

## V. Operational Highlights

### 1. Business Activities

#### 1. Business Scope

##### 1. Main Business Scope:

- (1) CC01080 Electronic Parts and Components Manufacturing
- (2) CC01101 Electronic Parts and Components Manufacturing
- (3) CC01110 Computers and Computing Peripheral Equipment Manufacturing
- (4) CC01120 Data Storage Media Manufacturing and Duplicating
- (5) CC01990 Electrical Machinery, Supplies Manufacturing
- (6) F119010 Wholesale of Electronic Materials
- (7) F219010 Retail Sale of Electronic Materials
- (8) H201010 Investment
- (9) I301010 Software Design Services
- (10) I501010 Product Designing
- (11) JE01010 Rental and Leasing Business

##### 2. Revenue Proportion :

Established in May 1997, the Company's primarily provides Integrated Circuit (IC) packaging and testing services. Revenue proportion as of 2023 was followed :

Unit : NT\$ K

Items	Net Revenue 2023	Revenue Proportion
Packaging Service	45,568,783	64.69%
Testing Service	10,173,572	14.44%
Module Service	5,965,582	8.47%
Wafer Level Packaging	3,047,200	4.33%
Wafer Level Testing	5,657,213	8.03%
Others	28,595	0.04%
Total	70,440,945	100%

##### 3. Current Product/Services :

- (1) High Pin-count Thin Small Outline Package (TSOP) packaging and testing services
- (2) Quad Flat No-leads (QFN) Packaging Services
- (3) Multi-Chip Packaging (MCP, S-MCP) Packaging and Testing Services
- (4) Ball Grid Array (wBGA, FBGA) IC packaging and testing services
- (5) Secured Digital Memory Card (SD, microSD) 、USB packaging and testing services
- (6) Solid State Drive(SSD) 、Embedded Memory (eMMC, eMCP, UFS) packaging and testing services
- (7) DRAM Chip-Stacking packaging and testing services
- (8) Mobile memory packaging and testing services
- (9) Wafer testing services
- (10) Wafer bumping packaging services
- (11) System-in-Package (SiP) packaging services
- (12) Redistribution Layer (RDL) services
- (13) Wafer Level Chip Scale Package (WLCSPP) packaging services
- (14) Package on Package / Package in Package (PoP, PiP) packaging and testing services
- (15) CMOS Image Sensor (CIS) packaging and testing services

- (16) Flip-Chip Packaging Services
- (17) Copper Pillar Bump Flip Chip (Cu Pillar Bump Flip Chip) packaging services
- (18) Electro Magnetic Interference (EMI) shield package packaging services
- (19) Fan-Out Panel Level (FOPLP) packaging and testing services
- (20) Module and System packaging services

#### 4. Product/Service in Development :

- (1) Large-size (>100mm x 100mm) FCBGA.
- (2) Large-size (>70mm x 70mm) MCM FCBGA (logic + memory), applied to automotive.
- (3) Customization of CPO (SiPh chip + SoC) on FCBGA packaging
- (4) Application of new processes and materials such as Cu core solder ball for Package on Package applications.
- (5) Application of advanced node wafers to automotive packaging and assembly.
- (6) High heat dissipation metal conductive adhesive applied to large-size FCBGA and FCLGA.
- (7) BT and ABF substrate applied to FCBGA such as AI, HP and automotive.
- (8) FOPLP method based on RDL with ultra-fine line and pitch was successfully developed to supply high-density heterogeneous IC packaged products for high-speed network and server applications.
- (9) Fan-out on Substrate packaging.
- (10) Fan-out embeds small chips to integrate logic chips or system-on-chip (SoC) and high-bandwidth memory to meet the application of cloud artificial intelligence (Cloud AI) and edge computing (Edge Computing)
- (11) Fan-out integrates logic chips or system-on-a-chip (SoC) and memory chips to be vertically stacked and integrated to meet the needs of wearable devices that are light, thin and compact.
- (12) Chip Last Fan-out architecture based on combination of Flip-Chip Package and Redistribution Layer (RDL) technology.
- (13) Pillars in Fan-Out (PiFO®) process for smart phone, wearable device and other consumer product applications.
- (14) Application of Through Silicon Via (TSV) technology to the packaging of high-frequency, high-capacity memory used in AI and other products.
- (15) FOPLP stacked packaging that combines 8 NAND memory IC with Controller to meet the requirements for ultra-thin, high-density, and high-speed mobile communication applications.
- (16) High heat dissipation memory IC module technology combining NAND memory with micro-controller chip for ultra-thin, high capacity, high heat dissipation and high-performance cloud storage applications.
- (17) High Bandwidth Memory (HBM) stacked IC incorporating TSV and microBump technologies, as well as Chip Fan-out Stack packaging to provide high bandwidth, high memory density, high-performance computing, and high-speed Internet connection applications.
- (18) 8 NAND Flash memory IC was combined with 8 LPDRAM memory IC, micro-controllers, and 6 stacked IC with silicon dielectric layer to provide high-density, high-performance, and ultra-thin packaging for mobile communication applications.
- (19) Highly integrated FO-PoPoP structure to provide enhanced electrical attributes through integration of active IC and spherical devices.

- (20) 3D-FOPoP structure to supply package solutions for high-density, high electrical performance, as well as size shrinkage.
- (21) Ultra-small and ultra-large IC (CIS CSP) packaging to satisfy the requirements of different applications.
- (22) Development of high-speed 3D-NAND testing services and hardware development.
- (23) High-speed Storage Class Memory (SCM) testing services and hardware development.
- (24) Development of Tester IO board hardware.
- (25) Automotive power module testing.
- (26) Power module pre-burning.
- (27) PCIe interface testing
- (28) HBM test develops development

## 2. Industry Summary

### 1. Current Industry Status & Outlook

In 2023, the world faced an economic recession and industrial turmoil was severe. Geopolitics has impacted industrial development, US-China economic sanctions have expanded, regional wars and conflicts continue, coupled with high inflation and interest rates, China's post-pandemic economic performance is not as good as expected, global terminal demand is weak, inventories are rising, and many unfavorable factors are shrouding 2023. The global economic development has been slow in 2023, and data from the International Monetary Fund (IMF) show that the global economic growth rate in 2023 will be only about 3.2%.

Looking forward to 2024, the economic situation still has not rebounded significantly. According to the IMF report in April, the global economic growth rate is expected to be similar to 2023, maintaining 3.2%.

As far as the semiconductor industry is concerned, according to the US Semiconductor Association (SIA), global chip sales in 2023 reached US\$526.8 billion, a decrease of 8.2% compared to 2022.

Based on a study of Industrial Economics and Knowledge (IEK) published in February 2024: expected that Revenue of Taiwan semiconductor industry was NT\$ 4.34 trillion which was 10.2% decreased from 2022. Revenue of Taiwan design sector was NT\$ 1.10 trillion which was 11% decreased from 2022. Revenue of Taiwan IC manufacturing sector was NT\$ 2.66 trillion which was 8.8% decreased from 2022 (Among them, wafer foundry was NT\$ 249 billion which was 7.2% decreased from 2022, memory and others was 170.1 billion which was 27.8% decreased from 2022.) Revenue of Taiwan IC packaging sector was NT\$ 393.1 billion which was 15.6% decreased from 2022, and revenue of Taiwan IC testing sector was NT\$ 191.6 billion which was 12.8% decreased from 2022. Looking forward to 2024, the revenue is expected to be 5.01 trillion

The semiconductor industry will continue to grow in the long-term however. Semiconductors have a wide range of applications including smart phones, computers, cloud servers, AI, AR/VR, 5G, electric and self-driving vehicles, IoT, and e-healthcare. New applications are constantly being developed.

