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Preface

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Message from the Chairman and CEO

It has been over 35 years since Winbond’s establishment in 1987. The recent challenges have deviated from tradition: the shift from globalized to regionalized supply chains, the COVID-19 pandemic, regional conflicts, economic changes caused by interest rate hikes and inflation, and the damages of climate change—all vividly present. However, I believe that constant change is the norm in the world, and compared to the changes faced by century-old companies that can withstand the test of time, the fluctuations of a few years are still relatively small. Companies do not need to deliberately talk about transformation; instead, they should focus on the foundation of sustainable existence. The key still lies in whether we can maintain a high level of insight and adaptability, continuously monitor and adjust accordingly.

Therefore, “sustainability” is a multifaceted concept for us. It represents a spirit of enduring enterprise that transcends time, aiming to maintain the ability to continuously create value in a changing world, inspiring us to become pillars of sustainable development in human society. It reminds us to wisely utilize resources and cherish our one and only Earth. Winbond embody this spirit through the following five aspects: “Conduct business with integrity and ethical behavior,” “Accountable teamwork,” “Enthusiasm of learning,” “Aggressively innovate,” “Sustainable contribution.” Integrity establishes our foundation, accountability drive practical implementation, learning expands our horizons, and innovation keeps us up to date. Most importantly, it is crucial for all colleagues to constantly remember how to contribute to society with their own abilities, as this is the core key to the long-term existence of the company.

With this belief, we have recently embraced the vision of being an “Be a hidden champion in providing sustainable semiconductors to enrich human life” and actively invested in the development of green products and technologies. We aim to practice the core competitiveness of safe and low-carbon technologies through applications in data processing, communications, transportation, smart living, and more. Gradually, we respond to the high demand of contemporary society for environmental sustainability. In order to ensure that all colleagues understand this belief, we will establish the product carbon footprint as a key measure of innovative value and implement a systematic carbon performance management process. This will enable every employee to clearly understand that prioritizing green initiatives is of utmost importance and to internalize this mindset, naturally shaping the company’s culture of sustainability.

Employees are the carriers of corporate culture, so Winbond highly emphasize their development. We believe that if a company is willing to invest a large and wide range of educational resources in its employees, encourage their passion for learning, and support their continuous growth within the company, it will surpass academic qualifications and experiences obtained in the same amount of time from schools or the external world. Additionally, through emphasizing opportunities for job rotation between departments, we ensure that theory and practice complement each other, enabling all colleagues to possess abundant capabilities.

Social sustainability is the foundation for the sustainability of a company, and the sustainability of employees is crucial for the continuity of the company’s spirit. That’s why we are committed to developing green products responsibly and dedicated to creating a joyful learning environment in the workplace. Having the ability to give back to society is the trajectory for stable growth of the company. In the future, as humanity continues to explore and develop various possibilities, our company will maintain its spirit of sustainability and, with innovative capabilities, join forces with all sectors to enrich and improve the lives of all human beings.
Message from the President

Looking back on the pivotal events of 2022, it became evident that the global movement towards decarbonization had gained significant momentum as a response to the pressing challenges of climate change confronting the world. Simultaneously, a growing awareness of human rights and an escalating demand for green-collar experts were driving positive change across various industries. Issues pertaining to corporate fairness, justice, and employee rights were increasingly capturing public attention day by day. Meanwhile, as we move into 2023, the market is facing additional hurdles with the impact of war and inflation leading to fluctuations. Companies endeavor to display resilience, proactively addressing risks and challenges with efficiency and effectiveness. Their ability to delivering sophisticated solutions and adeptly meet clients’ expectations was critical in turbulent times.

Winbond actively participated in the Taiwan Climate Partnership (TCP) and has served as a board member in its inaugural term. Also, with the dedicated ESG department established, we continuously monitor domestic and international Environmental Social and Governance (ESG) trends and regulatory policies, laying a solid foundation to plan and execute our ESG strategy projects. In addition, Winbond commits to enhancing its core technological competitiveness to differentiate from competitors, including R&D innovation, and zero-defect quality; integrates such elevations into our development pathway; and upholds our corporate vision “Be a hidden champion in providing sustainable semiconductors to enrich human life.” There will be a myriad of challenges ahead waiting for us in the future, however, Winbond shall advance with confidence toward its goal and meet stakeholders’ demands and expectations.

Green Innovation and Development

To implement carbon management systems, Winbond has utilized digital tools to analyze and achieve carbon reduction. In 2022, Winbond collaborated with Microsoft to establish the Carbon Emissions Information Platform, which accurately calculates the carbon emissions throughout each IC production process, prioritizing potential carbon reduction hotspots within product life cycle. For instance, GHG emissions can be reduced by implementing local scrubber equipment that supports in the treatment of exhaust gas during the manufacturing process. In terms of energy, Winbond has established dedicated departments responsible for green energy investment and renewable energy certificates purchase. With diligently R&D on smaller chips and enhancement design on product packaging, we can save materials, reduce testing time, and minimize power consumptions. Winbond commits to green manufacturing through advancing process technology, reducing production time, and implementing energy-saving measures. Winbond aims to complete ISO 14067 Product Carbon Footprint verification in 2023.

Talent Development and Social Participation

Talent is a crucial asset for businesses, and Winbond values human rights and embed such topic into our corporate management framework. In 2022, we saw a significant boost in the employment rate of people with disabilities at Winbond. Furthermore, our Central Taiwan Science Park (CTSP) fab attained a perfect score in the RBA VAP platinum certificate and completed human rights due diligence.

In terms of talent recruitment, Winbond has implemented industry-academia cooperation to collaborate with schools in nurturing students through programs such as industry expert courses, scholarships, and internship opportunities. Also, Winbond provides specialized assistances for international employees on relocation during on-board process, ensuring a hassle-free working environment. In recent years, Winbond has built an environment for lifelong learning and interdisciplinary practical engagement, through various licensed software and platforms installed, and development programs organized, encouraging employees to continuously improve their skills and apply their knowledge in their work.

Nowadays, the scope of work extends beyond livelihood considerations and also encompasses the pursuit of personal values. In 2022, Winbond organized the Hou-Feng Bike Path Adoption program, attracting over 300 employees and their families to participate; and host activities such as river cleanup and birdwatching in collaboration with the Society of Wilderness. Winbond wishes to reinforce employees’ self-worth, promote family harmony, create a joyful working dynamic, and contribute to society via collective efforts through diverse social engagement opportunities.
Excellent R&D to Meet Market Demands

To strengthen operational stability through risk management, Winbond has established a centralized risk management organization responsible for coordinating research on regulations, response measures, and supporting risk management across subsidiaries. Risk management units have been established within each department to address the challenges of regulatory and risk differences around the globe. For example, Risk Management Committee is instituted under the Board of Directors, along with and ESG Committee, all units monitor risks collaboratively, ensuring better resource utilization and responses lead time.

To mitigate the impact of climate change and energy transition (such as water and electricity shortages), Winbond has implemented corresponding measures, including securing long-term natural water sources, and a 45-thousand-ton underground on-site reservoir that can sustain Kaohsiung Fab’s operations for four months, under the government’s Level 3 alert where 15% of water is rationing.

Winbond is committed to expanding product lines to address fast-changing market realities. In addition to existing consumer products, Winbond has aggressively developed high-end products for industries such as automotive, industrial application, and medical care. Furthermore, Winbond pays close attention and actively responds to the demand of green products from customer, hence preserving strong customer relationship. Also, by leveraging data science technology, Winbond optimizes production scheduling, machine condition prediction, and improves factory management efficiency. Digital transformation has also been extensively applied across departments to enhance work efficiency, and this effort has yielded significant outcomes.
Company Profile

Corporate Culture and Vision
The corporate culture of Winbond Electronics Corporation ("Winbond") is defined by "business integrity, accountable team work, enthusiasm for learning, aggressive innovation, and contribution to sustainability," which also serves as Winbond’s core value, belief, and conduct.

Winbond Culture

Product information
Main products
Code Storage Flash Memory, TrustME® Secure Flash, Specialty DRAM, and Mobile DRAM

Application scope
Handheld applications, consumer electronics, computer peripherals, and automotive and industrial-use electronics, which are all fields that have extremely high standards for product quality

Business Performance in 2022

- Memory products
  - NT$48.8 billion (79% in 2019)
  - NT$60.7 billion (66% in 2020)
  - NT$99.6 billion (59% in 2021)
  - NT$94.5 billion (56% in 2022)

- Logic products
  - NT$3.25 billion

- Earnings per share
  - NT$3.25

Business Performance Table

- Revenue
  - NT$94.53 billion

- Earnings per share
  - NT$3.25

- Net profit
  - NT$15 billion

Corporate Governance

- Global TOP1 NOR Flash supplier
- Global TOP5 DRAM supplier
- Ranked top 6-20% in TWSE Corporate Governance Evaluation
Important Events of Winbond

1987
- Established in Hsinchu Science Park

1995
- Listed on the stock market

2004
- Built a 12-inch fab in CTSP

2006
- Official operation of the 12-inch wafer fab in CTSP

2008
- Division of logic product business
  Established Nuvoton Technology Co.

2010
- WEC transformed to be a Specialty Memory provider
  Nuvoton Technology Co. listed on the stock market

2013
- Successful verification of DRAM product with self-developed 46nm process technology.

2017
- Won the top 5% excellent companies in the 3rd corporate governance evaluation of listed companies and OTC companies included in the constituent stocks list of “Taiwan Corporate Governance 100 Index” and “Taiwan High Salary 100 Index”

2018
- Mass production of DRAM product with self-developed 25nm process technology
- Groundbreaking ceremony for the Kaohsiung Fab
- Winbond 1.2V Serial NOR Flash won “The 2018 World Electronics Achievement Award for Memory of the Year” from the ASPENCORE Double Summits

2019
- Worldwide Top 1 NOR Flash Supplier

2021
- Worldwide Top 5 DRAM Supplier
- Worldwide Top 1 NOR Flash supplier
- Kaohsiung Fab received the quality management system and EHS management system certificate.

2023
- Winbond Group recognized as a “Top 100 Global Innovators” from Clarivate
Winbond's Values

Observing market trends for the new generation of products, Winbond has continuously invested resources into semiconductor design, manufacturing technologies, and sustainable innovations for products, providing customers with low-carbon and low-power-consumption green products while creating competitive advantages and increasing our market share in green business opportunities. Winbond strives for continuous improvement to enhance overall sustainable competitiveness.

Technology Platforms

Automotive Electronics
- From vehicle body to power systems, to information and entertainment systems, to intelligent driving and advanced safety systems, our technology is used in emerging electric vehicles to achieve a safer, smarter, and more environmentally friendly transportation environment.

Industrial Electronics
- For industrial systems, Winbond brings higher performance, information security, and advanced safety in intelligent networking, remote monitoring, human-machine interaction, and on-site machine learning.

5G Communications
- With higher data transmission speeds, Winbond provides a foundational platform for the Internet of Things, enabling efficient communication that transcends time and location, enhancing productivity, entertainment, and learning.

IoT
- In the world of interconnected devices, Winbond accelerates digital transformation while ensuring information security and functional safety, achieving energy efficiency, convenience, and a higher level of safety protection for everyday life.

Consumer Electronics
- For consumer products, Winbond delivers more powerful, energy-efficient, and feature-rich solutions, offering an enhanced product experience.

Applications and Products

• Vehicle-to-Everything (V2X)
• Advanced driver-assistance systems (ADAS)
• Vehicle dashboards
• In-Vehicle Infotainment (IVI) systems
• Telematics
• Automotive sensing components
• Automotive gateways

• Real-time sales information devices
• Smart factories
• Smart dashboards
• Programmable logic controllers
• Graphical user interfaces
• Industrial gateways
• Industrial machine vision
• Industrial computers
• Unmanned Aerial Vehicles (UAVs)
• Surveillance cameras

• Network digital video converters
• High-speed Ethernet switches
• Wireless terminal access equipment and customer premises equipment (CPE)
• Long-Term Evolution (LTE) technology
• LTE/5G base stations

• Smart cities
• Smart transportation systems
• Self-driving cars
• Smart factories
• Telehealth
• Smart home
• Smart meter

• Smartphones
• Smartwatches
• AR smart glasses
• Tablet computers
• Smart TV
• Smart home
• Satellite navigation
• Digital cameras
• True wireless earphones
• Set-top boxes
## 2022 Awards and Recognition

### Sustainability Recognition

<table>
<thead>
<tr>
<th>Award</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taiwan Corporate Sustainability Awards</td>
<td>- TCSA Corporate Sustainability Report Award (Electronics): Platinum&lt;br&gt; - Top 100 Sustainability Model Award&lt;br&gt; - People Development Award</td>
</tr>
<tr>
<td>Responsible Business Alliance (RBA)</td>
<td>Platinum, VAP (Validated Assessment Program)</td>
</tr>
<tr>
<td>FTSE4Good</td>
<td>Selected as&lt;br&gt; - Constituent company of FTSE4Good Index Series&lt;br&gt; - Constituent company of FTSE4Good TIP Taiwan ESG Index</td>
</tr>
<tr>
<td>Carbon Disclosure Project (CDP)</td>
<td>Achieved B List (Management Level) in &quot;Climate Change&quot;</td>
</tr>
<tr>
<td>British Standards Institution (BSI)</td>
<td>2022 BSI Sustainable and Resilient Outstanding Award</td>
</tr>
<tr>
<td>Taiwan Continuous Improvement Award</td>
<td>2 Golden Tower Awards&lt;br&gt; 2 Silver Tower Awards</td>
</tr>
</tbody>
</table>

### Corporate Governance

<table>
<thead>
<tr>
<th>Corporation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taiwan Stock Exchange Corporation (TWSE)</td>
<td>Selected as&lt;br&gt; - Constituent company of the TWSE Corporate Governance 100 Index&lt;br&gt; - Constituent company of TWSE RAFI® Taiwan High Compensation 100 Index&lt;br&gt; - Ranked top 6~20% of listed companies of the 9th Corporate Governance Evaluation</td>
</tr>
</tbody>
</table>

### Green Products

- **Carbon Disclosure Project (CDP)**: Achieved B List (Management Level) in "Climate Change".
- **British Standards Institution (BSI)**: 2022 BSI Sustainable and Resilient Outstanding Award.
- **Taiwan Continuous Improvement Award**: 2 Golden Tower Awards, 2 Silver Tower Awards.

### Product Innovation

- **Clarivate**: Top 100 Global Innovators.
- **SESIP**: TrustME® W77Q Secure Flash obtained SESIP Level 2 certification.
- **Intellectual Property Office, MOEA TIPO**: TIPO Top 100 Patent Applicants in 2022: 17th Place among the Applicants of the Taiwanese Juridical Persons, 16th Place among the Patentees of the Taiwanese Juridical Persons.
- **OFweek China IoT & AI Awards 2022**: TrustME® W77Q Secure Flash won the 2022 Innovative Technology Product Award.
- **Elecfans**: HYPERRAM™ 3.0 won the 2022 China IoT Innovation Award.
## Sustainability Performance

### Environmental

<table>
<thead>
<tr>
<th><strong>2.1 million tons CO2e Reduction</strong>&lt;br&gt;Since 2006, Winbond has participated in Taiwan Semiconductor Industry Association (TSIA) and the World Semiconductor Council (WSC) PFCs emission reduction projects, and has reduced a total of about 2.1 million tons CO2e</th>
<th><strong>380 GWh electricity Saving</strong>&lt;br&gt;From 2018 to 2022, a total of 380 million GWh of electricity has been saved, which is equivalent to the annual electricity consumption of 108,361 households</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rooftop solar power system generated a total of 660,000 kWh</strong>&lt;br&gt;Central Taiwan Science Park Facility has installed rooftop solar power generation equipment, and the power generation capacity reached 660,000 kWh in 2022</td>
<td><strong>Develop Carbon Emissions Information Platform</strong>&lt;br&gt;Winbond collaborates with Microsoft to develop Carbon Emissions Information Platform</td>
</tr>
<tr>
<td><strong>Water Recycling Rate reached 80.5%</strong>&lt;br&gt;The water recycling volume reached 11.15 million cubic meters, and the plant-wide water recycling rate reached 80.5%</td>
<td><strong>Rooftop solar power system generated a total of 660,000 kWh</strong>&lt;br&gt;Central Taiwan Science Park Facility has installed rooftop solar power generation equipment, and the power generation capacity reached 660,000 kWh in 2022</td>
</tr>
<tr>
<td><strong>Water Conservation of 3,530 megaliters</strong>&lt;br&gt;Cumulative water conservation of 3,530 megaliters from 2018 to 2022</td>
<td><strong>Waste recycling rate 90.1%</strong>&lt;br&gt;8,633 metric tons of waste were recycled, with a recycling rate of 90.1%</td>
</tr>
</tbody>
</table>

### Social

<table>
<thead>
<tr>
<th><strong>100% coverage of human rights due diligence investigation</strong>&lt;br&gt;In 2022, human rights due diligence were implemented for all employees for the first time</th>
<th><strong>Childcare subsidy has exceeded 290 million</strong>&lt;br&gt;Provide employees’ children with a “childcare subsidy” of 6,000 NT per month. From 2011 to 2022, a total of NT$298,832,873 has been paid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>82% utilization rate of LOHAS leave in 2022 (7 days LOHAS leave per year)</strong></td>
<td><strong>The average salary of non-supervisors is 1.93 million</strong>&lt;br&gt;The average salary of non-supervisor full-time employees is 1.93 million</td>
</tr>
<tr>
<td><strong>Weighted employment of disabled individuals increased by 147%</strong>&lt;br&gt;By the end of 2022, there will be 32 employees with disabilities on the job, and the number of employees weighted according to the degree of disability will be 47</td>
<td><strong>Invest nearly NT$10 million</strong>&lt;br&gt;Nurturing cross-disciplinary talent in the semiconductor field, collaborating with National Cheng Kung University to promote the ‘Semiconductor Program’</td>
</tr>
<tr>
<td><strong>The average training hours of staff is 42 hours</strong></td>
<td><strong>Human Rights Due Diligence Report</strong>&lt;br&gt;First independent Human Rights Due Diligence report published in 2023</td>
</tr>
</tbody>
</table>

### Governance

<table>
<thead>
<tr>
<th><strong>TCFD Report</strong>&lt;br&gt;Publish the first independent TCFD Report in 2023</th>
<th><strong>Winbond Zero-carbon family day</strong>&lt;br&gt;The first purchase of blue carbon credits to offset the carbon emissions for the family day, to achieve a zero-carbon family day</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Winbond Zero-carbon family day</strong>&lt;br&gt;The first purchase of blue carbon credits to offset the carbon emissions for the family day, to achieve a zero-carbon family day</td>
<td><strong>Investing NT$555 million in green energy development</strong>&lt;br&gt;Investing in renewable energy development projects and continuing alliances and exchanges with green energy industry suppliers</td>
</tr>
<tr>
<td><strong>NT$20 billion sustainability-linked syndicated loan</strong>&lt;br&gt;Signed a NT$20 billion sustainability-linked syndicated loan joint credit agreement with 11 banks, and maintained sustainable performance such as carbon reduction, power saving and corporate governance</td>
<td><strong>Taiwan Climate Partnership (TCP)</strong>&lt;br&gt;Join the Taiwan Climate Partnership in 2022, and the chairman served as a member of the alliance</td>
</tr>
<tr>
<td><strong>1,000 tons of CO2e blue carbon credits</strong>&lt;br&gt;Invested in Pakistan’s mangrove conservation project, which is currently the largest blue carbon project in the world</td>
<td><strong>ISO 27001</strong>&lt;br&gt;Certified ISO 27001 Information Security Management System , and set up Chief Information Security Officer</td>
</tr>
</tbody>
</table>
| **Winbond Group selected as one of the Top 100 Global Innovators from Clarivate** | **Winbond’s Story**

Contribution to Sustainability

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**Green Products**

**Environmental Sustainability**

**Human Rights and Social Inclusion**

**Corporate Governance**

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**Appendix**
Winbond's Story

Proactive Innovation, Pioneering a Zero Carbon Future
Deliver low-carbon footprint future by innovation

Winbond is a technology innovation company that strives to improve the quality of human life and ensure the sustainability of the planet through technological advancements. — Winbond

With the global goal and challenge of achieving net-zero emissions by 2050, Winbond continuously enhances relevant research, development, and manufacturing efforts. Winbond actively invests in the development of green products and technologies and have embarked on a digital transformation journey to create the "Carbon Emissions Information Platform." Winbond aims to realize the goal of transitioning towards net-zero emissions by focusing on three key areas: innovative designs for green products, implementing green and low-carbon production practices, and constructing a green information platform.

Green Design: Innovation in Sustainable Product Design

Winbond understands that following the same path won’t lead to new destinations. Starting from the concept of product life cycle, Winbond focuses on selecting low-carbon raw materials, continuously improving processes and design innovation, enhancing productivity and reducing design time to achieve smaller chip sizes, fewer pins. With incorporating Design for Test (DFT) techniques, this results in smaller form factor, lower pin counts, shorter testing time, and finally significantly reducing carbon emissions generated during the manufacturing process. In addition, Winbond emphasizes the use of environmentally friendly materials for packaging, supports low-temperature soldering processes, and reduces PCB usage through smaller form factors. These efforts help downstream customers reduce overall raw material usage and energy consumption during PCBA production, further lowering carbon emissions. Moreover, Winbond commits to reduce power consumption and prolonging power usage time during the product usage phase. Besides continuously design the Flash memory with lower operating currents along with process evolution, Winbond has developed new processes and circuit architectures, and introduced the world’s first NOR Flash that supports operating voltage of 1.2V. At every stage of the product life cycle, Winbond considers energy-saving and carbon reduction measures, striving towards net-zero emissions.

— Winbond integrates product performance with environmental protection, ensuring a sustainable approach throughout the product life cycle —

Green product innovation

In the era of portable electronic products and the Internet of Things, Winbond continues to focus on designing low-power-consumption products. For example, our value is demonstrated in the context of net-zero and environmental sustainability by offering the Known Good Die (KGD) sales model, where memory chips are packaged together with logic chips, creating energy-efficient and carbon-saving end products that prioritize low carbon emissions and green features.

Known Good Die (KGD) quick fact

With the assistance of Winbond’s expertise, many customers utilize the Known Good Die (KGD) of our flash memory products for System-in-Package (SiP) solutions. Flash memory chips are stacked with controller chips and placed in a single package or module to provide SiP solutions. KGD of other components can also be stacked with flash memory KGD, saving packaging materials, improving performance, and reducing power consumption and chip size.
Winbond Group selected as one of the Top 100 Global Innovators from Clarivate

With "Aggressive Innovation" as one of our core values, Winbond was selected as one of Clarivate’s Top 100 Global Innovators. The evaluation criteria for this award include not only the total number of patents, reaching 500, but also factors such as the industry influence, track record of success, globalization, and technology applications. Out of 3,200 candidate organizations worldwide, Winbond Group has been recognized, demonstrating our strength in innovative research and development, as well as the global impact of our patent portfolio. This recognition from an international evaluation institution proves that Winbond is a semiconductor company that values research and development investments, pursues growth driven by innovation, and is committed to environmental sustainability. From the product design stage, Winbond focuses on using low-carbon materials and developing green products that are high-performance, low-power, and require minimal resources. Our goal is to protect and minimize our impact on the environment.

Green Information Construction

Carbon management serves as an important indicator for mitigating climate change. In 2022, Winbond collaborated with consulting teams from Microsoft Taiwan and SoftwareOne Taiwan to develop the “Carbon Emissions Information Platform.” By leveraging Microsoft's cloud services and Power Platform, Winbond has created an automated integration system for carbon emission data, enabling real-time data visualization and management.

The semiconductor manufacturing process is complex and diverse, presenting three major challenges in integrating carbon emission data: standardization, manual processing, and visualized management. The "Carbon Emissions Information Platform" addresses these challenges and provides solutions for various pain points. For example, it allows for inventorying historical data, monitoring dynamic reports, and simulating and predicting future carbon emissions based on future capacity growth. This enables the evaluation of relevant reduction measures, facilitating the construction and management of green information and supporting the goal of transitioning to a greener paradigm.

4 Steps to launch a digital zero-carbon new future

The "Carbon Emissions Information Platform" completed Step 1 calculations of GHG inventory for Scopes 1 and 2 in 2022. Winbond plans to achieve Step 4 by the end of 2023, calculating Scope 3 and product carbon emissions. Winbond will provide customers with carbon footprint data for purchased products and incorporate activity data analysis and supplier carbon emissions information. The goal is to integrate and provide real-time information and management for green products and green manufacturing through the Carbon Emissions Information Platform.
Green Manufacture

Since the first day of constructing our Kaohsiung Fab, Winbond has been considering how to balance the environment, talent, and manufacturing efficiency. The smart factory leverages automation technology, artificial intelligence, and big data to enhance production efficiency, enabling human resources to focus on high-value innovation. The Kaohsiung Fab has adopted high-energy-saving designs, resulting in significant reductions in energy consumption (as shown in the table below). This achievement aligns with the goals of environmental protection, carbon reduction, and the realization of green and low-carbon manufacturing.

**Achievements in Energy Saving and Carbon Reduction at the Kaohsiung Fab**

<table>
<thead>
<tr>
<th>Type</th>
<th>Name of energy-conservation/carbon reduction project</th>
<th>Energy Savings (kWh)</th>
<th>Energy Savings (GJ)</th>
<th>GHG Emission Reduction (tCO₂e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy-Efficient Design of the Fab</td>
<td>Waste heat recovery from hot ultra-pure water heat pump</td>
<td>8,488,000</td>
<td>30,558</td>
<td>4,320</td>
</tr>
<tr>
<td></td>
<td>Waste heat recovery from air compressor dryer</td>
<td>54,750</td>
<td>197</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>High-efficiency energy-saving boiler</td>
<td>9,855,000</td>
<td>35,478</td>
<td>3,230</td>
</tr>
<tr>
<td></td>
<td>Increased outlet water temperature of chilled water system</td>
<td>10,444,110</td>
<td>37,599</td>
<td>5,316</td>
</tr>
<tr>
<td></td>
<td>LED Energy-conserving lighting</td>
<td>1,656,000</td>
<td>5,962</td>
<td>843</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>30,497,860</strong></td>
<td><strong>109,793</strong></td>
<td><strong>13,737</strong></td>
</tr>
</tbody>
</table>

**Note** 1. The energy-saving design of the new fab was based on the CTSP Fab as the reference. 2. The GHG reduction of the high-efficiency energy-saving boiler project was the comprehensive calculation result of electricity saving and natural gas usage.

