2 Innovation and Service

2.1 Innovation Management

2.2 Product Quality

2.3 Customer Service

2.4 Sustainable Supply Chain & Management

Material Topics Target and Achievement

Key Performance Indicator	United Nations Sustainable Development Goals (SDGs)	2023 Goals	2023 Status and Achievements	Short-term Goals (2024)	Mid-term Goals (2025 - 2030)	Long-term Goals (2030 and beyond)
Product Quality and Safety						
Customer Satisfaction		8" & 12" Product Quality & Product Development > 82	Achieved	Product Quality & Product Development > 83 Meet the needs of customers for different generations and different application products	Product Quality & Product Development > 85 Become the first-tier supplier of advanced processes and mature products for customers.	Product Quality & Product Development > 88 Become the first choice of customers for products of different generations and different applications
Product Specifications		100% Compliance with hazardous substance-related regulations and customer specifications	Achieved	100% Compliance with hazardous substance-related regulations and customer specifications		
Sustainable Supply Chain Management						
Supplier A obtained ISO 14001 Certification		-	62% (120/194 suppliers)	65%	80%	100%
Supplier A Obtained Third-Party Carbon Inventory Confirmation		-	11	20%	50%	80%
Supplier A Obtained Third-Party Product Carbon Footprint Verification		-	3	+ 2	+ 2	> +10
Due Diligence in Procurement of Compliant Conflict-Free Minerals A		-	100%	100%	100%	100%
Supplier Annual Audit		-	Supplier Document & Physical Audit 83%	Increase supplier sustainability audits by 30%	Increase supplier sustainability audits by 50%	Increase supplier sustainability audits by 60%

A = Qualified primary and secondary raw material suppliers. The 2023 target achievement for sustainable supply chain management is calculated only for the Taiwan region. From 2024 onwards, calculations will be based on the entire Group.

2.1 Innovation Management

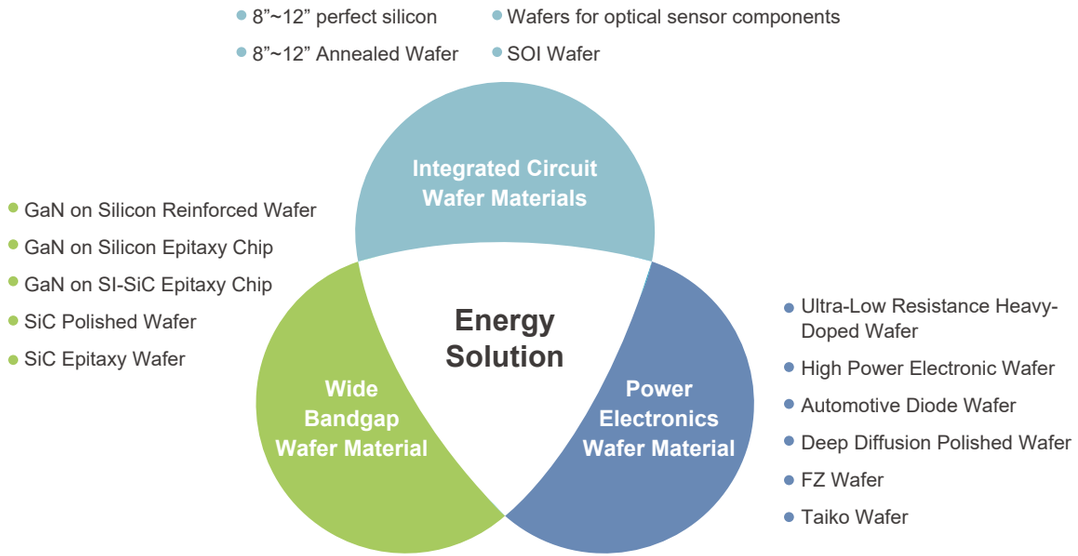
To meet the demand for increased semiconductor unit content brought about by technological innovation and respond to the accelerated digital transformation post-pandemic, GlobalWafers has implemented a large-scale capacity expansion plan, including production locations in Asia, Europe, and the USA. The production capacity expansion covers 12" wafers and epitaxy, 12" SOI, 8" FZ, SiC wafers (SiC Epi included), GaN on Si, among other large-sized next-generation products. Currently, the Phase 2 plant of the Hsinchu Science Park is undergoing equipment replacement, investing in 12-inch silicon wafers for advanced processes and expanding its R&D center to develop advanced compound semiconductors materials such as silicon carbide (SiC) and gallium nitride (GaN) epitaxy. These two wide bandgap materials are widely used in the fields of power devices and microwave/RF communications, ncluding 5G, high-power components, fast-charging applications, high-frequency and high-voltage, automotive electronics, photonic data communications, AIoT, green energy, and other application fields. Market demand has continued to climb significantly. At present, these products have entered mass production one after another, becoming the new impetus for GlobalWafers' sustained high growth.