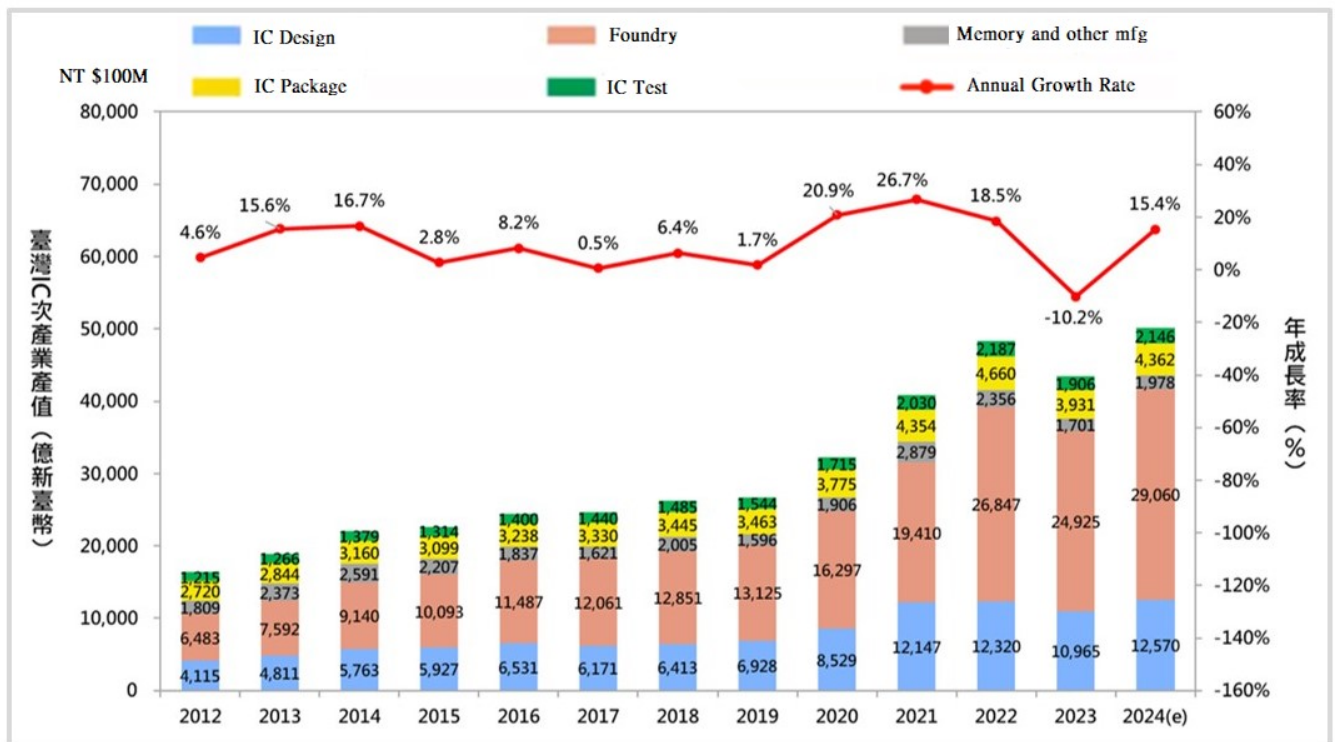
## 2020-2023 Taiwan IC Industry Value

Unit : NT \$billions

In NTD M	2020	YoY	2021	YoY	2022	YoY	2023	YoY
IC Industry value	3,222.2	20.9%	4,082.0	26.7%	4,837.0	18.5%	4,342.8	-10.2%
IC Design	852.9	23.1%	1,214.7	42.4%	1,232.0	1.4%	1,096.5	-11.0%
IC Manufacturing	1,820.3	23.7%	2,228.9	22.4%	2,920.3	31.0%	2,662.6	-8.8%
Wafer Foundries	1,629.7	2.1%	1,941.0	19.1%	2,684.7	38.3%	2,492.5	-7.2%
Memory & Other	190.6	19.4%	287.9	51.0%	235.6	-18.2%	170.1	-27.8%
IC Packaging	377.5	9.0%	435.4	15.3%	466.0	7.0%	393.1	-15.6%
IC Testing	171.5	11.1%	203.0	18.4%	218.7	7.7%	190.6	-12.8%
IC Product Value	1,043.5	22.4%	1,502.6	44.0%	1,467.6	-2.3%	1,266.6	-10.2%
Overall Global Semiconductor Value (US\$ B)/YoY	4,404	6.8%	555.9	26.2%	574.1	3.3%	526.8	-8.2%

Source : Industrial Technology Research Institute

## Taiwan Semiconductor Revenue by Sector



Source: IEK

## 2. Industry Supply Chain

Sectors in IC industry can be categorized according to position in production process, including IC Design at the upstream, IC Manufacturing & Foundries at the mid-stream and IC Assembly & Testing sector at the downstream.

### (1) Upstream IC Design:

IC Design Sector includes companies designing IC products. The sector is knowledge-intensive with high entrance barrier and return on investment. Its main business scope includes designing and sales of own products or customized design for customers.

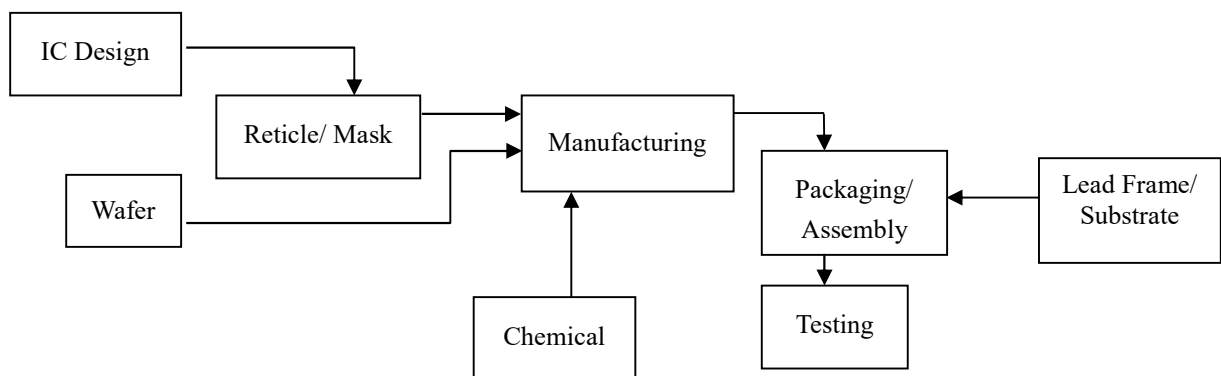
### (2) Mid-stream IC Manufacturing:

Include IC manufacturing sector and related chemical suppliers. Its main business scope involves manufacturing wafer with precision tools according to in IC circuits designed in house or specified by customers. This sector is capital and technology intensive with high entrance barrier

### (3) Downstream Assembly and Testing:

Outsource Assembly and Testing (OSAT) sector provides cutting, packaging, assembly and testing service to manufactured IC wafer for final product application.

IC Industry Supply Chain as illustrated below



In recent years' scope of IC manufacturing as well as assembly and testing continues overlap due to increasing market demand for larger quantity and higher quality IC. In addition to higher performance and smaller profile, IC is also required to satisfy demands for integrated functions. As a result, some wafer foundries begin to develop products and services that extends into scope of IC packaging and assembly. Majority of wafer foundries choose to work closely with cooperating assembly and testing service providers. Integrated Design and Manufacturers (IDM) also collaborate with OSAT service providers in designing and developing product solutions.

## 3. Trend of Product Development and Competition

### (1) Trend of Product Development

Trends in semiconductor development include multi-function, enhanced performance, energy-efficiency, thermal dissipation, and a high level of integration. These are spurring the push towards advanced packaging technologies such as System in Package (SiP) and Heterogeneous Integration. New types of advanced packaging technologies such as Panel Fan-out, TSV, Embedded Package, Thin Wafer, Chip Stacking, Fine Pitch Flipchip, High Density Encapsulation, Antenna in Package (AiP), High Density SMT, as well as the integration of System Assembly and Testing technologies will be the next critical juncture for the semiconductor industry in the post-Moore's Law age.

Future products will inevitably require the integration of different advanced packaging and testing technologies. PTI has for many years focused on continuous R&D of technologies to meet the needs of new product types. Having a detailed of the latest product trends means PTI can launch technologies essential to the market at the optimum point in time.

The semiconductor industry is set for several years of continued growth. PTI will continue to develop innovative packaging and testing technologies to maintain our technological leadership in the global OSAT sector. At the same time, quality and production yields will be emphasized to provide the market and the industry with the different technologies required in each field. We aim to provide customers with the most competitive services in pursuit of joint growth.

## (2) State of Competition :

A comprehensive back-end packaging and testing capability means that PTI is more than capable of providing semiconductor customers with everything from Bumping, Wafer Sort, WLCSP, Wire Bond Package, Flipchip Package, System in Package, Panel Fan-out, 3DIC TSV, System Assembly, to Final Test services.

Once the wafer emerges from the foundry, PTI can provide customers with a one-stop shop for all semiconductor back-end services instead of having to line up different production sites and schedules. The comprehensive semiconductor back-end services offered by PTI encompasses conventional product packaging & testing as well as mass production based on the latest technologies. These are some of the reasons why PTI is so competitive in the semiconductor back-end sector.

In addition, other PTI advantage include technical sophistication, short production cycle, high production yields, and low production costs. PTI is willing to share our strength with the customers. For more than two decades, we have made customers our top priority and shared our strengths with our customers so that we can grow together.

In the future, as the demand for advanced packaging technologies continues to grow, PTI will not only maintain our leadership in memory packaging and testing but also see large, sustained growth in our logic and SiP business. PTI is now a world-leader in total semiconductor packaging and testing services.

