

2

Innovative Products and Services

- 2.1 RD and Innovation
- 2.2 Customer Relationship



Suggested priority for referring to the stakeholders in this chapter:

- Supplier ■ Customer ■ Employee ■ Investor □ Government ■ Media
- Others (such as the general public, academic institutions, etc.)

TSC aims to implement sustainable development, and hopes to reduce the environmental impact caused by business activities, in line with the spirit of "Take from Society, Give Back to Society". The Company has established product environmental protection specifications to control the hazardous substances in its products. In addition to complying with the requirements of the EU RoHS directive and REACH regulation, TSC upholds the principles of environmental protection and HSF (Hazardous Substance Free) in the design and production stages, continuously incorporating the concept of green products. Measures such as using non-hazardous raw materials and adopting low-pollution and energy-saving production processes have gained favor from automotive customers, allowing TSC to contribute substantial benefits in greenhouse gas mitigation through its core R&D capabilities.

2.1 R&D and Innovation

Material Topics -

Innovative Products and Services - Sustainable Product Design



Policy and Commitments

- Continuously monitor regulatory trends related to materials and related issues, ensuring that all products 100% comply with regulations and adhere to all applicable laws and regulations.
- Establishing an internal culture of quality management, advocating for a zero-defect commitment for our products, which includes zero errors, zero warranty claims, zero returns, and zero defects.
- Provide energy-efficient product solutions to minimize the environmental impact of manufacturing and packaging as much as possible.



Management Policy and Evaluation Mechanism

- Continuously invest resources in researching and developing innovative products, as well as optimizing processes to improve efficiency and reliability. This will enable us to provide end customers with more energy-efficient products.
- The TSC Environmental Compliance database has been established to manage hazardous substances in accordance with the EU RoHS directive, REACH regulations, and other relevant regulations.
- The quality management system undergoes regular verification by third parties, such as IATF 16949 and ISO 9001.
- To address the car supplier's implementation of online or physical audit programs, such as VDA 6.3 process audits and ISO 9001 quality management standards, in order to ensure that the products meet automotive quality specifications.



Action Plan and Performance

- ✓ Continuously developing a range of innovative products, such as MOSFET, automotive low-power voltage stabilizer ICs, and ESD products, while also ensuring thorough verification and mass production.
- ✓ A full material disclosure was conducted for 9,909 products, with a disclosure rate of 99.6% based on the weight percentage of the products.
- ✓ In 2023, a total of nine automotive suppliers underwent audits based on the VDA 6.3 process audit and ISO 9001 quality management standard.
- ✓ There were no incidents of non-compliance with hazardous substance management in 2023.

2.1.1 Products and Services GRI 3-3 GRI 416-2 GRI 417-1 GRI 417-2 TC-SC-000.A TC-SC-000.B

TSC is mainly engaged in the manufacturing of Rectifiers, Transistors and LED Drivers, Assembly, Testing, and After-sales Service. Its product line includes Rectifiers, protection diodes, Metal-Oxide-Semiconductor Field-Effect Transistors (MOSFETs), bipolar transistors, ultra-low power voltage regulations, ESD protection diodes, high-voltage low-loss flow regulators, fast recovery rectifiers, LED drivers, sensors, and wide band gap. These products are mainly used in three major fields: automotive electronics, industrial markets (charging piles, power tools, pneumatic device equipment), and consumer electronic products.

Vertical integration is one of TSC's competitive advantages. We provide end-to-end services, from R&D and design, and production, to assembly, testing, and sales. This integrated approach optimizes the manufacturing process and reduces communication errors.



Total output of main products

Unit: Kpcs

Main Product	Indicator	2021	2022	2023
Rectifier* ¹	Production Capacity	9,568,832	9,566,990	6,103,225
	Production Quantity	7,063,712	7,063,352 ³	4,505,401

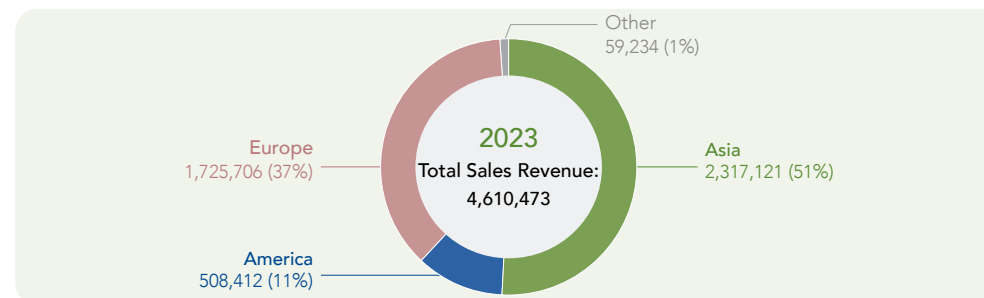
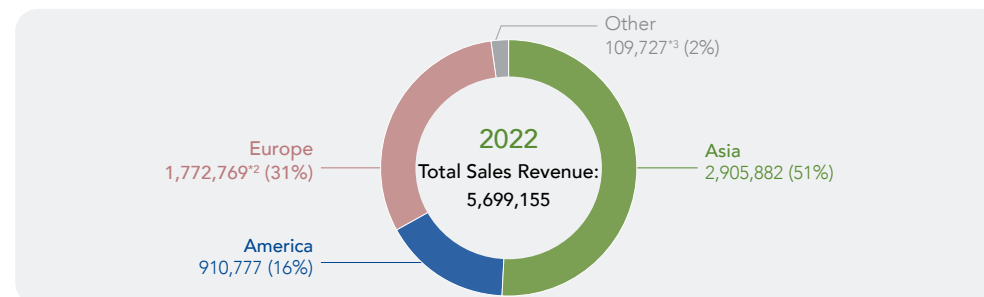
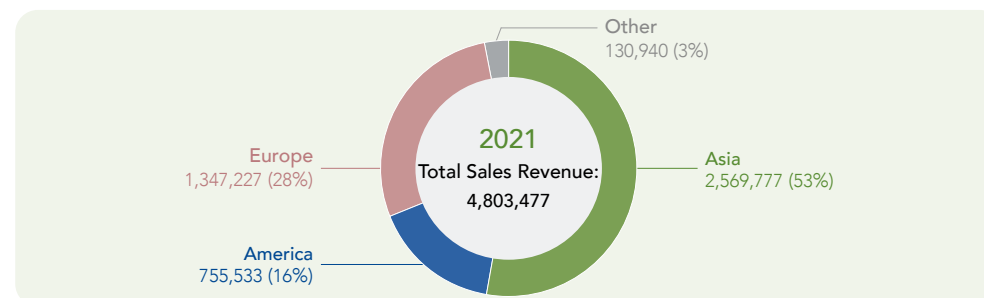
Note:

- Due to the wide variety of TSC's products and the significant differences in production units, considering the reasonableness and accuracy of the information, only the total production of the Main Product - Rectifiers is disclosed.
- The overall production volume is expected to decline in 2023 due to the semiconductor industry's overall consumption not recovering as strongly as anticipated.
- Update the total production data (original 7,062,352 Kpcs) for 2022 to match the parent company only financial statements for 2023.

In 2023, TSC achieved a self-production rate (percentage from its own factories) of approximately 70% for its products, with the remaining 30% outsourced or purchased externally. In recent years, TSC has actively pursued transformational initiatives and adjusted its product sales strategies. By the end of 2023, the automotive and industrial markets accounted for about 60% of total revenue. Regarding sales in major regional markets, Asia represented 51%, while Europe and the Americas combined accounted for 48%, showing minimal change compared to 2022. Other regions accounted for 1%.