**Energy-conserving Design of Kaohsiung Fab**

With green production as the goal, Winbond’s Kaohsiung Fab incorporated numerous energy-conserving designs in its initial design. The facility is able to conserve large amounts of energy through methods such as recycling waste heat, using low-power LED lights, and adopting energy-conserving chiller designs. Take waste heat recovery and energy-saving chiller design as examples:

1. Waste heat recovery from hot ultra-pure water heat pump: Waste heat generated by the process cooling water (PCW) is recovered. A heat pump is used to heat the UPW, which is then supplied to the equipment.

   - Heat Source: Machines generate waste heat
   - Heat pump transfers the heat from higher-temperature PCW to UPW
   - UPW heated to become hot UPW
   - UPW supplied to machines

2. Increased outlet water temperature of chilled water system: The outlet water temperature of the chiller is increased to 12°C, significantly reducing energy consumption compared to the previous 9°C chiller operation.

   - Increased outlet water temperature of chilled water system: The outlet water temperature of the chiller is increased to 12°C, significantly reducing energy consumption compared to the previous 9°C chiller operation.
ISO 50001 Energy Management System Certification

In 2022, Winbond’s CTSP Fab achieved ISO 50001 Energy Management System certification. This certification establishes management procedures, energy baselines, and energy performance indicators. Through the P-D-C-A cycle, continuous improvement is pursued, optimizing equipment related to major energy consumption. The goal is to achieve systematic energy management. By implementing the ISO 50001 management system, Winbond has achieved tangible benefits such as improved energy efficiency, reduced energy costs, and decreased greenhouse gas emissions. This includes effectively managing and optimizing the electricity efficiency of process and utility equipment, as well as implementing various carbon reduction measures, such as introducing perfluorocarbons (PFCs) emissions reduction projects, smart air conditioning, energy-saving chillers, waste heat recovery from hot ultra-pure water heat pumps, and high-efficiency energy-saving boilers, to reduce carbon emissions during the production process.

Implement energy-saving measures

By implementing the ISO 50001 Energy Management System, Winbond has successfully completed 21 energy-saving measures in 2022, with 35.9 million kWh of electricity saved and GHG emissions of 16,485 metric tons reduced.

PFCs emissions reduction projects

PFCs emissions reduction projects: Over the past 15 years, a cumulative reduction of approximately 2.1 million metric tons has been achieved.

Energy-saving chillers

In 2022, Winbond collaborated with National Taiwan University on an industry-academia partnership to implement group control settings for chillers. By establishing a kW/RT energy consumption model and combining it with weather forecast data from the Central Weather Bureau for the next six hours, optimal settings for chiller energy savings were derived, resulting in an energy-saving ratio of approximately 2.8%.

Objective: Optimize chiller parameters setting → Improve power efficiency and reduce electricity consumption

<table>
<thead>
<tr>
<th>AS-WAS</th>
<th>NOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consider current individual component temperature settings</td>
<td>Predict future 6-hour air conditioning demand</td>
</tr>
<tr>
<td>Integrate all components to achieve multi-point temperature optimization recommendations</td>
<td></td>
</tr>
</tbody>
</table>

### Table: Chiller Performance Comparison

<table>
<thead>
<tr>
<th>Time</th>
<th>Energy consumption (kWh/RT)</th>
<th>Time</th>
<th>Energy consumption (kWh/RT)</th>
<th>Reduced energy consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>2022/1</td>
<td>0.71</td>
<td>2023/1</td>
<td>0.69</td>
<td>2.82%</td>
</tr>
<tr>
<td>2022/2</td>
<td>0.72</td>
<td>2023/2</td>
<td>0.70</td>
<td>2.78%</td>
</tr>
<tr>
<td>2022/3</td>
<td>0.72</td>
<td>2023/3</td>
<td>0.70</td>
<td>2.78%</td>
</tr>
<tr>
<td>2022/4</td>
<td>0.72</td>
<td>2023/4</td>
<td>0.70</td>
<td>2.78%</td>
</tr>
</tbody>
</table>

Note: Due to the schedule of compiling the Corporate Sustainability Report, the energy consumption comparison table is disclosed up to April.
Climate change is the biggest global risk and a significant challenge for businesses. Winbond recognizes the trends and, by strengthening its core competencies, is gradually exploring green and sustainable business opportunities. In 2022, Winbond elevated the organizational level of the ESG committee to be under the purview of the Board of Directors, with the chairman directly serving as the committee's chairman. Winbond has allocated resources to three main aspects: TCFD climate governance, green investments, and promoting a carbon reduction culture. Winbond aim to strengthen employees’ awareness and behavior towards carbon reduction through the communication of principles and practical operations, thus exerting a positive impact on the environment and society, and fulfilling our commitment to sustainable development.

The organizational level of the ESG committee elevated to be under the purview of the Board of Directors

Winbond has restructured the current "Winbond Corporate Social Responsibility (CSR) Implementation Committee“ into the ESG committee in May 2022 (as shown in Figure 1). The level of committee is raised to be under the purview of the Board of Directors. It shall be composed of several directors and five to seven executive managers from relevant departments including the President. The term of the directors is the same as the term of the Board of Directors while the Chairman serves as the chairperson of the committee.

Under the ESG committee, Winbond established the ESG office and five task forces, including Environmental Sustainability, Green Products, Human Rights and Social Inclusion, Sustainable Supply Chain, and Corporate Governance. Winbond has developed a sustainable strategy framework (as shown in Figure 2) and continue to promote sustainable actions. The committee reports its implementation achievements to the Board of Directors every fourth quarter to ensure the promotion and implementation of works related to corporate sustainability.

--- ESG committee ---

--- Carbon footprint as an assessment indicator of innovative contributions ---

<table>
<thead>
<tr>
<th>Vision</th>
<th>E</th>
<th>Measure innovative contributions with “carbon footprint”</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td></td>
<td>To be kind, righteous, proper, wise and trustworthy in everything we do. We would treat others as ourselves, and extend that to all people and even everything</td>
</tr>
<tr>
<td>G</td>
<td></td>
<td>Conduct business with integrity and ethical behavior</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Green Product</th>
<th>Sustainable Supply Chain</th>
<th>Human Rights and Social Inclusion</th>
<th>Corporate Governance</th>
<th>Talent</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESG</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Talent</th>
<th>ESG</th>
<th>Awareness Building (Education and Training, Sustainable Education and Training Platform)</th>
<th>ESG Sustainability Capabilities Building</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Processes</th>
<th>Risk Management Process</th>
<th>Sustainable Governance Process</th>
<th>Compliance Disclosure</th>
<th>Sustainable Innovation Culture (ESG Award)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td></td>
<td>G</td>
<td>G</td>
<td>ESG</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technology</th>
<th>ESG Digital Transformation</th>
<th>ESG Sustainable Data Establishment and Application</th>
<th>E</th>
<th>Carbon Emissions Information Platform</th>
</tr>
</thead>
</table>

--- Figure 1 ---

--- Figure 2 ---
Enhancing TCFD climate change governance

To strengthen climate change governance, a TCFD Task Force has been established and the TCFD management framework has been introduced for us to identify climate-related risks and opportunities as the basis for reviewing Winbond’s strategies in response to climate issues and establishing relevant management indicators. Winbond also publishes climate-related financial disclosure reports to continuously review and focus on enhancing the Winbond’s operational resilience towards climate change.

Joining Taiwan Climate Partnership to exert social influence

In 2022, Winbond joined the Taiwan Climate Partnership, with Chairman Yu-Cheng Chiao serving as a board member of the Partnership. By joining the Taiwan Climate Partnership, Winbond aims to leverage its industry influence and take practical actions to realize carbon reduction goals in collaboration with the upstream and downstream supply chains. In addition to responding to the demands of international brand customers, this move also demonstrates Winbond’s high level of concern for climate change issues.

Initiating green investments

Investing NT$555 million in green energy development as a crucial first step towards achieving carbon neutrality

Upon conducting a comprehensive GHG inventory across the entire Company, Winbond discovered that indirect energy emissions accounted for approximately 89% of the total emissions. To meet carbon reduction and carbon neutrality targets, Winbond has been actively evaluating investments in renewable energy. In 2022, Winbond invested NT$555 million in green energy development related business, marking a crucial first step in initiating green investments. Through green investments and continuous collaboration with green industry suppliers and alliances, Winbond aims to expand the scope and impact of its green investments.
Winbond has acquired carbon credits from the world's largest blue carbon project, contributing to environmental protection and biodiversity conservation.

In the face of the climate crisis, the next decade is crucial, and global resources and collective innovation are needed. Winbond has actively evaluated green investments and invested in the Pakistan Mangrove Conservation Project in 2022, which is currently the world's largest blue carbon project. Covering an area of over 350,000 hectares, the project encompasses habitats of several endangered species and brings significant climate adaptation benefits to the region's biodiversity, and contributes to climate change mitigation, biodiversity conservation, and job creation opportunities.

Winbond's investment in the world's largest blue carbon project has contributed to climate change mitigation, biodiversity conservation, and job creation efforts.

The Pakistan Mangrove Conservation Project is currently the world's largest blue carbon project, covering an area of over 350,000 hectares. It encompasses habitats of several endangered species and brings significant climate change adaptation benefits to the region's biodiversity. The project is expected to benefit around 42,000 local residents through various co-benefits, including the creation of over 21,000 full-time jobs, access to clean drinking water sources, conservation-focused education and training, public health improvements, and gender equality advocacy.

Driving a carbon reduction culture: embracing sustainable thinking everywhere

Corporate sustainability and global sustainability are interconnected concepts, and it is not a new issue for Winbond. Winbond actively reduces waste and implements a carbon reduction culture in their daily operations. The "Zero Carbon Family Day" is an example of this. In a fun and educational way, Winbond encourages employees and their families to actively conserve energy and reduce carbon emissions in their daily lives, such as bringing their own eco-friendly food containers, using reusable cups, promoting carpooling, ethical purchasing, environmental awareness, waste reduction, and using electric vehicles, among other practices, to collectively contribute to mitigating climate change.

Zero Carbon Family Day strengthens the carbon reduction awareness of all employees and extends influence to the next generation

Winbond's "Zero Carbon Family Day" focused on promoting net-zero emissions and green living, with nearly 7,000 employees and their families participating together, showing their concern for green sustainability issues and expanding their influence!

For the first time, the carbon emissions generated on Family Day were retired through the purchase of blue carbon credits, achieving a zero carbon family day. The retirement certificate was issued by the Climate Impact X, a carbon credit exchange based in Singapore.
In a rapidly changing world, talent is Winbond’s ace in transforming the world

The cultural spirit, excellence in quality, research and development innovation, and sustainable development of a company all rely on “people” for inheritance and creation. With the impact of declining birth rates expanding, Taiwan’s semiconductor industry will also face a shortage of talent. Therefore, Winbond not only values “talent cultivation” but also knows how to cherish talent. Winbond is committed to providing a good learning environment for potential talents and senior employees alike, initiating proactive actions to support them in terms of technology, resources, and life. Winbond hopes to cultivate a stronger semiconductor industry talent pool for Taiwan and even the world, through Winbond’s professionalism, influence, and encouragement of a passion for learning.

Establishing an ecosystem that supports employees’ passion for learning

As a technology innovation enterprise, Winbond values talent development and has established a learning ecosystem to cultivate semiconductor talents through a culture of passionate learning. Winbond empowers employees with the key to learning, encouraging them to learn anytime, anywhere based on their own learning needs. Winbond’s learning platform offers six major programs with over 3,200 courses, allowing employees to learn at their own pace. At the same time, Winbond provides diverse learning channels to assist employees in their personal career development.

Driving digital transformation and continuously empowering employees

Innovations and the development of artificial intelligence technology are accelerating the transformation of our future work and life. As talent is the core of Winbond’s sustainable development, Winbond places great emphasis on talent development and cultivation, aiming to assist employees in facing the future world with sufficient capabilities. Winbond continues to drive digital transformation and have established the Data Science Program to support lifelong learning for employees.
## Jointly cultivating semiconductor talent in Taiwan through industry-academia collaboration

To enhance the quality of semiconductor talent in Taiwan, Winbond actively supports the collaboration between industry, government, and academia to foster talent. Through various means such as technology exchange, knowledge sharing, and teaching, Winbond actively participates in the cultivation of talent in society, aiming to enhance Taiwan's industrial competitiveness.

### Establishing Semiconductor Program to cultivate the next generation of talent

With a sense of responsibility for the development of Taiwan's semiconductor industry and talent cultivation, Winbond invested nearly NT$10 million each year to assist in the establishment of the Academy of Innovative Semiconductor and Sustainable Manufacturing at National Cheng Kung University. In 2022, Winbond collaborated with the Academy to launch the "Semiconductor Program," which was planned by Winbond's senior executives. The program aims to help students lead the future semiconductor industry and develop a foundational understanding of artificial intelligence. Winbond also provides scholarships, internship/visit opportunities, guaranteed job interviews, and signing bonuses as part of its high-quality programs, encouraging the new generation of talent to join the semiconductor industry. As of 2022, over a hundred students have participated in Winbond's Semiconductor Program.

### Semiconductor Program Planning

<table>
<thead>
<tr>
<th>Essential semiconductor expertise and skills</th>
<th>Semiconductor professional knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possessing data science concepts (Next-generation requirements)</td>
<td>Fundamentals of AI courses</td>
</tr>
<tr>
<td>Core competencies (Practical and quick integration into the organization)</td>
<td>Key technologies and leadership practices courses</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component process integration program</th>
<th>Equipment program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required: 24 credits, Elective: 6 credits (Semiconductor process/Linear algebra/Experimental design, etc.)</td>
<td></td>
</tr>
<tr>
<td>Required: 3 credits (Data analysis, machine learning, computer vision, etc.)</td>
<td></td>
</tr>
<tr>
<td>Required: 3 credits (Taught by industry experts from Winbond)</td>
<td></td>
</tr>
</tbody>
</table>

**Total 36 credits**

### Collaborative smart manufacturing project for joint research and innovation environment

From 2021 to 2022, Winbond cooperated with Professor Chia-Yen Lee of National Taiwan University on the smart manufacturing project. The graduate students led by the professor and Winbond jointly conducted project development and research. The main contents included "Data Analytics Efficiency", "Quality Enhancement", "Yield Improvement", "Energy Saving Analysis" and other topics to help students connect with the industry in advance while at school.

### Research and development sponsorship for industry upgrading

Winbond sponsored the "Chair Professor Research Grant" project at National Yang Ming Chiao Tung University to assist the university in enhancing its academic standards. The sponsorship aimed to attract and retain outstanding domestic and international scholars, supporting professors in continuously improving their teaching and research capabilities, with a dedication to advancing academic research and fostering talent development in the field of information and communication technology. By combining resources with academia, Winbond strives to improve the environmental quality of the semiconductor industry.
Not only do Winbond take care of our employees, but Winbond also take care of their families

Employees are long-term partners of Winbond, and as they enter the family stage of life, Winbond strives to become the most reliable ally for every employee who becomes a parent. We provide childcare allowances, flexible working hours, work-from-home options, and LOHAS Holiday, allowing our employees to balance their work and family life. Winbond is one of the few companies in the industry that extends group medical insurance coverage to employees’ spouses and children.

Creating a friendly work environment during the COVID-19 pandemic

During the COVID-19 pandemic, Winbond has implemented various employee welfare measures related to epidemic prevention based on the employee needs. These measures include paid vaccine leave, epidemic care leave, and group epidemic insurance, which covers employees, their spouses, and children. As work and lifestyle patterns have changed during the pandemic, Winbond provides systematic and professional psychological counseling services to support employees. Remote medical consultations and workplace resilience seminars are also conducted to provide employees with emotional and mental support during the epidemic. Winbond aims to create a friendly work environment during the epidemic, ensuring that employees can work in a healthy and secure manner.

Industry-leading childcare allowance

Winbond believes in creating a supportive work environment that provides resources for childcare. This not only helps mitigate the risks associated with declining birth rates but also recognizes that every child has the right to receive proper care and development. Winbond offers a monthly “Childcare Allowance” of NT$6,000 for employees’ children in the hopes of easing the financial burden of childcare and providing support for employees’ career development.

Since 2011, the Childcare Allowance has cumulatively reached NT$298,832,873; benefiting a total of 1,122 employees and 1,667 children who have received this support!

Father of five children

We have enjoyed the company’s childcare allowance, and you can too!

During my 15 years at Winbond, I went from being single to getting married and having five sons.

I am extremely grateful for Winbond’s supportive policies that help employees achieve a balance between work and family. The LOHAS Holiday and flexible working hours have provided me with more quality time to spend with my children. The reasonable vacation and delegation system also allow us to focus on our children when we are at home.

But the most significant support has been the childbirth allowance. When we had our first child, we had to start from scratch, buying everything from diapers and cribs to baby clothes, car seats, strollers, and toys. They were all very expensive, and the quarterly childbirth allowance provided over four years felt like a regular dose of happiness. It greatly relieved the financial burden of raising children. Winbond’s genuine commitment to its employees’ families and personal lives is not just a slogan; it’s something we can genuinely feel and experience.
Contribution to Sustainability
- Taking the Lead

26  I. ESG Implementation Framework
27  II. Sustainable Development Governance
32  III. Materiality Analysis and Stakeholder Engagement
43  IV. Sustainable Practices
I. ESG Implementation Framework

Winbond strives to become "a hidden champion in providing sustainable semiconductors to enrich human life". Under the leadership of the Chairman, Winbond upholds integrity, innovation, and passion, continuously enhancing corporate value, while paying attention to global trends, caring about social issues, and responding to the expectations of stakeholders. Winbond has developed a strategic blueprint based on the vision of ESG in three frameworks, aligning with the action plan for the United Nations Sustainable Development Goals (SDGs). By integrating sustainability principles into our core capabilities, Winbond is fostering new possibilities for talent, processes, and technologies, and creating a better future for society.

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<table>
<thead>
<tr>
<th>Strategy</th>
<th>Green Product</th>
<th>Sustainable Supply Chain</th>
<th>Environmental Sustainability</th>
<th>Human Rights and Social Inclusion</th>
<th>Corporate Governance</th>
</tr>
</thead>
</table>
| Action Plans | • Energy-efficient product planning and promotion  
• Development of new green manufacturing processes  
• Product carbon footprint tracking system | • Implementation of sustainable risk assessment  
• Development of a low-carbon supply chain  
• Execution of due diligence on conflict minerals  
• Supplier sustainability training and communication  
• Establishment of a digital supplier management platform | • Creation of a carbon emissions information platform and reporting system  
• Carbon reduction plan  
• Participation in energy-saving and carbon reduction initiatives  
• ISO 50001 energy management system and energy-saving measures  
• 2050 net-zero plan | • Best employer  
• Talent cultivation  
• Creating a diverse and inclusive workplace  
• Human rights due diligence  
• Social impact  
• Semiconductor academy | • Corporate governance assessment  
• Climate-related financial disclosures  
• Green energy procurement  
• Carbon credits  
• Protection of intellectual property rights  
• Preservation of trade secrets  
• Maintenance of information security defense mechanisms and resilience |

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|--------|----------|-----------|---------------------------------|-------------------------------------|-------------------------|-------------------------------|---------------------|------------------------------------------|----------------------|-----------------------------------------------|------------------------------------------|

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Winbond Sustainability Strategy Framework

Vision

- Measure innovative contributions with “carbon footprint”
- To be kind, righteous, proper, wise and trustworthy in everything we do. We would treat others as ourselves, and extend that to all people and even everything.
- Conduct business with integrity and ethical behavior.
II. Sustainable Development Governance

In 2015, Winbond established the "Winbond Corporate Social Responsibility (CSR) Implementation Committee" as the main management for promoting sustainable development within the Winbond. It was restructured into the ESG Committee in 2022. The level of committee is raised to the level of the Board of Directors. The committee convenes at least twice a year, with the Chairman serving as its chairperson. The purpose of the committee is to plan Winbond’s sustainable development strategies and goals, formulate corresponding action plans, integrate company resources, and address various sustainability issues to enhance operational competitiveness.

Under the ESG committee, Winbond established the ESG Office and five task forces, including Environmental Sustainability, Green Products, Human Rights and Social Inclusion, Sustainable Supply Chain, and Corporate Governance. The committee regularly reports its implementation results to the Board of Directors annually to ensure the promotion and implementation of works related to corporate sustainability.
Sustainability Statement

Hsiang-Yun Fan  DRAM Product Business Group Vice President
Winbond is committed to the research and innovation of low-power memory products, aiming to enrich human life through green semiconductor technology and mindset. Winbond strives to make concrete contributions to our customers and society in terms of sustainability.

Wen-Hua Lu  Memory IC Manufacturing Business Group Vice President
Risks are also opportunities, and Winbond actively manages controllable operational risks to minimize their impact. Winbond provides abundant resources to stabilize the supply chain and continuously explore business models that create value for our customers. Through product and process innovation, Winbond hopes to establish long-term and sustainable win-win relationships with our customers.

Jen-Lieh Lin  Flash Memory IC Business Group Vice President
Net-zero carbon emissions have become a global consensus, and through green product design process, Winbond brings significant benefits on carbon emission to end users, by memory product design, chip manufacture, device making and user end devices. Winbond continuously optimizes product design and process technology, reduces the size of chips and use small form factor packages, which effectively saves materials and reduces carbon emissions per chip. Additionally, Winbond aims to reduce energy consumption during end product usage. Winbond commits on reducing the carbon reduction to enrich human experience and also environment friendly. From product design and manufacturing to end-user usage, Winbond strives to create maximum value and benefits to customers.

Wen-Chang Hong  Sales Center Vice President
Business integrity and innovation are embedded in Winbond’s DNA. Winbond strives to continuously innovate and develop green products that enrich human lives while contributing to carbon reduction on our planet.

Pei-Lin Pai  Technology R&D Group Vice President
Winbond is committed to develop low carbon footprint process, production, and products for environment protection, starting from the planning phase and throughout the development cycles. We will never stop simplifying and optimizing our process technology to ensure market competitiveness and business sustainability.

Chi-Chung Chou  Finance Center Chief Financial Officer
In addition to financial performance indicators, corporate value should also emphasize the expectations of diverse stakeholders for sustainable development. Winbond will integrate financial information and promote cross-departmental communication and collaboration to fully implement ESG strategies and establish the long-term impact of an excellent company so that Winbond can achieve the sustainable vision of environmental and social well-being and mutual prosperity.

Chi-Ching Lai  Human Resources Division Human Resources Executive
In addition to fostering better employee work-life balance and providing learning opportunities, Winbond also actively participates in social welfare activities through donations, volunteer services, and many other means of support. Our goal is not only making positive contributions to society but also promoting the Winbond’s sustainable development and advancing diverse culture and talent development.

Jing-Fong Tsai  Quality & ESH Center Vice President
R&D innovation is Winbond’s most powerful advantage in adapting to trends. Winbond has incorporated it into our company’s development path, aligning it with market demands while maintaining service quality. With confidence, our team continues to strive towards the development of high-end products, aiming to cultivate competitiveness and core technologies to face various risk challenges.

Shu-Cheng Chang  Prod. Control and Sub. Management Center Technology Executive
The supply chain is the relationship between a company and its suppliers, including aspects such as materials, equipment, and services. Winbond continuously establishes partnerships with suppliers, working together to achieve ESG goals, promote sustainable development, and further enhance business ethics, environmental protection, social care, and transparency in governance structure.
Outcomes of SDGs promotion

Since the release of United Nations' and Taiwan's Sustainable Development Goals (SDGs), Winbond has immediately begun incorporating SDGs related to our core business into our ESG policy and business approach.