## Revenue Annual Growth 2018-2023 of Taiwan OSAT Companies Ranking Among Global Top 10

Unit : NT million

Company/ Revenue	2018	YoY	2019	YoY	2020	YoY	2021	YoY	2022	YoY	2022
ASE Holding	397,261	4.0%	413,182	15.4%	476,979	19.5%	569,997	17.7%	670,872	-13.26%	581,914
<b>Powertech</b>	<b>68,039</b>	<b>-2.2%</b>	<b>66,525</b>	<b>14.5%</b>	<b>76,181</b>	<b>9.99%</b>	<b>83,794</b>	<b>0.16%</b>	<b>83,927</b>	<b>-16.07%</b>	<b>70,441</b>
KYEC	20,816	22.7%	25,539	13.4%	28,959	16.58%	33,759	-17.26%	27,932	-10.21%	33,025
Chipbond	18,725	9.0%	20,419	9.1%	22,275	21.58%	27,082	-11.34%	24,010	-16.47%	20,056
ChipMOS	18,480	10.0%	20,338	13.1%	23,011	19.07%	27,400	-14.17%	23,517	-9.19%	21,356

Source : Market Observation Post System/ Relevant Financial Statements Organized by PTI

Note: ASE Holding consolidated ASE and SPIL started from Apr 2018.

## (3) Summary of Technological Research & Development

### 1. R&D Cost

Latest Annual R&D expenditure as followed

Unit : NT thousands

Item	Year
R&D Expenditure	2,457,741

## 2. Successfully developed technology or product :

### (1) Packaging Solution Achievements:

- A. The method for using RDL first (chip last) for substrate and Fan-Out Panel Level Package (FOPLP) was successfully applied to the development of automotive SiP with embedded passive components and has now been fully validated by the customer.
- B. FOPLP method based on RDL with Line/Space 3/3um RDL was successfully developed, validated and applied to high-performance computing IC.
- C. Utilize the redistribution capability of thin line width of Chips Integration Embedded Fan-out Solution (CHIEFS®) to minimize the size and layer of Substrate and form a Chip First Fan-out on Substrate with size and cost competitiveness
- D. SoC and High Bandwidth Memory HBM were successfully integrated through chip middle process for FOPLP. The technology can be used to meet the data processing and low-latency data transmission requirements of HPC/AI.
- E. LED and control IC were successfully integrated through chip middle process for FOPLP. Applications include AR/VR devices used in entertainment, healthcare, and education.
- F. The Chip Middle FOPoP architecture combines fan-out packaging with Through Silicon Via - Wafer-level CSP (TSV-WLCSP) to meet the requirements of wearable device applications.
- G. FOPLP method based on RDL with ultra-fine line/space was successfully developed, validated and applied to high-performance computing IC.
- H. G. Wafer reconstruction technology can integrate two or more types of IC with different functionalities into a single wafer with TSV-WLCSP. The advantages of small multi-IC modules match the demand for lightweight, thinness, compact size, high transmission rate and lower power consumption in consumer electronic products.
- I. High-density High Bandwidth Memory (HBM) made using TSV and high-precision die stacking processes.
- J. Successful development of TSV CIS CSP process for the mobile device, healthcare, security surveillance and automotive segments.
- K. Successful development of large-size for multi-chips FCBGA (SoC + chiplets) and AI server application.
- L. Successful development of embedded H/S FCCSP and applied to microcontroller and TV chip packaging
- M. Successful development of FCLGA and applied to AI, HPC and automotive.
- N. Successful development of FCCSP products for 5G AP, Modem and RF-related applications.
- O. Successful development of HS-FBGA products for TV Chip and RF-related applications.
- P. Successful development of Wi-Fi-related Hybrid (DB, WB + FC) products.
- Q. Successful development of H/S FCBGA and applied to SOC and MCU for automotive.
- R. Successful development of CIS system-level packaging on substrate.
- S. Successful development of FCBGA products for automotive IC.
- T. Successful development of FCCSP products for high-speed data transfer controller IC (PCIE).
- U. Successful development of FCBGA products for optical network controller IC (OTN).
- V. Successful development of 16 NAND die stacking + 2 Interface Chi for high-capacity SSD products.
- W. Successful development of 8xDRAM + 8xNAND+Controller uMCP Hybrid (WB+FC) product for high-speed, high-capacity mobile communication products.
- X. Successful development of Antenna in Package (AiP) technology. A Radio Frequency (RF) laboratory was also set up to help customers accelerate the development and validation of their 5G high-frequency packaged products.

(2) Testing Solution Achievements:

- A. Testing services for WiFi 6E and BTC.
- B. PCIe Gen4 system-level testing services and hardware development.
- C. Testing and hardware development for High Density 3D-AND.
- D. Testing and development of related hardware for Teradyne IP750 CIS.
- E. Development of high-speed test board for Advantest T5503HS.
- F. Development of Thin package COK.
- G. Development of BI testing solutions and hardware for system-level IC.
- H. Development of anti-adhesion memory test jigs.
- I. Development of large-size packaging and testing.
- J. Development of large-size packaging machines.
- K. Development of UFS 4.0 automotive products and hardware.
- L. Development of AR / VR related application of testing and hardware.

(4) Long-term and Short-term Business Strategy

Our Short-term and Long-term strategic business planning in management, production, sales & marketing and research & Development are outlined below

1. Short-term business planning

- (1) Technological leadership is one of PTI's key business strategies. The diversification of semiconductor product applications is reflected in the packaging technologies they need as well. PTI will continue to develop new processes and technologies aimed at meeting the needs of the industry. An example of this is Through-Silicon Via technology applied to HBM products and accomplish the memory module with high-speed and high-bandwidth. This is one of the products that PTI will be focusing on in the short-term. Panel Level Fan Out packaging applied to HPC/ AR / AI / IoT/ autonomous vehicle will realize the Heterogeneous Integration. And this will help to achieve the high-speed and high-bandwidth requirements of semiconductor chips
- (2) Continue to reduce production lead time in order to provide speedy service for customers.

Our main advantage lies in flexible production process offering high level of mobility. We will continue to reduce production lead time in order to provide speedy service for our customers.

- (3) Continue to provide integrated Turn-Key services  
Due to consideration in cost, up-stream wafer foundries continues to outsource IC assembly, packaging and testing to specialized assembly and testing facilities (OSAT). We are among the few companies capable of providing complete assembly, packaging and testing services in the country. In order to increase our competitive advantage in providing customer with more options and better service, we will continue to offer integrated Turn-Key services.
- (4) Explore foreign and domestic market and increase market share  
In addition to maintaining strong relationship with existing foreign and domestic customers, we will use our competitive advantage in flexible production process, high level of mobility and capability in providing Turn-Key services to develop new customer worldwide.

2. Long-Term Business Planning

- (1) Emphasize long-term partnership with customer and supplier  
Through emphasizing long-term collaboration with up-stream and down-stream partners, we aim to become the trusted OSAT service provider providing our customer reliable quality and service. We will also develop strong collaborative partnership with our suppliers



- (2) Emphasis on long-term cooperation with suppliers  
Suppliers are an extension of PTI's production capabilities. Our suppliers for semiconductor equipment and materials have been crucial to the growth of PTI over the years. PTI will therefore continue to strengthen and expand our cooperation with suppliers so that we can all grow and succeed together on a foundation of mutual trust and benefit.
- (3) Promotion of digitization and digital optimization  
Digitization efforts based on AI/Big data will continue. RPA (process robots) will be introduced to process large quantities of repetitive missions in order to save manpower and improve productivity. Operating reports provided by BI (Business Intelligence) can provide feedback on improvements to routine business processes. EDA (Engineering Data Analysis) not only offers routine project monitoring. The synergies from stacked technology enhance digital automation. Product yields will be increased to boost productivity.
- (4) Continue to development next-generation packaging and testing technologies  
PTI has always been on the cutting-edge of the industry in developing advanced packaging technologies that our customers need. The establishment of the packaging and testing R&D center in 2006 saw PTI become the industry leader in innovative R&D of new technology patents. The new technologies are then introduced into mass product at a suitable time and place. In the future, technology will continue to service as the foundation for sustained innovation. PTI will therefore continue to focus on the development of innovative technologies as well.
- (5) Increase revenue contribution from Logic, Module(SSD) and Micro-electro-mechanical Systems(MEMS)  
Through increasing customer and revenue in areas of Logic, Module (SSD) and (MEMS) we continue to diversify product risk and increase company scale.

## 2. Market and Product Sales Outlook

### (1) Market Analysis

#### 1. Primary area of product/service sales/provision

PTI primary business scope includes providing IC outsourced assembly and testing (OSAT) services in overseas as well as domestic market. As of 2023 revenue from domestic sales account for 25.72% of overall revenue while that of overseas markets account for 74.28%. PTI principle markets are located in Japan, Singapore, and North America.