⊙In Terms of Products and R&D, the Following Strategies are Formulated:

- Significantly increase the production capacity and technology of high-end semiconductor wafers dedicated to advanced processes;
- Accelerate the development of SiC wafers and semi-insulating SiC required for new technologies such as 5G, power electronics, and electric vehicles;
- Expand the establishment and R&D capacity of the Taiwan Wafer R&D Center;
- Invest in the development of green energy in Taiwan and increase the proportion of green energy used in the semiconductor wafer manufacturing process.

Products can be classified into three major products based on product types. The following is an explanation of development directions for these three major products:

⊙GlobalWafers Product Development Direction



⊙1. Integrated Circuit Wafer Materials

Our main products include 8"~12" perfect silicon, 8"~12" annealed wafers, optical sensor device wafers and SOI wafers, predominantly used in the manufacture of integrated circuit devices across five key categories: Bipolar Digital, Memory, Micro, Logic, and Analog. As manufacturing processes continue to miniaturize and demands for silicon wafer purity, surface cleanliness, and flatness become more stringent, advancements in crystal pulling technology (such as oxygen density control and micro-defect reduction) and breakthroughs in wafer processing technology have become increasingly critical. With the shrinking wire widths in integrated circuit manufacturing, the quality standards for silicon wafers also become more exacting. GlobalWafers is dedicated to developing wafers that meet the exacting requirements of advanced integrated circuit manufacturing processes, all while offering customers the finest services and options available.

⊙2.Power Electronic Wafer Material

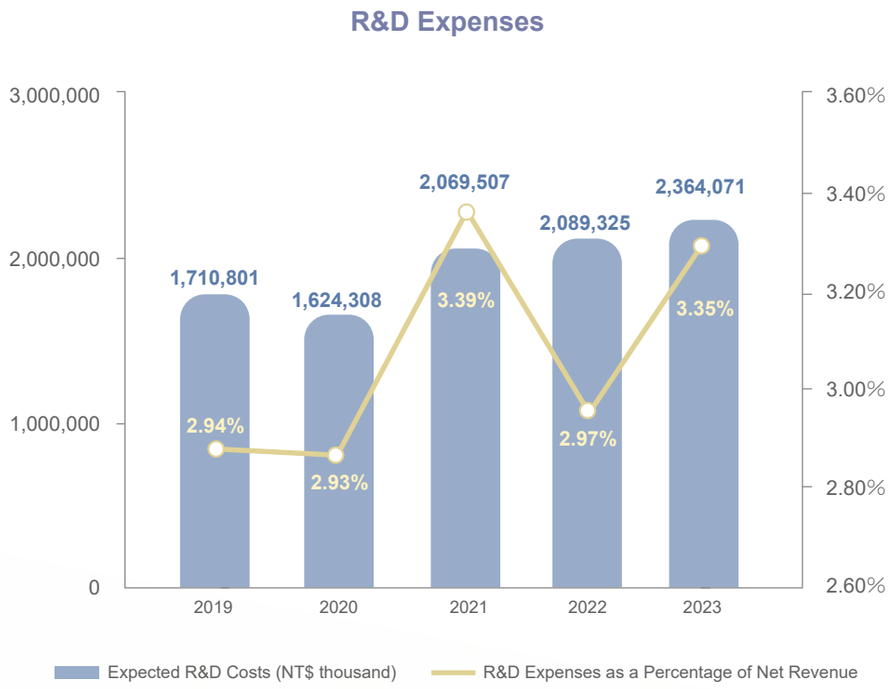
The global shift towards green energy amid heightened environmental awareness has spurred a rising demand for renewable energy sources and accelerated growth in the electric vehicle sector, making power electronics development a focal point worldwide. This trend, coupled with industrial automation advancements, increasing consumer power consumption, and rising demand for electronics, has propelled the expansion of power electronics solutions. Industry leaders are prioritizing energy efficiency through advanced power electronics solutions, driving extensive industrial applications and expanding vertical markets in this field. The wafers required for power electronic components of silicon-based power semiconductors include ultra-low resistance heavily doped wafers, high-power power electronics wafers, automotive diode wafers, FZ wafers, Taiko wafers, etc. For mass applications, the demand for wafer quality and quantity is also increasing year by year. With the continuous market growth, the power electronics market size was valued at USD$43.3 billion in 2022 and is expected to grow to US$94.21 billion by 2032, at a compound annual growth rate (CAGR) of 8.3% during the forecast period (2021-2030). Higher power density and the increasing demand from the automotive industry are the main market drivers for the market growth. At the same time, the revolution in material switching is ongoing. GaN and SiC technologies are replacing part of silicon-based transistors, more diode products to enhance product performance.. The global demand for power semiconductors continues to grow. GlobalWafers plays a leading role in this field while continuously strengthening the development of related products and technologies.