<table>
<thead>
<tr>
<th>Corresponding SDGs</th>
<th>2022 Performance Highlights</th>
<th>Future Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.4</td>
<td>• Data Science Program: Assisting individuals in mastering AI, big data technologies, and commanding AI. Winbond offered physical and online course lectures covering four categories: core, professional, data science, and management. The courses were conducted a total of 2,631 times, with a cumulative participation of 117,526 individuals.</td>
<td>• Use Kirkpatrick's four-level educational training evaluation model to track course effectiveness assessment and continuously optimize the cloud-based learning platform. Increase the interactivity of live courses to enhance employee competitiveness, self-realization, and improve job performance.</td>
</tr>
<tr>
<td></td>
<td>• Industry-academia collaboration - Semiconductor Academy: Investing NT$10 million and collaborating with NCKU to design semiconductor courses, with 17 instructors involved in this initiative.</td>
<td>• Continue to assess and promote new water-saving measures</td>
</tr>
<tr>
<td></td>
<td>• Education grants for underprivileged students: To supplement education resources for children from impoverished families so they can attend school on a regular basis, Winbond has been working with Taiwan Fund for Children and Families since 2017 by inviting employees to join the effort of raising education grants. From the general manager to grassroots staff, there has been enthusiastic participation in donation drives. From 2017 to 2022, a total of 4,343 beneficiaries have been supported, with a cumulative donation amount of NT$17,372 million. In 2022, 1,032 students were assisted, with a donation amount of NT$4,128 million.</td>
<td>• Improve the reuse rate of recycled water</td>
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<td></td>
<td>• Promoting a culture of passionate learning: The LMS platform offers five major programs with a total of 3,241 courses. This allows employees to learn anytime and anywhere at their own pace. In 2022, there were a cumulative 117,526 participants with a total of 142,711 learning hours.</td>
<td>• Reduce water consumption per unit of product</td>
</tr>
<tr>
<td></td>
<td>• Water recycling: Winbond values all resources and is committed to improving the reuse rate of recycled water. In 2022, the overall water recycling rate in the entire plant was approximately 80.5%, and the process water recycling rate was approximately 89%.</td>
<td>• Fab water recycling rate reaches 80% or more</td>
</tr>
<tr>
<td></td>
<td>• In 2022, three new water-saving measures were implemented, resulting in an increase in water savings of approximately 64,000 cubic meters.</td>
<td>• Align with the government’s renewable energy policy and assess the feasibility of implementing renewable energy installations</td>
</tr>
<tr>
<td>6.4</td>
<td>• Invested 550 million in renewable energy projects to increase the development of the renewable energy industry and increase the proportion of renewable energy in the global energy structure.</td>
<td>• Achieve a year-on-year reduction of over 1% in the electricity consumption per unit of product</td>
</tr>
<tr>
<td></td>
<td>• A 499kW rooftop renewable energy generation equipment has been installed, and the renewable energy it generated was sold to Taiwan Power Company. In 2022, approximately 660,000 kWh of power was generated.</td>
<td>• Increase the utilization rate of renewable energy</td>
</tr>
<tr>
<td></td>
<td>• In 2022, the CTSP Fab obtained ISO 50001 certification for energy management systems, effectively integrating energy management into engineering operations. The Kaohsiung Fab is also planning to adopt ISO 50001, aiming to expand the scope and effectiveness of energy management.</td>
<td></td>
</tr>
<tr>
<td>7.2</td>
<td>• Winbond strives to create economic values for various stakeholders. In 2022, the company's consolidated revenue totaled NT$94.53 billion, a slight decrease of 5% compared to 2021. The consolidated net income after tax was NT$15 billion, with an earnings per share of NT$3.25.</td>
<td>• Continue to monitor market changes and improve our financial performance</td>
</tr>
<tr>
<td></td>
<td>• The employment rate for individuals with disabilities increased by 147%, with 32 employees with disabilities in position by the end of 2022. Taking into account the weighted number of employees based on the severity of disabilities, the total reached 47. The employment rate exceeded legal requirements.</td>
<td>• Understand the situation of employees with disabilities and provide a more inclusive work environment</td>
</tr>
<tr>
<td>8.2</td>
<td>• Winbond’s Story</td>
<td></td>
</tr>
</tbody>
</table>

**Contribution to Sustainability**

**Winbond's Story**

**Sustainable Supply Chain**

**Corporate Governance**

**Human Rights and Social Inclusion**

**Green Products**

**Environmental Sustainability**

**Appendix**

**Preface**
<table>
<thead>
<tr>
<th>Corresponding SDGs</th>
<th>2022 Performance Highlights</th>
<th>Future Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.5</td>
<td>• Winbond continued to actively engage with foreign talent through various channels and provided services to newly hired foreign employees to assist with their relocation and settlement, ensuring a smooth transition for both the employees and their families.</td>
<td>• Winbond aims to accumulate over 5,700 global patents by 2025.</td>
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<tr>
<td></td>
<td>• COVID-19 prevention measures: providing paid leave for vaccination, prevention kits for confirmed cases, epidemic prevention insurance, and rapid antigen test kits were provided.</td>
<td>• Winbond continuously providing guidance to each department to identify and inventory confidential information and trade secrets related to their business responsibilities, in order to further enhance the protection of Winbond’s intellectual property.</td>
</tr>
<tr>
<td></td>
<td>• Group insurance for employees, their spouses and children: offering self-paid group insurance plans which covered employees, their spouses, children, and parents, allowing them to choose different coverage options based on their own needs.</td>
<td>• Continuously implement green design and processes to reduce the size and enhance efficiency, resulting in energy saving and reduced material usage.</td>
</tr>
<tr>
<td></td>
<td>• Flexible working hours/work-from-home: Employees can apply if they have family needs.</td>
<td>• Collaborate with outsourcing partners to promote sustainability development, including conducting carbon footprint assessments/verification, setting carbon reduction targets, and implementing carbon reduction plans.</td>
</tr>
<tr>
<td>9.4</td>
<td>• Winbond seeks to consolidate our competitive advantage through continuous innovation in products and technologies. Winbond expands its production capacity and upgrades production processes to provide customers with energy-efficient and environmentally-friendly green products. Winbond granted nearly 380 patents in 2022, and the accumulated granted patents have exceeded 4,500.</td>
<td>• Achieve a waste recycling rate of over 90%</td>
</tr>
<tr>
<td></td>
<td>• In 2022, Winbond incorporated trade secrets into the IP strategies and set about planning the mechanism of registering trade secrets. A total of 23 trade secret workshops were conducted.</td>
<td>• Promote sustainability awareness and culture</td>
</tr>
<tr>
<td>12.5</td>
<td>• Winbond has incorporated environmental considerations into design practices to actualize the concept of corporate sustainability, achieving a total reuse of 5,200 tons/year of recycled materials in 2022.</td>
<td>• Practice responsible procurement</td>
</tr>
<tr>
<td></td>
<td>• Winbond places importance on corporate sustainability performance and regularly holds supplier conferences to utilize sustainability review standards, actively working with partners to improve. In 2022, Wah Bang’s suppliers/outourcing partners achieved a 100% pass rate in audits and assessments in economic, environmental, and social dimensions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Waste recycling rate: 90.1%.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Promoting sustainability awareness: Establishing the Sustainable Education and Training Platform</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Conflict minerals: 100% of primary suppliers have signed the Winbond Supplier Code of Conduct Commitment Letter, and Winbond formally declared to suppliers Winbond’s policy of not using conflict minerals through website and advocacy letters.</td>
<td></td>
</tr>
<tr>
<td>9.6</td>
<td>• Continue to recruit diverse talents to enhance talent diversity, and promote cultural integration to unleash innovative vitality</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities</td>
<td></td>
</tr>
<tr>
<td>12.8</td>
<td>By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse</td>
<td></td>
</tr>
<tr>
<td></td>
<td>By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature</td>
<td></td>
</tr>
<tr>
<td>13.3</td>
<td>• Established a Climate Change Task Force Team: Members were assigned from various departments under the ESG committee to form a cross-departmental TCFD Task Force Team consisting of over 40 individuals to identify climate risks and opportunities and discuss financial impacts and mitigation measures. The first TCFD report was published in 2023.</td>
<td>• Continue improving the TCFD management mechanism and regularly track management goals.</td>
</tr>
<tr>
<td></td>
<td>• Blue carbon procurement: Winbond invested in the world’s largest blue carbon project, contributed efforts to climate change mitigation, biodiversity conservation, and job creation efforts.</td>
<td>• Develop a TCFD information platform to enhance efficiency through digital tools.</td>
</tr>
</tbody>
</table>
17.16 Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries.

Corresponding SDGs

2022 Performance Highlights

- Winbond promoted supply chain decarbonization and implemented the Co-Sustainability project, with the first phase targeting raw material and outsourcing suppliers.
- In 2022, the Key Supplier ESG Learning Forum was established for comprehensive ESG knowledge exchange and deep learning.
- Winbond communicated and engaged with suppliers to convey and discuss the 10% carbon reduction target for the Winbond supply chain, and conducted carbon footprint assessments/certifications with outsourcing partners.

Future Directions

- In 2023, focus on supplier ESG Learning and Exchange Workshop and Co-Sustainability projects, and targeting key suppliers will be expanded to other types of suppliers.
- Sustainability risk assessments will be implemented for the first-tier key suppliers in 2023 and based on the assessment results, plan corresponding sustainability audit activities.
- Establish a digital supplier management platform to digitize various sustainability surveys, receive information feedback, and share sustainability-related information with suppliers for mutual learning and growth.
Winbond is committed to communicating with stakeholders in a transparent and open manner in order to identify all sustainability topics of concern and incorporate these topics into our corporate sustainability framework. In 2023, Winbond published its first Materiality Analysis Report, disclosing the material topics Winbond had identified and its approach to managing these issues. Based on the GRI Standards published by the Global Sustainability Standards Board on October 2021 (GRI 3: Material Topics 2021), Winbond has conducted a materiality analysis, and defined Winbond's material topics assessment principles as: “issues of significant impact to major stakeholders that also have a noticeable impact on Winbond operations, while staying consistent with Winbond’s sustainable development goals”. In line with our philosophy for managing material topics, Winbond has identified 9 material topics in 2022, after consolidating similar topics into a single topic category: Business integrity and corporate governance, regulatory compliance, risk management (information security and personal information protection, climate-related risks and opportunities), research and development innovation, productivity and business performance, supply chain management, green product (product and service quality), energy and carbon emissions management, human resources management (recruitment, compensation and benefits, employee care, education, and training).

The following is a description of each 2022 material topic:

### List of 2022 Material Topics

<table>
<thead>
<tr>
<th>List of 2021 Material Topics</th>
<th>List of 2022 Material Topics</th>
<th>Description of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Integrity and Corporate Governance</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Regulatory Compliance</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Risk Management</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Research, Development and Innovation</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Productivity and Business Performance</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Supply Chain Management</td>
<td>-</td>
<td>Supply chain management is a topic that Winbond’s senior management has assessed as having a noticeable impact on Winbond operations.</td>
</tr>
<tr>
<td>Green Product (Product and Service Quality)</td>
<td>-</td>
<td>Green products have become an important issue as Winbond continues to progress towards achieving net zero carbon emissions. It is newly-added to Winbond’s list of sustainability topics this year, and also an issue highly concerned by stakeholders and senior management of Winbond.</td>
</tr>
<tr>
<td>Energy and Carbon Emissions Management</td>
<td>-</td>
<td>Energy and Carbon Emissions management is a topic that Winbond’s senior management has assessed as a noticeable impact on operations.</td>
</tr>
<tr>
<td>Human Resources Management (Recruitment, Compensation and Benefits, Employee Care, Education, and Training)</td>
<td>-</td>
<td>Human Resources Management is a new material topic after consolidating multiple issues with similar perspective, and is a topic in line with our material topic management. This topic displays Winbond’s focus on human rights topics, and our commitment on diverse talents development and care.</td>
</tr>
</tbody>
</table>

New topics compared to 2021 are: human resources management (recruitment, compensation and benefits, employee care, education, and training), green products, supply chain management, and carbon emissions management.
## Stakeholder and Material Topic Assessment Process

### 01 Identifying Stakeholders

- **Explanation**
  - Winbond’s senior management fills out a stakeholder identification survey, and material stakeholders are identified after confirming the extent of the stakeholder’s relationship with Winbond.
  - 7 types of stakeholders identified

### 02 Investigate issues of concern

- **Surveys**
  - 282 valid survey responses received from stakeholders
  - Surveys are sent out to the identified stakeholders to understand the level each stakeholder is concerned with each of the 19 different sustainability topics.

### 03 Assess Positive and Negative Impact

- **Assessment surveys**
  - 22 internal impact assessment surveys
  - Based on the definition of “Materiality” provided in the GRI Standards (2021), Winbond’s senior management fills out the operational impact assessment survey, also taking into consideration the concept of double materiality, to assess Winbond’s positive and negative economic, environmental, and social impact through these 19 sustainability topics. They would also assess the likelihood of the impact occurring, and the severity of any potential impact.

### 04 Make Adjustments

- **Board of Directors Confirm 9 Material Topics**
  - The material topics identified in procedures 2 and 3 are organized and submitted to the ESG committee for review. Based on the priority set by Winbond for its Sustainable Development Goals, the impact of each topic on Winbond’s internal corporate development, the external economic, environmental, and social (including human rights) impact of Winbond’s business operations, and in line with Winbond’s philosophy for managing material topics, similar material topics are consolidated into a single topic. Through this adjustment process, 9 material sustainability topics are identified this year.

### 05 Review and Approval of Material Topics

- **Winbond ESG committee reviews the material topics identified, and confirms that they meet sustainability context and complete disclosure requirements. A management approach will also be determined for each material topic, and submitted to the Board of Directors for approval.**

The relevance and precedence of stakeholders are identified by Winbond using the five principles of the AA1000 Stakeholder Engagement Standard (SES) 2015. These include Dependency, Responsibility, Influence, Tension, and Diverse Perspectives.

In 2022, 22 of Winbond senior management were involved in conducting the stakeholder identification survey, and identified the following major stakeholders after confirming the extent of each stakeholder’s relationship with Winbond: government agencies, customers, employees, investors/shareholders, media, suppliers/contractors, and community groups. A stakeholder section has been established on Winbond website, providing stakeholders with ways to communicate with Winbond. Should a stakeholder have any question or suggestion related to a sustainability topic, he/she is able to communicate with Winbond through these methods, with different contacts responsible for responding to different types of stakeholders. This ensures that Winbond is able to communicate effectively with stakeholders.
## Stakeholder Communications and Outcomes

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Importance of Stakeholder to Winbond</th>
<th>Topics of Concern</th>
<th>Channel and Frequency of Communication</th>
<th>2022 Communication Performance</th>
</tr>
</thead>
</table>
| Government Agencies | Government agencies are concerned with Winbond's regulatory compliance on environmental, social and governance (ESG) matters. Its influence on industry development and policy implementation makes it a material stakeholder. | • Business Integrity and Corporate Governance  
• Human Resources Management  
• Energy and Carbon Emissions Management  
• Regulatory Compliance  
• Risk Management | • Official documents and correspondence (ad hoc)  
• Public hearings (ad hoc)  
• Policy information sessions (ad hoc)  
• Regulatory conferences (ad hoc) | • Participated in 18 meetings with environmental, safety and health authorities.  
• 28 on-site audits and inspections were conducted by environmental, safety, and health authorities. |
| Customers | Customers are the main source of the economic value created by Winbond. They are primarily concerned with the ESG performance of Winbond operations. | • Business Integrity and Corporate Governance  
• Energy and Carbon Emissions Management  
• Green Product  
• Regulatory Compliance  
• Productivity and Business Performance | • Winbond official website, telephone, and e-mail (regular)  
• Sales meetings (regular)  
• ESG questionnaire (annual)  
• Technical seminars (annual) | • Winbond invited our customers to take part in the WinTech 2022 conference, and also opened up the conference to online participation. Our customers responded favorably to all conference topics, including those on market dynamics and future trends.  
• Winbond attended and showed off our products at the Electronica electronic components trade fair in Munich, taking this opportunity to seek out more opportunities to collaborate with potential customers.  
• Regular customer communications were carried out through telephone, email, or regular in-person visits. Winbond also adopted the D365 system to keep track of data on past visits. Apart from using the system to track sales, Winbond was also able to look up past interactions between Account Sales and each customer before visiting these customers. |
| Employees | Employees are one of Winbond's most important assets, being key stakeholders in our continued breakthroughs and innovations. Employees are one of Winbond's most important assets, being key stakeholders in our continued breakthroughs and innovations. | • Business Integrity and Corporate Governance  
• Human Resources Management  
• Regulatory Compliance  
• Productivity and Business Performance | • Internal Hotline 75234 Employee Complaints Hotline (always available)  
• Care” Employee Suggestions Box (always available)  
• Illegal Employment Infringement Appeals and Arbitration Committee (always available)  
• Health Consultation (always available)  
• Health Promotion Activities (ad hoc) | • 7 cases of internal complaints in total  
• 9 reports of everyday issues received through suggestion box (both physical and email messages).  
• 1,634 persons attended the President's Talk event, held online because of the pandemic, with 55 pieces of feedback received through the event.  
• 0 cases of sexual harassment.  
• 2 cases of illegal workplace infringements.  
• 12 labor management meetings held. (Zhubei, Central Taiwan Science Park, Kaohsiung)  
• Elections were held for new labor and management representatives for the Central Taiwan Science Park and Zhubei locations, due to the terms of the previous representatives expiring.  
• 4 quarterly executive management and issue discussion conferences were held. These sessions were attended by 1,973 people, achieving an attendance rate of 87%.  
• EP articles.  
• Public announcements to all. |
| Shareholders/Investors | Shareholders/Investors are Winbond's main source of capital. They are mainly concerned with Winbond's operating performance and sustainable development. | • Business Integrity and Corporate Governance  
• Green Product  
• Regulatory Compliance  
• Productivity and Business Performance  
• Research, Development and Innovation  
• Risk Management | • Telephone and e-mail (immediate)  
• Winbond official website (ad hoc)  
• The Taiwan Stock Exchange Market Observation Post System (ad hoc)  
• Investor conference (biannual, or whenever necessary due to special circumstances) | • 12 disclosures of revenues  
• 1 annual shareholders’ meeting  
• 2 institutional investor conferences  
• 4 disclosures of financial reports |
<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Importance of Stakeholder to Winbond</th>
<th>Topics of Concern</th>
<th>Channel and Frequency of Communication</th>
<th>2022 Communication Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Media</strong></td>
<td>The media serves as a bridge between Winbond and stakeholders. With immediate access to information released by Winbond, they can assist Winbond with the disclosure of positive sustainability information.</td>
<td>Business Integrity and Corporate Governance, Human Resources Management, Green Product, Productivity and Business Performance, Research, Development and Innovation</td>
<td>Telephone and e-mail (immediate), Press release (regular), Media interviews (annual), ESG questionnaire (annual)</td>
<td>20 telephone and e-mail communications, 29 press releases, Winbond operating report provided 2 times, 3 press conferences held</td>
</tr>
<tr>
<td><strong>Suppliers/Contractors</strong></td>
<td>Suppliers/Contractors provide supplies and services required for Winbond’s production operations. They help maintain Winbond's continuous and sustainable operations, making them also important stakeholders and partners of Winbond’s sustainable development.</td>
<td>Business Integrity and Corporate Governance, Green Product, Regulatory Compliance, Research, Development and Innovation, Supply Chain Management</td>
<td>Winbond Ethics and Integrity Policy and complaint channel (Six months), External complaints channels (immediate), Supplier audits (annual), Evaluations of major suppliers (once every six months), ESG questionnaire (annual)</td>
<td>All suppliers have signed the Commitment to Ethical Conduct and the Responsible Business Alliance (RBA) Code of Conduct, 100% of key suppliers have signed the Declaration of Non-Use of Conflict Minerals, 100% of key suppliers have signed the Hazardous Substance Free Declaration (HSF), 0 cases of supplier complaints, 100% of suppliers have passed economic, environmental, and social impact audits, and have adopted sustainability review standards.</td>
</tr>
<tr>
<td><strong>Community</strong></td>
<td>Their proximity to Winbond’s operating locations means they bear the brunt of the impact from our operations. Their welfare is therefore of high importance to Winbond.</td>
<td>Business Integrity and Corporate Governance, Human Resources Management, Regulatory Compliance</td>
<td>Volunteer activities (ad hoc), Collaborative projects and visits (ad hoc)</td>
<td>In 2022, the orphanage and after-school tutoring volunteer activities were suspended due to the COVID-19 pandemic, In 2022, 1,052 employees contributed a total of NT$4128 million to student grants, In 2022, 5 blood donation events were held, attracting a total of 219 participants.</td>
</tr>
</tbody>
</table>
### Matrix of Level of Potential Positive and Negative Impact and Likelihood of Occurrence

<table>
<thead>
<tr>
<th>Likelihood of occurrence</th>
<th>Level of positive impact</th>
<th>Level of negative impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Product and Service Quality</td>
<td>Research, Development and Innovation</td>
</tr>
<tr>
<td></td>
<td>Salary, Benefits, and Employee Care</td>
<td>Energy and Carbon Emissions Management</td>
</tr>
<tr>
<td></td>
<td>Supply Chain Management</td>
<td>Green Product</td>
</tr>
<tr>
<td>Medium</td>
<td>Information Security and Personal Information Protection</td>
<td>Information Security and Personal Information Protection</td>
</tr>
<tr>
<td></td>
<td>Energy and Carbon Emissions Management</td>
<td>Climate-related Risks and Opportunities</td>
</tr>
<tr>
<td></td>
<td>Risk Management</td>
<td>Talent Recruitment and Development</td>
</tr>
<tr>
<td></td>
<td>Regulatory Compliance</td>
<td>Research, Development and Innovation</td>
</tr>
<tr>
<td></td>
<td>Occupational Health and Safety</td>
<td>Information Security and Personal Information Protection</td>
</tr>
<tr>
<td></td>
<td>Business Integrity and Corporate Governance</td>
<td>Climate-related Risks and Opportunities</td>
</tr>
<tr>
<td></td>
<td>Research, Development</td>
<td>Supply Chain Management</td>
</tr>
<tr>
<td>Low</td>
<td>Environmental (E)</td>
<td>Environmental (E)</td>
</tr>
<tr>
<td></td>
<td>Social (S)</td>
<td>Social (S)</td>
</tr>
<tr>
<td></td>
<td>Governance (G)</td>
<td>Governance (G)</td>
</tr>
</tbody>
</table>

**Definition of positive impact**  Refers to positive or noticeable results generated by Winbond implementing measures in response to the topic, leading to a positive economic, environmental, or social (including human rights) impact on sustainable development.

**Definition of Negative impact**  Refers to the negative economic, environmental, or social (including human rights) impact caused by Winbond’s overall business operations due to Winbond failing to implement or poorly implementing measures in response to the topic.

**Note**  Ranks the top 10 sustainability issues with the largest positive and negative impacts, and highest likelihood of occurring.
### Material topics and their relationship with Winbond value chain

<table>
<thead>
<tr>
<th>Material Topic</th>
<th>Topics defined in GRI Standards/ Self-defined Topics</th>
<th>Implications of Material Topic to Winbond</th>
<th>Type of impact (positive/negative)</th>
<th>Description of impact (description of economy, environment, and people including human rights' impact)</th>
<th>Scope of impact to Value Chain</th>
<th>Corresponding Section</th>
</tr>
</thead>
</table>
| **Business Integrity and Corporate Governance** | GRI 205 Anti-corruption  
GRI 206 Anti-competitive behavior | The foundation of how high-tech companies are able to survive during the information economy age. | • Improve positive brand image  
• Corruption and anti-competitive behavior reduce the trust that stakeholders have in Winbond, negatively affecting our operating revenue | • Good corporate governance and legal compliance leads to increased investment  
• Avoids Winbond and other Winbond entities from losing assets or rights due to illegal behavior | Winbond  
Customers  
Supply Chain | Environmental Sustainability  
Corporate Governance |
| **Regulatory Compliance** | GRI 414 Supplier Social Assessment | Building a sustainable and resilient supply chain system, coordinating and integrating logistics, production, procurement, and other sales-related activities, achieving high production and service efficiency and maximizing value. | • Refine the supply chain management system, making the goods supply process more stable and smooth.  
• Supply channels obstructed, leading to production and sales delays. | • Build a comprehensive supply chain management system, ensuring that supply is stable, leading to increased business production efficiency and higher revenues.  
• Poor management of the social and environmental aspects of the supply chain, leading to lower customer trust and sales orders, increased environmental burden. | Winbond  
Supply Chain | Sustainable Supply Chain  
Corporate Governance |
| **Risk Management** | GRI 201 Economic Performance | Productivity and business performance are critical to Winbond’s continued development. Improving productivity can lead to lower costs and less waste while increasing income at the same time, further increasing corporate profits and improving business performance. | • Increased productivity, positively impacting revenues.  
• Insufficient productivity, reducing business performance. | • Increased productivity can reduce costs and waste, improving business performance and capabilities.  
• Insufficient productivity can lead to higher costs and waste, leading to revenue losses and increased environmental burden. costs and waste, leading to revenue losses and increased environmental burden. | Winbond  
Supply Chain | Corporate Governance  
Corporate Governance |
| **Research, Development and Innovation** | Research, development and innovation into our products, technologies, and business model are the sources of our competitiveness and value. They are also one of the most effective ways to conserve energy and reduce carbon emissions. | • Research and development into improving energy conservation and carbon reduction performance are able to provide both Winbond and our customers with benefits.  
• If research, development, and innovation are unable to provide results that customers are satisfied with, Winbond’s competitiveness would decline. | • The energy conservation and carbon reduction benefits provided through research and development are able to reduce environmental impact.  
• Innovative technologies can satisfy customer requirements, leading to more competitive products and higher revenues for Winbond. | Winbond  
Supply Chain  
Customers | Green Product  
Inclusion |
| **Environment** | GRI 308 Supplier Environmental | Building a sustainable and resilient supply chain system, coordinating and integrating logistics, production, procurement, and other sales-related activities, achieving high production and service efficiency and maximizing value. | • Refine the supply chain management system, making the goods supply process more stable and smooth.  
• Supply channels obstructed, leading to production and sales delays. | • Build a comprehensive supply chain management system, ensuring that supply is stable, leading to increased business production efficiency and higher revenues.  
• Poor management of the social and environmental aspects of the supply chain, leading to lower customer trust and sales orders, increased environmental burden. | Winbond  
Supply Chain | Sustainable Supply Chain  
Corporate Governance |
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<th>Type of impact (positive/negative)</th>
<th>Description of impact (description of economy, environment, and people (including human rights) impact)</th>
<th>Scope of Impact to Value Chain</th>
<th>Corres-ponding Section</th>
</tr>
</thead>
</table>
| Green Product  | GRI 417 Marketing and Labeling                       | Creating value, reducing risks, and developing sustainable technologies and products in order to create secure, energy-saving, and smart lifestyles. | • Improving product functions and reducing product energy consumption can create positive benefits for the environment.  
• Product market competitiveness. | • Consistent with sustainability trends, meet customer expectations, improve product positioning and revenues, while also benefitting the environment.  
• Product value and revenues would fall if Winbond is unable to meet customer requirements. | Winbond | Green Product |
|                | GRI 302 Energy                                       | Extreme climate conditions threaten to upset ecosystem balance. Winbond needs to do our part to save energy and reduce carbon emissions. | • If energy consumptions and emissions go unmanaged, this may lead to severe environmental impacts and accelerate the negative impact of climate change.  
• Carbon emissions management, calculating and managing carbon costs. | • Reduce the likelihood of extreme climate conditions impacting business operations.  
• Manage Winbond's energy consumption and Carbon emissions, effectively reducing costs. | Winbond | Environmental Sustainability |
|                | GRI 305 Emissions                                     |                                                                                                         |                                                                                             |                                                                                               |                             | Human Rights and Social Inclusion |
|                | GRI 401 Employment                                    | Talent is the key to Winbond's success. Recruiting talent, using talent, cultivating talent, and retaining talent are all long-term operational tasks. | • Two-way communications between employers and employees help promote smooth business operations.  
• Workplace safety, and rules on diversity and equality can all affect whether talent is retained, or leaves the Winbond. | • Through recruiting and retaining talent, as well as improving employee abilities and self-worth through cultivating employee growth, companies with high employee satisfaction can better achieve sustainable management and improve research, development, and innovation capabilities.  
• Implement measures for occupational health and safety management, preventing serious injuries, and improving employee physical and mental health. | Winbond | Human Rights and Social Inclusion |
### Business Integrity and Corporate Governance

Legal compliance is the minimum threshold to be achieved. The Winbond considers “ethical business management” to be the highest standard for business ethics, and by following these standards, the Company strives for mutual prosperity for both the Company and society.

**Medium and long-term goals** (refers to goals planned to be achieved in 2030 or later)

- The corporate culture of ethical business management is deeply rooted in our sales operations, where Winbond aim to win the trust of long-term customers.

**Short-term goals** (refers to goals planned to be achieved before 2030)

- Fulfill our responsibilities as Winbond management, protecting the legitimate rights and interests of shareholders, and the rights of other stakeholders.

**Outcome of Management Approach Assessment**

- Winbond was ranked in the top 6-20% by the 2022 Corporate Governance Evaluation.
- No violations of laws and regulations on corporate governance and business integrity.

### Regulatory Compliance

Winbond shall fully complies with all laws and regulations on corporate governance, financial operations, trade, environmental protection, occupational safety and health, information security, intellectual property, worker rights, internal controls, and risk management relevant to our business operations.

**Medium and long-term goals**

- Held 15 courses each year on legal compliance.
- Assessed the adoption of the ISO 37301 Compliance Management Systems standard
- Completed 2 legal compliance review meetings for each year.
- Complied with international and domestic laws, no major legal violations reported

**Short-term goals**

- Improved legal compliance management systems
- Held 12 courses each year on legal compliance
- Compiled with international and domestic laws, no major legal violations reported

**Outcome of Management Approach Assessment**

- Held courses each year on legal compliance (including courses on: corporate law, securities and exchange laws, insider trading, business secrets, labor standards laws, labor laws, information security, occupational safety and environmental protection, and environmental safety and protection for new hires), 10 courses held in total.
- No legal violations occurred in 2022.