Unit : NT\$ Thousands

<b>Market \ Year</b>	<b>2022</b>	<b>%</b>	<b>2023</b>	<b>%</b>
Domestic	19,356,303	23.10	18,117,103	25.72
Export	64,437,269	70.07	52,323,842	74.28
Japan	27,189,539		21,514,180	
Singapore	11,349,663		15,689,481	
North America	13,728,399		9,446,028	
Europe	1,930,719		1,689,438	
China and Hong Kong	2,250,357		2,038,684	
Others	2,358,320		1,946,031	
Total	83,793,572	100	70,440,945	100

#### 2. Market Share:

Despite strong growth in 2021, the semiconductor packaging & testing industry saw a reversal in demand in 2022 and the number of orders began to shrink. Despite the slump in the market,

we continued to refine our product technology and production capability. By adopting this strategy of robust development, we hope this will accelerate our growth and boost our market share once the economy recovers. PTI expects little change to the market shares of global professional packaging and testing companies in 2022. The Company will follow a strategy of robust development and continuous growth at all levels with the aim of gradually increasing our market share and maintaining steady growth.

In the second half of 2022, the demand of semiconductor packaging and testing industry decreased, and the reduction of order and business continued to 2023. Although affected by the sluggish market conditions, it is the Company's strategic policy to maintain stable operations by continuing to improve various product technologies and manufacturing capabilities in the hope of accelerating growth and increasing market share when the economy reverses. The market shares of PTI among the world's major professional packaging and testing OEMs can continue to rise.

### 3. Market Supply and Demand Outlook and Growth Potential

In terms of the outlook for 2024, SIA forecast indicated that the global semiconductor may grow up by 13.1% to US\$595.3 billion in 2024. The semiconductor industry will continue to grow in the long-term.

### 4. Competitive Advantages

PTI have grown to become one of the major OSAT service providers, delivering high quality, dedicated service and advanced technology for our customers. We continue to collaborate closely and maintain solid relations with our customers. Our competitive advantages are as followed.

#### (1) Solid Strategic Allies and Globalization

The IC OSAT sector is characterized by high level of collaboration with upstream wafer foundries. Consequently, profitability of assembly, packaging and testing service providers relies on solid relationship with customers. In the meantime, IC manufactures also chose long-term partnership with assembly, packaging and testing service providers due to confidentiality in product technology, product quality and production process. Such strategic alliance with concrete relationship of collaboration is beneficial for long-term development of the company.

#### (2) Turn-key Service

In response to rapid decline in IC sales prices, we offer Turn-key Service to our customers, including both assembly and packaging, as well as testing in order to reducing cost and risk in shipping process.

#### (3) Outstanding capability in development and production

PTI have been committed in developing new technologies while investing heavily in technological research and production process improvement. We have been proudly awarded many domestic and international patents, as well as technology license from multiple major international manufacturers, establishing our solid competitive edge within the industry.

#### (4) Investment in high precision automated equipment

In response to development of IC product towards increasingly higher performance, pin-count and density we continue to invest in high precision automated equipment from well-known Japanese and US vendors in order to satisfy customer needs and continuously improve our quality of service.

#### (5) Online automated customer service system

Our online automated customer service systems enable customer to track closely product status, production progress, and any potential problems. This facilitates swift problem resolution and product improvement while increasing added value for customer.

## 5. Supporting and Hindering Factors and Responding Strategy

### (1) Supporting Factors :

#### 【Industry Background】

##### ① Competitive Advantage of Taiwanese Semiconductor Industry

Taiwan semiconductor industry encompasses a complete semiconductor industry structure from upstream IC Design and wafer foundries to downstream OSAT service providers. This vertically integrated chain of supply, consistent with industry development, contributes to establish the strong competitive position of Taiwanese semiconductor sector in the global market. Booming IC industry facilitated by rapid global development in electronics, information technology, communication technology, consumer electronics, optoelectronic industry, Artificial Intelligence (AI) and Internet of Things (IoT) will continue to support stable growth in OSAT sector.

##### ② OSAT Sector Benefitting from Major Integrated Device Manufacturer (IDM) Outsourcing Trend.

Due to high capital investment of advanced production process, global IDM manufacturers continue to increase its outsourcing of wafer manufacturing, assembly, packaging and testing to Asia region with lower production cost. Taiwan, with its complete industry structure and dynamic vertical supply chain, is the most preferential outsourcing choice for international IDM manufacturers and IC Design Companies. Taiwanese OSAT sector also benefits from OEM orders.

#### 【Competitive Niche】

##### ① Strong Managing Team and Solid Strategic Alliance

Our major share-holders include well-known companies such as Kingston Group and Taiwan Toshiba Semiconductor, facilitating solid reputation and stable customer base. As our revenue continues to grow, support from our shareholders also ensures sufficient capital supply for our future operation and development. Furthermore, our management team is equipped with comprehensive working experience within the semiconductor sector and capability of making appropriate decisions according to market trend.

##### ② Continued Development and Innovation

In response to rapid changes in semiconductor market, PTI is dedicated to technological development. In addition to developing new products, we continue to introduce new technologies through collaboration with our strategic partners. Our research and development team is equipped with capability in independent designing and developing testing software and hardware programs. In addition to continually developing testing program and improving testing equipment in areas of IC testing, we also continue to develop cutting edge technologies and services in respond to future mainstream IC market demand. Our business scope has extended into logic market from assembly, packaging and testing of memory products. Building on our leading advantage in assembly, packaging and testing for both memory and logic IC, PTI continues to expand its scope into 3D IC. In assembly and Packaging we have completed development in IC Chip-Stacking technology, Field Programmable Gate Array (FPGA) and Fan-Out Packaging technology, and have been rewarded many patents. We will also continue our effort in refining in material and production process.

##### ③ Turn-key Service and Flexible Capacity

We able to provide our customer integrated turn-key service of IC assembly, packaging, testing and packing service in a single order, effectively reducing shipping time and cost. In addition, we are able to respond quickly to market and customer demand and swiftly expand and adjust our capacity accordingly through timely investment in advance equipment, providing our customer with most competitive solutions.

## (2)Hindering Factor and Responding strategy

### ① Fluctuation in IC Industry in Connection with Economic Climate

#### Strategic Response :

##### A. Product Diversification

In addition to continually strengthening our memory assembly, packaging and testing quality and technology, also contributed immensely to expansion into Logic market. Our production technologies such as copper pillar bump, Re-distribution Layer (RDL), Wafer Level CSP, Flip Chip, MEMS and system-level packaging continues to achieve customer qualification. Through product diversification we are able to mitigate risk of economic cycle as well as provide our customer greater range of assembly, packaging and testing services

##### B.Strengthening Collaboration with Customers

Establish long-term partnership with existing customers and actively developing new customers to achieve stable and sufficient level of capacity utilization.

##### C.Increase Market Scope

Actively enter the Japanese, European and American markets, and enter into applications such as AI, self-driving cars, electric vehicles, 5G, and industry to expand customer base and product application areas.

### ② Erosion of Gross Profit by Increasing Material Cost

#### Strategic Response :

##### A. Inventory reduction

In response to persistently weak end-user demand and high inventory levels, we will continue to communicate with customers, accelerate the disposal of expired materials, and actively negotiate with suppliers on outstanding orders for raw materials to realize the effective control of inventory and accelerate inventory reduction.

##### B.Lowering of production costs

We will continue to inquire, negotiate and compare prices for raw materials, change our product structure, improve yields, propose alternative materials, and continue refining our production processes to mitigate the impact of higher costs.

##### C.Emphasis on added value

We will continue to put ourselves in the customer's position by providing a service with good quality, short delivery times, and responsive to customer requirements. Efforts will be focused on the development of new packaging, assembly and testing techniques to help customers bring competitive products to the market at the right time.

##### D. Building long term partnership with suppliers

We will continue to build long term partnership with equipment and material suppliers to secure stable supply. Create a win-win for both sides.

### ③Manpower shortage

#### Strategic Response :

A. Increase staff welfare and bonus incentives to attract talent and encourage cohesion among staff members. We also design staff training program according to long-term development strategy to support progress for both company and staff member.

B.We will continue to improve productivity and dependence on manpower through actively introducing advanced automated equipment.

C.Actively engage with universities to expand industry-academia cooperation and promote the industry-academia integration for the cultivation of new talent.

D. To support the middle-level technical talent plan for migrant workers proposed by the

Ministry of Labor, we will provide blue-collar migrant workers with technical training that promotes them to middle-level technical talent. The initiative will stabilize our production workforce to mitigate the effects of an aging population and shortage of semiconductor expertise.

④Intensifying competition in the semiconductor back-end.