Main regional market sales status and proportion

Unit: NT\$ thousand

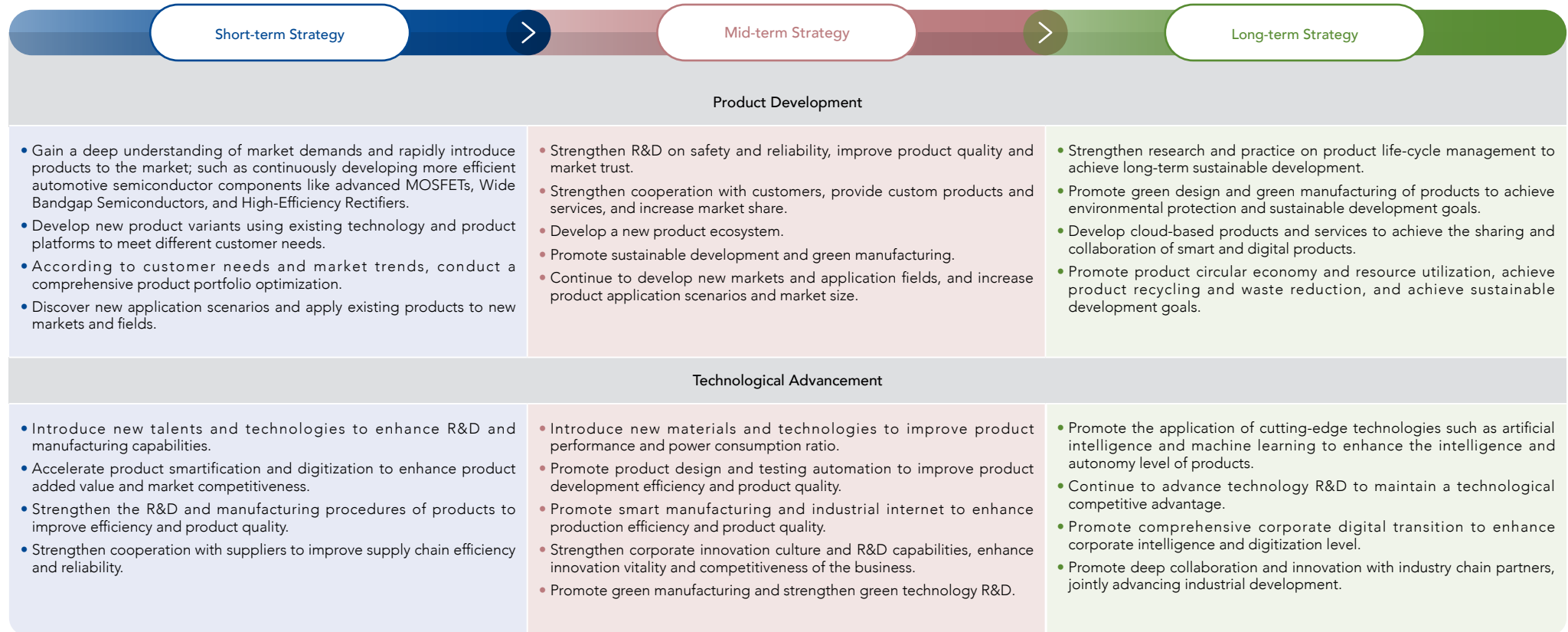


Note:

- In 2023, the total sales decreased compared to the previous year due to the overall market conditions.
- Update the sales revenue (original NT\$1,776,181 thousand) in the European market for 2022 to match the parent company only financial statements for 2023.
- Update the sales revenue (original NT\$106,315 thousand) in other areas market for 2022 to match the parent company only financial statements for 2023.

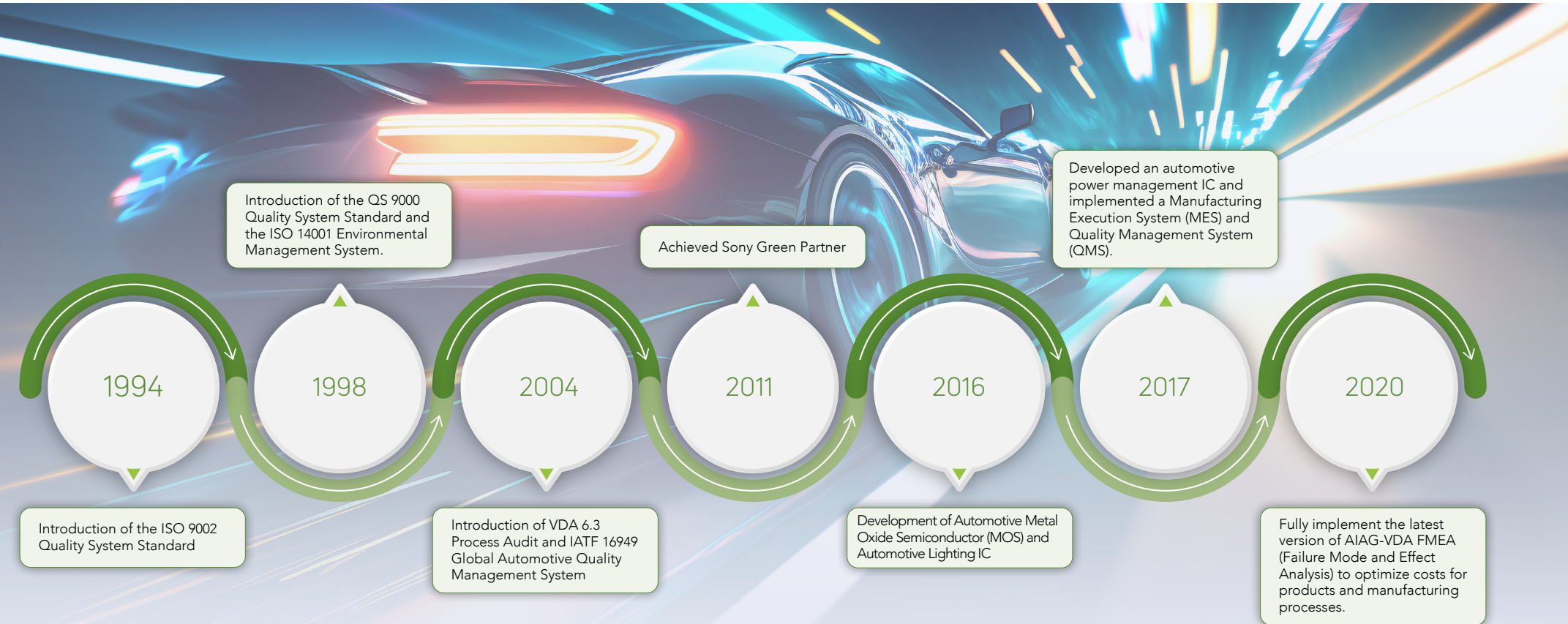
Multi-Faceted Strategy Layout

To provide customers with more comprehensive product solutions, TSC has continuously improved its technological innovation and R&D capabilities in recent years. It has also formulated short-, medium-, and long-term product development strategies to meet customer needs and market trends. In addition to establishing a sound product development strategy, TSC also promotes a comprehensive quality management system. These two schemes are complementary to each other, forming the foundation of TSC's competitiveness.

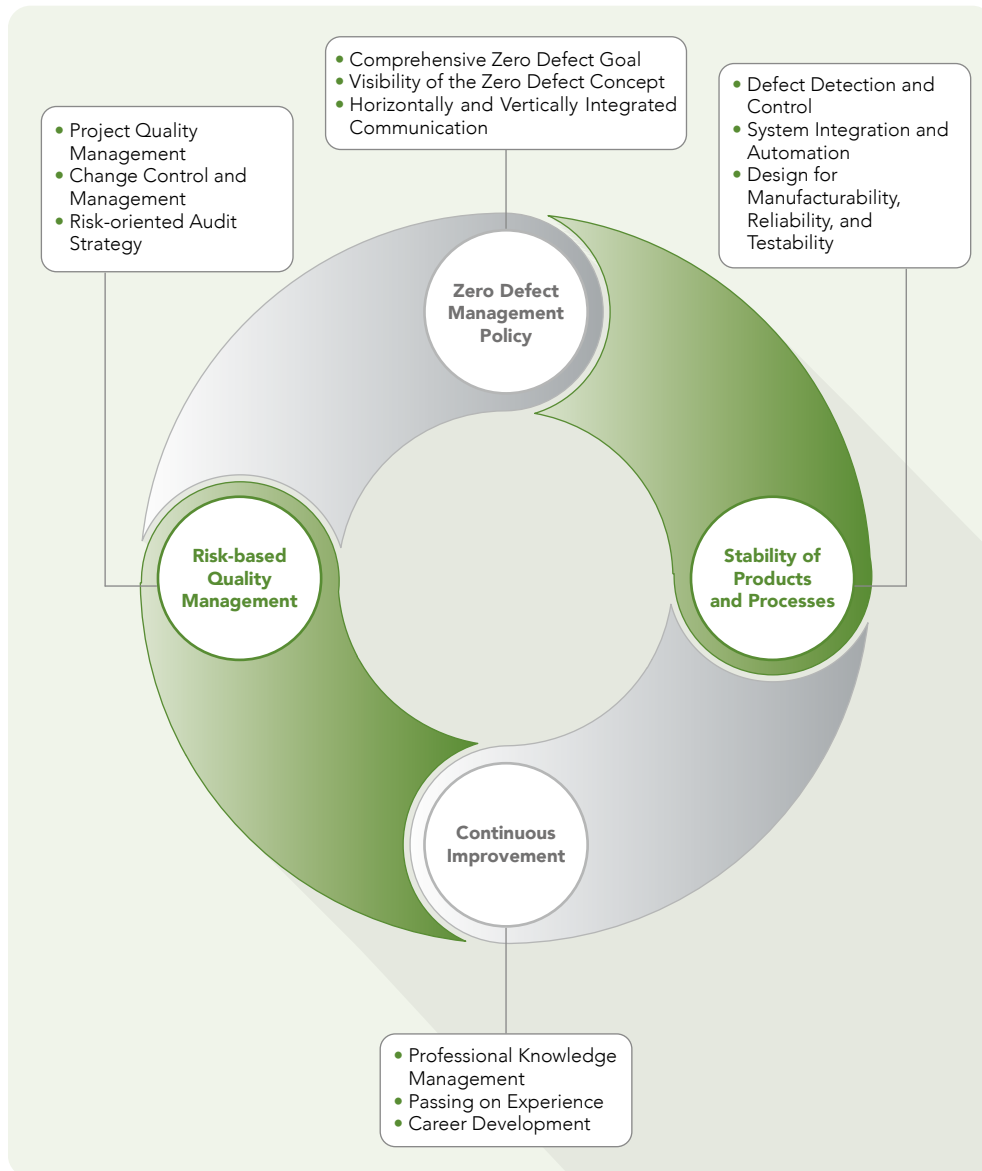


Product Quality Management

TSC has been fully implementing the Zero Defect Strategy in its automotive supply chain since 2004, after verifying compliance with the global automotive industry quality management system IATF 16949 and the quality system ISO 9001. By implementing a rigorous quality management system, TSC has successfully achieved the objective of continuous product improvement and defect prevention, ensuring the delivery of high-quality products to customers in the global automotive industry.