⊙3.Wide Bandgap Wafer Material

Wide bandgap power device comes with many advantages which include features of high electric breakdown field, high saturated electron drift velocity and superior heat dissipation. These features make wide bandgap device more suitable for applications in high power, high frequency and high temperature environments. Utilization of wide bandgap power device can lower energy consumption during conducting and switching, and the power consumption for the system's overall operation can be reduced by half. Additionally, given the features of lowered energy consumption and excellent heat dissipation, volume and weight for the system using wide bandgap power devices can be reduced dramatically. Currently, new materials such as SiC, GaN and Ga2O3 are being regarded as materials for next-generation power semiconductor. According to TrendForce research estimates, the market value of SiC power devices will significantly grow 3.3 times by 2026 compared to 2022. The output value will grow from US$1.69 billion in 2022 to US$5.33 billion in 2026. According to Transparency Market Research Inc.According to the (TMR) research on the GaN semiconductor market, the output value of GaN semiconductors was US$1.85 billion in 2021. The compound annual growth rate (CAGR) is expected to be 27.4% from 2022 to 2031, and the output value will reach US$19.5 billion by the end of 2031. The global demand for GaN substrates will reach US$647 million in 2030 from US$227 million in 2022. GlobalWafers has invested in the research of developing GaN and SiC wafers. Currently, the Company is already providing customers with silicon wafer substrates, which are exclusive for GaN on silicon and GaN on silicon/GaN on SI-SiC epitaxy wafers for their device design and development. Developments for polished SiC wafers and Epitaxy wafers shall continue. For these two new materials with explosive growth, we shall continue to invest in development resources. At the same time, GlobalWafers will be able to provide various types of wafers for energy applications and total solutions for customers.

GlobalWafers has a strong R&D team composed of 137 R&D engineers in Taiwan and 124 overseas.

⊙Actual R&D Expenses Over the Years



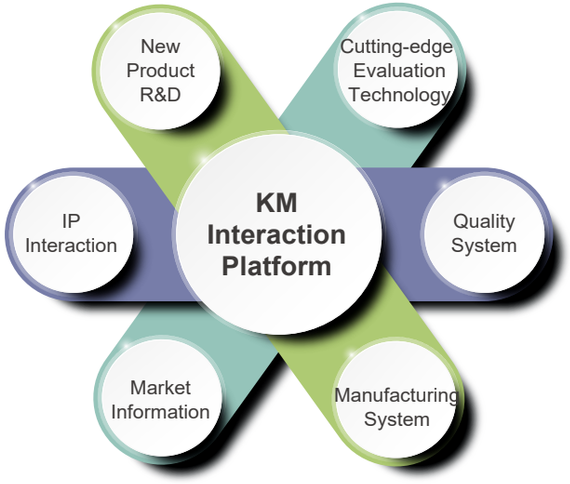
2.1.1 R&D Resources

Developing products requires considerable time, manpower, and resources. It also necessitates support and resources from numerous stakeholders for successful completion. Given limited resources, effectively utilizing what is available is crucial for maximizing benefits.