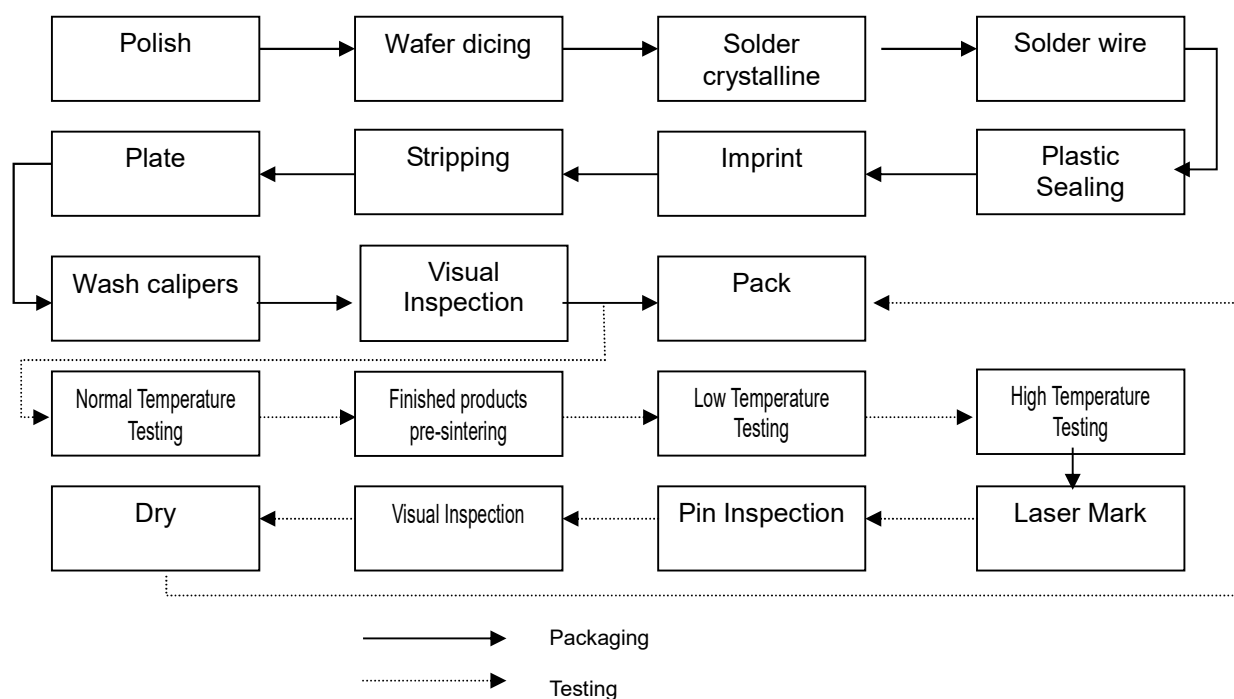
Semiconductor technology plays a critical role in the ever-changing field of advanced technology. In the past, most attention in the semiconductor supply chain was concentrated in the wafer foundry sector. In the post-Moore's Law age, semiconductor wafers produced by advanced processes must be complemented by advanced back-end packaging technology to realize their true performance. Foundries and PCB makers are now making a rush to enter the packaging sector. In response, PTI will continue to strengthen our R&D efforts, carefully assess our investments in new technologies and production capacity, and build solid partnerships with customer and suppliers. We will also strengthen the integration of our services from wafer testing through to the shipping of the final product to maintain our commanding advantage in the semiconductor back-end sector.

## 2. Important Applications and Production Process of Main Products

### 1. Product Applications

Main Products or Services	Important Applications or Functions
IC Assembly	To turn Wafer into complete single product through sawing, mounting, wire bonding, molding, trimming/forming, and other processes of the Integrated Circuit (IC).
Final Test	Placing the IC into different environment such as normal, high, or low temperature to test and classify according to test conditions specified by customers. These steps ensure the product conforms to the quality and stability demanded by customers.
Burn-In	Using Burn-In process forced the IC operate in extreme environments to accelerate aging of the products and screen out the unqualified, to ensure reliability of products.
Laser Mark	Printing the name of company and product details on the IC.

### 2. Production Process



### (3) Suppliers of Major Raw Materials

Our company mainly provides IC processing for our customers. The suppliers of the key raw materials used in packaging operations are listed below:

Main Raw Materials	Main Suppliers
Lead-Frame	Shinko Electric Ind. Co., Ltd. Chang Wah Technology Corp. Nichiden Seimitu Kogyo Co., Ltd.
Substrate	Kinsus Interconnect Technology Corp. Shinko Electric Ind. Co., Ltd. Simmtech Co., Ltd. Samsung Electro-Mechanics Co. Leading Interconnect Semiconductor Technology Co., Ltd. Phoenix Pioneer Technology Inc. GTS

Main Raw Materials	Main Suppliers
Die Attach Film (DAF)	Resonac (HK) Nitto Denko Corp. LINTEC Corp. Henkel Korea
Gold Wire	Nippon Micrometal Corp. TANAKA Kikinzoku Kogyo K.K.
Compound	Chao Young Corp. Resonac Semiconductor Materials (Taiwan) Co., Ltd KYOCERA Asia-Pacific Pte. Ltd. Chang Wah Technology Corp. KYOCERA Corp.

(4) Information of suppliers' who commanding 10% and plus of annual purchasing volume in any year over the last 2 years.

1. List of major supplier accounted for over 10% of total purchase over the last 2 years.

Unit: NT\$ Thousands

Year	2022				2023				As of 2024 Q1			
Rank	Name	Amount	Percent of total amount sold (%)	Relation with Issuer	Name	Amount	Percent of total amount sold (%)	Relation with Issuer	Name	Amount	Percent of total amount sold (%)	Relation with Issuer
1	A	3,685,031	11.04	None	A	2,523,230	12.08	None	A	531,674	8.36	None
	Others	29,691,694	88.96		Others	18,365,439	87.92		Others	5,828,316	91.64	
	Net Amount Sold	33,376,725	100		Net Amount Sold	20,888,669	100		Net Amount Sold	6,359,990	100	

Reason for changes: None.

2. List of Major Customers:

	2022				2023				As of 2024 Q1			
Rank	Name	Amount	Percent of total revenue %	Relation with Issuer	Name	Amount	Percent of total revenue %	Relation with Issuer	Name	Amount	Percent of total revenue %	Relation with Issuer
1	A	18,688,423	22.27	None	A	17,978,222	25.52	None	A	4,083,478	22.28	None
2	B	20,882,528	24.88	Related Party	B	14,717,119	20.89	Related Party	B	4,011,362	21.89	Related Party
3	C	9,651,686	11.50	None	C	6,039,665	8.58	None	C	2,264,600	12.36	None
	Others	34,704,098	41.35		Others	31,705,939	45.01		Others	7,969,441	43.47	
	Net Revenue	83,926,735	100		Net Revenue	70,440,945	100		Net Revenue	18,328,881	100	

Reason for changes: None.



(5) Production Quantity & Value Table 2022-2023

Quantity Unit: 1,000 wafers Amount Unit: NT\$ Thousands

Year Production Units	2022			2023		
	Capacity	Quantity	Amount	Capacity	Quantity	Amount
IC Packaging	17,829,582	13,070,734	38,333,692	16,126,972	10,442,126	33,107,908
IC Testing	11,593,541	7,490,729	8,322,870	10,288,650	5,617,597	6,846,461
Module	226,089	140,444	6,857,107	326,152	132,361	4,708,977
Wafer Level Packaging	1,249	1,008	2,928,336	2,361	869	2,296,297
Wafer Level Testing	2,174	1,335	4,626,065	2,130	1,427	3,304,888
Total	29,652,635	20,704,250	61,068,070	26,746,265	16,194,380	50,264,531

(6) Sales Quantity & Value Table 2022-2023

Quantity Unit: 1,000 wafers Amount Unit: NT\$ Thousands

Year Sales Quantity & Value	2022				2023			
	Domestic Sales		Exports		Domestic Sales		Exports	
	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
IC Packaging	6,628,689	19,808,940	6,286,078	32,700,734	5,388,572	13,773,064	5,170,515	31,795,719
IC Testing	4,235,611	1,948,894	3,157,530	10,895,809	3,454,501	1,754,167	2,300,387	8,419,405
Module	79,764	443,622	35,036	8,012,111	97,201	470,733	21,735	5,494,849
Wafer Level Packaging	400	1,670,245	590	2,460,196	258	1,169,166	434	1,878,034
Wafer Level Testing	661	1,242,326	1,203	4,683,903	439	940,662	1,155	4,716,551
Others	—	5,711	—	54,244	—	9,311	—	19,284
Total	10,945,125	25,119,738	9,480,437	58,806,997	8,940,971	18,117,103	7,494,226	52,323,842

### 3. Employee Status

Table for Employees Number, Average Age, Average Years of Service, and Distribution of Education for Last Two Years

Year		2022	2023	As of Mar 31, 2024
Employees number	Management Staff	1,130	1,113	1,108
	Technical Staff	2,500	2,400	2,428
	Administration Staff	452	437	441
	Operators	7,823	7,048	7,582
	Total	11,905	10,998	11,559
Average Age		36.18	37.06	36.75
Average Years of Service		6.88	7.80	7.50
Education Distribution in %	Doctorates	0.04	0.05	0.04
	Masters	7.74	8.18	7.88
	College and Universities	71.07	71.66	72.78
	High School	20.38	19.39	18.63
	Below High School	0.77	0.72	0.67

#### 4. Environmental Protection Expenditures

The total amount of losses (including reparations) and penalties due to environmental pollution caused in most recent year and as of the publication date of this annual report, and an explanation of future responses (including improvement measures) and possible expenditures.

(1) The total amount of losses (including reparations) and penalties due to environmental pollution caused as of most recent year and publication of annual report.