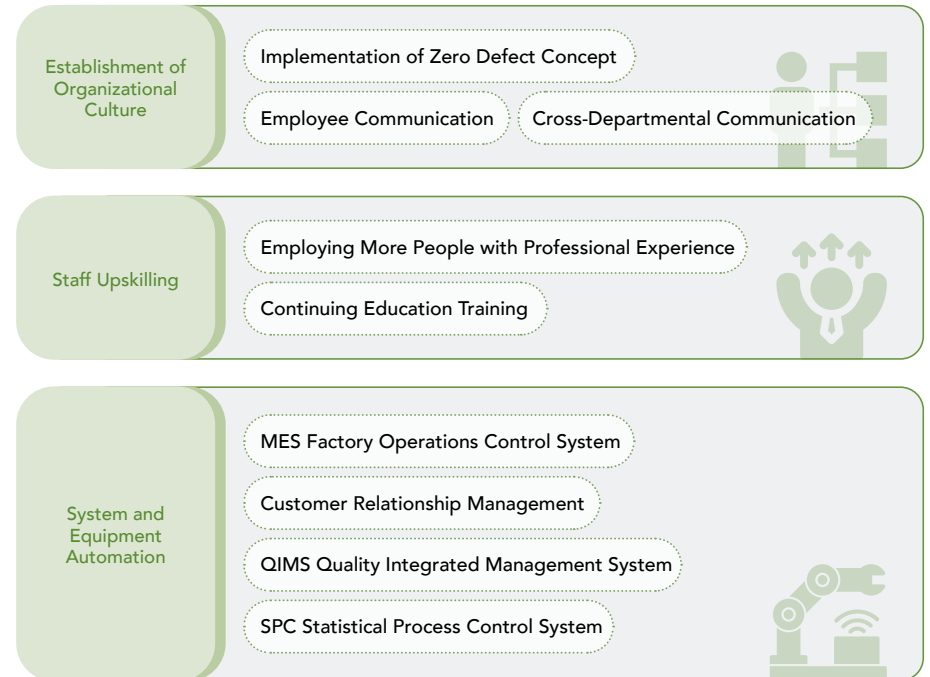


Quality Management Policy and Goals



Comprehensive Quality Management Capability Building

In order to effectively implement the quality management policy, TSC has undertaken relevant capability building in organizational culture, personnel skills, equipment, and system automation. This includes promoting horizontal and vertical communication to ensure the spirit of "zero defects" is company consensus. TSC has also introduced more talented individuals with extensive experience, strengthened the professional knowledge of internal engineers and supervisors, expanded training in specific automotive technologies, and laid the foundation for product quality management. Additionally, TSC is gradually introducing automated equipment and systems to enhance the efficiency of quality management.



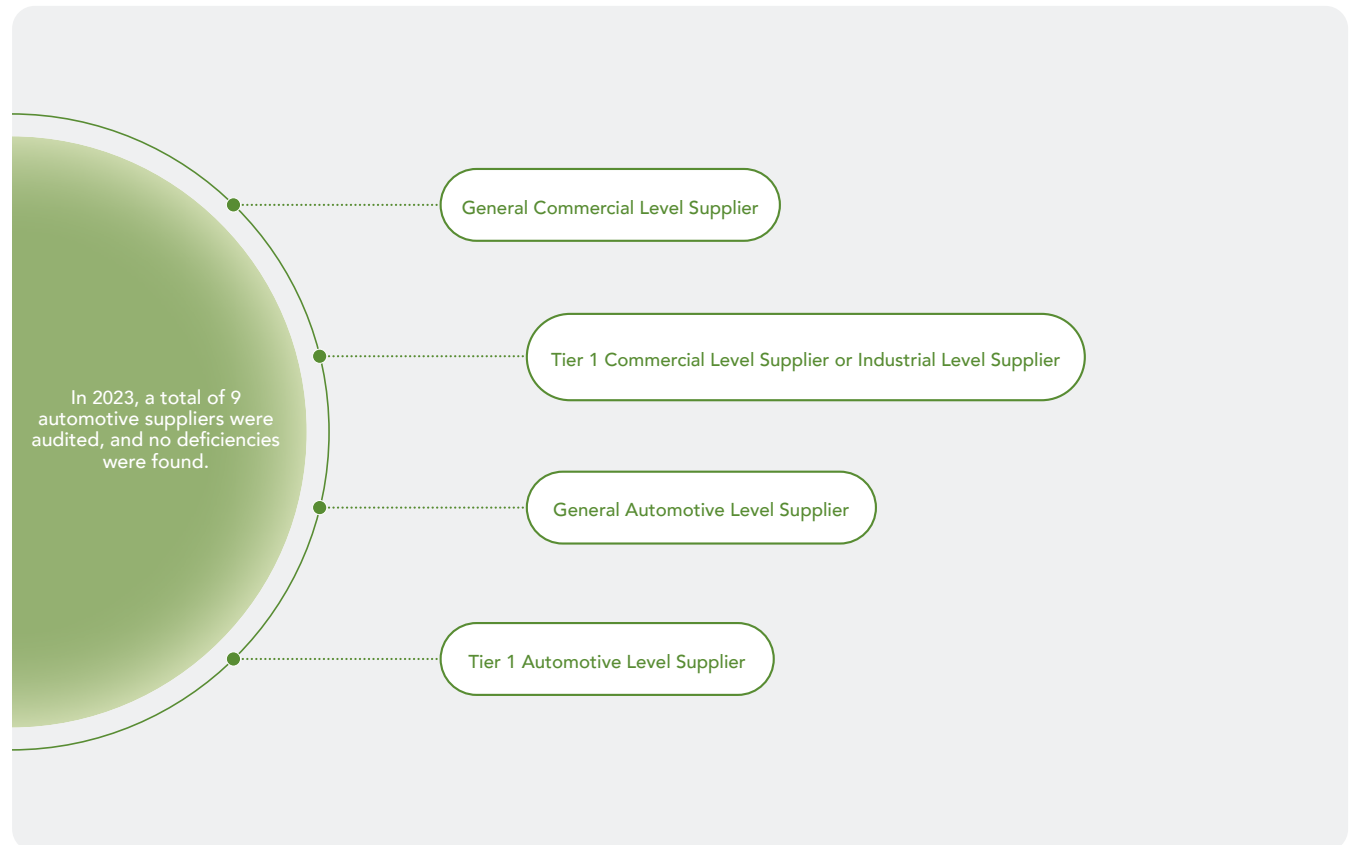
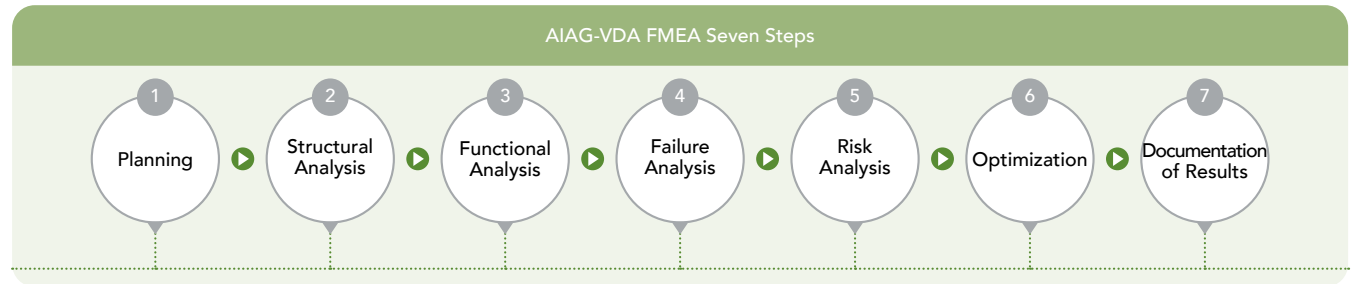
Reliability Analysis

Since 2000, we have strengthened our management through VDA6.3 process audits and IATF 16949. By integrating our existing quality management system, we assist in internal diagnosis and optimization, refine our zero-defect goals, and enhance competitiveness in the automotive supply chain. Additionally, in response to the continuous improvement of the international automotive industry, we have fully implemented the latest version of AIAG-VDA FMEA (Failure Mode and Effect Analysis) in 2020 to optimize costs for products and manufacturing procedures.