⊙Internal Resources

GlobalWafers has a total of 18 operating production bases distributed throughout 9 countries worldwide, as well as customers in Europe, Asia, and the Americas. Faced with globalized competition, grasping information and sharing resources will be conducive to more efficient and accurate strategies. Therefore, it is necessary for GlobalWafers to establish a cross-plant KM (Knowledge Management) Exchange Platform, allowing the factories to exchange information and technology with each other. On this interaction platform, resources and support can all be obtained for technology issues, market information and product development, manufacturing management, quality management and IP patent related activities faced by respective factories. In the meantime, enhancement for respective factories' capabilities is facilitated accordingly through the internal competition mechanism established by this interaction platform.

Internal Resources - KM Exchange Platform



⊙External Resources

Taiwan has excellent academic resources and has accumulated a large amount of profound knowledge regarding fundamental research and scientific applications. Industry-academia collaboration can quickly integrate abundant R&D capabilities, accelerating product development and shortening the time to market. Taiwan also has a comprehensive ICT (Information and Communication Technology) industry chain. Through the integration of upstream and downstream operations, products can be mass-produced in the development stage. Furthermore, to facilitate industry upgrades and the practical application of academic research, governmental bodies provide substantial research funds each year to subsidize academia-industry collaboration on new products and new technology development. Since 2015, the Taiwanese government has initiated a guidance program promoting industry upgrades & innovation platforms and assists industries in undergoing structural changes via four major development strategies: enhancing product value, supplementing critical supply chain, developing systems and incubating emerging industries. GlobalWafers headquarters utilizes external resources through academia-industry collaborations with academic institutes, commissioned research with research agencies, as well as implementing national projects via subsidy application to national institutes and conducting strategic alliances with industry players. External research consultant groups composed of these external resources work together to solve technological issues arising during the product development process and conduct verification of research products.

External Resources

- Corporate sustainable operation and continued profits are every enterprise's expectation. However, century-old enterprises may vanish too when faced with global competition and technology evolution if they loses their driving force for progressive operation. A company will grow and make profits if its operation strategies align with the development trends.
- Regarding research strategies, it is necessary to continue with in-depth cultivation of core technologies and core competitiveness, supplemented by technology trends and market information as the development direction. The company can thus achieve the goals of sustainable operation through integrated internal and external resources and maximum benefits from minimum investment, along with sound management of intellectual property protection and utilization.

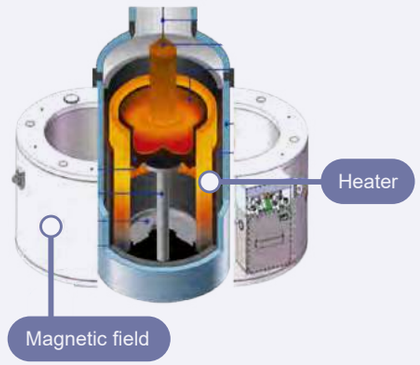
R&D Strategy and Company Operations

Case in Focus

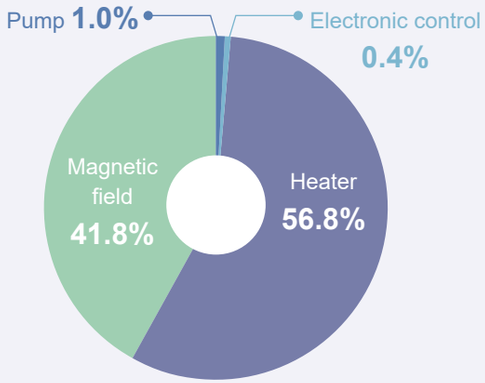
Crystal Puller Energy Saving Project

★ Project Introduction

For sustainable operation, the Company continues to invest in green energy technology to reduce the energy consumption of production and manufacturing. For this project, the magnetic field during the crystal growth process and the electricity consumed by the heater accounted for more than 90% of the total. The conversion efficiency of the transformer of the electric box is poor, and the old transformer generated a lot of heat loss, making it impossible to perform software magnetic field control. This project evaluates the new IGBT power box on the hardware side through the development and improvement of hardware and software. The power box has the advantages of high conversion efficiency and low loss; on the software side, the magnetic field control software developed in-house is used to modulate the magnetic field switch and size.