1. The Environmental Protection Bureau of Hsinchu City Government issued a notice (Fu-So-Huan-Kong Letter No. 1120093211) on June 17, 2023 stating that an on-site audit and found that washing rate of a washing tower(A102) was 1,018 L/min, and reviewed the monitoring data from February 26, 2023 to March 23, 2023 and found that the minimum washing rate were between 309~779.4 L/min which were lower than the lower limit 1,500 L/min regulated by Stationary Pollution Source Installation, Operating and Fuel Use Permit Management Regulations Amended Clauses. This violated Article 24, Paragraph 2, of the Air Pollution Control Act, and a fine of NT\$100,000 was subsequently issued.

Corrective actions: The cause of the incident was an abnormal failure of the check valve in the washing tower pipeline, which caused a decreasing washing rate. Immediately switch to the backup pipeline and perform troubleshooting of the abnormal check valve.

Preventive measures: Alarm call pre-alarm is set to an alarm lower than 1,800 LPM (permissible value >1,500 LPM). Alarm call notifies the factory unit and other relevant personnel to confirm the abnormal situation and handle it immediately.

(2) Expected Environmental Protection Capital Expenditures for Coming Years

Intended purchase of pollution prevention equipment or capital expenditure is listed below:

Unit: NT\$ Thousands

Item/Year	2024	2025	2026
Greenhouse gas examination and consultant fees	1,955	1,820	1,820
Product carbon footprint	1,345	1,203	1,428
Wastewater treatment and emission fees	37,770	38,795	39,816
Wastewater treatment fees	53,469	55,212	56,252
Environmental protection monitor & exam fees	1,934	2,320	2,320
Waste material disposal fees	79,837	9,804	95,804
Expansion of wastewater treatment equipment	62,000	22,000	22,000
Air pollution examination fees	3,262	3,362	3,362
Establish air pollution treatment equipment	12,054	20,454	24,084
Air pollution prevention fees	993	1,192	1,192
Total Expenditure Amount	254,619	242,162	248,078

## 2. Maintenance Measures

### (1) Management Program:

In order to fulfill our corporate social responsibilities, our company has obtained ISO14001 environmental management system certification. The Company conducts the following programs to implement its responsibilities on environmental protection:

- A. Air Pollution Control: Set up air pollution control equipment VOCs. Regularly exam the air quality to meet Environmental Protection Bureau standards. Hsin Chu Science Park Plant I and II both adopted Best Available Control Technology (BACT) to eliminate the impact on the environment.
- B. Recycle Waste Water: Utilize waste water recycle system to reduce waste on resources and re-use the recycle water to save and protect the water resources.
- C. Water Pollution Control: all facilities waste water must be treated and meet official standard before release back to the water system. Internal monitoring system and regular measure & calibration were in place.
- D. Waste Disposal: The entire disposal must meet environmental protection regulations. Enhance the recycle and re-use rate by well-classify materials.
- E. Work with suppliers: Regular inspects suppliers to meet environmental protection regulations.
- F. Climate Change and Energy Control: the company has established Greenhouse Gas Control Procedures followed the guidance of ISO14064-1 and Task Force on Climate-related Financial Disclosures (TCFD) to reduce impacts and financial risks of extreme weather.
- G. Voluntary Environmental Monitor Program: Program including waste water, noise, air quality, waste material impact on environment to effectively control the company operations impact on the environment.
- H. Allowance Permit: Consistently monitor the company operations meet the latest environmental standards.

### (2) Environmental management performance

- A. Air pollution control:
  - a. The Company emitted 73.3 tons of Volatile Organic Compounds (VOCs) in total during 2023. The reporting and payment of pollution control fees for use of VOCs were completed through the EPA Air Pollution Control Fee for Stationary Sources System every quarter as required by law.
  - b. Regular monitoring data provided by qualified external contractors indicated that concentrations of polluting emissions from all factories were lower than the regulatory threshold.
- B. Waste water treatment and process recovery:
  - a. Regular monitoring of discharge water quality indicated that concentrations of all pollutants was lower than the regulatory threshold.
  - b. Total waste water discharge from all PTI sites in amounted to 1,967,811 tons in 2023, an decrease of 148,155 tons compared to 2022.
  - c. PTI Taiwan achieved 88.68% recovery rate for water used in the packaging process in 2023.
- C. Waste disposal:
  - a. The Company generated 6,367.41 tons of waste, which consist of mainly waste fluids generated during the wafer cleaning process, as well as 5,339.83 tons of general waste, which consists mainly of sludge generated in the wastewater treatment process. All such waste was disposed of by qualified waste disposal contractors. The Company actively looking for recycling and reuse flows, non-hazardous waste recycling volume (including energy recovery) 4,091.49

tons, and the non-hazardous waste recycling rate (including energy recovery) reached 91.5% in 2023, to reduce the impact to environment.

- b. Waste disposal/treatment/recycling contractors undergo field/written audits or random tracking of their vehicles every year. A total of 45 regular audits were conducted for waste contractors during 2023.

D. Energy conservation and greenhouse gases

- a. Waste liquid purification and recycling

The Company generated 438.4 tons of waste liquid during the photoresist coating process, and after diversion and collection in the factory, the main recycled materials are purified by distillation to a cooperative manufacturer, and then made into industrial secondary products, which can be used as paint or surface coating diluents.

- b. Waste liquid precious metal recycling

The Company generated 182.5 tons of waste liquid precious metal during the electroplating and etching process, and after diversion and collection in the factory, the precious metals in the waste liquid are precipitated into precious metal ingots or flakes by cooperative manufacturers through extraction, oxidation and reduction, etc., which can be used in metal smelting and product manufacturing.

- c. Recycle empty chemical barrels

In 2023, The Company promote 6 chemical suppliers to implement the recycling of empty barrels. After the use of chemical raw materials, the empty barrels are recycled by the original supplier, refilled with raw materials and sent back to A for reuse.

E. Energy Saving, carbon reduction and greenhouse gases

- a. When purchasing factory equipment, choose high-efficiency models and environmentally friendly refrigerants with low greenhouse effect potential to reduce greenhouse gas emissions.
- b. The Company passed and obtained ISO 50001 (Energy Management Systems-Requirements with guidance for use, EnMS) certification.
- c. Total power savings in 2023 amounted to 17,240,951 kWh, or the equivalent of 62,067.4 GJ, and met the target of reducing energy consumption by 1%.

## 5. Labor Relations

### (1) The Implementation Status for Employee Welfare Policy, Training and Continue Education

PTI values the salary and benefits for its employees and offers lawful benefits. According to the bonus payment specifications, annual earnings minus taxes, surplus and dividends are then appropriate for employee bonuses. Employees can also enjoy benefits provided by the Employee Welfare Committee. With PTI family day, movie screenings and year end banquets to relieve stress from work and bond with coworkers.

1. Insurance: All PTI employees are insured with free general group insurance (including life, accident, medical, cancer, and other insurances). In the spirit of caring for employees as well as their families, the spouse and children of employees also include in the free group insurance.

### 2. Health and Safety:

(1) Through professional medical staff and health management, PTI conducts health promotion and health management for employees. All plants are staffed with professional medical personnel to monitor the health of employees. We collaborate with professional medical organizations to conduct health examinations for employees.

(2) We conduct risk management and assessment for resumption of work for individuals with high health risks. We also offer health information and courses.

(3) PTI prevent the disease triggered by abnormal workload by self-reporting the workload, work in day/ night shift, prolonged abnormal workload, irregular schedule, frequent business trips, or tense working conditions. These employees undergo health risk evaluation, overwork risk evaluation, and Framingham risk evaluation. On-site doctors evaluate the results, talk with the employees, and if necessary, change job positions, decrease working hours, or take other administrative management to maintain employee health.

(4) In 2004, PTI obtained the OHSAS 18001 occupational health and safety management certificate. To prevent occupational injuries and accidents and ensure the safety and health of our workplace, we also devised our "Environmental Safety and Health Policy".

### **Environment, Safety and Health Policy**

- Communicate ESH policy to employees, customers, and related groups.
- Comply with environmental protection, safety and health legislation/regulations and customer requirements.
- Consult and engage with workers and their representatives on the prevention of injuries, diseases, and accidents as well as damage control.
- Actively promote energy efficiency and waste reduction initiatives in response to international trends in environmental protection and the organization's current circumstances.
- Engage in continuous review and improvement to set higher targets for safety, health and environmental management, and improve their overall performance.

### 3. Employee assistance

PTI uses the "Psychological Counseling System" to let employees unload burdens and listened to themselves in this ever changing world of responsibilities. Care-free conversations during the Psychological Counseling System to heal inner wounds, rejuvenate, see a different world, and create a healthy work environment.