Automotive Supplier Audit

To effectively manage automotive suppliers and distinguish their capabilities, TSC categorizes them into four categories. Regular audits are conducted based on the VDA 6.3 process audit and ISO 9001 Quality Management Standards* to ensure that the product quality of upstream suppliers meets TSC's high standards. In 2023, a total of 9 automotive suppliers were audited, and no deficiencies were found.

Note: Regular audits include on-site audits, online audits, and written audits, among other forms.



Health and Safety Impact Assessment of Products

In recent years, TSC has been developing the automotive market. Major European and American automotive manufacturers pay great attention to the high quality and precision of their products because of the importance of automobiles in terms of personal and traffic safety. If there are any malfunctions, it may result in unforeseen risks and impacts. Defects in automotive electronics not only pose potential risks to personal safety but also lead to negative impacts on corporate reputation through subsequent product recalls. Therefore, customers have extremely high requirements for the products provided by TSC. Only by offering high-quality products, implementing a Zero Defect Policy, and continuously monitoring the development trends of harmful substance regulations at home and abroad can we maintain a competitive advantage.

Through assessment, the products offered by TSC are not end products. The products and services provided by TSC in 2023 have no significant impact on health and safety, and there have been no incidents that violate relevant health and safety regulations for products and services. TSC will continue to strive to manage the health and safety impacts of its products and make the sustainable development blueprint more complete.

Product Chemical Substances Control and Disclosure

Many chemical substances are used in the production process of TSC products, and there is a risk of harm to human beings and the environment. As such, the control of chemical substances is crucial. In recent years, environmental substance regulations have been updated frequently, and the number of regulated items has increased year by year, reflecting the increasing international attention to chemical management. Meanwhile, customers also attach great importance to the composition, showing their attention to the subsequent R&D, design, manufacturing, and quality maintenance of purchased parts. To allow customers to quickly understand the chemical substances contained in products for accelerating demand matching, TSC set up a Material Composition Declaration system of the internal website.

In the past, when customers or agents inquired about materials, they had to convey their needs through the Sales Division and go through various internal processes to obtain detailed information about the composition of the product. This communication flow increased the operation time and caused a lack of immediacy in clarifying doubts for customers or agents, resulting in possible missed business opportunities. Therefore, TSC's MIS Department has designed a unique system, the MCD Environmental System, to control and manage the chemical composition of products and establish a list of hazardous substances. The information on the substances contained in the products is continuously compiled and disclosed on the official TSC website. Currently, all products have MCD data sheets, and customers, suppliers, and other external stakeholders can quickly search for specific products that meet their needs through the self-service feature on the TSC official website, accelerating the overall communication process and saving time on back-and-forth communication.

In 2023, TSC disclosed the complete material composition of 9,909 products, achieving a disclosure rate of 99.6% by product weight percentage, surpassing the previous year's target of 97%. Moving forward, TSC will further promote the disclosure of complete material composition for product components, integrating them into a transparent and comprehensive material information database. This will involve analyzing high-risk materials to ensure the production of environmentally friendly products by TSC.

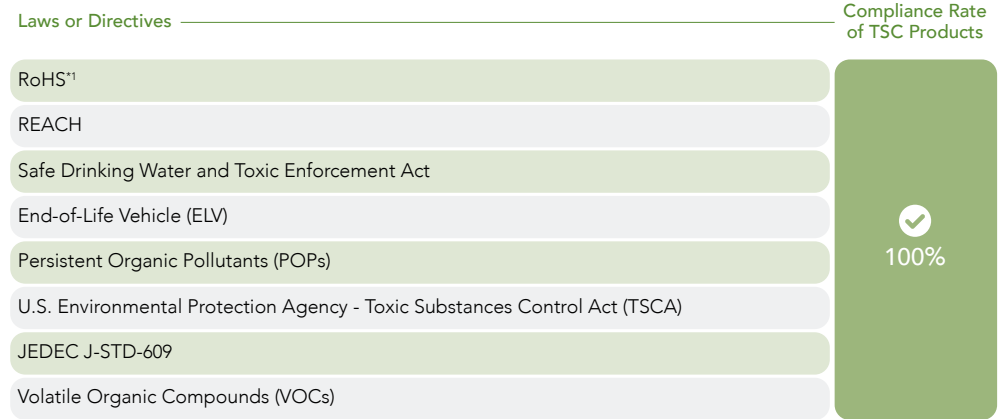
Hazardous Substances Management

We believe that the management of hazardous substances is a crucial part of sustainable management, which is also important for customers. The Company strictly complies with international regulations, such as the EU RoHS directive, REACH regulations, etc., and has established a TSC Environmental Compliance database to manage hazardous substances. We provide manufacturing services that are more environmentally friendly and disclose hazardous substances in response to customer needs, supporting customers in expanding the green product market.

For a complete list of environmental laws and regulations followed by TSC, please refer to the official website's [Compliance with Environmental Laws and Regulations](#).

During the product development stage, TSC adheres to quality management system frameworks such as ISO 9001 and IATF 16949 to conduct PDCA reviews. This ensures the assessment of all product health and safety impacts. Additionally, we incorporate customer requirements into each production site. In 2023, TSC's products and packaging design and manufacturing have complied with local regulations and 100% meet customer requirements for hazardous substance management. There were no violations of regulations on product information labeling or voluntary agreements, nor were there any incidents leading to fines or warnings.

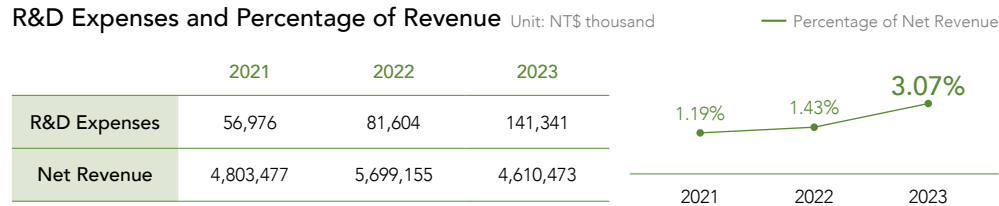
We strictly comply with the product import regulations or instructions of various countries. After internal verification, the product pass rate in 2023 is 100%. Regarding the EU RoHS directive, TSC has obtained third-party testing reports.



Note:
1. This refers to the instruction for restricting the use of certain hazardous substances in electronic and electrical equipment (Restriction of Hazardous Substances).

2.1.2 Innovation and R&D

TSC continues to invest in product R&D and technological innovation, gradually introducing more professional talents and technologies. As the scale continues to grow, TSC continues to expand the R&D team in 2023, including new technical professionals in ESD, wide band gap semiconductors, automotive low-power voltage stabilizer ICs, and other product lines. The Hsinchu Office of the R&D team was established in 2023. In addition, TSC incorporated the R&D performance of new products into the performance bonus evaluation criteria for researchers to encourage the team to actively pursue innovation. Over the past three years, the annual investment in innovative R&D has increased year by year, and its percentage of net operating revenue has also increased with the growth of operating revenue. In 2023, R&D expenses accounted for 3.07% of net operating revenue, representing a 1.64% increase.



New Product Development Plan

In recent years, TSC launched a number of new product development projects, including MOSFETs, automotive low-power voltage stabilizer ICs, ESD, and other products. These projects have undergone continuous validation and have been successfully put into mass production. The products involve different applications of semiconductor technology, such as automotive electronics, Advanced Driver Assistance Systems (ADAS), Internet of Things, 5G, etc., laying the foundation for the Company's long-term development. For instance, we completed the development of the SiC 650V Schottky Diode (MPS) by the end of 2023, and it has already undergone various verification. It is scheduled to enter mass production in the first quarter of 2024. For further details, please refer to the "Highlight Story: R&D of SiC 650V Schottky Diode (MPS)".

TSC has established an effective project management system to track and manage tasks and progress across departments, in order to respond to the technical challenges, market uncertainties, product design, and quality control issues associated with developing new products. Additionally, the Company conducts training and exchange activities to enhance employees' skills and knowledge in product development, and to promote cross-department collaboration and communication.

Expected Benefits of Product Development





R&D of SiC 650V Schottky Diode (MPS)

With the further development of power electronic products, the demand for components in applications such as Uninterruptible Power Supply (UPS), Data Centers, and even On-Board Chargers (OBC) and charging pile circuits has been increasing year by year. High-performance power electronic products operating at high voltage and power are receiving more attention. Compared to traditional silicon (Si) materials, the new silicon carbide (SiC) semiconductor materials have significant advantages in terms of thermal conductivity, device switching speed, device size, and resistance. Due to its material properties, SiC Schottky products have lower conduction and switching losses compared to traditional Si FRED, as well as better heat dissipation capabilities. This indirectly leads to the reduction of product size and energy-saving and carbon-reducing effects.