### Risk Management

Adhering to the goal of sustainable business operations, establishing a risk management mechanism, integrating and managing various potential risks that may affect operations and profitability, including but not limited to financial, environmental, cybersecurity, operational, and climate risks.

**Medium and long-term goals**

- Establish long-term identification, analysis, evaluation, response, monitoring, and review systems.

**Short-term goals**

- Regularly convene risk management committee meetings, continuing to track and implement risk management measures.

**Outcome of Management Approach Assessment**

- Any lapses discovered shall be reviewed by the responsible employees or department, and an action plan shall be proposed to address the issue.

### Research, Development and Innovation

Winbond promises to provide the most competitive products and services in our targeted markets. Winbond promises to deliver most energy efficient and power saving, as well as low carbon emission, products through our innovative technologies from R&D.

**Medium and long-term goals**

- Winbond strives to exceed our customers’ expectations for product energy efficiency and performance through our technologies, designs, and manufacturing.
- Together with our strategic partners, Winbond is developing new technologies and products capable to sustain long term business operations and enrich human beings’ lifestyles.

**Short-term goals**

- Winbond will reduce the carbon emissions from each new generation by 20% per bit (memory unit).
- Winbond will target at over 80% satisfaction ratings for both internal and external customers.
- To achieve technical leadership, Winbond will have over 350 patent approvals globally by 2023.

**Outcome of Management Approach Assessment**

- Granted nearly 380 patents, and the accumulated granted patents have exceeded 4,500 as of 2022.
- Completed ISO 14067 carbon footprint inventory for our IC products.
- Our pioneering 1.2V NOR Flash uses 45% less power than the current 1.8V NOR Flash in mainstream today.
- Winbond completed JEDEC reliability test procedures for low temperature soldering, reducing carbon dioxide in the manufacturing process by approximately 57 tons a year.
## Supply Chain Management

Winbond is committed to ensuring the stability of our supply chains, improving supply chain transparency, and establishing and implementing policies on environmental protection and corporate social responsibility through close collaborations with our suppliers. These efforts aim to promote the overall legal compliance and continued development of the overall supply chain.

<table>
<thead>
<tr>
<th>Medium and long-term goals (refers to goals planned to be achieved in 2030 or later)</th>
<th>Short-term goals planned to be achieved before 2030</th>
<th>Outcome of Management Approach Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Establish a global supply chain by 2030 able to effectively diversify operating risks, providing the overall supply chain with more potential for continued development. Further promote our values to indirect suppliers, continuously expanding the scope of our influence in promoting environmental protection and corporate social responsibility.</td>
<td>• Improve the reliability of our supply chain, optimize inventory management, and improve supply chain risk management by 2024.</td>
<td>• 100% of suppliers have signed Winbond’s sustainable supply chain declarations and documents.</td>
</tr>
<tr>
<td>• Reduce carbon emissions from our supply chain by 10% by 2030.</td>
<td>• Establish a high-quality supply chain management team by 2026, and gradually build up a sustainable green supply chain, improving the environmental-friendliness and corporate social responsibility of our products.</td>
<td>• 100% of audited suppliers have no major environmental, social responsibility, and corporate governance issues, and no audited suppliers have consequently been disqualified.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• According to the total sales volume of 1.2V NOR Flash in 2022, compared with the power consumption of 1.8V NOR flash, it will save up to 493,727 kWh of power consumption, which is equivalent to a reduction of 251.3 tons of carbon dioxide equivalent.</td>
</tr>
</tbody>
</table>

## Green Product

Winbond’s vision is to become a “hidden champion in providing sustainable semiconductors to enrich human life”, and Winbond has devoted itself to developing a high-efficiency, small-size, low-energy-consumption, and high-quality green memory products and green manufacturing processes.

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<tbody>
<tr>
<td>• Reduce carbon emissions from flash memory by 110,000 tons by 2030 (using the total number of products shipped in 2021 as the baseline).</td>
<td>• Reduce carbon emissions from flash memory by 35,000 tons by 2024 (using the total number of products shipped in 2021 as the baseline).</td>
</tr>
<tr>
<td>• By using the 16nm advanced technology process by 2030, the new developing DRAM memory is able to reduce carbon emissions by 20% across its product life cycle.</td>
<td>• Develop new flash memory products apply to new energy and healthcare applications to reduce carbon emissions by 34% and electricity consumption by 27% per chip.</td>
</tr>
</tbody>
</table>

## Energy and Greenhouse Gas Management

Combine data science and professional knowledge, and together with our plant facility systems suppliers, continue to improve energy usage efficiency, gradually increase the proportion of renewable energy used, and reduce greenhouse gas emissions.

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<tbody>
<tr>
<td>• Have our Central Taiwan Science Park (CTSP) Fab use 90% renewable energy by 2030.</td>
<td>• Reduce greenhouse gas emissions intensity by at least 5% per unit year-on-year from 2023 to 2030.</td>
</tr>
<tr>
<td>• Reduce carbon emissions from our CTSP Fab by 60% by 2030.</td>
<td>• Reduce product energy consumption by at least 1% per product unit year-on-year from 2023 to 2030.</td>
</tr>
<tr>
<td>• Achieve net-zero emissions across the whole Company by 2050.</td>
<td>• Recycle at least 80% of all water used by our plant facilities each year from 2023 to 2030.</td>
</tr>
<tr>
<td></td>
<td>• Recycle at least 90% of all total waste produced each year from 2023 to 2030.</td>
</tr>
</tbody>
</table>

## Human Resources Management

Winbond is committed to providing a high-quality working environment, competitive compensation and benefits to attract, develop, and retain our talents, aiming to enhance employee engagement and dedication.

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<tbody>
<tr>
<td>• Implement human rights management by promoting human rights concepts and due diligence checks, to manage and continuously improve human rights risks.</td>
<td>• Conduct human rights training continuously, with the goal of achieving a 100% global training rate.</td>
</tr>
<tr>
<td>• Provide competitive compensation, salary, and benefits, as well as diverse training resources to enhance employee engagement, creating a stable and attractive workplace.</td>
<td>• Maintain overall compensation within the top 25% level in the industry.</td>
</tr>
<tr>
<td>• To increase our impact in social welfare activities, we actively participate in various social welfare initiatives.</td>
<td>• Aim to have more than 95% of employees willing to contribute their expertise in Winbond for the next five years.</td>
</tr>
<tr>
<td></td>
<td>• Continue donating to promote social inclusion each year.</td>
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<tr>
<td></td>
<td>• Achieve an average of 48 hours of learning per employee per year.</td>
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<tr>
<td></td>
<td>• Completed human rights due diligence investigation in 2022.</td>
</tr>
<tr>
<td></td>
<td>• Performance evaluations were conducted for both direct and indirect employees, with a 100% participation rate.</td>
</tr>
<tr>
<td></td>
<td>• Winbond achieved the highest Platinum level certification in the Responsible Business Alliance (RBA) Validated Assessment Program (VAP).</td>
</tr>
<tr>
<td></td>
<td>• Average annual learning hours per employee were 42 hours.</td>
</tr>
<tr>
<td></td>
<td>• No significant deficiencies were found in audits or labor inspections.</td>
</tr>
</tbody>
</table>
### Systems for Managing Material Topics

<table>
<thead>
<tr>
<th>Material Topic</th>
<th>Tracking Systems</th>
<th>Reporting/Communication Mechanism</th>
</tr>
</thead>
</table>
| Business Integrity and Corporate Governance | • Through systematic audits and internal controls implemented by functional committees.  
   • Established whistleblowing systems, acting together with the monitoring system implemented by the audit committee under the Board of Directors.  
   • Externally, Winbond is subject to regular accountant audits, who also communicate appropriately with the Audit Committee. | Established whistleblowing system (note 1):  
   • Whistleblowing channels for stakeholders on Winbond’s website.  
   • (Anonymous/Non-anonymous) reporting hotline and mailbox. |
| Regulatory Compliance                | • Notification system: Disciplinary actions and penalties are managed and regular progress reports made until the case is resolved.  
   • Review system: Annual legal compliance review meetings are convened, where each responsible department reports on any issues that have occurred, and the preventive measures taken.  
   • Reporting system: Winbond’s Chief Corporate Governance Officer shall report on the year’s legal compliance operations to the President in the annual Management Audit Meeting, and report on the summarized results.  
   • Possesses ability to learn about new global laws and regulations. | • Legal Department assist with the legal questions or provide legal advice. |
| Risk Management                      | • Risk identification shall be carried out using the risk identification results of other companies in the industry as a benchmark for comparison.  
   • Risk analysis indicators and calculations shall be based on methods accepted by the industry or academic community, and adjusted when appropriate, in order to maintain objective and correct results.  
   • The approved risk appetite and the results of regular assessments shall be combined with information systems in order to produce management reports, ensuring that risk assessments have been conducted.  
   • Risk management operations and other related documents will be included in Winbond’s internal controls, and disclosed when necessary pursuant to law. | Established whistleblowing system (note 1):  
   • Whistleblowing channels for stakeholders on Winbond’s website.  
   • (Anonymous/Non-anonymous) reporting hotline and mailbox. |
| Research, Development and Innovation | • Conduct internal and external satisfaction surveys each year.  
   • Conduct product competitiveness analyses each year, ensuring that our products possess competitive advantages.  
   • Conduct product competitiveness analyses each year, ensuring that our products meet energy consumption and carbon footprint reduction goals.  
   • Upper management personally communicate with customers each quarter, directly learning what expectations customers have towards our service and products.  
   • Review business performance of each business group year, as an indicator of each group’s competitiveness. | • Innovation R&D teams regularly meet for discussions and brainstorming sessions, incorporating various internal opinions and suggestions.  
   • Intellectual Property Department provides R&D departments with training related to intellectual property protection and invention proposals, as well as consultation on patent strategies. |
| Productivity and Business Performance | • Digital Transformation Committee: Responsible for promoting an overall digital transition, further improving productivity and business performance. Also reviews digital transformation plans and results, while also monitoring employee abilities and training.  
   • Benchmark comparisons: Understand the role of Winbond in the industry, and our strengths and weaknesses. Discover problems and opportunities, and establish refined plans in response.  
   • Stakeholder feedback: Collect suggestions on Winbond’s productivity and business performance to improve Winbond’s fulfillment of corporate social responsibilities and brand image. | Established whistleblowing system (note 1):  
   • Whistleblowing channels for stakeholders on Winbond’s website.  
   • (Anonymous/Non-anonymous) reporting hotline and mailbox. |
| Supply Chain Management              | • Winbond has continued to conduct internal and external audits, alongside other measures for verifying product quality. At the same time, Winbond has also conducted regular evaluations of our suppliers, detecting, preventing, and resolving issues, and helping our suppliers propose methods for improvement. From 2022 onwards, due to climate change and sustainable development trends, Winbond has engaged in ESG exchanges and conducted ESG investigations into our suppliers, creating a low carbon emissions supply chain management investigation report, and continuing to track how our suppliers are progressing in reducing carbon emissions.  
   • Held a supplier conference and ESG workshop for material (key) suppliers, engaging in two-way communication. | • Held a supplier conference and the Sustainable Supply Chain Upgrading forum, engaging in two-way communication at the venue. |
<table>
<thead>
<tr>
<th>Material Topic</th>
<th>Tracking Systems</th>
<th>Reporting/Communication Mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Green Product</strong></td>
<td>• Established goals to reduce energy consumption during production and product energy consumption in our new product development plans, tracking how effectively Winbond can conserve energy and reduce carbon emissions during the actual production process.</td>
<td>• Innovation R&amp;D teams regularly meet for discussions and brainstorming sessions, while carrying out product development innovative new ideas are implemented with the goal of reducing carbon emissions and energy consumption throughout the product development processes of raw materials, innovative design, testing, packaging and production.</td>
</tr>
</tbody>
</table>
| **Energy and Carbon Emissions Management** | • ISO 14067 Verifying carbon footprint of products  
  • ISO 14064-1 Greenhouse gas emissions verification  
  • ISO 50001 Energy management systems verification  
  • Regular reports made by ESG committee | • ESG committee regularly reports on how Winbond is managing and reducing its energy consumption and greenhouse gas emissions, and continues to review, analyze, and plan improvement measures. ESG Committee is also responsible for monitoring domestic and international trends, laws, and regulations. |
| **Human Resources Management**    | • Regularly review human rights due diligence investigation.  
  • Regularly review the Employee Core Values and Engagement Survey.  
  • Conduct salary surveys on the labor market.  
  • Regularly review Responsible Business Alliance certification audits.  
  • ISO 45001 Occupational safety and health management systems verification  
  • Safety performance indicators | Diverse, open, and transparent channels for effective communication:  
  • Physical suggestion boxes  
  • 75234 Employee Complaints Hotline  
  • Care Complaints Mailbox  
  • Sexual Harassment Complaints Committee, etc.  
  Functional regular communications meetings:  
  • Employer-employee Meetings  
  • Management Discussion Meetings  
  • Employees Welfare Committee etc. |

**Note 1** Whistleblowing channels for stakeholders on the Winbond website include: (1) Whistleblowing Hotline: +886-4-2521-3579; (2) Whistleblowing Email: internal_audit@winbond.com; (3) The whistleblowing channels available on the Winbond official website provide our employees and persons not affiliated with the Winbond with methods to make anonymous or non-anonymous reports if they discover that the Winbond’s employees have engaged in illegal activities, such as unfair business practices, bribery, earning illegal profits, fraud, or coercion. Whistleblowing reports shall be handled by dedicated responsible units, and an investigation team may be established if necessary. Measures have been implemented to ensure confidentiality and protection during the investigation process, allowing for reports to be handled fairly. Winbond shall not dismiss, re-assign, or otherwise change how an employee is treated at work due to the employee making a whistleblowing report. Employees at all levels within the Winbond may not discriminate against, threaten, or otherwise negatively treat the whistleblowing employee, in order to encourage all stakeholders, including Winbond employees, to have the courage to expose illegal behavior.

**Note 2** Winbond conducts regular (quarterly) and ad hoc strategic meetings, where the management team reports on any material topics to the Board of Directors, and listens to suggestions from the Board.
1. Green Product

Winbond has integrated our core innovative technology competencies with sustainable energy conservation and carbon reduction goals. Through green product design, digitalizing information systems, and improving production efficiency, Winbond can develop and optimize our products in various different areas, strictly controlling each step of our product process. Winbond promises to deliver the highest quality products to customers, minimizing the carbon emissions required to deliver our products into the hands of customers and consumers. While benefiting from the convenience brought about by technology, Winbond has also helped protect the earth’s environment, and helped the overall value chain effectively reduce carbon emissions.

2022 Performance Highlights

- **The accumulated granted patents have exceeded 4,500.**

- **ISO/SAE 21434**
The world’s first memory manufacturer obtained Cybersecurity Systems for Road Vehicles

- **Developed the world’s first NOR Flash that supports an operating voltage of 1.2V.** Winbond 1.2V NOR Flash uses 45% less power than the 1.8V NOR Flash in mainstream use today.

- **Four Major Digital Transformation Systems**
  Improved analysis system helps engineers increase data analysis efficiency and productivity.
1.1 Research, Development and Innovation

Digital Transformation

From 2020 onwards, Winbond has been pushing for the Company to undergo a full digital transformation. Winbond has established the Digital Transformation Committee for Business (DTCB) and the Digital Transformation for Manufacturing (DTCM), which are responsible for driving the digital transformation of our business, production, and manufacturing operations. The President shall regularly convene meetings to discuss the progress being made by these Committees. Additionally, senior management shares articles on digital transformation each week; and our human resources departments have invited external speakers to provide training related to digital transformation. Winbond has also established a platform for internal collaborations. As of 2022, digital transformation has already become an effective tool regularly used by each of our departments in their day to day operations, demonstrating the effectiveness of our digital transformation measures.

In 2022, Winbond adopted professional software to replace traditional document recording methods. By doing so, Winbond has made information sharing more transparent, lowered communications costs, and increased teamwork effectiveness. Through the Visual Basic for Applications (VBA) online real-time monitoring system, Winbond is able to reduce the time needed to search through and organize documents. Additionally, by using the big data analysis system Power BI to analyze large amounts of data and produce analysis reports, Winbond has been able to greatly reduce the amount of time, manpower, and accuracy constraints for these procedures.

Technology Computer-Aided Design (TCAD) Simulation Tools

Winbond has adopted TCAD simulation tools for integrating our research and development and productions processes, as well as in module and element development. These tools have helped us collect data on experiment conditions, reduce chip usage, and improve the working model of our research and development team. These tools have not only helped Winbond reduce research and development times, but have reduced the amount of resources consumed by the process.

Launch of Four Major Digital Transformation Systems

In 2022, Winbond launched four systems able to effectively increase the productivity of the research and development department, with the help of the Computer-Integrated Manufacturing (CIM) team.

<table>
<thead>
<tr>
<th>Four Major Digital Transformation Systems</th>
<th>Explanation of system usage</th>
<th>Results</th>
</tr>
</thead>
</table>
| Flaws and yield analysis system          | Consolidates measurement data from various module machines online, helping the research and development department analyze and make connections between data on development operations, analyzing and consolidating data with high efficiency. | • Greatly reduce information analysis times.  
• Increase engineer productivity.  
• Improved analysis system helps engineers increase data analysis efficiency by 50%. |
| Automated engineering reports system     | Rapidly and automatically looks up and consolidates measurement data online. | • Effectively supports information processing operations.  
• Helps the research and development team analyze and weigh experiment conditions, continuously optimizing the process.  
• Automated system helps engineers more efficiently create engineering reports, increasing productivity by 80%. |
| Digitalize and standardize online        | Helps Winbond employees make adjustments based on data to production module conditions when necessary to meet requirements. | • Greatly improves the prediction and analysis of the key electrical properties of memory elements.  
• Allows for good predictions to be made for key parameters.  
• System able to improve productivity by 15%. |
| Memory element reliability analysis      | Effectively consolidates and organizes massive amounts of measurement data, discovering the optimal operating parameters for use in product CP/FT testing. | • Greatly increases the data analysis speeds of our engineers.  
• System able to improve data analysis productivity by 70%. |

<table>
<thead>
<tr>
<th>Module development</th>
<th>TCAD simulation tools</th>
<th>Risk assessment</th>
<th>Design, optimization</th>
<th>Design, optimization, and electrical prediction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Element development</td>
<td></td>
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</table>
Green Innovation Research and Development

Predicting market trends for the new generation of products, Winbond has continuously invested resources into semiconductor design, manufacturing technologies, and sustainable innovations for products, creating competitive advantages and increasing market share for our green products. At the same time, Winbond has provided high quality products and services for our customers, whose needs Winbond has placed first.

Semiconductor Industrial Chain

Winbond possesses an advanced and complete semiconductor industrial chain and professional specialization. This includes IP (Intellectual Property Rights) design and IC (Integrated Circuit) design, wafer production, and semiconductor testing and packaging.

Additionally, Winbond has been deeply involved in the KGD (Known Good Die) field for many years, working together with chip factories to provide SiP (System in Package) multichip packaging solutions and creating more value in collaboration with the semiconductor industrial chain.

Note

1. System in Package (SiP): From a packaging perspective (downstream of the semiconductor industrial chain), this term refers to arranging multiple chips in series or in a stack, creating a single packaged electronic element.

2. Known Good Die (KGD): Refers to wafers which are not immediately packaged after being manufactured, but instead provided to customers and packaged into a single chip along with other products. Rigorous product quality standards thus need to be met for these products, in order to ensure that the functions of the final product would not be affected.
Winbond provides global customers with comprehensive specialty DRAM solutions and services. Our major product lines include Code Storage Flash Memory, TrustME® Secure Flash Memory, Specialty DRAM and Mobile DRAM, which all have been designed with green product concepts in mind. Winbond is the only company in Taiwan with the ability to develop DRAM and Flash products in-house. By leveraging the synergies between each product in our portfolio, Winbond is able to fully satisfy the various needs of our customers, allowing customers to integrate their own products with Winbond’s products to create a wide range of hand-held applications, consumer electronics, computer peripherals, artificial Intelligence, automotive and industrial-use electronics, which are all fields that have extremely high standards for product quality.

Current Status and Results from Innovation and Research and Development

**DRAM**

In 2022, Winbond launched the HYPERRAM 3.0. This series of products is ideal for use in low power consumption IoT devices such as wearable devices. It is able to support voice control and tinyML calculations, and can also be used in vehicle dashboards, entertainment and remote communications systems, machine vision, HMI displays, and communications modules. In 2022, our Kaohsiung Luzhu Fab formally began mass production, an important milestone for Winbond. DRAM production line capacities can be gradually expanded in the future, adding new product lines for DDR4, or even higher speed ASIC DRAM products etc. to meet various customer requirements.

**HYPERRAM ™ 3.0**

The third generation of our HYPERRAM products utilizes the all-new 16-bit extended HYPERBUS interface, supporting data transfer speeds up to 800 Mbps through the same commands, bit address signals, and data bus format. It features the same standby power consumption, and only requires an adjustment to a small number of signal pins. The product also features a higher frequency.

**DDR3**

Shrinking from 38nm to 25nm, and then further down to 25S nm. Operating efficiency goes up with each technology node, and our 2Gb DDR3 products have 35% reduced power consumption. Winbond has continued to supply DDR3 products, making sure to satisfy long-term customer demand.

**LPDDR4 Single Channel x16 4,267Mbps**

Winbond provides single-die package (SDP) and dual-die package (DDP) product combinations, with faster data transfer speeds compared to DDR4 x16 3200Mbps and LPDDR4 Dual Channels x32 4,267 Mbps that provide even higher performance.

**100BGA LPDDR4/4X Memory**

Winbond is committed to shrinking the surface area of printed circuit boards (PCBs), and launched the 1Gb and 2Gb 100BGA LPDDR4/4X memory of Single Channel x16 with data transfer speeds up to 4,267 Mbps in 2022. This product not only meets JEDEC JED209-4 standards but also takes up 50% less surface area compared to the original standard 200BGA products. This memory is ideal for IoT devices that require small packages with higher data transfer speeds.
Secure Flash Memory

Due to the constant advancement of IoT technology, digital information security needs have also been increasing. Governments around the world have continued to strengthen security laws and regulations. However, it takes multiple years for a product to become certified, creating practical challenges due to the short useful lives of products. In response, Winbond has created the TrustME® W77Q Secure Flash Memory series and other secure memory elements able to ensure the stability of IoT devices and provide protection for end-to-end connections.

TrustME® Secure Serial Flash Memory W77Q Series

Improves protection against software and hardware attacks in line with the information security requirements of IoT systems, and also meets Common Criteria EAL 2+ certification standards for IoT devices. In addition to protection against software and hardware attacks, the W77Q series also supports secure eXecute In Place (XIP), and possesses sophisticated cryptographic encryption of the communications channel. It allows for personalization of each device with unique keys, cryptographic read and write locks, data integrity protection, secure over-the-air (OTA) firmware updates, root of trust (RoT) functions, and secure read, write and erase operations. The memory is ideal as a secure storage solution for operating systems with limited storage space, pins, and power.

TrustME® Secure Serial Flash Memory W75F

The W75F memory series was developed in response to the high security identify verification needs of mobile payment services and other applications, and due to confidential data storage requiring encrypted system hardware modules to possess EAL 5+ security certification. Products in the W75F series are the first secure flash memory solution in the world to obtain Common Criteria (CC) EAL 5+ certification. They also support secure eXecute-in-Place (XIP), and are able to protect the confidentiality and integrity of codes and data stored in IoT devices.

Code Storage Flash Memory

One of Winbond’s goals has always been to reduce power consumption and prolong battery life. To that end, Winbond has developed new processes and circuit architectures, and launching the world’s first NOR Flash support 1.2V operating voltage, and through matching with the SoC that use advanced manufacturing process and low-voltage design to achieve high read and write speeds while also conserving power consumption.
Intellectual Property Management

**Patent applications**

- Cumulative number of worldwide patent applications exceed **6,000**.
- Apply **450** patent applications in 2022.
- **17th** Place among the Applicants of the Taiwanese Juridical Persons, place on the top **20 Applicants** of the Taiwanese Juridical Persons for **six consecutive years**.

**Patents granted**

- Cumulative number of worldwide granted patents exceed **4,500**.
- Worldwide granted patents nearly **380** in 2022.
- **16th** Place among the Patentees of the Taiwanese Juridical Persons, place on the top **20 Patentees** of the Taiwanese Juridical Persons for **seven consecutive years**.

*Note: Data sourced from the Ministry of Economic Affairs, Intellectual Property Office*

Intellectual property (IP) are important assets for maintaining corporate sustainability. In order to protect the research and development resources and results invested by Winbond, Winbond has established IP policies in line with the Winbond’s operating goals. By institutionalized IP management, Winbond nurtures a corporate culture of innovation and strengthens the IP protection awareness of employees. Winbond encourages the continuous innovation and IP right creation of our employees during the course of work which strengthens the sustainable competitive advantages.

Winbond has established annual IP goals based on an overall assessment of the business objectives and research and development resources, connecting our business objectives with our IP strategy. As of 2022, the cumulative worldwide patent applications have exceeded 6,000 and the cumulative worldwide issued patents has exceeded 4,500.

Winbond has established an IP department and Patent Committee responsible for IP right management, assessment, promotion, and utilization. Started from the incubation stage, Winbond rigorously reviews the patent proposals based on official patent examination guidance from various countries and the commercial value so as to improve our patent qualities and protect our research and development outcomes appropriately.

Winbond provides generous incentives and bonuses which encourage our employees to learn the requirements of patent rights and submit patent proposals proactively. In addition, Winbond provides training courses customized for each department which sought to inspire our employees to think innovatively by presenting them with cases relevant to their work, leading to more high-quality inventions being proposed.

With regard to the technical topics important to the business objectives, Winbond utilizes variety approaches to construct a high-value and diversified patent portfolio such as holding thematic brainstorming meetings with relevant technical departments and conducting patent map analysis.

Apart from continuing to develop a diversified patent portfolio, Winbond has as of 2022 included trade secrets into our IP strategies. Winbond set about planning the mechanism of registering trade secrets, and held a total of 23 workshops which educate our employees on how to identify and take inventory of confidential information or trade secrets that they may encounter as part of their work duties, further improving Winbond’s IP protection.
1.2 Quality Management for Products and Services

Winbond’s product policy is to become a world class company offering products/services that best satisfy our customers, by establishing Total Quality Management, Zero Defect and Quality First quality culture through the process of continuous improvement. Following this policy, Winbond has established various rules and standards that Winbond abide by. Apart from ensuring that our product quality and packaging meets the legal requirements of each country and region, Winbond has also carried out quality management through various international product quality systems, such as the ISO 9001, IATF 16949, and ISO 26262 standards that Winbond has received third-party certification for. Winbond has focused on carrying out quality management by defining and tracking quality performance indicators, and have continuously implemented improvement measures. By adopting various management processes, such as FMEA, SPC, and MSA tools, Winbond conduct comprehensive assessments, evaluations, and improvements to our product quality in order to meet the needs and expectations of customers.