### 4. Travel

The pandemic began easing in 2023 so the government started lifting restrictions and encouraging a return to pre-pandemic life. Travel contracts were therefore renewed with well-known travel agencies. Colleagues could now use the entertainment coupons issued by the Welfare Committee to redeem products with travel agencies and decide when to use them once quarantine conditions at the destination permit. Colleagues were encouraged to not only work hard but also given the flexibility of enjoying life with family and friends at a place and time of their own choosing.

#### 5. Family day/ big activity/ leisure activity

The Welfare Committee launched a series of "online" and "small-scale physical events" in 2023 to invite colleagues and their families to venture into the great outdoors for health and leisure. Participation in these events helped to strengthen relationships and promote greater interaction. In addition to continuing to create a friendly workplace based on the three elements of "caring, health, and technology" where colleagues could feel "Promising, Thriving, and Inspiring", we also used elements such as "sustainability, environmental protection, and charity" as the main themes for activity design. Colleagues were invited not only enjoy an exciting life but also join Powertech in energy conservation, carbon reduction, and helping our planet! Activities such as online walking competitions, public beach cleanups, open-air music days, and riverside park jogging were held during 2023.

#### 6. Employee Club Activities

Clubs were one of the channels through which colleagues with the same interests could connect through with each other and relax after work; we continued to support our colleagues in managing and participating in various clubs. As of 2023, there were 407 members in 11 clubs founded by our colleagues themselves at Powertech. In addition to regular club activities, each club also holds company-wide activities every year to provide opportunities for members and non-members as well as colleagues and non-colleagues to connect with each other. For the 2023 Club Carnival, exciting physical activities were painstakingly developed for all colleagues by 8 clubs: Jogging Club, Bowling Club, Badminton Club, Mountaineering Club, Parent-Child Discovery Club, Zen Club, Basketball Club, and Softball Club. A series of club activities were held between July and September. Both dynamic and static activities bore witness to the power of Powertechers! This year's Club Carnival attracted nearly 660 colleagues and their families.

#### 7. Ask for Leave

In accordance with Labor Standard Act, PTI offers holiday and annual leave to employee. Regular reports are provided to supervisors to assist employee has a balanced work and life.

#### 8. Birthday/ Funeral and Other Benefits

- (1) Birthday star is given a coupon equivalent of NTD\$500 to celebrate his/her birthday. Employees with matters of material contingencies are offered a grant from NTD\$1,000 to NTD\$10,000.
- (2) PTI offers NTD\$1,000 value of cash or equivalent coupon, gift on annual Labor's Day.
- (3) PTI offers coupon/ gift equivalent of NTD\$1,000 during Dragon Boat Festival, Mid-autumn Festival etc.
- (4) Gifts are offered to employees with 3, 5, 10, 20 years of seniority.

#### 9. Maternity Subsidies and Other Services

A NTD\$2,000 of subsidies per child birth are provided to employee or its spouse. Also, PTI provides related application services for labor insurance. PTI cares about the employees and their interaction with their families. By having the employee welfare committee signing designated kindergartens and child-care facilities in the areas where employees reside, we offer options of pre-school care for the children of our employees, so that the employees can excel in both their work and their family life without any worries.

#### 10. Food and Housing:

- (1) PTI has outsourced catering services with subsidies for employees. Employee only has to pay a small amount to enjoy lavish meals.
- (2) Catering Committee has been established since 2008 to enhance the quality and welfare of employees.
- (3) PTI offers dormitory option for long distance commute employees.

#### 11. On-Job-Training:

To ensure a diverse talent, we "listen to needs" to consider internal and external issues. PTI has committed to meet the demand of employee learning, organizational development, and company policies, which has led to PTI's unique "need and resolution oriented" operational model and training system, where PTI enhances the managerial abilities of executives, improve employee competence, and ensure the sustainable growth of the company. PTI has been promoting virtual training courses and e-books for continue education especially during the COVID-19 periods.

## (2) The Implementation Status for employee retirement and pension system

### 1. Retirement Condition

Condition	Details
A. Voluntary	A ∙ Individual who served in the company over 15 years and over 55 years old. B ∙ Individual who served in the company over 25 years. C ∙ Individual who served in the company over 10 years and over 60 years old.
B. Mandatory	A ∙ Individual who was over 65 years old. B ∙ Individual who certified by public medical institutes with unfit physical or mental condition to work.

2. PTI Taiwan follows the Labor Standards Law and the Labor Pension Act in implementing employee retirement regulations and established a labor pension supervision committee to appropriate the full amount of pension contribution for employee to apply for pension after retirement. The insurer of Annuity Insurance is an insurance company approved by the central competent authority and the insured of the Annuity Insurance contract is the employer who will insure from the same insurer. The workers are the insured persons and beneficiaries. The Annuity Insurance premium to be paid by the employer each month may not be less than 6% of the monthly wages of the worker. In 2023, the listed total amount contributed to pension was NT\$408,119,483.

## (3) Negotiation between Management and Labor and the Implementation of Employee Rights

### 1. Employee Care:

PTI values the opinion of its employees. We offer various channels to encourage communication between employees and the management, so that we thoroughly understand employees' satisfaction with management and welfare systems and maintain good labor-management relationship. Since our foundation, PTI has enjoyed harmonious labor-management relationship. There has been no occurrence of labor-management disputes that resulted in losses. The possibility of future labor management disputes leading to losses is extremely low. In addition, with quarterly labor management meetings and welfare committee meetings, employees can voice their opinions on specific issues and reach agreement with the company through discussions in the meetings, thus perpetuating effective communication channels. PTI also respect and protect employees' rights of freedom of speech and freedom of assembly and association. The quarterly labor management meetings are negotiated by labor representation voted by employees.

### 2. Comprehensive Communication Channels

We have established comprehensive channels for diverse, two-way, and open communication. By helping employees communicate their opinions to the management, their concerns can be effectively taken care of. Our fair, confidential, and efficient handling procedure resolves employees' concerns while maintaining good labor management relationship. We have also established sexual-harassment prevention measures, employee psychological counseling services, and rewards and discipline regulations. We are always listening to employees' opinions. Anonymous or otherwise, we always exercise confidentiality and fairness in handling such information. All forms of retribution are protected against, so that employees can express their concerns without fear.



(4) Status of Violation of Labor Standards Act :

Penalty date	Penalty No.	Violated regulation:	Content of violated regulation	Penalty description
Date received: 2023/8/3	Fu-Lao-Zi No. 1123934360	Article 13 of the <i>Gender Equality in Employment Act</i>	The Gender Equality at Work Act incident led to the Hsinchu County Employment Discrimination Review Committee finding a violation of Paragraph 2, Article 13 of the Gender Equality at Work Act.	Fine of NT\$100,000
Date of inspection: 2023/11/7 Date received: 2024/2/5	Fu-Lao-Zi No. 1133930811	Paragraph 1, Article 24 of the <i>Labor Standards Act</i>	Failure to pay for overtime work requested by the employer at the proper rate violated Paragraph 1, Article 24 of the Labor Standards Act.	Fine of NT\$50,000 (Note)

Note: The violation took place in the 2023 fiscal year and the amount of the fine was issued in the 2024 fiscal year.

## 6. Information and Cyber Security Management

### (I) Information Security Risk Management Structure

A comprehensive information security management regime was established by the Company to ensure our information security. Our organizational structure includes an "Information Security Committee" that reports directly to the President responsible for promoting and coordinating the construction and maintenance of the information security management system. The Committee is composed of heads of each unit. It meets at least once a year and as necessary depending on the needs of information security risk management. The Information Security Committee receives regular briefings on the state of information security governance. A variety of methods including management review, internal audit, risk assessment, corrective and preventive measures were used to establish an information security management mechanism, strengthen information security protections, and enhance the standard of information security. To ensure the proper implementation of cybersecurity management, a dedicated information security department has been set up to assist with the upgrading and enforcement of cybersecurity policy. To ensure the proper implementation of cybersecurity management, a dedicated Information Security Department has been set up to assist with the implementation of information security policy. The department is responsible for ensuring the



information security of the Company through information security awareness, education and training, threat detection, incident handling, etc. Through the above measures, the Company can effectively manage information security risks and protect the confidentiality, integrity, and availability of information assets.