In contrast to the traditional Schottky diode (SBD), this project focuses on the R&D of the Merged PiN and Schottky diode (MPS) to achieve better device characteristics (voltage (VR) and current (IR)). The terminal design incorporates Junction Termination Extension, which improves device efficiency and enhances the electrical characteristics of the on-state resistance (R_{on}), ultimately significantly increasing device performance and competitiveness.

The test results of the 806W CCM PFC application circuit show that the SiC MPS device developed by TSC outperforms the traditional Si FRED in terms of key parameters V_F , T_{rr} , and Q_{rr} . It also demonstrates greater stability during high-temperature operation and comparable performance to SiC devices from Tier1 IDM manufacturers.

The future SiC 650V Schottky Diode (MPS) product will be built upon the existing foundation for process optimization and design. The goal of the Gen2 product development is to improve performance by 20%, further reducing switching losses and component size to enhance product competitiveness. Additionally, the development of SiC 1200V Schottky Diode is underway to meet the increasing demand for higher voltage products. TSC will also develop products in various assembly forms to cater to multiple market demands.

Practicing Intelligent Factory

To improve factory efficiency, enhance process quality, and meet customer delivery requirements, TSC established the Automation Development and Integration Department in 2018. It introduced Manufacturing Execution System (MES) and Equipment Automation Program (EAP) to optimize processes and product traceability, thereby improving efficiency and achieving intelligent production. In order to expand MOSFET's production capacity, TSC plans to invest over NT\$200 million in new equipment from 2022 to 2025. Additionally, it plans to invest approximately NT\$7 million in unlimited quantity EAP software licenses to meet the needs of the new equipment.

Digital System Management (MES/EAP)

Equipment can remotely and automatically perform parameter setting, and automatically retrieve production programs. When products are put into production, the system can immediately designate the process flow. Additionally, production information can be digitized and visualized.

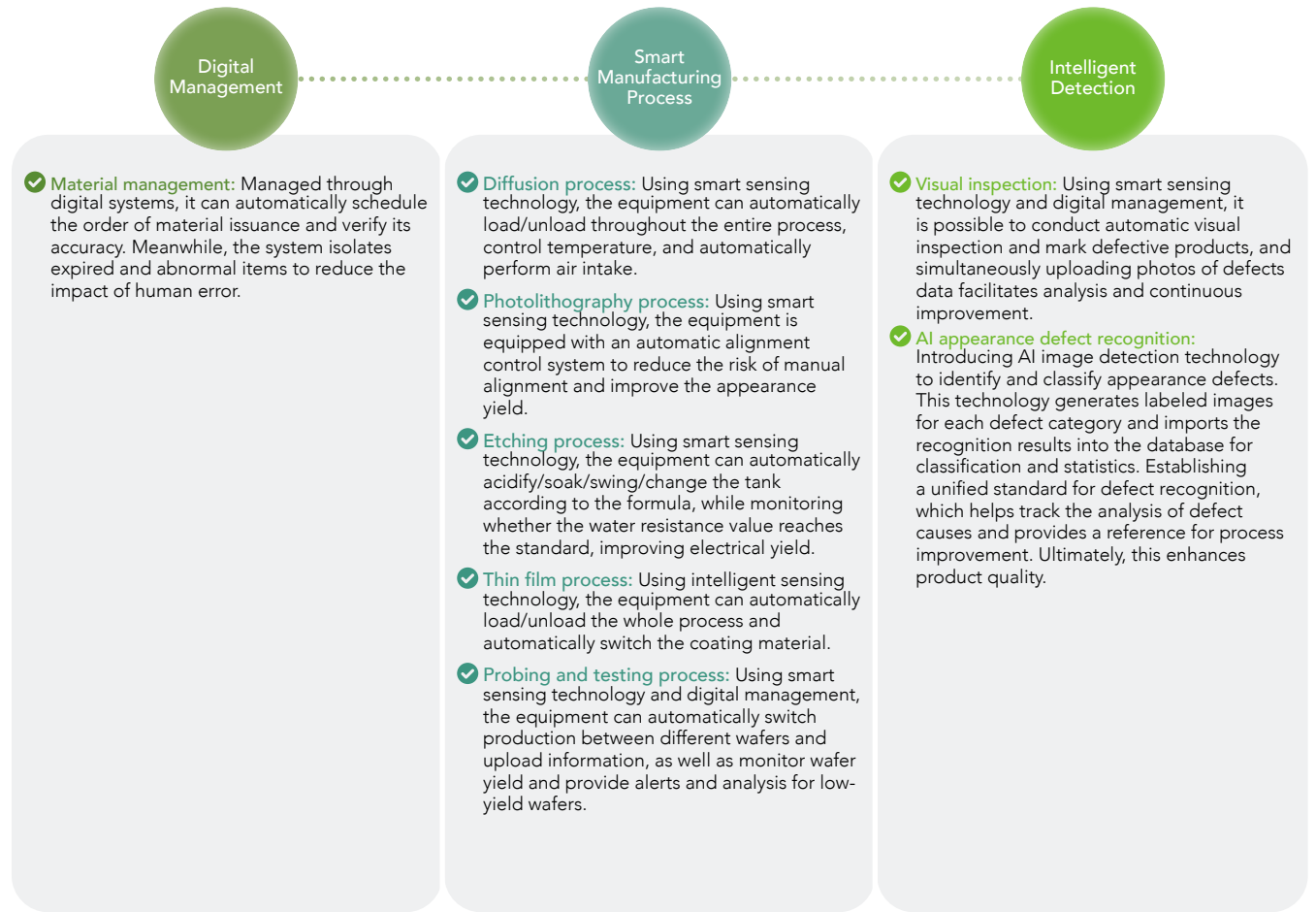
Automatic equipment

Intelligent sensing technology allows the equipment's robotic arm to automatically load and unload materials. The equipment can complete the entire process automatically, enhancing operational efficiency.

Product traceability

Through data management for statistical analysis, it provides preventive and troubleshooting functions. For example, it can query the product batch code to track all quality issues that occur during the production process and perform traceability analysis on the entire history of that batch of products, achieving effective production and continuous improvement purposes.

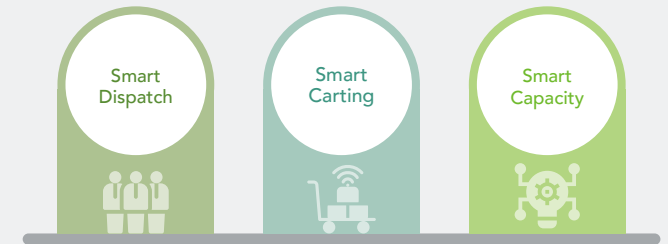
In order to enhance factory efficiency, improve process quality, and meet customer delivery requirements, TSC made an investment in the planning of an automated factory in 2017. The digital transformation of the factory is guided by three main aspects: digital management, intelligent processes, and smart inspection. The goal is to gain customer trust through advanced information technology. By 2023, the automation coverage of equipment in both Li-Je Site and wafer fab will increase compared to 2022, reaching a 70% automation rate.





Developing an Intelligent Automated Production System to Move Towards Smart Manufacturing

In order to enhance product quality, meet automotive standards, and work towards the goal of zero defects, Li-Je Six-inch Wafer Site launched the Smart Production Project in 2023. This project involves partnering with a well-known domestic automation production expert team to implement smart dispatching and automated storage systems. The main objectives of the project are to improve production efficiency, meet customer quality requirements, and achieve research and development milestones. The expected benefits of the project include improving Activation, enhancing space utilization rate, and promoting environmental sustainability. The project is currently in progress.



Improve the Activation

- ▶ AMR (Autonomous Mobile Robot) automatically transports materials and semi-finished products, thereby reducing the need for manual transportation, accelerating the production process, and shortening the production cycle time.
- ▶ The Real-Time Dispatch (RTD) intelligent system management can optimize scheduling and production, effectively reducing waiting time for wafers and lots, and improving machine activation.

Improving Space Utilization

- ▶ The Stocker system effectively utilizes factory space by maximizing storage capacity through vertical or dense storage, thereby saving floor space.
- ▶ The Stocker system can seamlessly integrate with the production management system, enabling real-time monitoring and adjustment of inventory status. This integration improves the efficiency and accuracy of material management.

Friendly Environment

Automated transportation helps to reduce energy consumption and carbon emissions, which aligns with TSC's goals and trends in green manufacturing.