Apart from having adopted international product quality management systems to meet our product quality goals, Winbond has also proactively attempted to cultivate a culture of product quality management through methods such as FMEA analysis, 5-Why analysis, and creating the Winbond Quality Newsletter, advocating for and promoting quality-related policies, culture, activities, and methods, that enable our employees to gain a deeper understanding and awareness of quality.

Failure Mode and Effect Analysis (FMEA) Systemization Project

In 2022, Winbond fully adopted FMEA into our new product development process, applying this analysis to the development of our 20nm DRAM and 24nm Flash technologies for the first time. Based on the various risk assessments generated through this method, such as production process, electrical, and design risk assessments, our employees can choose to focus on “Man, Machine, Material, Method, Environment” based on the different risks posed by each factor, using this information to keep the production process stable. This structured analysis method has increased the depth and scope of failure analysis, helping to avoid more potential failures from taking place.

— F24 PFMEA Architecture —

— PFMEA F24 Status —

Winbond employees are able to effectively utilize these techniques in their day-to-day work. Winbond working groups also carry out regular audit meetings, helping to greatly optimize product design and shore up weak points in the production process. Throughout
From 2021 onwards, Winbond has regularly held an annual FMEA working group results announcement meeting in the fourth quarter of each year, where each working group shares their results and experiences with promoting FMEA. This allows each group to observe and learn from other groups, implementing the philosophy of “never make the same mistake twice” into daily operations. These meetings have received good feedback and have been well received. In the 2022 results announcement meeting, 322 employees above the rank of assistant manager attended, an increase of 40 compared to 2021. This shows the proactive attitude and focus that Winbond’s executives have towards quality management. This has not only greatly assisted Winbond in promoting and implementing FMEA, but also helped improve communications and learning within the company organization.

A Corporate Culture of Pursuing Quality

In the digital age, Winbond has, through a digital transformation, integrated ourselves with future AI development trends, establishing a more comprehensive information platform. Through concrete action, Winbond has stopped corrupt practices, innovated, and continued to optimize rules and processes, with the goal of providing our customers with quality services that they can be satisfied with. In the future, Winbond shall remain committed to our original mission, and strictly manage each quality checkpoint for our customers and for the Company, with a goal of constant self-improvement.

With regard to improving the quality of our procured materials, Winbond launched the Chemical Analysis Information Platform in 2022, which consolidates and provides the supplier’s COA shipping information, Winbond’s supply inspection IQC information, regular inspection results from the warehouse system, and micro-pollutant information from the Winbond’s equipment department. Through a digital transformation and optimizing the inspection process, Winbond has improved the efficiency of producing IQC information, and of our chemical experiment lab operations. At the same time, Winbond has allowed our engineering department to more quickly obtain micro-pollutant analysis information.

In 2022, Winbond newly created a Supplier Quality Management Platform, which systematically records past related information that can help us easily and quickly communicate with suppliers, ensuring that our quality requirements have been met. From 2021 onwards, Winbond has also begun building the Visual Inspection QC System, providing more transparent information on our product flaws, and developing a smart visual identification function for identifying product flaws. Quickly following the beginning of development, Winbond completed the automated identification system in 2022. After the AI visual identification system was launched, Winbond was able to save 90% of the manpower previously necessary for flaw identification. By transferring standardized processes to a machine, Winbond allows our employees to focus on more high value activities, increasing productivity and decreasing the risk of coming into contact with sensitive information.
5-Why

From 2018 onwards, Winbond has been promoting the 5-Why courses, including these courses as a KPI for each of our departments, and providing bonus reward activities and competitions. Following this guidance, when our employees face an issue, they would first search for all possibilities, and uncover the root cause of the issue through verifying all possibilities, allowing them to precisely pin down the correct response to resolve the issue.

— 5-Why Verification and Validation —

Conduct a complete analysis following a step-by-step process, starting by analyzing the technology/failure link, then conducting verification and validation, and then analyzing the process, with the entire procedure encompassing these three aspects.

In 2022, 167 employees attended Winbond’s 5-Why Advanced Coaching Elite Course held online. Through the training provided by this course, employees were able to improve their skills, and the course also discussed the 5-Why process by applying it to various different scenarios, such as for engineering departments, non-engineering departments, and fab work. This allowed employees to more precisely analyze issues through the 5-Why method.

Winbond Quality Newsletter

Since the fourth quarter of 2021, Winbond has published a Quality Newsletter. Through this internal platform, Winbond has cultivated a corporate culture of placing quality first, and shared various articles, videos, websites, and livestreams on quality control topics, deeply instilling our quality culture into the lifestyles and work of our employees through these different approaches, embedding these values into the DNA of our employees.

Each Quality Newsletter thoughtfully incorporates quality-related activities, making the newsletter a more appealing read for Winbond employees. Through presenting interesting topics, the Newsletter has successfully promoted quality-related policies, culture, activities, and techniques.

- Accumulated 76 articles and videos on quality-related topics
- Browsed 21,531 times
Winbond Quality Month

The theme for the Winbond Quality Month in 2022 was “Bond Investigations Bureau”, employing educational entertainment to increase employee awareness of quality. The diverse activities put on for the month attracted eager participation and discussion from our employees, with these activities including a Teams weekly raffle, Quality Video Shorts competition, and the Winbond Knowledge King Quiz. For the first time, a vlog of a day in the life of a Kaohsiung/CTSP engineer was also displayed, which was well received by the audience. The video allowed Winbond employees to understand the work duties of employees in other departments, promoting mutual understanding between internal employees. These activities attracted 4,424 participants, an increase of approximately 5% compared to 2021. In the future, Winbond will continue to promote Winbond Quality Month through various creative ways.
International Standards Certification

Winbond has continued to strictly manage our production process and quality control. Not only the stable and well-appointed factory in Central Science Park factory but also our Kaohsiung Fab began production operations, and successfully obtained the IATF 16949, ISO 9001, and QC 080000 international standards certifications in 2022. In order to improve product quality, Winbond has improved its yield analysis, supply chain management, and adopted other methods to better understand customer needs in order to continuously improve its product quality. Additionally, Winbond has received multiple certifications verifying our compliance with RBA, ESG, and other international standards. Following the high standards of our customers, Winbond has implemented hazardous substances and production environment management, as well as fulfill our corporate social responsibilities.
— ISO/SAE 21434 Cybersecurity Systems for Road Vehicles —

Winbond has in the past few years expanded into the field of automotive electronics. In order to improve the reliability and functional safety of our automotive electronics products, Winbond has entered the global advanced automotive safety systems supply chain.

2019 • 2020 • 2022

Winbond has obtained ISO 26262 certification, the world’s highest-level automotive electronic safety standard. This also makes us the first maker of automotive-use memory in Taiwan to obtain this certification on road vehicle functional safety, allowing us to become a trusted partner of international automakers.

Winbond has obtained the higher-level ASIL (Automotive Safety Integrity Level) standard product certificates for individual products, expanding into the automotive electronics market and providing automotive electronics products that meet the supply chain needs of international automakers.

Winbond has obtained ISO/SAE 21434 Cybersecurity Systems for Road Vehicles certification from TÜV NORD, becoming the first memory manufacturer in the world to have obtained this certification.

Introduction to Quality Management - ISO/SAE 21434 Road Vehicles - Cybersecurity Engineering

The ISO/SAE 21434 standard covers all necessary safety standards related to the design concept, development, production, use, and disposal of a car, applicable to the microcomputers and other components used and developed in these processes. The standard requires car systems to be equipped with stronger information security functions for preventing cyberattacks, effectively improving the ability of a vehicle to manage network threats.

Matthias Springer, Senior Vice President of Functional Safety and Security at TÜV NORD: “Winbond’s current cybersecurity systems have been certified as meeting ISO/SAE 21434 standards, and are able to provide comprehensive security solutions for automotives. This is unmistakably an important milestone. Additionally, Winbond highly recommend OEMs and suppliers in industries with relatively high security requirements, such as the automotive industry, to obtain these certifications.”

Quality Awards Won

Winbond has proactively participated in the Taiwan Continuous Improvement Awards (TCIA), a national competition supervised by the Ministry of Economic Affairs Industrial Development Bureau, and organized by the Corporate Synergy Development Center. From 2013 onwards, Winbond has for ten years in a row been promoted to the highest-level Zhi-Shan Group. Each year, Winbond continue to work hard towards improving our quality. In 2022, Winbond also won two Golden Awards and two Silver Awards, showcasing our exceptional achievements. These honors are a testament to the enthusiasm towards learning displayed by Winbond employees, as well as of the high priority Winbond place on quality and our commitment to making continuous improvements. At the same time, they are evidence that Winbond has lived up to the trust that our customers have placed on us. These achievements have further advanced Winbond’s long-term stable development.

<table>
<thead>
<tr>
<th>Team name</th>
<th>Event theme</th>
<th>Prize</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team Perseverance</td>
<td>Reducing the incidence of memory wafer pad corrosion</td>
<td>Golden Award</td>
</tr>
<tr>
<td>Team Collaboration</td>
<td>Creating a smart chemicals plant, greatly improving</td>
<td>Golden Award</td>
</tr>
<tr>
<td></td>
<td>Winbond production capacity</td>
<td></td>
</tr>
<tr>
<td>Team Green</td>
<td>Increasing tap water usage efficiency</td>
<td>Silver Award</td>
</tr>
<tr>
<td>Team Precision</td>
<td>Established the Probe Card precision prediction system,</td>
<td>Silver Award</td>
</tr>
<tr>
<td></td>
<td>greatly improving testing productivity</td>
<td></td>
</tr>
</tbody>
</table>

— Quality Awards Won —

<table>
<thead>
<tr>
<th>Year</th>
<th>Gold</th>
<th>Silver</th>
<th>Bronze</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2017</td>
<td></td>
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<tr>
<td>2018</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2021</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2022</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1.3 Green Manufacturing

Winbond has remained committed to green manufacturing principles. Winbond has included reducing carbon emissions as an important goal, and have implemented measures to do so starting from the research and development phase. Through methods such as optimizing our production processes and adopting zero carbon emissions gases, Winbond hopes to become a model for promoting green products, relying on our core competencies to create a green impact. In 2022, Winbond invested NT$1.334 billion into implementing environmental protection measures, and have continued to invest into reducing the environmental impact caused by our business operations. Compared to 2021, Winbond has invested 253% more funding into these efforts, with this increase mainly due to the many pollution prevention/treatment facilities built for our new Kaohsiung Fab. Winbond has continued to reduce the environmental impact caused by our operations, and the economic benefits brought about by the environmental protection investments above have totaled NT$36 million.

---

--- Environmental Investment Amount ---

<table>
<thead>
<tr>
<th>Expense category</th>
<th>Expense Items</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>New prevention/treatment equipment</td>
<td>Air pollution prevention equipment</td>
<td>95,355</td>
<td>3,500</td>
<td>388,432</td>
</tr>
<tr>
<td></td>
<td>Water pollution treatment equipment</td>
<td>2,900</td>
<td>23,600</td>
<td>440,803</td>
</tr>
<tr>
<td>Operational and maintenance expenses</td>
<td>Air pollution prevention equipment</td>
<td>93,889</td>
<td>98,582</td>
<td>129,979</td>
</tr>
<tr>
<td>for prevention equipment</td>
<td>Water pollution treatment equipment</td>
<td>113,214</td>
<td>162,020</td>
<td>259,322</td>
</tr>
<tr>
<td>Waste processing expenses</td>
<td>General industrial waste</td>
<td>34,558</td>
<td>33,839</td>
<td>40,390</td>
</tr>
<tr>
<td></td>
<td>Hazardous industrial waste</td>
<td>32,833</td>
<td>56,697</td>
<td>75,029</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>372,749</td>
<td>378,238</td>
<td>1,333,955</td>
</tr>
</tbody>
</table>

---

--- Economic Benefits from Environmental Investment ---

<table>
<thead>
<tr>
<th>Benefits</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Recycling</td>
<td>8,100</td>
<td>6,008</td>
<td>6,324</td>
</tr>
<tr>
<td>Electricity conservation measures</td>
<td>170,500</td>
<td>189,780</td>
<td>329,639</td>
</tr>
<tr>
<td>Water Conservation Measures</td>
<td>7,512</td>
<td>10,594</td>
<td>9,180</td>
</tr>
</tbody>
</table>

Total economic benefits created| 186,112| 206,382| 345,143|

(Unit: NTD Thousands)

---

--- Smart Manufacturing Prognostic and Health Management (PHM) ---

By using PHM for smart health monitoring of the production process, Winbond is able to discover and repair damage to the electrostatic chuck (ESC) early before serious damage occurs, effectively reducing ESC usage costs, and reducing the number of wafers that need to be discarded due to ESC damage. In 2022, our ESC usage costs were lower by 13% compared to 2021. Winbond also discarded 55% less wafers, a major improvement.

---

--- ESC Usage ---

<table>
<thead>
<tr>
<th>Year</th>
<th>Cost (MNTD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y2021</td>
<td>112</td>
</tr>
<tr>
<td>Y2022</td>
<td>97</td>
</tr>
</tbody>
</table>

---

--- Scrape Wafer due to ESC Fall ---

<table>
<thead>
<tr>
<th>Year</th>
<th>Wafer Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y2020</td>
<td>371</td>
</tr>
<tr>
<td>Y2022</td>
<td>168</td>
</tr>
</tbody>
</table>
1.4 Customer Relationship Management

Maintaining Customer Relationships

Customer Satisfaction

Customers play an important role in corporate business management. The value chain of a company is closely linked to its customers, which means that Winbond is devoted to satisfying the needs of its customers and placing customers first. Winbond hopes to grow and develop sustainably alongside our customers. In 2022, Winbond adopted the use of internal control reports for the first time to monitor product delivery needs. Winbond regularly reviews and tracks whether or not our products are being delivered on time, as a way of measuring customer satisfaction. Additionally, warnings for differences between the target and sales order price are displayed through an upper and lower range indicator. The Production Part Approval Process (PPAP) system has standardized customer query responses for frequently seen customer queries. Winbond hopes to be able to communicate with customers more proactively and timely, responding to customer issues in real time by implementing adjustments and improvements. Winbond hopes to prevent customer complaints before they happen, allowing our customers to enjoy the benefits of this “unseen” customer service, and building sound relationships of trust.

Tracking Customer Intentions

At Winbond, we place a high priority on our brand value. Winbond continues to monitor customer complaints received in the past and take the customer’s requirements and thoughts in these past complaints into account to create customized services. In 2022, Winbond received a total of 1,085 customer complaints. Out of these cases, Winbond was able to determine through testing that 637 complaints, or 59% of total complaints, were not due to Winbond’s quality or service issues. Understanding and removing these customer complaints allowed these cases to become a useful reference for us, with this process also being a part of our customer services. Considering the amount of chips shipped, customer complaints were only received for 0.000055% of all chips shipped, which is an extremely good track record.

After analyzing customer complaints and determining the causes of failure for each case, Winbond was able to discover and resolve the root causes for each failure. Winbond also proposed further failure mode analyses and correction plans to be implemented, as well as establish correction plans to address the issue from the initial production process.

This ensures that customers are provided with the best customer service quality and products. Winbond has also achieved an extremely low failure rate (calculated as total number of failed ICs/total ICs shipped) of 0.2ppm. By maintaining customer satisfaction levels, Winbond is able to maintain stable business performance, creating a win-win situation.

Quality Workshop

Winbond regularly holds quality workshops. Apart from allowing us to understand customer requirements and suggestion for products, Winbond also invites professionals and experts from the industry to attend, creating opportunities for discussions on quality and technology issues. Through the opportunities for communication offered by these quality workshops, Winbond is able to propose solutions to customer issues in real-time, as well as continuously improve and raise production and quality. These efforts can further raise customer satisfaction, while also allowing us to gain more industry and technical knowledge, helping us to continue improving our own technological capabilities and product quality. Winbond believes that quality workshops will continue playing an important role in future development, contributing to the mutual development of Winbond and our customers.

Customer Privacy Protection

Winbond Electronics strictly manages customer information. All business information, such as documents and information on customer interactions, are stored in Winbond’s internal highly-protected system. Winbond approves and release work access rights for our employees based on the relevant operational guidelines and procedures. In order to ensure that the Winbond is able to protect customer privacy and prevent business secrets and intellectual property rights from being stolen or leaked, Winbond has in 2022 obtained the ISO 27001 Information Security Management Systems certification, establishing a comprehensive information security protection system.

Winbond Electronics has already made the required adjustments to remain compliant with the European Union’s General Data Protection Regulations (GDPR) which came into effect in May 2018, amending the Winbond’s official website and re-inspecting the information of all website members. The GDPR has also been included in online courses on the Personal Data Protection Act. In 2022, 3,052 employees participated in these
In order to ensure that customer privacy has been well protected, Winbond has signed confidentiality agreements with our suppliers and customers, working together to protect each other’s confidential information and preventing sensitive information from being inappropriately disclosed. Winbond has established operational guidelines and provided regular education and training on our internal employee work procedures, such as on: Phishing emails, ICP import and export restrictions, red alerts, etc. Additionally, Winbond has in 2022 implemented a smart transition for our reporting systems, using programming tools and Robotic Process Automation (RPA) for: Handling computer viruses, adopting systems for running automated consistency checks on information systems, delivering mail notifications. In order to allow users to more easily operate the system in an emergency, Winbond hopes to change this system from a passive into an active one. By providing early warnings, Winbond can reduce risks, Winbond has adopted Microsoft’s cloud services to conduct automatic verifications and deliver notifications for why an account has been locked.

In 2022, Winbond continued to have no reported incidents where Winbond violated customer privacy or lost customer information, or where Winbond was fined for violating product liability laws and regulations.
IV. Sustainable Practices | Environmental Sustainability

2. Environmental Sustainability

Winbond has worked alongside countries and companies from around the world to implement green sustainability measures, proactively reducing the impact that our business operations have on the environment. Apart from having no major violations of environmental laws, Winbond has also committed innovative new technologies and significant resources into adopting measures for reducing energy consumption and carbon emissions, improving resource utilization rates, and improving waste and emissions management, taking concrete action to implement our sustainable development blueprint.

<table>
<thead>
<tr>
<th>2022 Performance Highlights</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cumulative electricity savings of 380 GWh from 2018 to 2022</strong></td>
</tr>
<tr>
<td><strong>The power generation capacity of the rooftop renewable energy equipment in CTSP Fab reached 660,000 kWh</strong></td>
</tr>
<tr>
<td><strong>GHG emissions per layer of wafer photomask was 13.2 (kg CO2e/layer - wafer photomask)</strong></td>
</tr>
<tr>
<td><strong>Electricity consumption per layer of wafer photomask was 82 (MJ/layer - wafer photomask)</strong></td>
</tr>
<tr>
<td><strong>Cumulative water saving of 3,530 megaliters from 2018 to 2022</strong></td>
</tr>
<tr>
<td><strong>The water recovery rate of the whole plant reached 80.5%</strong></td>
</tr>
<tr>
<td><strong>Waste recycling rate reached 90.1%</strong></td>
</tr>
<tr>
<td><strong>Removal rate for VOCs in 2022 reached 99%</strong></td>
</tr>
</tbody>
</table>
2.1 Energy and Greenhouse Gas Management

2.1.1 Energy Management

Our use of raw materials/fuel has increased in recent years due to the building of new facilities and the addition of new equipment. In 2022, Winbond consumed approximately 2,807,178 GJ of energy. In view of these figures, Winbond has continued to implement energy conservation measures in 2022, changing 21 pieces of equipment in order to conserve more energy, including: Utilizing smart air conditioning, and optimizing the Make-up Air Unit (MAU) air washer system. In 2022, our Central Taiwan Science Park (CTSP) Facility obtained ISO 50001 energy management systems certification, effectively standardizing the facility’s management processes and allowing it be managed by our engineering units. Our Kaohsiung Fab is also planned to undergo ISO 50001 certification, with the hopes of expanding the scope and benefits of our energy management operations. Amount of electricity saving increased about 129,229 GJ compared to 2021. In 2022, the average electricity consumption per layer of photomask for 12-inch wafers was 82 MJ. Compared to the 79.3 MJ consumed in 2021, electricity consumption per product unit increased by approximately 3.4% YoY (MJ/layer - wafer photomask). Compared to our target of 80.1 MJ for 2022, electricity consumption per product unit was higher by approximately 2.4% YoY (MJ/layer - wafer photomask). This was due to the global economic deterioration in 2022 leading to lower demand, in turn causing the average electricity consumed to produce one product unit to slightly overshoot our target levels. In the future, Winbond shall continue to promote energy conservation plans to reduce the burden on the environment.

From 2018 to 2022, a total of 1,366,906 GJ of electricity was conserved, equivalent to the annual electricity consumption of 108,361 households

Note: This figure is based on the Taiwan Power Company’s 2018 statistics, which showed that average annual electricity consumption for one household was 3,504 kWh, approximately 12.6 GJ.

---

![Table](https://example.com/table.png)

---

2022 Energy-Conserving Measures and Outcomes

<table>
<thead>
<tr>
<th>Type</th>
<th>Energy-saving/Carbon Reduction Project</th>
<th>Energy Savings (kWh)</th>
<th>GHG Emission Reduction (tCO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting</td>
<td>Replacement of LED lighting equipment in mechanical areas of the facility</td>
<td>49,801</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Replacement of LED lighting equipment in the office areas</td>
<td>17,928</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Smart air conditioning</td>
<td>2,270,518</td>
<td>1,156</td>
</tr>
<tr>
<td></td>
<td>Optimization of the MAU air washer system</td>
<td>499,084</td>
<td>254</td>
</tr>
<tr>
<td></td>
<td>Enhanced the plate heat exchanger efficiency of UPW (Ultra-Pure Water) and PCW (Process Cooling Water) system</td>
<td>589,641</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td>Replacing heating units of machinery in fab</td>
<td>516,932</td>
<td>263</td>
</tr>
<tr>
<td></td>
<td>Energy-saving improvements for exhaust systems</td>
<td>623,506</td>
<td>317</td>
</tr>
<tr>
<td></td>
<td>Optimization of VOC system operation</td>
<td>83,665</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>Optimization of bulk gas purifier regeneration</td>
<td>53,586</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Optimized the loading of PCW(Process Cooling Water) system</td>
<td>39,841</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Water and energy saving of UPW(Ultra-Pure Water) system</td>
<td>1,594</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Improved water production rate of RO system</td>
<td>79,681</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>Optimization of compressor dryer units</td>
<td>896</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>Reduction of exhaust emissions from VMB and gas cabinets</td>
<td>490,040</td>
<td>246</td>
</tr>
<tr>
<td></td>
<td>Energy-saving for air conditioning in the cleanroom of testing production</td>
<td>81,673</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>Motor upgrades for soft water system</td>
<td>730</td>
<td>0.4</td>
</tr>
</tbody>
</table>

Total | 5,399,116 | 19,438 | 2,748 |

Note 1: 2021 used as the base year.
— 2022 Results of Energy-Conserving Designs Implemented in Kaohsiung Fab —

<table>
<thead>
<tr>
<th>Name of energy-conservation/carbon reduction project</th>
<th>Energy Savings (kWh)</th>
<th>GHG Emission Reduction (tCO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste heat recovery from the hot purified water heat pump system</td>
<td>8,488,000</td>
<td>30,557</td>
</tr>
<tr>
<td>Waste heat recovery for air compressor dryers</td>
<td>54,750</td>
<td>197</td>
</tr>
<tr>
<td>High-efficiency boilers</td>
<td>9,855,000</td>
<td>35,478</td>
</tr>
<tr>
<td>Increasing the outlet temperature of the chilled water system to save energy</td>
<td>10,444,110</td>
<td>37,599</td>
</tr>
<tr>
<td>Energy-saving LED lighting</td>
<td>1,656,000</td>
<td>5,962</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30,497,860</strong></td>
<td><strong>109,793</strong></td>
</tr>
</tbody>
</table>

Note
1. The energy-saving design of the new fab was based on the CTSP Fab as the reference.
2. The GHG reduction of the high-efficiency energy-saving boiler project was the comprehensive calculation result of electricity saving and natural gas usage.

— Energy use and energy intensity for each product unit —

<table>
<thead>
<tr>
<th>Energy intensity/year</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total energy consumption (GJ)</td>
<td>2,207,442</td>
<td>2,234,839</td>
<td>2,807,178</td>
</tr>
<tr>
<td>Energy consumption per unit (MJ/layer - wafer photomask)</td>
<td>90</td>
<td>89.1</td>
<td>92.2</td>
</tr>
<tr>
<td>Electricity usage (GWh)</td>
<td>546</td>
<td>552</td>
<td>689</td>
</tr>
<tr>
<td>Total electricity consumption (GJ)</td>
<td>1,966,533</td>
<td>1,988,490</td>
<td>2,479,988</td>
</tr>
<tr>
<td>Electricity consumption per unit (MJ/layer - wafer photomask)</td>
<td>80.1</td>
<td>79.3</td>
<td>82.0</td>
</tr>
<tr>
<td>Percentage of total electricity usage (%)</td>
<td>89.1</td>
<td>89.0</td>
<td>88.3</td>
</tr>
<tr>
<td>Natural gas usage (ten thousand cubic meters)</td>
<td>636</td>
<td>654</td>
<td>854</td>
</tr>
<tr>
<td>Total natural gas usage (GJ)</td>
<td>236,788</td>
<td>242,327</td>
<td>314,966</td>
</tr>
<tr>
<td>Natural gas usage per unit (MJ/layer - wafer photomask)</td>
<td>9.7</td>
<td>9.7</td>
<td>10.9</td>
</tr>
<tr>
<td>Percentage of total natural gas usage (%)</td>
<td>10.7</td>
<td>10.8</td>
<td>11.2</td>
</tr>
<tr>
<td>Diesel usage (cubic meters)</td>
<td>54</td>
<td>55</td>
<td>285</td>
</tr>
<tr>
<td>Total diesel usage (GJ)</td>
<td>1,899</td>
<td>1,934</td>
<td>10,023</td>
</tr>
</tbody>
</table>

Note
1. Winbond has not used renewable energy.
2. Energy usage has been converted into joules (1 kWh of electricity = 3,600 kJ, 1 cubic meter of natural gas = 8,809 kcal, 1 liter of diesel = 8,400 kcal, 1 liter of gasoline = 7,800 kcal, 1 calorie = 4.184 joules).
3. Standards, methodology, assumptions, and/or tools used: All energy usage information comes from meter readings, the natural gas monthly consumption statement and the requisition form/item number inventory change record checklist. These tables contain no estimates.
4. Source of conversion factors: Apart from natural gas, which had been calculated using the caloric values provided by the supplier, all other conversion factors were based on the Environmental Protection Agency’s Table of Greenhouse Gas Emissions Coefficients Version 6.0.4.
5. Data for the Kaohsiung Fab was added in 2022. Additionally, as the Kaohsiung Fab is newly-established and just began operations, it has not been included in this year’s calculation of energy consumption per product unit.