Distribution of electricity consumption for crystal pullers



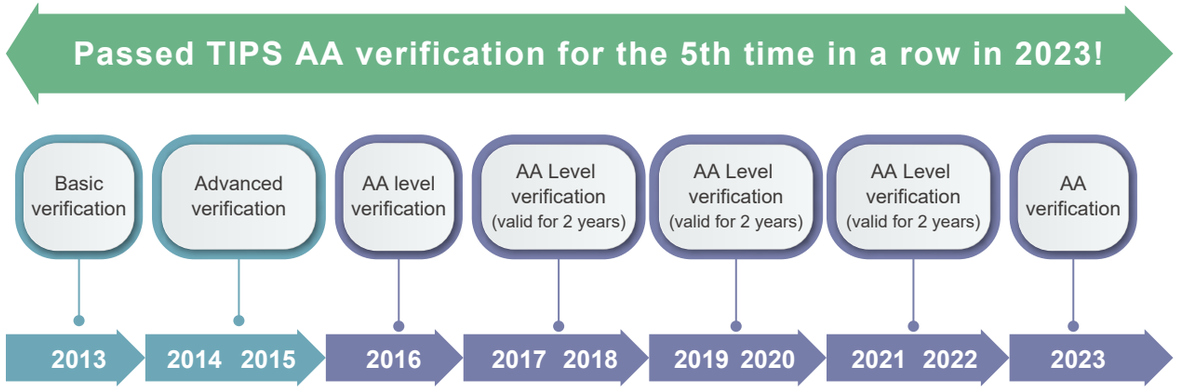
★ Concrete achievements

- Cumulative power consumption savings of 5,576,000 kWh (hardware improvement + software improvement) = 5.57 million kWh (320,000 kWh/month)
- Reduced carbon emissions by 5,576,000 kWh X 0.495kgCO2/kWh = 2,760 ton CO2 (162 ton CO2e/month)
- The total savings accumulated since implementation amount to 5,576,000 kWh X 3 (NTD/kWh) = 16.72 million (NTD) (NT$960,000/month)

2.1.2 Intellectual Property Management System

GlobalWafers implemented the Taiwan Intellectual Property Management System (TIPS) in 2013, establishing management processes and passing the basic certification. It continued to achieve advanced certifications in 2014 and 2015, as well as AA-level certification in 2016, 2017, 2019, 2021, 2023. Strengthen and enhance the Company's intellectual property management capabilities through the establishment of systematic management and have them certified and affirmed by third parties.

⊙TIPS Validation History



⊙Intellectual Property Management Strategy

★ Improve intellectual property management capabilities and cultivate long-term competitiveness.

★ Encourage all employees to make innovative proposals and strengthening the layout of product patents

★ Establish a confidentiality management mechanism to protect the rights and interests of corporate customers.

Through the implementation of TIPS, the intellectual property management policy focuses on confidential control and patent layout, aligning with operational and R&D strategies. Aiming to become the world's largest and most comprehensive wafer supplier, the Group employs core technological capabilities to establish competitive next-generation products. The intellectual property management system aims to enhance IP management capabilities, strengthen product patent layouts, build a comprehensive confidentiality management mechanism, and ultimately boost the Company's competitiveness while protecting the rights of the Company and its customers.

⊙Intellectual Property Management Outcome: Diversified Patent Deployment to Secure Competitive Advantages

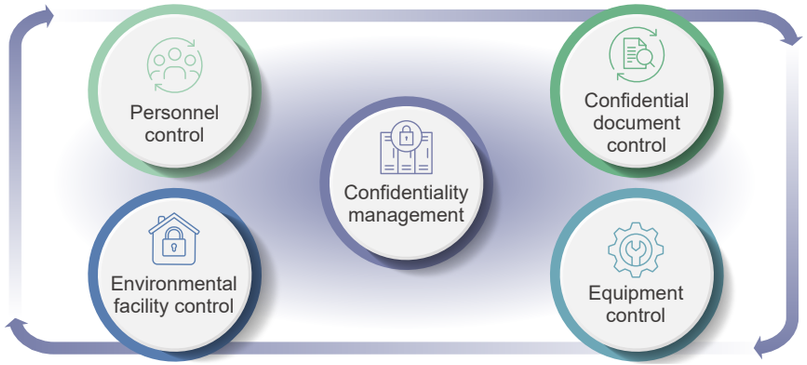
In terms of system implementation, the head of the R&D unit acts as the management representative and forms a promotion team together with the intellectual property unit and the executive representatives of each unit. Annual internal audits and management reviews are conducted regularly, and participation in external verifications ensures the effective implementation of the management system. In terms of patent management, we establish patent management procedures to ensure the quality of patent output and cooperate with the innovation and development team to strengthen the patent portfolio for new products or new technologies.