On the other hand, regarding the assembly testing equipment, TSC has been gradually purchasing new types of networked and automated machines since 2017 and conducting assembly testing processes. We have also purchased EAP software licenses to achieve process parameter control and automation access. The applicable products include diodes and MOSFETs. With the increasing number of newly purchased equipment each year, more software automation engineers are needed to assist in the implementation and development of EAP. As of the end of 2023, through hardware, software, and manpower recruitment, I-lan Site has used machines with EAP automation capabilities to produce over 95% of its products. Future new products and machines will also be equipped with EAP functionality to maintain the intelligent operation of the factory.

- ▶ **Material management:** Utilize digital systems to achieve visualized warehouse management, thereby improving inventory turnover efficiency, reducing stagnant materials, enhancing product quality traceability, and increasing production efficiency.
- ▶ **Test process:** Using digital management, it is possible to achieve automatic parameter setting, health index warning and disposal, as well as visualization of all production information.
- ▶ **Automated tool life monitoring management:** Utilizing digital management to assist in the monitoring of tool life for assembly process machines (cutting and compound removal), enhancing quality control capabilities.

Intellectual Property Protection

Intellectual property represents the intellectual results and achievements of the company's investment in technology development, especially for the long-term development of the company, it is a significant intangible asset. TSC has formulated the Intellectual Property Management Measures as the basis for the management and maintenance of group intellectual property rights. Meanwhile, in order to enhance the importance and economic value of our company's R&D technology and cultivate patents, the Company regularly commissions external firms to provide intellectual property and patent-related training courses for internal R&D and technical personnel.

In the face of the changing structure and rapidly advancing technology in the semiconductor industry, TSC has redefined its goals and strategies for the management and maintenance of intellectual property rights. We aim to optimize existing technologies and focus on researching core technologies, conducting an inventory and review of all patents within the group, and retaining patents with economic value. Additionally, TSC places greater emphasis on applying for new invention patents with higher levels of "originality" and "novelty". TSC continues to collaborate with a technology company in the United States to develop new technologies, prioritizing quality over quantity. As of now, TSC has been granted and holds 35 valid patents, including 33 invention patents, 2 utility model patents, and 1 design patent was granted and licensed in 2023.

In order to strengthen the determination of TSC's intellectual property deployment, the Legal Department, together with the senior management of the Company, not only plans regular intellectual property training or industry-related courses for R&D and technical personnel, but has also started planning and formulating new internal management measures and systems (including the introduction and promotion of trade secret systems) to enhance the content of technology and patents, and protect the core technology and patents of the Company. By the end of 2023, the plan is to invite international intellectual property law firms to TSC in the first quarter of 2024 to provide education and training on "essential patent knowledge for R&D personnel" to the R&D team in TSC.

To encourage TSC employees to actively engage in research, invention, and innovation, and to improve product quality and functionality, thereby enhancing TSC's competitiveness, there are numerous incentive measures, including proposal rewards, approval rewards, patent infringement reporting rewards, patent rejection rewards, licensing rewards, and annual rewards, which encourage employees to collectively protect TSC's intellectual property rights through diverse criteria.

2.1.3 Developing Sustainable Products GRI 301-1 GRI 301-2

In addition to continuing to roll out smart factories, and improve production efficiency, TSC is actively engaged in product innovation and the development of high-efficiency products. TSC aims to achieve product sustainability by gradually replacing energy-consuming products with more efficient alternatives. For instance, the adoption of high-performance rectifier diodes instead of traditional diodes, along with significant investments in new product development, enables end customers to reduce energy consumption and indirectly decrease carbon emissions.

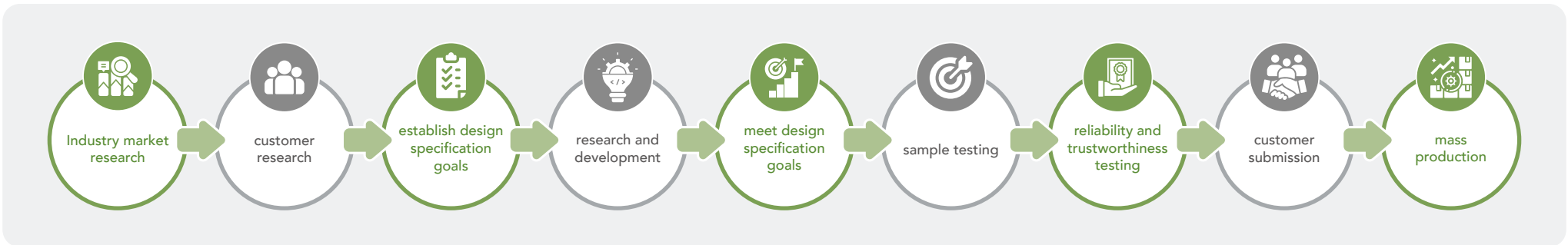
In addition, TSC agrees with the concept of green packaging and remains committed to ensuring the recyclability of raw materials and packaging materials. Additionally, the Company prioritizes customer instructions and packaging requirements, promptly coordinating with upstream suppliers to accurately label relevant symbols on the packaging in accordance with international standards.

Developing Sustainable Products

With the advent of the era of 5G and electric vehicles, the market demand for products that are resistant to high temperatures and high pressure, high power, and low power consumption has increased. Considering the excellent performance and good heat dissipation of SiC semiconductors in high voltage and high power applications, as well as their wide use in electric vehicles, charging piles, and 5G, TSC launched a new generation R&D project of power devices in 2022. The project applied third-generation semiconductor materials, SiC and GaN, to existing products in order to introduce power MOSFET products with lower power consumption and higher efficiency.

Starting in 2022, TSC has collaborated with the integrated industry's professional wafer fabs and power semiconductor assembly factories to jointly develop SiC Schottky Rectifiers. Currently, the samples fully meet the design specifications and pass reliability and trustworthiness testing. The first generation of SiC Schottky Rectifiers was launched by Q1 2024. In the future, TSC will continue to make efforts to apply silicon carbide materials to products of different specifications, such as 650V-1200V Schottky products or higher power 1200V MOSFET products. This will not only maintain robust growth in operations but also contribute to energy savings, in line with sustainable operation.

Product Development Execution Process



A Sustainable Product Case from TSC

TSC is a prominent manufacturer of power semiconductor. Its products consist of semiconductor components that are customized and utilized based on customer requirements. In recent years, TSC has made significant advancements in research and development, enhancing product performance and reliability. As a result, the Company is able to offer customers higher specification products.

<p>Silicon Carbide Schottky Diode</p>	<p>High-performance power semiconductor devices offer several advantages over traditional silicon Schottky diodes:</p> <ul style="list-style-type: none"> • High heat resistance: Capable of operating at elevated temperatures, suitable for use in high-temperature environments. • High voltage interrupting capability: Capable of handling higher voltages, which is advantageous for applications in high-voltage power environments. • Low reverse recovery time: Silicon carbide Schottky diodes have a significantly lower reverse recovery time compared to silicon diodes. This characteristic helps to minimize switching losses and enhance circuit efficiency and speed. • Higher efficiency: Low forward voltage drop and low reverse recovery characteristics can reduce power consumption and improve overall efficiency in power conversion applications. • Small size and weight: Due to the material properties of silicon carbide, it can offer higher performance in smaller sizes, making it crucial for applications with limited space or where weight reduction is important. • Long lifespan: The durability and high temperature resistance of this product result in a longer lifespan compared to traditional silicon diodes. As a result, maintenance and replacement costs are reduced.
<p>Low Power Consumption Voltage Regulator</p>	<ul style="list-style-type: none"> • Extending battery life: Low-power voltage regulator ICs can reduce battery consumption in battery-powered devices, thereby extending the operating time of the device. This is especially crucial in applications such as portable devices, wireless sensors, and Internet of Things (IoT) devices. • Reducing heat generation: Low-power voltage regulator ICs typically generate less heat, which reduces the need for cooling and simplifies the design of cooling systems. This is especially beneficial for small electronic devices or thermosensitive applications. • Simplified circuit design: Low-power voltage regulator ICs usually do not necessitate intricate heat management or additional radiators, thereby simplifying circuit design and reducing design and manufacturing costs. • Improving energy efficiency: Low-power voltage regulator ICs not only reduce their own power consumption but also exhibit high-efficiency voltage regulation performance. This feature helps to decrease the overall energy consumption of the system and assists end customers in creating more environmentally friendly and energy-saving product applications. • Smaller size: The low-power voltage regulator IC generates less heat, eliminating the need for a large radiator. As a result, the circuit board and equipment can be made smaller. This is especially beneficial for portable and space-limited applications. • Improved reliability: Lower heat generation and reduced cooling requirements result in a decreased risk of failures, which is crucial for applications (such as medical equipment and industrial control) that necessitate long-term stable operation. • Support for environmentally friendly applications: With the growing awareness of the environment, low-power voltage regulator ICs contribute to reducing energy consumption and promoting sustainable and eco-friendly electronic products.
<p>High-voltage low-loss rectifier</p>	<p>The objective is to develop a device that can efficiently rectify high voltage environments while minimizing losses during the conversion process.</p> <ul style="list-style-type: none"> • Efficiency improvement: Low-loss rectifiers generally have a lower forward voltage drop and a shorter reverse recovery time. These characteristics help to reduce losses in the energy conversion process, resulting in improved overall efficiency. • Reduced heat generation: The rectifier generates less heat due to low losses. This not only reduces the need for cooling but also minimizes the risk of failures caused by overheating. • Higher voltage withstand capability: High voltage rectifiers have the ability to handle higher voltages, enabling them to be used in high-power conversion and transmission applications in environments with higher voltages without being easily damaged. • Longer lifespan: High-voltage rectifiers are usually designed to be durable, and capable of withstanding high voltage with minimal losses. This design feature helps to extend their lifespan and reduce maintenance and replacement costs. • Wide application: The high-voltage, low-loss rectifier has a wide range of applications in various fields, including power supplies, inverters, electric vehicles, solar inverters, and industrial automation. • Reduced component size: These rectifiers typically do not require large radiators due to their efficient operation and reduced heat generation. As a result, the overall circuit board size can be smaller, which is particularly beneficial for portable and space-constrained applications. • Reducing operating costs: An efficient rectification process leads to reduced energy consumption and lower operating costs.