Investment into Renewable Energy

In response to government renewable energy policies, Winbond has installed a 499 kW rooftop renewable energy generation system in 2019. In 2022, the system generated 660,000 kWh of electricity, and all electricity generated each year is sold to the Taiwan Power Company, contributing to Taiwan’s push for renewable energy.
Winbond Electronics’ Kaohsiung Fab incorporated numerous energy-conserving designs in its initial design. The facility is able to conserve large amounts of energy through methods such as recycling waste heat, using LED lights instead of traditional light bulbs, and adopting energy-conserving chiller designs.

1. Waste heat recovery from hot ultra-pure water heat pump: Waste heat generated by the process cooling water (PCW) is recovered. A heat pump is used to heat the UPW, which is then supplied to the equipment.

2. Increased outlet water temperature of chilled water system: The temperature of water output by the chiller was increased to 12°C, increasing power-saving efficiency compared to the previous temperature of 9°C.

3. In 2022, Winbond completed ISO 14067 carbon footprint inventory and verification of a portion of our IC products.

--- 3 Major Components of Winbond’s Greenhouse Gas Emissions ---

- **Scope 1 (Direct GHG emissions)**
  - Includes the greenhouse gases emitted during the production process (hydrofluorocarbons, perfluorocarbons, perfluorocarbons, nitrogen trifluoride, nitrous oxide, methane, and carbon dioxide), and greenhouse gases produced from burning fuels (such as: natural gas, petrol, and diesel), and the fugitive emissions from treated organic waste gases, septic tanks, high and medium-voltage panels, and firefighting equipment.

- **Scope 2 (Energy indirect GHG emissions)**
  - From electricity purchased indirectly.

- **Scope 3 (Other indirect emissions)**
  - Scope 3 includes other indirect greenhouse gas emissions, including emissions from production of the raw materials used, IC outsourcing package measurement service, and from transporting goods.

Winbond has proactively cooperated with the government in conducting inventory and verification of greenhouse gas emissions. Winbond has implemented greenhouse gas management systems within our plant facilities, adopted the operational control approach, and adopted ISO 14064-1 standards to carry out comprehensive greenhouse gas emissions inventory and verification. Winbond has also set carbon reduction targets, looked for opportunities to reduce emissions, and proposed improvement plans. In 2022, Winbond conducted ISO 14067 carbon footprint inventory of a portion of our IC products in 2022, gradually improving our greenhouse gas reduction results.

Additionally, Winbond has from 2000 onwards participated in the perfluorocarbons (hereinafter referred to as PFCs) emissions reduction projects organized by the Taiwan Semiconductor Industry Association and the World Semiconductor Council. Through adjustments to our manufacturing process, using other gases as a substitute, installing fluorocarbons (hereinafter referred to as FCs), reducing equipment, and obtaining 285,771 tCO2e of the EPA’s preliminary carbon reduction credits, Winbond has reduced our greenhouse gas emissions and lowered the risk of the impact of climate changes on Winbond. This has improved our ability to adapt to climate change and our competitiveness in the industry, creating new opportunities and allowing us reduce...
our energy consumed per product unit by approximately 4.8% YoY (MJ/Layer - wafer photomask) in advance before total caps on carbon emissions are introduced.

### Progress on Our Greenhouse Gas Emissions Strategies and Targets

Most of Winbond Electronics greenhouse gas emissions are derived from the FCs and purchased electricity used in our manufacturing process, making up over 94% of our total Scope 1 and Scope 2 greenhouse gas emissions. Therefore, our main targets are to reduce direct emissions of FCs (including by increasing utilization rates in our manufacturing process and installing exhaust gas treatment equipment) and reduce indirect emissions by conserving electricity. Winbond use the amount of average greenhouse gases emitted to produce one 12-inch wafer photomask layer as a metric for measuring our greenhouse gas intensity per product unit. In 2022, Winbond emitted 13.2 kilograms of carbon dioxide equivalents per product unit, which is approximately a 4.8% YoY increase (kilogram of carbon dioxide equivalent/Layer - wafer photomask) in carbon emissions per product unit compared to the 12.6 kilograms of carbon dioxide equivalents emitted in 2021. This is due to the global economic downturn in 2022 leading to lower total production capacity, which in turn had caused carbon emission per product unit to rise. Compared to our target of 13.3 kilograms of emitted carbon dioxide equivalents for 2022, the actual amount emitted was lower by 0.8 YoY.

### Target Achievement Progress

<table>
<thead>
<tr>
<th>Indicators and Targets</th>
<th>2022 Targets</th>
<th>2022 Achievements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensity of greenhouse gas emissions for each product unit (One kilogram of carbon dioxide equivalent/Layer - wafer photomask)</td>
<td>≈ 13.3</td>
<td>13.2</td>
</tr>
</tbody>
</table>

Note
- Carbon reduction targets are split into those for Scope 1 and Scope 2.
- Tier 2b calculation methods have been used to calculate the direct emissions produced by the manufacturing process in the greenhouse gas inventory report.
- The Kaohsiung Fab was newly-established and began operations in 2022, so it has not been included in this year’s calculations of greenhouse gas emissions intensity per product unit.

---

### GHG Emissions Overview

<table>
<thead>
<tr>
<th>Indicators and Targets</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope 1</td>
<td>53,271</td>
<td>38,760</td>
<td>44,373</td>
</tr>
<tr>
<td>Scope 2</td>
<td>278,046</td>
<td>277,284</td>
<td>353,523</td>
</tr>
<tr>
<td>Scope 3</td>
<td>-</td>
<td>-</td>
<td>443,204</td>
</tr>
<tr>
<td>Total Emissions</td>
<td>331,317</td>
<td>316,044</td>
<td>841,100</td>
</tr>
</tbody>
</table>

**Emission Intensity (Scope 1 and Scope 2)** (kilogram of carbon dioxide equivalent/Layer - wafer photomask)

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensity</td>
<td>13.5</td>
<td>12.6</td>
<td>13.2</td>
</tr>
</tbody>
</table>

Note
- In order to reduce and manage greenhouse gas emissions, Winbond has in 2020 adopted the PFCs tracking system for production process gases, using this system to differentiate between the gases used by each production process. Winbond also changed our greenhouse gas emissions calculation method from Tier 2a to Tier 2b, with the hope of being able to produce more precise emissions information. The baseline year for greenhouse gas inventory is temporarily set as 2020, where carbon emissions were 331,317 metric tons of CO2e.
- The Global Warming Potential (GWP) used in this table comes from the “IPCC Fourth Assessment Report (2007)”.
- The types of greenhouse gases include N2O, CH4, CO2, HFCs, PFCs, SF6, NF3, etc.
- Standards, methodology, assumptions and tools used: All energy usage comes from meter readings, the natural gas monthly settlement form/requisition form, and the AS400/part number inventory change record check list. The table contains no estimates.
- The emission factors used are mainly based on the recommendations in the EPA’s latest version of GHG emission factors, and the uncertainty data for emission factors were used as reference. To assess the uncertainty in activity data, Winbond used the technical specifications of the measuring instrument as the basis for our assessment.
- Values for 2022 are estimated values, as the emissions factor of electricity for 2022 has not yet been announced.
- New data for the Kaohsiung Fab was added in 2022. Additionally, as the Kaohsiung Fab is newly-established and only began operations in 2022, it has not been included in this year’s calculations of greenhouse gas emissions intensity per product unit.

### List of Scope 1 Emissions Sources

<table>
<thead>
<tr>
<th>Types</th>
<th>Scope 1 emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Dioxide (CO2)</td>
<td>19,709</td>
</tr>
<tr>
<td>Methane (CH4)</td>
<td>86</td>
</tr>
<tr>
<td>Nitrous Oxide (N2O)</td>
<td>3,976</td>
</tr>
<tr>
<td>Hydrofluorocarbons (HFCs)</td>
<td>3,368</td>
</tr>
<tr>
<td>Perfluorocarbons (PFCs)</td>
<td>13,071</td>
</tr>
<tr>
<td>Sulfur Hexafluoride (SF6)</td>
<td>1,252</td>
</tr>
<tr>
<td>Nitrogen Trifluoride (NF3)</td>
<td>2,911</td>
</tr>
</tbody>
</table>
Winbond continues to promote various carbon reduction plans and increase resource utilization rates. In 2022, Winbond reduced our emissions by 260,898 tCO2e, equivalent to 676 times the annual carbon reductions achieved by the Da’an Forest Park. (Based on data published by the Forestry Bureau of the Council of Agriculture Executive Yuan and the Department of Land Administration of the Taipei City Government: 25.93 hectares, when calculated based on a carbon fixation rate of 14.9 tCO2e/hectare/year, Da’an Forest Park absorbs 386 metric tons of carbon dioxide a year). Additionally, in order to reduce the number of times that our employees would need to drive from our Zhubei Building to our Central Taiwan South Park facility, Winbond has arranged for a public transport shuttle bus that makes 6 trips a day between the Zhubei Building and our Central Taiwan Science Park Facility on working days. Winbond has encouraged our employees to use this shuttle bus as much as possible. Our Central Taiwan Science Park Facility also provides shuttle bus services to our engineering assistants (with routes to the Taichung city center, and with routes heading both north and south), allowing our engineering assistants to use these shuttle buses for their work commute and reducing fuel consumption and air pollution.

---

### List of Scope 3 Emissions Sources

<table>
<thead>
<tr>
<th>Types</th>
<th>Scope 3 emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenhouse gas emissions indirectly derived from transportation</td>
<td>4,494</td>
</tr>
<tr>
<td>Greenhouse gas emissions indirectly derived from product usage</td>
<td>438,710</td>
</tr>
</tbody>
</table>

---

### Greenhouse Gas reduction achievements

<table>
<thead>
<tr>
<th>Reduction in greenhouse gas emissions/year</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct reductions in greenhouse gas emissions (Scope 1)</td>
<td>173,089</td>
<td>192,106</td>
<td>194,302</td>
</tr>
<tr>
<td>Indirect greenhouse gas emissions reductions from energy consumption (Scope 2)</td>
<td>34,386</td>
<td>37,139</td>
<td>55,928</td>
</tr>
<tr>
<td>Other Indirect greenhouse gas emissions (Scope 3)</td>
<td>-</td>
<td>-</td>
<td>10,668</td>
</tr>
<tr>
<td>Total reductions in greenhouse gas emissions</td>
<td>207,475</td>
<td>229,245</td>
<td>260,898</td>
</tr>
</tbody>
</table>

**Note**
- Greenhouse gas reductions have been calculated by comparing the differences between greenhouse gas emissions before and after carbon reduction programs for the year were implemented.
- Carbon reduction measures adopted in past years helped us reduce carbon dioxide equivalent emissions by 260,898 tCO2e in 2022.
- Values for 2022 are estimated values, as the emissions factor of electricity for 2022 has not yet been announced.
- Scope 3 emissions have been disclosed starting from 2022.

---

### 2030 goal: Achieve 90% of electricity consumption as renewable energy in CTSP Fab.

Winbond’s goal is to have the Central Taiwan Science Park (CTSP) Facility using 90% renewable energy by 2030, displaying our determination to work together alongside the rest of the world to achieve net zero carbon emissions. Currently, our CTSP Fab has already been installed with solar power generation, while evaluations for our Kaohsiung Fab are underway. In the future, Winbond shall make plans to collaborate with other companies to build new solar power projects and purchase T-RECs.
2.2 Resource Management

Winbond has maintained the principle of optimizing material/fuel use to reduce consumption, waste output, and greenhouse gas emissions. At the same time, production costs can be reduced, allowing us to reap both environmental protection and economic benefits.

2.2.1 Raw material management

Winbond regularly reviews the overall performance of the Winbond's material reduction measures, and constantly adjusts the operating parameters of raw materials in order to optimize and minimize demand for raw materials. Apart from reducing pollution and the amount of waste produced, Winbond is also able to reduce our operating costs, creating a win-win situation. Due to the continuous addition of new plant equipment in the past three years, there has been a gradual increase in all raw materials usage, but Winbond has also continued to invest in improving the efficiency of raw material usage and making good use of every resource.

--- Raw material usage ---

<table>
<thead>
<tr>
<th>Raw Materials/Energy</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-inch wafers (Metric Tons)</td>
<td>84</td>
<td>86</td>
<td>80</td>
</tr>
<tr>
<td>Process Gas Usage (Metric Tons)</td>
<td>407</td>
<td>423</td>
<td>420</td>
</tr>
<tr>
<td>Process Chemical Usage (Metric Tons)</td>
<td>11,877</td>
<td>12,560</td>
<td>11,535</td>
</tr>
<tr>
<td>Plant Gas Usage (Million Cubic Meters)</td>
<td>217</td>
<td>222</td>
<td>219</td>
</tr>
<tr>
<td>Plant Chemical Usage (Metric Tons)</td>
<td>19,093</td>
<td>21,019</td>
<td>21,073</td>
</tr>
</tbody>
</table>

Note: Recycled materials cannot be used due to the nature of Winbond products.

2.2.2 Water Usage

Water Risk Assessment

Winbond has employed the water risk assessment tool developed by the Water Resources Institute (WRI) and the Aqueduct Water Risk Atlas on the Aqueduct website to analyze Taiwan’s water resource distribution. The analysis found that all of our operating locations in Taiwan are located in regions with low water resource risk.

Winbond’s main source of water is tap water supplied by the Taiwan Water Corporation. Most of this water is supplied by the Liyutan, Deji, and A Gong Dian reservoirs, with a small part coming from rainwater and air-conditioning condensation. After the 2021 drought issues, Winbond has already developed other stable natural water sources. A 75,000 cubic meter underground reservoir has been built on-site at our plant, sufficient for supplying water to our plant operations in times of drought or water restrictions. In 2022, our total water consumption amounted to 4,300,000 cubic meters. Looking at our metric for measuring water intensity per product unit, Winbond averaged 134 liters of water usage to produce one 12-inch wafer photomask layer, meeting our target for 2022 (≤ 145 Liters/Layer - wafer photomask). In 2022, Winbond implemented 3 new water conservation measures that increased total water saved by approximately 64 megaliters.

--- Site Water Usage Process ---

In 2022, Winbond recycled 11.15 million cubic meters of water, achieving an 80.5% recycling rate for all water used by our plant.

Water-supplied

- Tap water
- Condensation water

Water-consuming process

- Production processes
- Water recycling and reuse system for production processes

Household water consumption, public water consumption, cooling towers, local/central scrubber

Processing

- Wastewater treatment plant
- Wastewater treatment plant on plant site

Note: Local Scrubber: Exhaust gas treatment equipment. Central Scrubber: Central waste gas scrubber.


## 2.2.3 Water Recycling

Winbond continues to increase water recycling rates. In 2022, the overall plant recycled approximately 80.5% of its water and 89.3% of its process water (meeting the science park’s commitment under the environmental impact assessment to recycle more than 77% of all water used, and more than 85% of all process water used). Winbond implemented 3 new water conservation measures in 2022 that increased total water saved by 64,000 cubic meters. Accumulated water savings between 2018 and 2022 has reached 3,530 megaliters, equivalent to 0.7 times the Baoshan Reservoir's capacity.

### Water Saving Measures

<table>
<thead>
<tr>
<th>Item</th>
<th>Water Conservation Measures</th>
<th>Explanation of Water Conservation Measures</th>
<th>Water Saving</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Water-saving measures for UPW used in production process</td>
<td>Water consumption parameters adjusted for production machines</td>
<td>17.2</td>
</tr>
<tr>
<td>2</td>
<td>Increased recycling rate for ROR systems</td>
<td>Increase recycling rate for RO water production equipment</td>
<td>11.8</td>
</tr>
<tr>
<td>3</td>
<td>Improve RO water production rates for UPW system</td>
<td>Adjust system operation times, reducing amount of concentrated water discharged</td>
<td>35.3</td>
</tr>
</tbody>
</table>

### Water Withdrawal

<table>
<thead>
<tr>
<th>Water Resources Types</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water withdrawal by source</td>
<td>3,633</td>
<td>3,293</td>
<td>4,131</td>
</tr>
</tbody>
</table>

- Third-party water
- Total water withdrawal

### Water Consumption

<table>
<thead>
<tr>
<th>Water Resources Types</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Water Consumption</td>
<td>1,216</td>
<td>975</td>
<td>960</td>
</tr>
</tbody>
</table>

Note: Changes in water storage is calculated as the difference in total water storage between the start and end of the reporting period. The water storage tanks at our sites have a fixed capacity so there was no change.

Note: Data for the Kaohsiung Fab was added in 2022. Additionally, as the Kaohsiung Fab is newly-established and just began operations, it has not been included in this year's calculation of water consumption per product unit.
2.2.4 Wastewater Management

— Winbond’s 3 major principles for plant wastewater treatment —

Establish appropriate treatment facilities based on the nature of the wastewater produced. Properly treat wastewater through various treatment systems, until wastewater reaches CTSP Sewage System Water Quality Standards.

Wastewater produced by the wafer production process:
- Treat the acidic and alkaline wastewater, fluoridated wastewater, wafer planarization wastewater, ammonia nitrogen wastewater, tetramethylammonium hydroxide wastewater, copper wastewater, and hydrogen peroxide wastewater produced during the wafer manufacturing process.

Wastewater produced by employee day-to-day lifestyle activities:
- Treated through membrane bio-reactor (MBR)

— Discharged Water Quality (Unit: mg/liter) —

<table>
<thead>
<tr>
<th>Influent Standard/Threshold Value</th>
<th>Chemical Oxygen Demand</th>
<th>Suspended Solids</th>
<th>Biochemical Oxygen Demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTSP Influent Standard</td>
<td>500 mg/L</td>
<td>300 mg/L</td>
<td>300 mg/L</td>
</tr>
<tr>
<td>Measured in first half of 2022</td>
<td>33.8</td>
<td>29.2</td>
<td>33.8</td>
</tr>
<tr>
<td>Measured in second half of 2022</td>
<td>19.2</td>
<td>4.4</td>
<td>19.2</td>
</tr>
<tr>
<td>Kaohsiung Science Park Influent Standards</td>
<td>450 mg/L</td>
<td>250 mg/L</td>
<td>250 mg/L</td>
</tr>
<tr>
<td>Measured in first half of 2022</td>
<td>21.6</td>
<td>2.5</td>
<td>21.6</td>
</tr>
<tr>
<td>Measured in second half of 2022</td>
<td>46.8</td>
<td>59.2</td>
<td>46.8</td>
</tr>
</tbody>
</table>

— Amount of Water Discharged (Unit: megaliters) —

<table>
<thead>
<tr>
<th>Item</th>
<th>Type</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emissions by Destination</td>
<td>Total Surface Water Emissions</td>
<td>2,417</td>
<td>2,318</td>
<td>3,172</td>
</tr>
<tr>
<td>Emissions by Treatment Level</td>
<td>Total Emissions after Level 3 Treatment</td>
<td>2,417</td>
<td>2,318</td>
<td>3,172</td>
</tr>
</tbody>
</table>

Note: Categorized by discharge destination, wastewater from Winbond was mainly discharged into surface water (fresh water ≤ 1,000 mg/L total dissolved solids).
2.3 Waste Management

Winbond ensures that waste generated during business operations is properly and safely disposed of pursuant to our Waste Disposal Management Procedures. Waste reduction, reuse and recycling are used to reduce the amount of waste generated by our plant in order to minimize pollution and environmental impact.

— Waste Management Process —

Winbond generated approximately 9,584 metric tons of waste in 2022. Waste generated per layer of 12” wafer photomask averaged 0.000317 metric tons. 100% of hazardous industrial waste was disposed of through licensed domestic waste disposal organizations.

— Waste Production, Disposal, and Transfer (Unit: Metric Tons) —

<table>
<thead>
<tr>
<th>Waste Material</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General waste</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waste generated</td>
<td>4,064</td>
<td>4,218</td>
<td>4,976</td>
<td></td>
</tr>
<tr>
<td>Recycling</td>
<td>3,960</td>
<td>4,137</td>
<td>4,784</td>
<td></td>
</tr>
<tr>
<td>Incineration</td>
<td>97</td>
<td>76</td>
<td>185</td>
<td></td>
</tr>
<tr>
<td>Landfilling</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Chemical treatment</td>
<td>7</td>
<td>5</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td><strong>Hazardous waste</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waste generated</td>
<td>2,506</td>
<td>3,509</td>
<td>4,608</td>
<td></td>
</tr>
<tr>
<td>Recycling</td>
<td>2,119</td>
<td>3,074</td>
<td>3,849</td>
<td></td>
</tr>
<tr>
<td>Incineration</td>
<td>384</td>
<td>432</td>
<td>756</td>
<td></td>
</tr>
<tr>
<td>Landfilling</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Solidification</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Waste Recycling</td>
<td>6,079</td>
<td>7,212</td>
<td>8,633</td>
<td></td>
</tr>
<tr>
<td><strong>Percentage of Hazardous Waste</strong></td>
<td>38%</td>
<td>45%</td>
<td>48%</td>
<td></td>
</tr>
</tbody>
</table>

Winbond achieved a recycling rate of 90.1% with 8,633 metric tons of waste recycled, meeting our annual target of achieving a recycling rate above 90%.

— Waste Recycling Rate (Unit: %) —

<table>
<thead>
<tr>
<th>Year</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Waste Recycling Rate</td>
<td>92.5</td>
<td>93.3</td>
<td>90.1</td>
</tr>
</tbody>
</table>

Note:
- The amount of waste generated is the value reported under waste disposal regulations.
- All waste generated by Winbond sites is removed for processing by qualified disposal organizations and none is processed directly on-site.
- Waste recycling refers to the recycling of waste materials for reuse.
- Data on waste materials produced by the Kaohsiung Fab was added in 2022, resulting in an increase to total waste materials. Additionally, as the Kaohsiung Fab is newly-established and just began operations, it has not been included in this year’s calculation of waste materials produced per 12-inch wafer photomask layer produced.
2.4 Air Pollution control

Winbond’s air pollution prevention strategy starts with reducing emissions at the source. Process improvements are used to reduce the amount of pollutants generated to a reasonable level. Pollutants in the missions are then treated with high-performance control equipment to ensure that atmospheric emissions exceed government standards for pollutant content. All past measurements found that Winbond emissions were all lower than EPA emission standards.

Our average removal rate for VOCs in 2022 reached 99% and exceeded the relevant EPA regulations.

<table>
<thead>
<tr>
<th>Emissions produced during Winbond’s production process</th>
<th>Measures for preventing air pollution</th>
</tr>
</thead>
<tbody>
<tr>
<td>General exhaust</td>
<td>General Exhaust is from machine cooling, does not cause air pollution</td>
</tr>
<tr>
<td>Acidic exhaust</td>
<td>Appropriate air pollution control equipment is installed to process each type of emission based on their characteristics.</td>
</tr>
<tr>
<td>Alkaline exhaust</td>
<td></td>
</tr>
<tr>
<td>Volatile organic compounds</td>
<td></td>
</tr>
</tbody>
</table>

Winbond has installed local scrubber equipment for certain hazardous, flammable, FCs and PFCs emissions from our production processes. These emissions go through absorption and incineration treatment processes before being delivered to the central scrubber to be washed and have their organic acids and alkaloids neutralized. Emissions that contain volatile organic compounds are sent directly to the zeolite rotor for absorption before being treated by vertical incinerators.

Our air pollution prevention system can be immediately switched to a backup system in an emergency or during maintenance. They are equipped with emergency power backup systems as well as an advanced real-time monitoring system that tracks changes in the system’s operating parameters 24 hours a day. An alert is immediately sent if a pre-set threshold is exceeded for immediate action to ensure reliable and continuous operations 24 hours a day, 365 days a year. The effective treatment of air pollutants conforms with the relevant regulations of the “Air Pollution Control and Emissions Standards for Semiconductor Industry” and the “Air Pollutant Emissions Standards for Stationary Pollution Source.”

<table>
<thead>
<tr>
<th>Item</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>12.06</td>
<td>10.89</td>
<td>12.18</td>
</tr>
<tr>
<td>SOx</td>
<td>0.45</td>
<td>0.42</td>
<td>0.47</td>
</tr>
<tr>
<td>VOC</td>
<td>4.80</td>
<td>4.22</td>
<td>4.26</td>
</tr>
</tbody>
</table>

2.5 Hazardous Substance Management

Winbond adheres strictly to international guidelines and standards such as the QC 080000 (Hazardous Substance Process Management System Requirements), RoHS Directive (EU Restriction of Hazardous Substances in Electrical and Electronic Equipment), REACH (Registration, Evaluation, Authorization and Restriction of Chemicals), California Proposition 65, TSCA (Toxic Substances Control Act) and the Canada Convention. This ensures that the hazardous substance content of wafer, chip, and package IC products manufactured by Winbond satisfy international environmental regulations and the green product requirements of our customers, preventing environmental pollution and posing a threat to human health. Winbond has also drawn up the Hazardous Substances Control Regulations and set up a cross-department hazardous substance management team to oversee all product-related design, purchasing, production, and sales processes. Suppliers and subcontractors are additionally required to adopt green product requirements. Our ultimate goal is to supply customers with Hazardous Substance Free (HSF) products that meet their requirements. Winbond also focuses on fostering an awareness of environmental protection concepts in our employees. All employees (including new employees) have received Hazardous Substance Identification and Pollution Prevention Training, and the following principles are followed during research and development, purchasing, production, operations, and service provision to reduce the impact of our company operations on the natural environment and human beings:

1. Reduce the resource and energy consumption of products and services.
2. Reduce emissions of pollutants, toxic substances and wastes; and properly dispose of the waste.
3. Improve the recyclability and reusability of raw materials or products.
4. Optimize the sustainable use of renewable resources.
5. Extend the durability of products.
6. Enhance the effectiveness of products and services.

Winbond’s HSF Policy commits us to the design, purchase, manufacture, and sale of hazardous substance-free products. Every effort is made to fulfill the Company’s responsibilities as a corporate citizen through complying with international regulations, satisfying customers’ requirements, and protecting the environment. Winbond has also separately established the Hazardous Substance Process Management System (HSPM), where management representatives convene a management review meeting every year to review and discuss policies, targets, regulations, audit outcomes and management performance in order to continuously improve the effectiveness of our hazardous substance management system.