GlobalWafers currently has 493 valid patent applications, with applications covering a wide range, including: (1) silicon substrate crystal growth and processing technology; (2) silicon carbide wafer crystal growth, processing, and defect inspection technology; (3) gallium nitride epitaxy technology; (4) smart manufacturing and AI analysis technology. We have layouts from the generation of semiconductor materials to the third generation of emerging technology. Including other overseas subsidiaries, the total number of effective patent applications for the entire Group has accumulated to 2,310, with 1,403 patents granted and 907 patents pending (as of the end of December 2023).

⊙Risks and Countermeasures: Reinforce Secret Control to Reduce Secret Leakage Risk

Whereas secret leakage frequently makes headlines in the media, the Company will continue to strengthen its secret control program to prevent theft of the technologies generated by its hard work and protect clients' interests. In terms of confidentiality control, a management mechanism is established for personnel, confidential documents, equipment, and environmental facilities. For the personnel department, intellectual property education and training are provided to raise employees' awareness of secrets control and risk awareness; for the document department, each department inventories and manages the documents, classifies them into confidentiality levels, and performs level labeling, authority control, and circulation and destruction control in sequence; for the equipment department, the use of personal computers or electronic storage devices is controlled; for environmental facilities, control areas are set up for important data centers or production operations to implement access control and filming control. The Company conducts internal audits and self-examinations every year to confirm the implementation level of confidentiality control in each department.

Four Major Areas of Confidentiality Management



For the Group, intellectual property rights can demonstrate the strength of technological development, create opportunities for strategic alliances, enhance the overall competitiveness of the Company, and win the trust and recognition of customers. In particular, when developing new technologies or products, it is important to position the patents in this field to avoid possible intellectual property risks. Intellectual property rights are not only a competitive tool for developing next-generation products, but also an important tool for defending against the influence of all competitors and enabling the Company to operate continuously.

2.2 Product Quality

GlobalWafers adheres to the spirit of never-ending improvement and excellence, provides the best quality, technology, and comprehensive services to enhance product quality and competitiveness. The Company aims to grow alongside its customers, foster excellence among employees, create value for shareholders, and maintain sustainable operations.

To ensure the effective implementation of strategic operations, GlobalWafers has promulgated the "Quality Policy" to serve as the creed for all employees. We are committed to continuous improvement in all aspects in order to achieve the ultimate quality, technology, and manufacturing excellence. Our goal is to provide customers with zero-defect products and services.

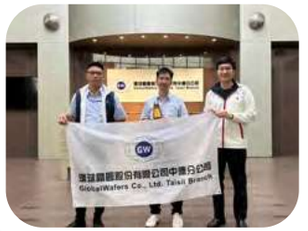
⊙Enhancement of Company Improvement Culture

Each GlobalWafers plant has actively invested in quality management activities, pursued comprehensive improvements, and refined process technologies to enhance product quality. The plants have established a Quality Improvement Team (QIT) composed of members from various functional departments to ensure process research and product quality improvement. The improvement results include innovative creativity; cost-effectiveness; lean production; product competitiveness; customer satisfaction; customer complaint cause analysis, review, and improvement; and quality index process capability. Its goal is to achieve perfection in order to enhance the image and competitiveness of the company's products through continuous improvement and progress. We aim at zero-defect as our permanent goal, and continue to improve and grow with our customers in order to become their No. 1 choice.

GlobalWafers participated in the 2023 "Taiwan Continuous Improvement Awards" and won two Silver Tower Awards in the categories of Self-improvement (Quality & Efficiency) and Project Improvement. We will continue to improve and refine our engineering technologies.

Wire Cut Good Circle Silver Tower Award

Improvement Topic: Reduction of the wire-cut wire cutting rate



IE4.0 Circle: Silver Tower Award

Improvement Topic: Energy Conservation Crisis and Joint Creation of New Opportunities for Carbon Reduction