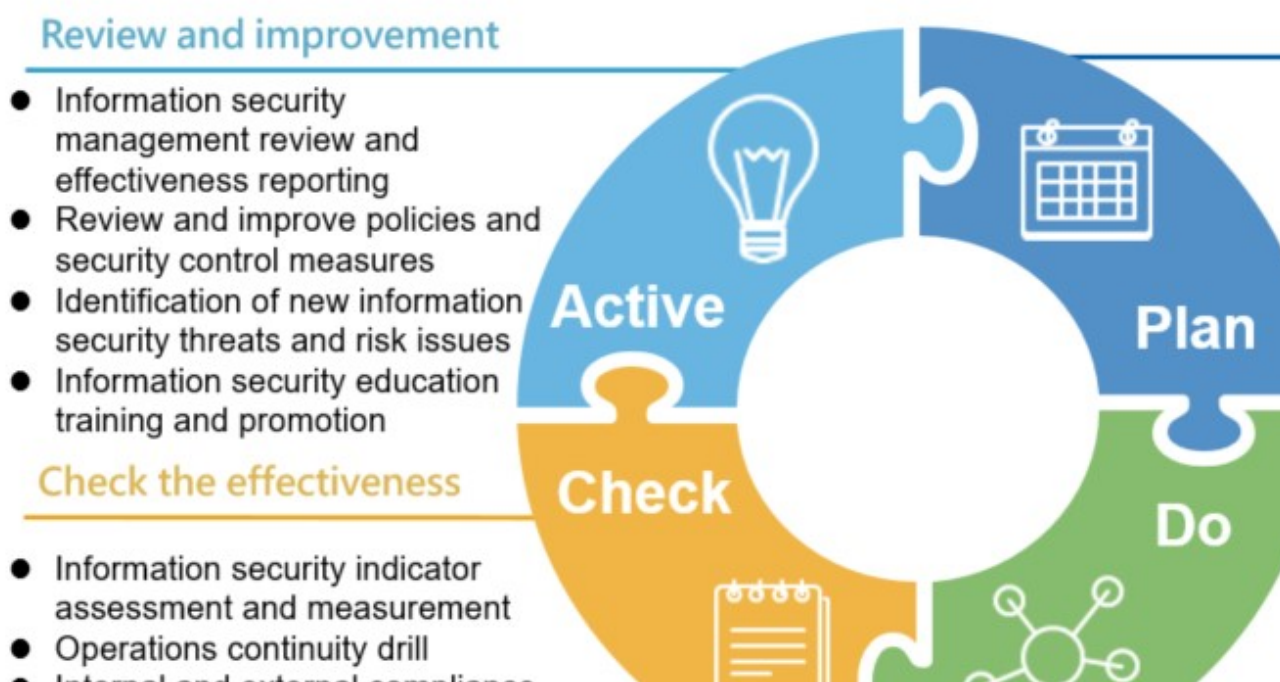
Information Security Committee Organization:



## (II) Cybersecurity Policies

The PTI Cybersecurity Policy is defined as “compliance with the relevant laws and regulations, protection of information assets relating to the Company’s business and information systems, as well as protection of confidential Company and customer information so they are not exposed to the risk of tampering, disclosure, damage or loss due to external threats, or their improper management and use by internal personnel. To enforce effective information security management, the “Plan-Do-Check-Act” (PDCA) model set out in the ISO/IEC 27001:2013 specifications for the development, maintenance, continuous improvement and documentation of an information security management system. This included laying down of principles for the functions of the management organization, document record management, and various information security control measures to ensure the effective protection of information assets on which important company business is conducted.

Information security risk management and continuous improvement structure:



### (III) Specific Management Plans

The following cybersecurity measures have been implemented by PTI to prevent and mitigate damage from cybersecurity attacks:

1. Ensure that the information security management system meets the needs of all parties and engage in regular communication to understand their expectations on information security.
2. Regularly host online information security education and training courses to raise employee awareness on information security.
3. Develop complete information security management specifications and operating procedures to ensure the systematic operation of information security management.
4. Conduct regular risk assessments to identify high-risk items and take measures to reduce or transfer risks.
5. Establish a complete information security protection system to achieve timely and effective identification, protection, detection, response and recovery.
6. Conduct regular drills on information security incident response and recovery procedures to ensure that we can respond quickly and effectively to incidents and reduce the impact.
7. Conduct regular disaster recovery drills for key application systems to ensure their effectiveness.
8. Continue to monitor new information security information and technologies, and incorporate them into the information security management system to provide effective defense against new types of threats.

### (IV) Input of Information Security Management Resources

PTI is continuing to invest in information security related fields. The following key accomplishments were made in the promotion of cybersecurity:

#### (1) Information Security Management and Audit System

1. The ISO27001 international information security certification remains valid and transition should be completed in 2025.
2. Reviewed information security-related policies and operating specifications. Revisions were made to 31 relevant management requirements based on risk trends.
3. Third-party threat intelligence is incorporated by PTI into our external information security risk assessments and management. Information security maturity at PTI has been ranked as A for three consecutive years by the information security evaluation management tool Security Score Card and through Bitsight certification.
4. Suppliers were graded according to the importance of the services they provided, and a total of 25 suppliers were identified as being of top priority. These suppliers were evaluated and asked to conform with the Company's information security assessment standard.

#### (2) Information security awareness and network protection detection

1. All new hires must complete the information security training course before they start work. All employees must complete two online information security training courses and exams each year. Information security training was conducted for 11,070 people and total duration was 3,586.24 person-hours.
2. No-notice e-mail social engineering exercises and social engineering awareness training is conducted on a quarterly basis. The link in the e-mail was clicked in less than 3% of cases.
3. There were 47 disciplinary actions recorded for violating information security regulations.
4. Arranged for information security personnel to participate in relevant information security seminars and training courses. Total participation was 21 people and 84 person-hours.
5. A total of 76 server and webpage vulnerability scans are carried out each year. BCP drills are also carried out on an ongoing basis to identify system vulnerabilities and strengthen response capabilities.
6. To prevent major financial loss from information security incidents, "Information Security Risk Management Insurance" was renewed in 2023 to protect the rights and

interests of customers and investors, demonstrate the Company's emphasis on information security, and reduce the financial impact of information security incidents.

(3) Information Security Notification and Incident Management

1. The Information Security Monitoring Center works with external information security expert resources to track the latest security alerts and threat intelligence as well as strengthen detection and response mechanisms.
2. The number of network disruptions experienced by production machinery due to information security threats and system intrusions were both zero, ensuring the stable operation of the production system and prevention of operational losses.
3. Share network threat information with national-level TWCERT, SP-ISAC and other information security information sharing and analysis centers.

(4) Disaster recovery drill

To ensure the sustainable operation of the information system and avoid the risk of disruptions to important information systems due to major disasters, the Company conducts at least one information security incident emergency response plan drill and 12 key production system data recovery drills every year. The drills ensure that the Company can use its disaster response capabilities at critical moments to restore business operations to a normal or acceptable standard, maintaining the continuity of key application systems and business operations

(V) Estimates of any damages or loss as the end of Mar 31, 2024 cause by information security misconducts: None.

## 7. Major Contracts

Contract Classification	Contract Company	Contract Duration	Main Contents	Limitations of Terms
Outsource Services Contract	A Company	Jun 2019 ~	Packaging and testing services	Non-disclosure agreement
	F Company	Dec 2019 ~ Dec 2024	Packaging and testing services	Non-disclosure agreement
	I Company	Dec 2019 ~ Dec 2024	Packaging and testing services	Non-disclosure agreement
	S Company	Mar 2022 ~ Dec 2025	Packaging and testing services	Non-disclosure agreement
Asset Transfer Contract	M Company	Jun 2023 ~ Jun 2024	Asset transfers Norms of rights and obligations	Non-disclosure agreement
Bank Loan	CTBC Bank	Aug 2023 ~ Aug 2026	Medium-term credit loan	Commitment to maintain a certain ratio between the assets & liabilities and net worth
	Mega International Commercial Bank	Sep 2023 ~ Sep 2026	Medium-term credit loan	None
		Oct 2021 ~ Oct 2026	Medium-term credit loan	
	Yuanta Commercial Bank	Nov 2022 ~ Nov 2026	Medium-term credit loan	Commitment to maintain a certain ratio between the assets & liabilities and net worth
	E.Sun Bank	Jul 2021 ~ Jul 2028	Machinery & Equipment Loan	None
		May 2023 ~ May 2026	Medium-term credit loan	
	Hua Nan Bank	Jan 2023 ~ Jan 2026	Medium-term credit loan	None
		Sep 2021 ~ Aug 2028		
	First Bank	Oct 2022 ~ Oct 2026	Building Construction	None
		Dec 2021 ~ Dec 2028	Machinery & Equipment Loan	
	Bank of Taiwan	Nov 2012 ~ Nov 2027	Building Construction Loan	None
		Aug 2021 ~ Aug 2031		
		Aug 2021 ~ Aug 2028	Machinery & Equipment Loan	
	Taiwan Cooperative Bank	Dec 2021 ~ Dec 2028	Machinery & Equipment Loan	None
	Chang Hwa Bank	Mar 2023 ~ Mar 2026	Medium-term credit loan	None
		Dec 2021 ~ Dec 2028	Machinery & Equipment Loan	
	Taishin Bank	Dec 2023 ~ Dec 2026	Medium-term credit loan	Commitment to maintain a certain ratio between the assets & liabilities and net worth
	Land Bank of Taiwan	Feb 2022 ~ Dec 2028	Medium-term credit loan	None
		Jun 2023 ~ Jun 2026		
	HSBC	Sep 2021 ~ Feb 2025	Medium-term credit loan	None
	MUFG Bank	Sep 2023 ~ Aug 2026	Medium-term credit loan	None
	DBS Bank	Dec 2023 ~ Dec 2026	Medium-term credit loan	None