**Targets achieved in 2022**

- No non-compliance issues related to hazardous substances monitoring have occurred
- 100% of Winbond personnel have completed hazardous substance training
- No non-compliance detected by customers’ hazardous substance audits
3. Sustainable Supply Chain

Supply chain management is becoming regional and shorter than ever before. Therefore, how to manage supply chain to keep sustainability has become one of the main challenges today. In order to establish a more resilient and sustainable supply chain, Winbond has proactively promoted corporate sustainable development by broadening the scope of these efforts. For pursuing a long-term and sustainable partnerships with our suppliers, we also hope to attract potential suppliers who share the same vision of sustainable business operations with us. By implementing sustainable supply chain management policies, and collaborating on regular ESG supplier workshops, environmental conservation investigations, and supplier sustainability training courses, we are truly appreciated to embed sustainability elements into Winbond’s sustainable supply chain management system gradually.

2022 Performance Highlights

- 15 Material Suppliers Participated in ESG Workshops
- 65 Material Suppliers Sustainable supply chain environmental surveys
- 8 packaging and testing outsource completed product carbon footprint inventory and verification
3.1 Supply Chain Composition and Overview

Winbond’s most important operating location is Taiwan, while the other important locations distributed across Japan, Korea, Israel, and China. The key suppliers who Winbond works with are from Japan, the US, Korea, Belgium, and Germany. These suppliers include those for raw materials, outsourced semiconductor assembly and testing (OSAT), machinery and equipment, factory engineering, components, maintenance, and other suppliers or contractors (for logistics, waste handlers, waste removal providers, information equipment and software, general items suppliers, and waste). In particular, these key major suppliers include raw materials directly or indirectly used for production. Materials directly used for production referring to raw materials which used in manufacturing products. These raw materials impact on final product quality a lot. Indirect materials referring to materials used in production including PADs, and quartz, packaging and then shipment. Compared to the previous reporting period, there are no changes within our supplier activities, value chain, or other business interactions.

Note

- A key supplier is defined as: a supplier directly related to production operations, a supplier accounting for more than 75% of total procurement spending for 2022, the sole supplier for a material/supplier responsible for a certain level of inventory stock, or a supplier of spare parts critical for production operations.
- Definition of domestic supplier: Refers mainly to Taiwanese suppliers.

In order to effectively reduce the negative environmental impact deriving from long-distance shipping and global threats associated with international geopolitics, to help domestic suppliers research, develop technologies and innovate, Winbond frequently does suppliers chasing and sought to find second suppliers as another sources.

In terms of local procurement performance in recent years, the proportion of chemicals, gases, and targets purchased has slightly decreased due to production strategy adjustments, but the proportion of wafer purchases in mid-2022 will increase by 19% compared to 2021.

### Composition of Winbond suppliers

<table>
<thead>
<tr>
<th>Raw materials</th>
<th>Parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outsourced semiconductor assembly and testing (OSAT)</td>
<td>Maintenance and repair</td>
</tr>
<tr>
<td>Machinery and equipment</td>
<td>Logistics</td>
</tr>
<tr>
<td>Factory engineering operations</td>
<td>Waste processing</td>
</tr>
</tbody>
</table>

3.2 Sustainable Supply Chain Management Framework

Winbond has established a Sustainable Supply Chain Task Force under the ESG Committee. We are responsible for developing and proposing supplier management policies and sustainable development work. In 2022, Winbond re-organized our existing supplier management policies, which include the Responsible Business Alliance (RBA) standards, our Hazardous Substance Free (HSF) policies, and traditional supplier management elements (quality, price, delivery and technical capabilities). At the same time, in response to extreme climate change, global economic, trade and geopolitical concerns, Winbond has organized sustainable procurement strategies and ESG risk assessments/audits into these policies, integrating all of these requirements into our sustainable supply chain strategies and policies.

With the goal of sustainable supply chain development in mind, building stable long-term relationships with our suppliers is the foundation of a stable management system. Winbond has designed the sustainable supply chain management system based on systematic Plan-Do-Check-Act (PDCA) procedures. These procedures allow us to trace and select new suppliers, regularly evaluate key suppliers, and finally to track and correct any issues. Winbond has proactively implemented SDG 17.16 “Partnerships for the Goals requirements”, enforcing strict internal quality requirements on the raw materials provided by suppliers. Externally, Winbond has carried out regular supplier evaluations, discovering new ways to improve our operational and manufacturing operations together with our suppliers. Through methods such as regular tracking, discussing progress on implementing improvements, and other methods to refine our business operations, Winbond hopes to work alongside our suppliers to implement sustainable supply chain development philosophies.
Winbond Sustainable Supply Chain Management Strategies

### Management Policy

**Ethical and Responsible Procurement**
- Evaluation of New Suppliers
- Winbond’s Corporate Social Responsibility (CSR) and Integrity Policies
- WINBOND SUPPLIER CODE OF CONDUCT
- Hazardous Substance Free (HSF)
- Non Use for Conflict Minerals

**Strengthening Supply Chain Resilience**
- Regular supplier evaluations
- First-Tier (Non)Key Suppliers Identification
- Sustainable Risk Assessment and Audit

**Low Carbon Supply Chain**
- ESG co-learning workshops for key suppliers
- Environmental investigation of Sustainable supply chain management
- Sustainable Supply Chain Upgrading Forum
- ESG-KSA Upgrading Training for Purchasing Team

### Management Measures/Activity

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of new suppliers</th>
<th>Percentage of suppliers selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td>2019</td>
<td>11</td>
<td>100</td>
</tr>
<tr>
<td>2020</td>
<td>4</td>
<td>100</td>
</tr>
<tr>
<td>2021</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>2022</td>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>100</td>
</tr>
</tbody>
</table>

### 2022 Key Supplier Sustainability Management Results

- Percentage of suppliers who have signed agreements with Winbond’s Corporate Social Responsibility (CSR) and Integrity Policies **100%**
- Percentage of suppliers who have signed the Winbond Supplier Code of Conduct Commitment Letter **100%**
- Percentage of suppliers who have signed agreements not to use conflict materials **100%**

### Sourcing and Assessment of New Suppliers

Winbond’s selection system for new suppliers includes evaluation items such as a quality system questionnaire (including questions on quality, delivery, services, technologies, and the supplier’s quality management system), which based on RBA Code of Conduct. Additionally, the supplier is required to provide third-party certification of its quality management system, its management guidelines for Process/Product Change Notices (PCN), and fill out a questionnaire on its hazardous substance management. Suppliers who are responsible for outsourced work on security products are additionally required to possess an international safety verification certificate, and fill out the Questionnaire on Safety Control Measures for Outsourced Work on Security Products. In 2022, we have passed 5 new suppliers, who have all passed the evaluation process.

### Regular Evaluation and Audits of Key Suppliers

Winbond conducts regular supplier evaluations on qualified suppliers. Evaluation items include quality, delivery, services, and prices, with each item being awarded an A, B or C grade (Excellent, Good, Requires Review) after being evaluated. Suppliers would receive different treatment depending on the grade earned. Additionally, in order to ensure that these systems are operating normally, Winbond conducts annual audits on our OSAT suppliers, ensuring that supply chain risk is being appropriately managed. Apart from quality management audits, the audit also includes two other main items, namely green assessment and social responsibility assessment. The annual supplier audit is carried out through a document audit or a physical visit to the supplier. In 2022, a total of 12 OSAT and 5 raw materials suppliers were audited. All audited suppliers were able to meet Winbond’s standards. No suppliers were found to not have committed major environmental, social, or governance violations, and no suppliers lost their supplier qualifications as a result.

### Pass rate of Key Suppliers/Outsourcers for the Audit’s Economic, Environmental, and Social Items (Unit:%)

<table>
<thead>
<tr>
<th>ESG aspect</th>
<th>Procurement category</th>
<th>Key Supplier/Outsourcer (providers of packaging and testing services)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td>ISO 9001 Quality Management Systems</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>IATF 16949</td>
<td>100</td>
</tr>
<tr>
<td>Environmental</td>
<td>ISO 14001 Environmental Management Systems</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>REACH</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>RoHS</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>HSPM Hazardous Substance Process Management</td>
<td>100</td>
</tr>
<tr>
<td>Social</td>
<td>RBA Social Responsibilities</td>
<td>100</td>
</tr>
</tbody>
</table>
### 3.3 Low Carbon Supply Chain

**Co-Sustainability Programs**

From 2022, Winbond has gradually implemented sustainability elements into our procurement activities. Winbond began promoting project “Co-Sustainability” in 2022, which is focused on our efforts to create a low carbon supply chain through management measures. The main activity conducted under this program include ESG co-learning workshops for key suppliers. In 2022, we have interacted with 16 key suppliers who had accounted for a major portion of our procurement spending in 2021, and who have also long implemented ESG measures and have displayed exceptional performance. The second activity conducted under this program was an investigation including the electricity consumption, water consumption, greenhouse gas and energy management, and product traceability management of each company in our supply chain. Based on the results of this investigation, Winbond established goals to reduce supply chain carbon emissions by 10% by 2030.

**ESG Workshops for Material (Key) Suppliers**

In 2022, the discussions and information exchanges held with 15 of our suppliers included topics such as reducing use of environmental resources, measures for responding to climate change, and measures for managing greenhouse gases and carbon emissions, human and labor rights protections, and corporate governance and ethics. Building on these discussion results, Winbond has absorbed and referenced the experiences of our suppliers in implementing their own ESG activities, and applied these experiences to the planning and implementation of our own internal sustainable supply chain.

---

<table>
<thead>
<tr>
<th>Supplier Category</th>
<th>Number of suppliers audited</th>
<th>Number of suppliers passed audit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providers of packaging and testing services</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Raw materials suppliers</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Supplier Evaluation Grade</th>
<th>Grade</th>
<th>Excellent (Score ≥ 90)</th>
<th>Good (80 ≤ Score &lt; 90)</th>
<th>Review Required (Score &lt; 80)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier Treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>The original mode of collaboration shall be maintained with the supplier. Supplier shall be subject to periodic document audits.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>• The supplier shall sign and return the Notice of Improvement for Raw Materials Suppliers within 1 month, and provide us with measures for improvement</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Suppliers who received a B grade twice or more in a row shall be labeled as having a C grade.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>• The supplier shall sign and return the Notice of Improvement for Raw Materials Suppliers within 1 month, and provide us with measures for improvement</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• When necessary, Winbond shall reduce our purchases from C grade suppliers, or request the procuring unit to prepare evaluation plans for using other materials.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

ESG Co-learning Workshops with Powertech Technology Inc.  
ESG Co-learning Workshops with Chipmos Technologies Inc.
Environmental investigation of Sustainable supply chain management

In order to achieve our target 10% of reducing carbon emissions across our entire supply chain by 2030, Winbond has begun conducting environmental surveys on sustainable supply chain management topics in 2022. Winbond surveyed 65 of our suppliers in total, including 52 raw material suppliers and 13 OSAT suppliers. Based on our survey results, Winbond has not only set energy conservation targets/quantities for each year, but also established a strategic direction for our low carbon supply chain management by implementing related measures.

### Sustainable supply chain management environmental surveys

**Purpose**

- Implementing Winbond low carbon supply chain management in order to achieve our goal of reducing supply chain carbon emissions by 10% by 2030.
- This survey includes electricity consumption, water consumption, waste materials, greenhouse gases, energy management and consumption, resource utilization methods, and Scope 3 emissions.

**Reduction measures**

- Establish emergency power supply equipment
- Conserve water usage
- Improve efforts to raise awareness and implement recycling
- Adjust production activities
- Establish second water source
- Induce Material Flow Cost Accounting
- Increase renewable energy usage
- Increase water recycling rate
- Develop reuse techniques

**Results Predicted for 2023**

- Supplier annual electricity conservation target: 1%
- Supplier annual water conservation target: 5%
- Suppliers annual waste reduction target: 1%
- Obtain ISO 14064:2018 certification: 30%
- Conduct carbon footprint inventory and verification: 5 companies

ESG-KSA Upgrading Training for Purchasing Team

The 2021 report published by the World Economic Forum titled "Net-Zero Challenge: The Supply Chain Opportunity" points out that appropriate communication on reducing carbon emissions for procurement and business operations is critical to the success of supply chain carbon reduction measures. Based on this view, Winbond has established the ESG-KSA Upgrading Training for Purchasing Team. Winbond has applied this sustainability knowledge to the results of the carbon management grade assigned to each supplier in our sustainable supply chain management environmental surveys, and to the greenhouse gas management status of each supplier (including organizational greenhouse gases and product carbon footprints), strengthening two-way communication on supply chain carbon reduction, and improving our understanding of the greening of products procured from suppliers.
3.4 Sustainability Risk Assessment

In order to gradually establish a resilient Winbond supply chain, Winbond has developed a supplier ESG risk assessment (which evaluates suppliers on 3 major aspects, environmental, social, and governance, and 21 assessment sub-items) based on the RBA standards since 2022. In 2023, Winbond will assess first-tier key suppliers, identifying high-risk suppliers and the type of risk. In the near future, through regular surveys, risk assessments, and assessing degrees of impact, Winbond hopes to propose improving actions targeting areas where our suppliers can move on. Winbond hopes to work together to increase the internal resilience of the overall supply chain.

### Supplier ESG Self-Assessment Questionnaire

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Measures</th>
<th>Results Predicted for 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify supply chain risks and the severity of impact on supply chains through regular sustainability surveys and assessments</td>
<td>Implementing key supplier ESG self-evaluations</td>
<td>100% of key supplier sustainable supply chain self-evaluation questionnaires completed</td>
</tr>
<tr>
<td>Manage and reduce the operating risks faced by first-level suppliers with regard to sustainable business operations and RBA standards, gradually improving the internal resilience of the Winbond supply chain</td>
<td>Completing ESG risk analysis of key suppliers</td>
<td>Identifying high-risk suppliers and risk types</td>
</tr>
<tr>
<td></td>
<td>Planning supplier sustainability risk audits</td>
<td>Establishing supplier ESG performance as part of our supplier selection criteria</td>
</tr>
</tbody>
</table>

### Content of supplier ESG risk assessments

<table>
<thead>
<tr>
<th>Management</th>
<th>Environment</th>
<th>Society</th>
<th>Governance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definitions</td>
<td>Starting with product life cycle traceability and supply, Winbond has committed to requiring our partnered suppliers to operate in an environmentally-friendly and economic manner.</td>
<td>Suppliers are required to sign the Winbond Supplier Code of Conduct Commitment Letter, ensuring that our suppliers provide a safe and healthy workplace compliant with international labor rights standards.</td>
<td>Suppliers are required to conduct business operations ethically and with integrity, the highest standard for business ethics, and ensure that this standard is applied to all internal business operations.</td>
</tr>
</tbody>
</table>
| Assessment items | • Environmental Management Systems  
• Air Pollution Prevention  
• Water Management  
• Water Management  
• Greenhouse Gas Management  
• Biodiversity Management  
• Hazardous and Shared Substance Management | • Human Rights Protection  
• Employment and Labor Rights Protection  
• Occupational Health and Safety, and General Health Management  
• Chemical Safety  
• Fire Safety  
• Equipment Safety | • Degree to Which Corporate Sustainability has been Formally Incorporated  
• Sustainability Impact and Degree of Disclosure  
• Business Continuity and Management  
• Supply Chain Management  
• Service Quality Management  
• Business Ethics and Philanthropy  
• Corporate Governance |
3.5 Conflict Minerals

Following the provisions on conflict minerals in the Responsible Business Alliance’s Code of Conduct, Winbond does not procure or utilize any minerals sourced from regions of the Democratic Republic of the Congo which are under the control of non-government or unlawful military groups. Prohibited minerals include gold (Au), silver (Ag), tantalum (Ta), Tungsten (W), and Tin (Sn). 100% of our main suppliers have signed the Winbond Supplier Code of Conduct Commitment Letter. Winbond has also formally announced to our suppliers our policy of not using conflict minerals through public declarations on our official website and advocacy letters.

Winbond has also used the Conflict Minerals Reporting Template (CMRT Ver. 6.22) according to the RBA Code of Conduct to investigate the use of conflict minerals by suppliers. Winbond has requested suppliers to disclose information on smelters which process conflict minerals, and taken action to ensure that information provided from suppliers is accurate. In the future, Winbond shall continue to cooperate with its suppliers to ensure that all suppliers use materials from Tier 1 Conflict-Free Smelters certified and announced in the RBA Code of Conduct as smelters which do not use any conflict minerals. Winbond conducted an investigation into conflict minerals for 18 of our suppliers (9 raw materials suppliers and 9 outsourcers). All of these suppliers were found to be compliant with related rules. In 2022, no products were prohibited from being sold to Winbond. (For more details, please refer to the Winbond Conflict Minerals Investigation Report on our official website.)

3.6 Sustainable Supply Chain Communication

Winbond regularly communicates with suppliers. Winbond highly values our partnership with suppliers, and hope to work together with our suppliers to collectively improve sustainability competitiveness and performance, which Winbond considers part of our social responsibility. As part of our regular communications, Winbond hold regular supplier conferences, supplier guidance courses, and safety education and training courses. As part of our emergency communications measures, Winbond has established systems for making disaster reports to our suppliers. For example, during an earthquake, Winbond has systematic communications channels in place to make emergency reports to companies in our supply chain, warning them of emergency situations. In the future, Winbond shall continue planning and holding forums for promoting sustainable supply chain upgrading and on advanced testing and packaging technologies. Winbond shall also adopt digital management measures, allowing us to avoid previous supply chain restrictions related to time and location in order to spread information on sustainability activities more efficiently.

Supplier Conference

Winbond Electronics highly values its long-term partnerships with our outsourcers, and hosts an annual supplier conference where Winbond announces our quality and corporate social responsibility policies to our suppliers. Through this conference, Winbond is also able to update our suppliers on any changes to our quality requirements, and share new innovative technologies in the industry, deepening our common understanding and partnership with our OSAT suppliers. Winbond hopes to work together with our suppliers to implement sustainable development, and in 2022 100% of our outsourcers attended the supplier conference.

Supplier/Outsourcer Guidance

Product Carbon Footprint

Winbond hopes to be able grow alongside our supplier and outsourcer partners, creating a sustainable supply chain. In order to share our carbon footprint inventory and verification experiences with our outsourcers, Winbond has proactively assisted our outsourcers in completing their own carbon footprint inventory, in order to better achieve future carbon reduction goals and implement carbon reduction programs. This creates a win-win situation, while also improving supply chain sustainable resilience at the same time.
— 2022 Outsourcer Guidance Outcomes —

<table>
<thead>
<tr>
<th>Content</th>
<th>Item Scope</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon footprint inventory</td>
<td>8 packaging and testing outsourcers conducted carbon footprint inventory</td>
<td>In 2022, 8 packaging and testing outsourcers all 100% completed product</td>
</tr>
<tr>
<td></td>
<td>and verification</td>
<td>carbon footprint inventory and verification</td>
</tr>
</tbody>
</table>

### Training for Security Personnel

Winbond establishes a training schedule for its security personnel each year, and conducts regular training on topics such as human rights. Winbond also arrange for our security contractors to undergo RBA audits. As of 2022, all of our security contractors have passed RBA audits comprised of 10 total audit items, including items on human rights, health, and safety. This not only ensures that Winbond is able to maintain a safe workplace, but also increases the awareness of our security contractors on their social responsibilities, improving their performance in this aspect.

Due to still being impacted by the COVID-19 pandemic in 2022, security personnel at our facilities have been requested to more strictly enforce COVID prevention measures for entering our facilities, such as taking body temperatures and wearing face marks. Winbond has also provided our security personnel with training on COVID prevention and management.

### — Education and Training Outcomes —

<table>
<thead>
<tr>
<th>Topic</th>
<th>Content</th>
<th>Number of security personnel</th>
<th>Length of training course (hours)</th>
<th>Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workplace equality</td>
<td>Training and courses on topics such as workplace bullying, abuse, harassment</td>
<td>26</td>
<td>0.5</td>
<td>CTSP Fab</td>
</tr>
<tr>
<td></td>
<td></td>
<td>22</td>
<td>0.5</td>
<td>Kaohsiung Fab</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10</td>
<td>0.5</td>
<td>Zhubei Building</td>
</tr>
<tr>
<td>COVID awareness</td>
<td>Informed security personnel on the need for employees/visitors/contractor employees to have their body temperatures taken and to wear a mask when entering our facilities</td>
<td>26</td>
<td>1</td>
<td>CTSP Fab</td>
</tr>
<tr>
<td></td>
<td></td>
<td>22</td>
<td>1</td>
<td>Kaohsiung Fab</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10</td>
<td>1</td>
<td>Zhubei Building</td>
</tr>
</tbody>
</table>

Sustainable Communications for the Future

- **Sustainable Supply Chain Upgrading+ forum**
  - Advanced Packaging and Testing Technologies forum

From 2023, Winbond shall hold sustainability training courses for our suppliers through forums. These include the Sustainable Supply Chain Upgrading+ forum, which aims to promote knowledge on climate change and improve supply chain risk resilience. The Advanced Packaging and Testing Technologies forum, which aims to improve green and low carbon packaging and testing technologies.

### Purpose
- Make promoting sustainability information and collecting various sustainability survey data more efficient across the entire supply chain
- Working together with suppliers to continue deepening knowledge on sustainable business operations

### Measures
- completing planning and establishing content for each section
- completing preparing the platform for use by procurement employees for promotion and training
- completing the promotion and training of website for supplier’s usage
- digitalizing sustainability surveys and data collection
- guiding suppliers on applying for and registering on the network
- completing promoting use of the network to suppliers
IV. Sustainable Practices | Human Rights and Social Inclusion

Winbond complies with internationally-recognized human rights standards, taking these standards as our highest-level guiding principle, and labor rights laws. Winbond protects our employees’ freedom of association and right to free speech, and do not discriminate against employees on the basis of race, age, gender, sexual preference, disability, pregnancy, politics, and religion. Winbond is devoted to creating a workplace free from discrimination.

Winbond is committed to putting people first, and adheres to international human rights conventions and labor rights laws. Through the comprehensive human resource policies established by our human resource department, Winbond has protected the human rights of our employees, and ensured that Winbond practices diversity, equality, and human rights protection. In 2022, Winbond was certified by the RBA Validated Assessment Program (VAP) as having zero violations, and experienced no violation of laws and regulations. Winbond continuously lead employees to actively engage in social welfare activities, benefit the external community, create value and expand our positive social impact.

2022 Performance Highlights

- First completion of 100% coverage of human rights due diligence investigation
- Providing a monthly childcare subsidy of 6,000 yuan for employees’ children
- 82% utilization rate of "Life-Work Balance Leave" (7 days per year)
- Average annual salary for non-supervisory full-time employees is 1.93 million
- Weighted employment of disabled individuals increased by 147%
- Total public welfare donations exceed 17 million yuan (including childcare, support for vulnerable groups, academic sponsorship, public welfare promotion, and environmental education)
- Average staff training hours per year: 42 hours
- First independent Human Rights Due Diligence report published in 2023
4.1 Human Rights Due Diligence Investigation

Winbond places a high priority on the development of human rights issues, and has proactively invested into human rights management activities. In order to sufficiently assess human rights risks, allowing for continuous improvements to be made, Winbond has performed a human rights due diligence investigation of all of our employees for the first time in 2022.

Winbond has conducted this investigation with reference to sustainability assessment and standards trends, developing a framework for this investigation based on an analysis of these trends. These standards include, without limitation, the UN Global Compact, the International Bill of Human Rights, the UNGPs on Business and Human Rights, the ILO-Declaration of Fundamental Right at Work, the International Labor Office Tripartite Declaration of Principles, and the OECD Due Diligence Guidance for Responsible Business Conduct.

— Implementation of the Human Rights Due Diligence Investigation —

<table>
<thead>
<tr>
<th>Scope</th>
<th>All employees at Taiwan headquarters, including the Taipei Office, Zhubei Office, CTSP Fab, Tainan Office, and Kaohsiung Fab.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>2022</td>
</tr>
<tr>
<td>Coverage rate of potential negative human rights impact assessment</td>
<td>100% coverage</td>
</tr>
</tbody>
</table>

— Human Rights Due Diligence Investigation Procedures —

- **Data analysis**
  - Research background, business models, and management conditions for assessed industries, to understand the scope of the issue, and identify targets for each stage of the assessment.

- **Identification of Potential Negative Impact**
  - Identify the human rights risks and issues applicable to Winbond, use this information as the basis for the assessment.

- **Assessment of Potential Negative Impact**
  - Conduct quantitative and qualitative studies. A quantitative risk value is calculated based on the occurrence frequency and severity of impact reported on the human rights risk assessment questionnaire, together with internal practice assessments and employee interviews.

- **Analysis of Potential Negative Impact**
  - Undertake human rights risk mitigation and remediation actions based on the assessment results, and establish a management cycle for continuous improvements.

- **Report and Disclosure**
  - Produce human rights due diligence investigation report on the regular basis, which reveals the investigation process and related risk analysis results.

Human Rights Risk Assessment

**Guidelines for Conducting Potential Negative Human Rights Impact Assessment**

Our human rights risk identification procedures had identified 37 risks that can potentially lead to a negative human rights impact.

Among the 37 risks, 9 risks can be assessed through internal practice review and prove no human rights violations, thus Winbond created questionnaires for the 28 other risks (including but not limited to forced labor, human trafficking, child labor, freedom of association, collective bargaining, equal pay for equal work, and discrimination) under the four main categories of labor rights, health and safety, environment and society, and governance and ethics.

Winbond assessed how frequently these negative human rights impacts occur and the severity of the impact based on the results of the questionnaires, and derive a risk product value by multiplying these two values together. A human rights risk matrix is then constructed based on the value of this product.
Human Rights Due Diligence Investigation Results

There is no high-risk impact requiring immediate remedial actions.

Based on the risk product value derived from the frequency and impact of a specific potential human rights impacts, Winbond has divided impacts into three categories: high risk, medium risk, and low risk. Low risk issues lie to the left of the green line. Medium risk issues lie between the green and red lines. High risk issues lie to the right of the red line.