Management of Raw Materials and Packaging Materials

TSC offers a range of services in the semiconductor industry, from front-end wafer manufacturing to back-end assembly and testing. The wafer fabrication process involves the use of chemicals, etchants, developers, and silicon wafers. Our assembly and testing facilities utilize lead frames, compounds, and carrier tapes. We are committed to reducing resource waste by constantly improving our production processes. In selecting raw material suppliers, we uphold strict standards and adhere to the procurement management procedures and operational specifications of each plant to ensure compliance with regulations and quality requirements.

Each site plans the packaging form based on the annual production plan, product category, customer demand, and environmental regulations. Currently, all materials used in the Li-Je Site are recyclable, including reusable cardboard boxes, plastic packaging materials, and cushioning materials. The I-lan Site also works with suppliers to recycle and reuse packaging materials, such as packaging rolls and plastic boxes, on an annual basis.

Total Amount of Production Material Consumption Used

Unit: kg

	2021		2022		2023	
	Weight	Percentage	Weight	Percentage	Weight	Percentage
Renewable material	290,701	7%	194,610	5%	158,453	6%
Non-renewable material	3,781,160	93%	3,713,706	95%	2,418,640	94%
Total Amount of Material Consumption	4,071,861	100%	3,908,316	100%	2,577,093	100%

Note:

1. Adjustments will be made to the unit weight of renewable materials in certain factories in 2021 and 2022, followed by a unified update in 2023.

Total Amount of Packaging Material Consumption Used

Unit: kg

	2021		2022		2023	
	Weight	Percentage	Weight	Percentage	Weight	Percentage
Renewable material	174,336	22%	154,915	23%	112,337	23%
Non-renewable material	632,035	78%	530,463	77%	369,046	77%
Total Amount of Material Consumption	806,371	100%	685,378	100%	481,384	100%

Value Chain Collaboration

Although TSC selects most of its packaging materials based on customer requirements, such as using anti-static plastic packaging materials for isolation of static electricity and content protection, which are difficult to replace with other materials, TSC is also dedicated to promoting value chain collaboration and finding appropriate vendors for recycling. For instance, bonding wires for assembly, and spools for packaging at the I-lan Site are sent back to the original equipment manufacturer for recycling and reusing. In 2023, a total of 1360 spools and 580 plastic boxes for packaging materials like lead frames were recycled. In the future, TSC will develop more value chain collaborations to establish suitable recycling methods and encourage circular reuse.



2.2 Customer Relationship Management GRI 3-3

Material Topics - Customer Relationship Management



Policy and Commitments

Through our global logistics locations and service strategies, we aim to offer customers comprehensive and reliable solutions to meet their needs. We are flexible and supportive in customizing solutions to fit each customer's specific requirements. Furthermore, we are dedicated to maintaining customer trust and service quality by facilitating effective two-way communication channels to fulfill all customer needs.



Management Policy and Evaluation Mechanism

- According to the Company's internal customer management procedures, customer relationship management is implemented to maintain customer relationships, monitor performance continuously, and make ongoing improvements.
- According to the Company's internal procedures for customer satisfaction and scorecard management, satisfaction evaluation indicators are established and service performance is regularly reviewed based on the data analyzed from the annual satisfaction survey.
- Customer Education and Training
- Dedicated Sales and Customer Service Window



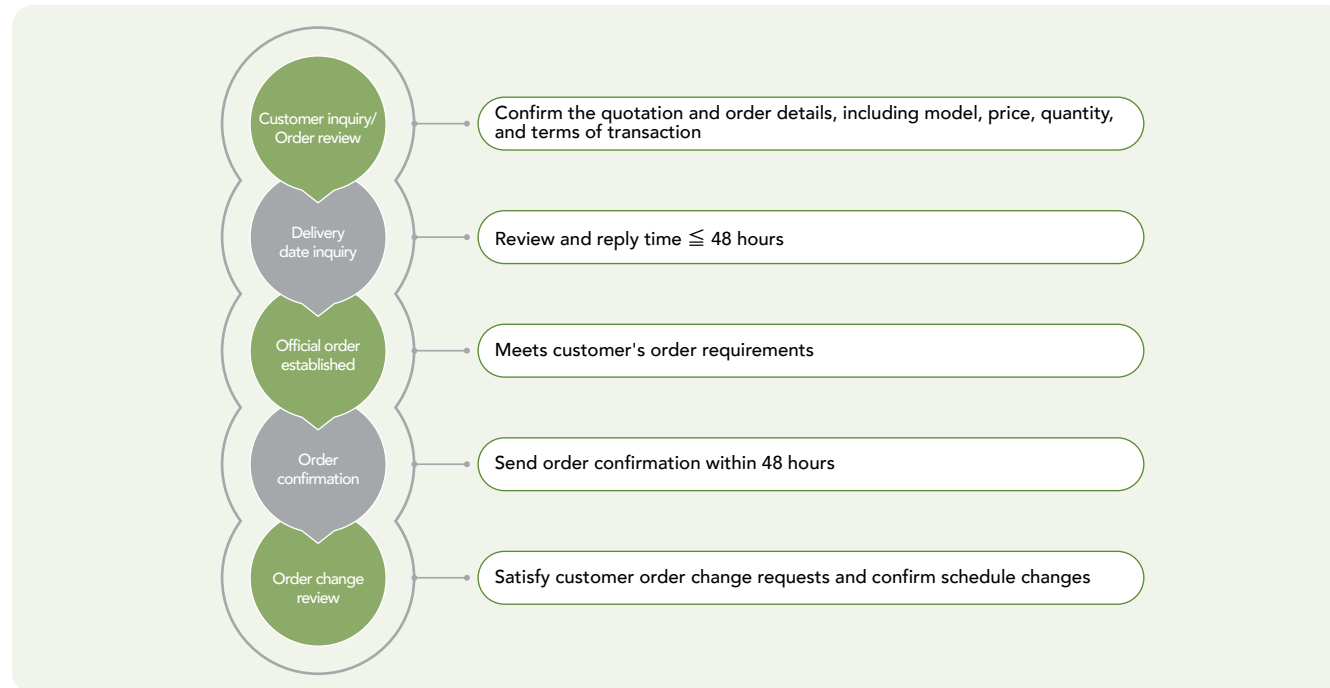
Action Plan and Performance

- ✓ Regularly conduct customer satisfaction surveys: Conduct regular customer satisfaction surveys to understand satisfaction levels with Company products and services, as well as potential areas for improvement. The customer satisfaction survey for 2023 resulted in a score of 4.6.
- ✓ Analysis and investigation results: Analyze the investigation results, identify the key factors that influence customer satisfaction, and determine potential improvement measures.
- ✓ Provide customers with educational and training resources to help them gain a better understanding of the usage and value of our products or services.
- ✓ Organize seminars, training sessions, and other events to increase customer awareness of the Company's products.
- ✓ To ensure that customers can easily express their needs, opinions, and problems through dedicated sales and customer service channels, while also ensuring that the Company can respond to and resolve issues in a timely manner.

2.2.1 Customer Satisfaction Improvement

TSC is committed to maintaining customer trust and service quality, and as such takes responsibility for customer satisfaction. Good customer relationship management can facilitate customer satisfaction and loyalty. If there are any deficiencies in customer relationship management, they may negatively impact product sales and Company operations. Smooth two-way communication is the primary element of customer relationship management. TSC's official website has a clear product information and inquiry system. Sales and Field Application Engineers also cooperate with agents to hold product application briefings from time to time, so that customers can easily obtain the latest and most complete product information.

