focused on four major dimensions of the six major categories, Supply Chain Risks, Quality and Reliability, Environmental Safety and Health, and Fire Protection System, to launch short, medium, and long-term improvement plans to solve the problems from previous audits. Furthermore, a key items improved project was implemented and suppliers were required to formulate a Business Continuity Plan (BCP) and conduct regular drills, and formulate contingency measures to minimize the potential risks of emergencies. 22 re-audits were completed in 2022. Through multiple rectification, suppliers are able to perform self-review to effectively improve audited findings, decrease the occurrence of abnormal events, increase process stability, operational safety, and reliability, maintain supply quality, and avoid the risk of material supply interruptions.

Thanks to proactive tutoring efforts, we prevented the termination of any suppliers with substantial actual/potential negative impacts in 2022. All 96 Tier-1 suppliers (who were identified to have substantial actual/potential negative impacts) agreed to establish and conduct a corrective action/improvement plan. TSMC's goal is to enhance the capabilities of all suppliers comprehensively, thus all 1230 Tier 1 suppliers are eligible for capacity building programs.

These capacity building programs in 2022 are:

- (1) Sustainability Academy Courses
- (2) CDP Supply Chain Program/Training
- (3) Supplier Health Assessment Rectification Program (S.H.A.R.P.) tracking improvement and counseling
- (4) Technical/ESG-related cooperation projects
- (5) Occupational safety training courses
- (6) ESH Workshops and Forum
- (7) Supplier Material Packaging White Paper Regulations
- (8) QCDSS evaluation approach

In response to the Net Zero by 2050 target, TSMC formed the Green Supply Chain Management Team and proposed specific action guidelines based on the five major dimensions proposed by World Economic Forum's (WEF) Net-Zero Challenge: The Supply Chain Opportunity guideline: Create Transparency,

Optimize for CO2, Engage Suppliers, Push Ecosystems, and Enable Your Organization.

To drive more active participation from all TSMC sponsors in assisting suppliers to improve their ESG programs, TSMC conducts periodic ESG training sessions for its buyers and related departments. In addition, ESG-related actions are regularly promoted during internal meetings every two weeks to ensure that the sponsors understand their roles and can assist suppliers in achieving their ESG programs. Furthermore, to bolster the operational capability of a low-carbon supply chain, TSMC also held several CDP, carbon reduction and ESG activities virtual training courses in 2022 to TSMC buyers and relevant departments to help suppliers achieve their targets.

TSMC adopts the QCDSS (Quality, Cost, Delivery, Service, and Sustainability) management approach to evaluate its suppliers on a quarterly basis. The assessment score plays a central role in determining business allocation and supplier award measurement. Suppliers that perform well in the ESG section may receive additional scores compared to other suppliers with only a minimum weight applied to ESG. This weight factor is applied to suppliers in the following categories: 1) Special Gas providers 2) Bulk Gas providers 3) Chemical providers 4) Wafer providers 5) Special Chemical providers, including Lithography and Precursor chemical suppliers 6) Chemical Mechanical Polishing (CMP) providers 7) Target providers 8) Wafer providers 9) Quartz providers.

TSMC is a member of Responsible Minerals Initiative (RMI) and uses RMI's Responsible Minerals Assurance Process (RMAP) to require its suppliers to source conflict-free minerals. The result was published in sustainability report for public use every year, to label and demonstrate TSMC has achieved a conflict-free supply chain by sourcing from 100% RMAP conformant smelters. Our customers are also members of RMI and use RMI's RMAP to source conflict-free mineral. They also announce their 100% RMAP on their latest sustainability report. There is 100% of total revenues from products containing minerals from conflict-affected and high-risk areas, and 100% of total revenues from products containing minerals from conflict-affected and high-risk areas coming from suppliers that have been verified conflict-free.