The Company maintains close communication with customers through comprehensive customer service, including proactively contacting and visiting customers, conducting satisfaction surveys, and providing a smooth channel for communication of grievances. Based on customer needs and feedback on products and services, TSC continuously optimizes customer experience and reduces product defect rates and recall rates, thereby improving customer retention and Company performance. In terms of customer inquiries, orders, and other demands, TSC aims to respond to customers within 48 hours in accordance with our internal customer management procedures. The Sales unit would provide negotiation and communication services with customers. The process is as follows:



Product Information Inquiry Platform

To provide customers with more comprehensive product information, TSC initiated an official website redesign project in 2023 and successfully launched it by the end of 2023. This redesign represents the most substantial improvement in recent years. The website will aim at providing richer information on product items, types, and fields of application, allowing customers to compare and query in real-time online, and filter based on specifications and their own needs, thereby improving customer satisfaction in accessing product-related information. In addition, when conducting sales and contacting customers, specific product URLs can be provided as references to enhance matching demands and communication efficiency. In the future, website interface and information updates will also be continuously optimized.





The official website represents the corporate image. In order to provide a smoother and more convenient user experience for global users, TSC initiated a website redesign project in 2023, with a focus on enhancing and optimizing various functionalities.

- ▶ **Enhancing user website experience:** The official website is a crucial component of the company's image. This project is the most significant website redesign in recent years, which involves redesigning the navigation to make it more intuitive, ensuring users can easily find the information they need.
- ▶ **Content Refinement:** include an extensive review and update of website content to ensure accuracy, relevance, and alignment with our brand messaging. High-quality content also helps us rank in search engines for better visibility.
- ▶ **A quality on-site search:** TSC offers a wide range of products. In this revision, the official website provides relevant results to enhance the user experience.
- ▶ **Product one-stop shop program implementation:** TSC's customers and potential customers are located globally. We provide users with an interface on our website that allows them to obtain info about products they want without requiring assistance from sales/FAE. Work with QRA dep to make it convenient for users to access.

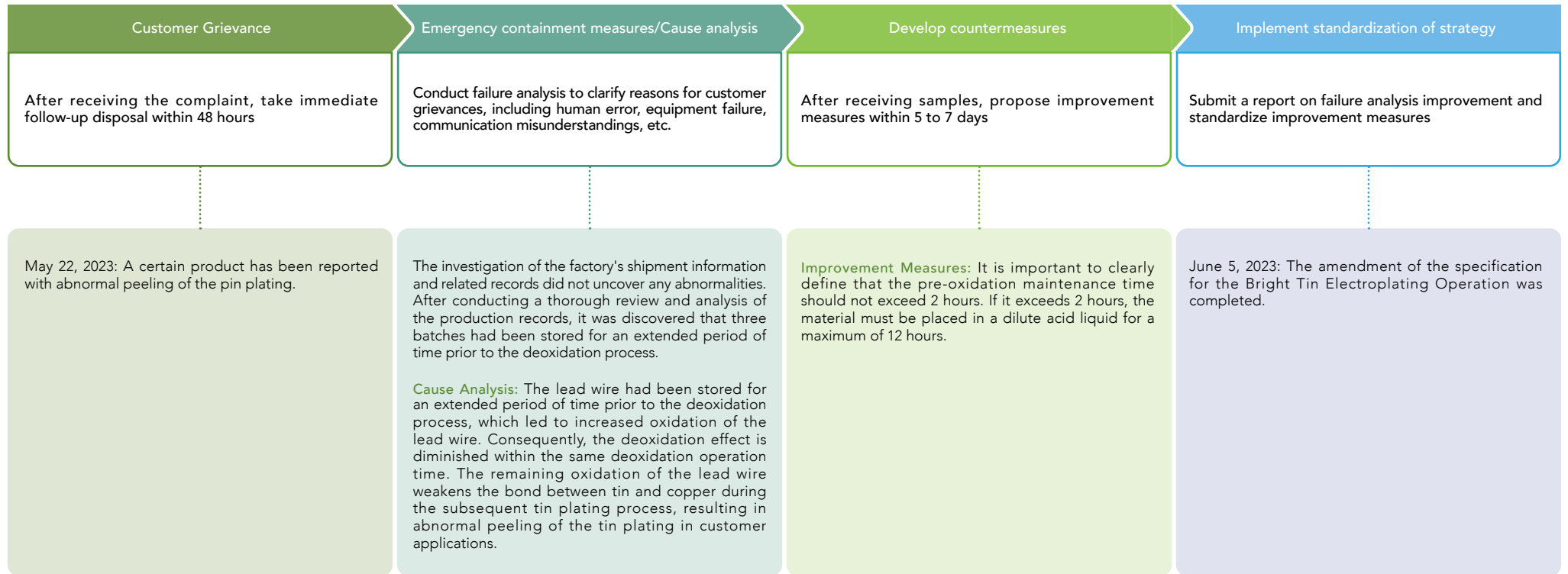
In the Application section, shows our products are utilized in diverse industries including automotive, industrial, power supply, computing, consumer electronics, and telecommunications. Grounded in a dedication to innovation, our components establish industry benchmarks for efficiency, empowering our global customer base to create energy-efficient and state-of-the-art solutions. The term sustainability has become more and more popular lately. We TSC also remain committed to addressing all aspects of ESG concerns, listening to stakeholder feedback, and promoting positive environmental, social, and economic growth through a comprehensive sustainable governance framework. Site search offers an efficient alternative to sifting through numerous web pages. Adding a filtering function to the search results page also assists users in narrowing down extensive search results and finding the information they need. In the future, we will continue to optimize user experience based on user feedback:

- ▶ **Feedback and Iteration:** Make iterative improvements based on user suggestions and changing needs. Regularly review the website's performance and make adjustments as needed.
- ▶ **Content Updates:** continuously update and add new content to keep the website dynamic and engaging.
- ▶ **SEO Optimization:** Implement SEO best practices such as optimize content, meta tags, images and ensure proper URL structures to improve the website's visibility on search engines.
- ▶ **Future Planning:** integrate new features or technologies to ensure the website remains competitive and aligned with the company objectives.

Customer Grievance Channel

To protect customer rights, TSC provides customers with diverse channels for filing grievances. For example, customers can provide feedback or file grievances through various regional sales in a timely manner. When a grievance is received by the Sales Division, the division will proactively contact the customer within 48 hours to understand the situation of the abnormal product, including quality, delivery, and service, and promptly handle the grievance case according to the operating regulations per the Company's "Procedures of the Customer Service Management". Then, the FAE/AE and the Quality Assurance Department would understand the grievance situation and clarify the cause, in order to formulate a solution and minimize losses for both parties. In 2023, we received 1 customer grievance.

Customer Grievance Process and Improvement Actions

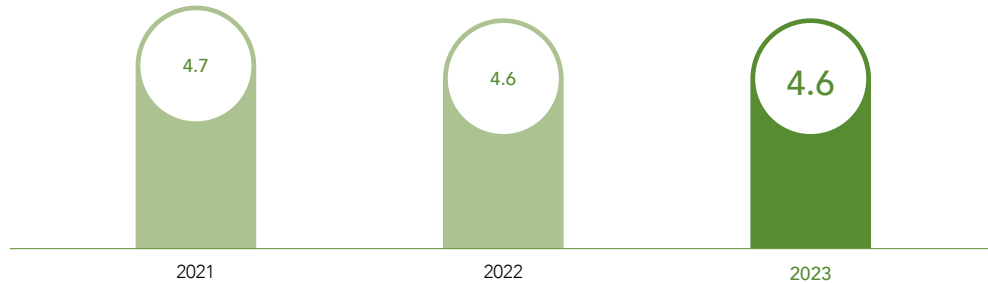


Customer Satisfaction Survey

In addition to a smooth grievance channel, customer satisfaction surveys are also crucial for maintaining customer relationships. TSC annually conducts customer satisfaction surveys to understand customer needs and improve product quality, converting those needs into tangible actions to enhance the Company's long-term competitiveness. At the beginning of each year, TSC selects a list of customers for satisfaction surveys based on the previous year's revenue. After confirming customer contact information by regional sales, the system sends out satisfaction surveys covering product, delivery, and service content. The surveys are filled out over one month, and sales conduct statistical analysis on the collected surveys. They will proactively seek further feedback from customers who gave lower scores and propose specific improvement measures based on their opinions and evaluations. After implementing improvement measures for six months, sales will send satisfaction surveys again to customers who gave low scores in the middle of the year to confirm the effectiveness of the improvements. Over the past three years, the Company has consistently received customer satisfaction scores of 4.5 or above, and we will continue to maintain a high level of service quality in the future.

Customer Satisfaction

● Key Customer Satisfaction Survey Index (Max Score: 5/5)



Note: The above index cover the TSC Group's rectifier business unit and do not include data from re-sent satisfaction surveys.

Customer Affirmation

TSC was invited to attend the 2023 Supplier Conference hosted by its customer, TPV Technology, on January 18, 2024. Among the many suppliers, TSC stood out for its exceptional overall ESG performance and was honored with the "2023 ESG Green Partner Award" by TPV Technology.