The results of these questionnaires reveal that none of the 28 issues identified are high risk issues which requires immediately action. 6 issues are medium risks which requires additional mitigation measures. The remaining 22 issues are all low risks, revealing that employees generally believe that there is only a low probability for these human rights risks to take place at Winbond, and that their impact on human rights is limited.
### Improvement and Follow-Ups

No high risks were discovered in this assessment. Winbond continues addressing the 6 medium risks, reducing the occurrence and the impact. The action plans are described in the table below:

<table>
<thead>
<tr>
<th>Risk</th>
<th>Mitigation Measures</th>
<th>Remediation Measures</th>
</tr>
</thead>
</table>
| **Working Hours**     | • Winbond has reviewed production capacity and manpower requirements regularly for talent recruiting and work arrangement.  
                        • Winbond has analyzed and addressed the issue through a mechanism and system for managing working hours.  
                        • Winbond has arranged regular annual training to enhance awareness of working hour management. | If any violation occurred, internal investigation will be conducted and disciplinary action will be taken, and the rights of employees whose interests have been damaged shall be restored. |
| **Forced Labor**      | Annual training on forced labor issues for supervisors will be arranged to enhance management awareness. | If any violation occurred, internal investigation will be conducted and disciplinary action will be taken, and the rights of employees whose interests have been damaged shall be restored. |
| **Work Life Balance** | Winbond regularly organizes events such as parenting seminars and wellness workshops to provide employees with information and support for their personal lives, and to enhance their work-life balance.  
                        Please refer to section 4.4.1 Occupational Safety and Health Management System for more details. | The “employee assistance program” (EAP) is provided to employees. Through the consultant team’s professional counseling in interpersonal relationships, physical and mental health, finance, law, and management, we assist employees in regaining work-life balance. |
| **Bullying and Harassment** | • The measures for preventing workplace unlawful infringement and preventing workplace harassment, including sexual harassment, have been strictly implemented.  
                        • Winbond has held regular anti-bullying and anti-harassment management courses, and courses on communication techniques will be arranged. For more details, please see section 4.4.1 Occupational Safety and Health Management System.  
                        • The prohibition of workplace unlawful infringement is regularly promoted through channels such as email, bulletin boards, or posters to ensure that employees understand the company’s regulations.  
                        • An internal complaints channel is established, as well as a follow-up tracking procedure, in order to provide employees with sufficient channels for receiving help. For more details, please see section 4.3 Open Employer-Employee Communications. | • An internal complaints channel is established, as well as procedures for following up on and addressing complaint reports, in order to provide employees with sufficient channels for receiving help.  
                        • If any violation occurred, appropriate protection and arrangements are provided for victims of bullying and harassment.  
                        • Internal measures for investigating and disciplinary actions of bullying and harassment issues are implemented. |
| **Talent Training and Development** | • The comprehensive training and development programs are planned based on the Winbond’s vision and core culture. For more details, please see section 4.2.4 Talent Development and Learning Outcomes.  
                        • Internal job opportunities are announced, and channels are provided employees to apply.  
                        • Succession programs for key positions are established, focusing on long-term cultivation of key talents. For more details, please refer to section 4.2.4 Continuous Development of Key Talent Cohorts. | • If employees provide feedback indicating insufficient training content, the responsible unit will assess the needs based on their specific topics and provide appropriate solutions.  
                        • The promotion of internal rotation regulations will also be carried out. |
| **Physical and Mental Health** | • Diverse health promotion activities are regularly organized to provide our employees with accurate health information, and to enhance their ability to manage and improve their personal health. For more details, please refer to section 4.4.1 Health Services and Promotion.  
                        • Winbond regularly uses employee health check survey to assess employees’ health risks and provide reminders and follow-up assistance to help improve their health. | If it is found that the shift system, rest time, epidemic prevention policy, and other practices violate legal regulations, an investigation should be conducted, and the disciplinary action shall be taken in accordance with the internal disciplinary regulations. The rights of employees whose interests have been damaged shall be restored. |
4.2 Human Resources Management

Winbond continues to enhance its human resource management system and optimize its human resource integration system, including recruitment, retention, compensation, benefits and talent development. Winbond is committed to promoting a people-centric corporate culture, increasing employee engagement with Winbond, and dedicating substantial resources to talent attraction and retention. In the face of global uncertainties, Winbond strives to maintain a strong competitive edge.

4.2.1 Workforce Structure

Global Talent Deployment

As of 2022, the total number of employees at Winbond’s Taiwan headquarters was 3,630, including 2,921 executives in research and development/production, administration/sales, as well as 709 production support personnel.

As of 2022, the total number of employees at Winbond’s Taiwan headquarters was 3,630 with the main growth factor since 2020 being the construction of the Kaohsiung plant in 2019. These includes 2,921 managers and personnel in research and development/production, administration/sales, as well as 709 production support personnel. The global workforce is predominantly located in Asia, with the increase attributed to the acquisitions of semiconductor companies in Japan, which aims to enhance the diversity of global talent and cultivate international competitiveness.

<table>
<thead>
<tr>
<th>Item</th>
<th>Head Office (Taiwan)</th>
<th>Asia (excluding Taiwan)</th>
<th>North America</th>
<th>Middle East</th>
<th>Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>16</td>
<td>2,409</td>
<td>9</td>
<td>413</td>
<td>1</td>
</tr>
<tr>
<td>Female</td>
<td>25</td>
<td>1,180</td>
<td>8</td>
<td>48</td>
<td>0</td>
</tr>
<tr>
<td>Subtotal</td>
<td>41</td>
<td>3,589</td>
<td>17</td>
<td>461</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>3,630</td>
<td>478</td>
<td>67</td>
<td>46</td>
<td>5</td>
</tr>
</tbody>
</table>

Note: Employees classification according to GRI corresponds to fixed-term contract employees classified as temporary staff; indefinite contract employees classified
2022 Employee Composition

Winbond conducts regular reviews of its workforce composition, and formulates effective talent recruitment strategies to attract suitable professional talents, ensuring the company’s competitiveness in the semiconductor industry. In 2022, Taiwan headquarters achieved a 50% ratio of hiring master’s and doctoral degree holders and a 35% ratio of bachelor’s degree holders to cater to the knowledge-intensive nature of the industry. Regarding age distribution, Winbond strictly adheres to domestic and international labor laws and the Responsible Business Alliance (RBA) Code of Conduct. The human resource department verifies the actual age of applicants to ensure compliance and refrains from employing child labor or individuals who have not completed compulsory education, guaranteeing that all employees are aged 18 and above. Generally, our staff members’ ages range from 31 to 50 years old, accounting for approximately 73% of the total workforce.

Distribution of Male and Female Employees

Due to the nature of the technology industry and factors in the job market, male employees constitute the majority at Winbond. At Taiwan headquarters, the total number of male employees is 2,425, while the total number of female employees is 1,205, resulting in a male-to-female ratio of approximately 2:1. Winbond is committed to maintaining a certain proportion of female employees and ensuring equal treatment and job security for all employees. Winbond prioritizes talent and promotion opportunities based on merit, without any discrimination based on gender, to maintain a balanced gender composition among our workforce.

Distribution of Employee Roles

Winbond employees based at the head office in Taiwan are between the ages of 31 and 50. The ratio of male to female employees is 2:1.

Note: The ratio is based on the total headcount of Taiwan headquarters as of December 31, 2022.
Employee Type and Roles

At the headquarters of Winbond Taiwan, employees are categorized into two types: Fixed-term Contract and Indefinite Contract, with a total of 3,630 individuals. Based on job roles, there are 523 employees holding managerial positions and 3,107 employees in non-management roles.

— Distribution of Employee Employment Contracts —

<table>
<thead>
<tr>
<th>Item</th>
<th>Male</th>
<th>Female</th>
<th>Total number of people</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of People</td>
<td>Number of People</td>
<td>Number of People</td>
</tr>
<tr>
<td>Fixed-term Contract</td>
<td>16</td>
<td>25</td>
<td>41</td>
</tr>
<tr>
<td>Indefinite Contract</td>
<td>2,409</td>
<td>1,180</td>
<td>3,589</td>
</tr>
<tr>
<td>Total</td>
<td>2,425</td>
<td>1,205</td>
<td>3,630</td>
</tr>
</tbody>
</table>

— Distribution of Employee Employment Types —

<table>
<thead>
<tr>
<th>Item</th>
<th>Male</th>
<th>Female</th>
<th>Total number of people</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of People</td>
<td>Number of People</td>
<td>Number of People</td>
</tr>
<tr>
<td>Full-time</td>
<td>2,425</td>
<td>1,205</td>
<td>3,630</td>
</tr>
<tr>
<td>Part-time</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>2,425</td>
<td>1,205</td>
<td>3,630</td>
</tr>
</tbody>
</table>

Note: Full-time employees are regular contract employees for indefinite periods, including engineering assistants and full-time employees on fixed-term contracts. Part-time employees are regular contract employees on fixed-term contracts.

— Distribution of Employee Roles —

<table>
<thead>
<tr>
<th>Item</th>
<th>Male</th>
<th>Female</th>
<th>Total number of people</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of People</td>
<td>Number of People</td>
<td>Number of People</td>
</tr>
<tr>
<td>Management</td>
<td>461</td>
<td>62</td>
<td>523</td>
</tr>
<tr>
<td>Non-Management</td>
<td>1,964</td>
<td>1,143</td>
<td>3,107</td>
</tr>
<tr>
<td>Total</td>
<td>2,425</td>
<td>1,205</td>
<td>3,630</td>
</tr>
</tbody>
</table>

Note: Management refers to section chief or higher grades responsible for supporting and directing employees in their department.

4.2.2 Talent Recruitment and Performance Evaluation

Winbond offers a competitive salary and benefits package that exceeds legal requirements, adhering to the principle of equality to attract and retain exceptional talents. We conduct quarterly reviews of benefits, as well as compliance with gender-related regulations. Additionally, we regularly survey the industry market conditions to adjust our employee compensation and benefits standards. Furthermore, we combine this with a robust performance evaluation system to reward outstanding performers. Through strategic talent management and appropriate workforce planning, we continuously introduce fresh ideas and perspectives to Winbond, contributing to our overall development goals.

Diverse Recruitment Channels

Winbond values workplace diversity and actively recruits talent through various channels such as Winbond career site, campus recruitment, social media, industry-academia collaborations, and internal referrals attracting outstanding individuals from different regions and age groups. Winbond also has an internal transfer system that encourages employees to rotate and develop their skills, allowing exceptional talents to flourish in suitable positions. Additionally, in response to the demand for advanced technical expertise from different countries, we hire professionals from Japan, South Korea, India, the United States, Malaysia, Indonesia, and other nations. This fosters a diverse and interactive work environment where employees can stimulate new perspectives innovative thinking.

Since 2018, Winbond has begun implementing digitalization in various processes, such as automated recruitment and training reports, to expedite the entire talent recruitment and onboarding process. This streamlining has significantly reduced the consumption of
manpower and time, allowing us to focus more on enhancing the quality of recruitment and talent alignment. Additionally, we have introduced market-competitive compensation and a diverse rewards system as part of our efforts to retain talent, serving as compelling incentives for employees to stay with Winbond. Through our commitment to digital transformation and employee-centric practices, we position Winbond as an employer of choice, attracting and retaining exceptional talents within our workforce.

<table>
<thead>
<tr>
<th>Recruitment channels</th>
<th>Explanation</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campus recruitment</td>
<td>• Through campus recruitment events and interactions with students, we provide on-site job consultations and engage in mutual exchange. • By leveraging social media platforms to promote our recruitment messages, we ensure that potential candidates have wider exposure to Winbond's job opportunities beyond geographical limitations.</td>
<td>Through campus recruitment efforts, Winbond successfully recruited 63 talented individuals who have joined the company and are now contributing their skills and expertise.</td>
</tr>
<tr>
<td>Internal recruitment</td>
<td>The human resource department announces internal job vacancies based on the recruitment criteria provided by the respective hiring departments. This process facilitates talent mobility within the organization and supports employees in pursuing diverse career paths, ensuring the right fit for each position and promoting a culture of appropriate talent placement.</td>
<td>Through our internal recruitment system, we have successfully facilitated the transfer of 5 employees within the company, allowing them to gain experience in different roles and fostering diverse.</td>
</tr>
<tr>
<td>Job search websites and social media</td>
<td>Job vacancies at Winbond are posted on official career site, job portals, and various social media platforms. This approach aims to reach job seekers from different regions and age groups, enabling them to access comprehensive information about job opportunities at Winbond. Additionally, candidates have the convenience of engaging in real-time job consultations with the Winbond recruitment team through fan pages and social media, providing them with immediate access to the necessary guidance and information.</td>
<td>By actively promoting job vacancies on recruitment websites and social media platforms, Winbond attracted 27,100 candidates who proactively submitted their resumes.</td>
</tr>
<tr>
<td>Employee referral</td>
<td>Winbond invites its employees to recommend outstanding talent to join the company. By leveraging the employees’ understanding and identification with the company, they can refer individuals who are a good fit for Winbond’s corporate culture and job requirements.</td>
<td>Through employee referrals, Winbond successfully recruited 60 outstanding talents to join the company.</td>
</tr>
</tbody>
</table>

### New Hires and Turnover in 2022

Winbond is dedicated to creating a diverse and inclusive workplace, providing an equal working environment, and firmly believes in the value of a diverse management team and employee composition. This approach enables Winbond to effectively capture market trends, understand customer needs, foster innovative outcomes, and maintain a competitive advantage.

In 2022, Winbond recruited 719 new employees based at the head office in Taiwan and our annual new hire rate was 19.81%. Among the new hires, 46% were from the younger age group below 30 years old, while 53% were in the age range of 31 to 50 years old. This recruitment initiative aims to revitalize the organizational energy by injecting fresh talent and enhancing organizational effectiveness through the inclusion of experienced professionals. Furthermore, Winbond has seen significant progress in the recruitment of female employees with the new hire rate increasing from 6% in 2020 to 24% in 2022. This upward trend has gradually surpassed the new hire rate of male employees. Winbond warmly welcomes more outstanding female talents to join the semiconductor industry in the future.

In 2022, the semiconductor industry experienced a thriving talent market with significant recruitment activities. Despite the competitive landscape, Winbond maintained a healthy employee retention rate. After analyzing the data, it was observed that approximately 50% of the employees who left the company had less than one year of tenure. This trend was primarily attributed to employees being in the early stages of their careers and exploring different opportunities. In response, Winbond proactively addressed this issue during the talent selection process by strengthening the job description and providing comprehensive information about the role. Internal support was also provided by experienced employees within the department to help new hires familiarize themselves with their responsibilities and understand the training and development plans tailored to their roles. These measures were implemented to facilitate a smoother onboarding process and enable new employees to quickly adapt to Winbond’s corporate culture.
— New Hiring and Turnover Statistics —

<table>
<thead>
<tr>
<th>Category</th>
<th>New Hires in 2022</th>
<th>Employee Turnover in 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of People</td>
<td>Proportion of employees in category</td>
</tr>
<tr>
<td>Female</td>
<td>293</td>
<td>40%</td>
</tr>
<tr>
<td>Male</td>
<td>426</td>
<td>60%</td>
</tr>
<tr>
<td>Over 51 years old</td>
<td>6</td>
<td>1%</td>
</tr>
<tr>
<td>31 to 50 years old</td>
<td>384</td>
<td>53%</td>
</tr>
<tr>
<td>Under 30 years old</td>
<td>329</td>
<td>46%</td>
</tr>
</tbody>
</table>

**Note**: The percentage of new hires/resigned employees to that employee category is that gender or age group divided by the number of new hires/resigned employees in 2022.

— New Hire Statistics —

![Graph showing new hire statistics]

— Employee Turnover Statistics —

![Graph showing employee turnover statistics]

— New Hire Ratio —

<table>
<thead>
<tr>
<th>Year</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of People</td>
<td>Ratio</td>
<td>Number of People</td>
</tr>
<tr>
<td>2020</td>
<td>110</td>
<td>6%</td>
<td>53</td>
</tr>
<tr>
<td>2021</td>
<td>457</td>
<td>20%</td>
<td>236</td>
</tr>
<tr>
<td>2022</td>
<td>426</td>
<td>18%</td>
<td>293</td>
</tr>
</tbody>
</table>

**Note**: The new hire rate is calculated as the number of new recruits for the year divided by the total number of employees of the same gender on December 31 of the same year.
Hiring Individuals with Disabilities

Through the government employment support agencies, Winbond maintains continuous attention to the resumes of individuals with disabilities, aiming to improve their employment rate. As of the end of 2022, Winbond has employed 32 individuals with disabilities, and after accounting for weighted factors based on the severity of their disabilities, the total number stands at 47. This represents a remarkable 147% increase compared to the previous year, demonstrating a higher employment rate than mandated by the law.

Prior to reporting to work, Winbond provides assistance to employees with disabilities who are actively involved in the company’s business operations. They assess each individual’s physical and mental disabilities and help new employees understand the practical aspects of commuting, work processes, and other relevant details. After their arrival, suitable personnel assistance, equipment, and work environment are provided to create a friendly workplace environment, allowing them to work with peace of mind and leverage their strengths. Starting from 2022, Winbond has introduced the position of a visually impaired massage therapist, offering massage and therapeutic services to employees. This initiative effectively reduces fatigue, promotes employee health and well-being, while also creating employment opportunities for visually impaired workers.

<table>
<thead>
<tr>
<th>Number of Employees with Disabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Number of People</td>
</tr>
<tr>
<td>Hires</td>
</tr>
</tbody>
</table>

Recruitment of Foreign Experts

On the path of sustainability, Winbond recruits talent individuals from around the world, offering equal opportunities for professional development to candidates from different countries. Through various channels, Winbond continues to reach out to foreign talent and provides comprehensive services to newly hired international employees, assisting them and their families with relocation, settling into their new lives, and other necessary support.

In 2022, Winbond participated in SEMI International Talents EXPO, an online talent recruitment event supported by Industrial Development Bureau, Ministry of Economic Affairs. Additionally, they took part in the “Indonesia-Taiwan Connect” job fair organized by Indonesian Economic and Trade office to Taipei, providing an opportunity to interact with potential candidates face-to-face. During these events, Winbond not only presented and described the work environment and opportunities available upon joining the company but also engaged in interactive Q&A sessions with foreign candidates. The outreach efforts resulted in approximately 100 talented individuals from overseas expressing interest in joining Winbond.

After years of cultivating the foreign talent market, the number of new foreign hires at Winbond has shown a significant increase in the past three years (from 2020 to 2022). In 2022, the company welcomed a record of 11 new foreign employees from six different countries, reflecting the diversity of nationalities. As of the end of 2022, Winbond’s foreign workforce represented a total of eight different countries, with a substantial presence from Japan and South Korea. The company has also actively recruited professional talents from Malaysia, Indonesia, Haiti, and other countries, who have studied in Taiwan and expressed a strong interest in contributing to the semiconductor industry, thus enhancing the diversity of the talent pool and fostering cultural integration to stimulate innovation. Notably, over 34% of all foreign employees hold managerial positions, with 19% of them serving as vice presidents or above, highlighting their significant contributions to leadership roles within the organization.

<table>
<thead>
<tr>
<th>Proportion of Foreign Managers in the Decision-making Circle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign Managers in the Decision-making Circle</td>
</tr>
<tr>
<td>Proportion of Foreign Managers in the Decision-making Circle</td>
</tr>
</tbody>
</table>

Note: Managers in the decision-making refer to managers above the rank of deputy director.
Podcast invitation interview - Global Talent in Taiwan

To enhance public understanding of diverse employers, the HR Manager of Winbond was invited to participate in a podcast hosted by "104 Career Clinic." The podcast's theme was "Global Talents in Taiwan," and during the episode, the HR Manager openly shared various insights into overseas recruitment, the challenges and rewards of retaining international talent, handling cultural impacts, and techniques for cross-departmental integration. By sharing exclusive experiences and expertise, the aim was to provide valuable references for the audience from all walks of life while strengthening Winbond’s employer brand as a promoter of diversity.

The podcast has already been viewed more than 4,000 times on the 104 official website!

Recruitment of Indigenous People

Winbond’s embraces diversity, and in 2022, the Taiwan headquarters had a total of 16 employees with indigenous backgrounds. To safeguard their rights to participate in cultural activities, Winbond offers the option to apply for indigenous festival leaves, demonstrating the company’s commitment to preserving and respecting Taiwan’s precious indigenous culture.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Indigenous Employees</th>
<th>Applications for Tribal Festival Leave</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Number of People</td>
</tr>
<tr>
<td>2020</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>2021</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>2022</td>
<td>16</td>
<td>2</td>
</tr>
</tbody>
</table>

Performance Management System

To align the company’s objectives with those of the managers and frontline employees, Winbond has established a comprehensive performance management system. This system is designed to understand and assess the employees’ job performance, support their personal development, and ultimately enhance the company’s competitiveness and overall organizational performance. Through this process, Winbond aims to foster a culture of continuous improvement and growth, ensuring that individual talents are nurtured, and the organization thrives as a cohesive and high-performing team.

During the probationary period for new employees, Winbond has established a new employee evaluation mechanism to assess their performance. This evaluation process involves gathering feedback from both the new employees themselves and their respective supervisors to promptly determine their suitability for the position.

In our performance management approach, at the beginning of each year, performance goals are set for employees. These goals are then monitored and managed through a performance evaluation system every six months. Additionally, mid-year and end-of-year performance assessments are conducted to review employees’ job performance. One of the key evaluation criteria is the demonstration of core company competencies, which includes integrity in business operations and contributions to sustainability. The results of these assessments serve as reference points for reward allocation, promotions, performance coaching, and other related activities. During the year 2022, both direct and indirect employees underwent a 100% participation in the performance assessment and evaluation process.

Winbond’s Performance Management System goes beyond assessing the achievement of individual goals; it also incorporates competency evaluations. The core competency assessment aims to reinforce our company culture, while the management and professional competency assessments help us gauge talent capabilities and identify any skill gaps within the organization. We place a strong emphasis on the long-term and future development of our employees’ abilities, ensuring that they are well-equipped for continuous growth and success.

4.2.3 Compensation and Benefits

Talent is a critical asset for any company, and at Winbond, we recognize the importance of attracting and retaining the best talent. To achieve this, we offer a highly competitive salary system and comprehensive benefits package, including generous base salaries, allowances, employee bonuses, and incentives. Employee performance evaluations are
based on a holistic assessment of their job performance and professional knowledge and skills. Accordingly, employees receive corresponding bonuses and rewards. We believe in immediate bonus distributions, sharing the success of our operations with our employees, and continuously boosting their morale and motivation in the workplace.

**Compensation Policy**

Employee compensation is guided by the principles of internal equity and external competitiveness, comprising both fixed components (e.g., base salary, allowances) and variable components (e.g., performance-based bonuses, employee incentives). These bonuses are promptly distributed, allowing colleagues to share in the fruits of our operational achievements, thereby attracting, motivating, and retaining talented individuals. Individual compensation is determined based on job responsibilities and professional expertise, while bonuses and incentives reward a holistic evaluation of personal job performance and contributions. Our commitment to human rights serves as an objective foundation, ensuring that compensation, benefits, evaluations, promotions, and other aspects do not discriminate based on gender, race, skin color, religion, political affiliation, sexual orientation, age, marital status, pregnancy, physical or mental disabilities, blood type, zodiac sign, or labor representation status.

In 2022, Winbond ensured that the basic monthly salary for inexperienced employees exceeded the statutory minimum wage, ranging from 1.4 to 1.7 times the legal minimum wage. Additionally, an annual market salary survey was conducted to review and adjust salaries based on performance, rewarding and retaining valuable talent. The ratio of the annual total compensation between the highest-paid individual and the median for regular employees was 22.7:1 (Note). Furthermore, the annual total salary remuneration change ratio for 2022 was 2:1.

**Note** The ratio of the total compensation (including both fixed and variable compensation) of the highest-paid employee within Winbond’s organization to the median average of total compensation for other general employees over the past three years (from 2020 to 2022) is used as a benchmark.

---

**Ratio of Entry-level Salary to Local Minimum Wage**

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Employee</td>
<td>1.3 times</td>
<td>1.4 times</td>
<td>1.4 times</td>
</tr>
<tr>
<td>Indirect Employee</td>
<td>1.7 times</td>
<td>1.8 times</td>
<td>1.7 times</td>
</tr>
</tbody>
</table>

**Note** Direct employees are paid based on the basic monthly salary for inexperienced candidates. Indirect employees, on the other hand, are paid based on the basic monthly salary for inexperienced candidates with a college degree.

---

**Employee Salary Ratio**

<table>
<thead>
<tr>
<th>Type of Personne</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Non-Management</td>
<td>1</td>
<td>1.1</td>
</tr>
</tbody>
</table>

**Note** Management refers to employees who hold a position at the department head level or above and provide assistance and guidance to other department staff.

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**Salary Statistics of Full-time Employees in Non-Management Roles**

<table>
<thead>
<tr>
<th>Item</th>
<th>2021</th>
<th>2022</th>
<th>Annual Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Full-time Employees in Non-Management Roles</td>
<td>2,831 persons</td>
<td>3,312 persons</td>
<td>16.99%</td>
</tr>
<tr>
<td>Total Salary of Full-time Employees in Non-Management Roles</td>
<td>NT$6,600,515,000</td>
<td>NT$6,377,932,000</td>
<td>-3.37%</td>
</tr>
<tr>
<td>“Average Salary” of Full-time Employees in Non-Management Roles</td>
<td>NT$2,332,000</td>
<td>NT$1,926,000</td>
<td>-17.41%</td>
</tr>
<tr>
<td>“Median Salary” of Full-time Employees in Non-Management Roles</td>
<td>NT$1,858,000</td>
<td>NT$1,580,000</td>
<td>-14.96%</td>
</tr>
</tbody>
</table>

---

**Salary Statistics of Full-time Employees in Management Roles**

<table>
<thead>
<tr>
<th>Item</th>
<th>2021</th>
<th>2022</th>
<th>Annual Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Full-time Employees in Management Roles</td>
<td>210 persons</td>
<td>240 persons</td>
<td>14.29%</td>
</tr>
<tr>
<td>Total Salary of Full-time Employees in Management Roles</td>
<td>NT$1,480,000</td>
<td>NT$1,670,000</td>
<td>13.05%</td>
</tr>
<tr>
<td>“Average Salary” of Full-time Employees in Management Roles</td>
<td>NT$70,000</td>
<td>NT$75,000</td>
<td>7.14%</td>
</tr>
<tr>
<td>“Median Salary” of Full-time Employees in Management Roles</td>
<td>NT$60,000</td>
<td>NT$65,000</td>
<td>8.33%</td>
</tr>
</tbody>
</table>

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**Generous Benefits**

Winbond offers comprehensive benefits and measures for all employees, encompassing various aspects of their well-being. These benefits range from performance-driven incentives and bonuses in the workplace to living allowances and employee vacations. Additionally, we provide diverse social clubs to foster a vibrant work environment. By availing these benefits, our employees gain motivation, achieve work-life balance, and find a sense of fulfillment in both their professional and personal lives.

In 2022, the total employee benefits note cost amounted to NT$19,705,663,000, including consolidated subsidiaries. This figure includes NT$18,829,173,000 for short-term employee benefits and NT$876,490,000 for post-employment benefits.

**Note**

1. All welfare items are handled in accordance with relevant regulations, with the data presented primarily from the Taiwan headquarters.
2. Short-term employee benefits refer to the employee benefits that are expected to be settled within the 12 months following the end of the period during which the employees render the related services (excluding severance benefits).
3. Employee benefits expense includes health insurance, club subsidies, retirement benefits, and equity.

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In response to the COVID-19 pandemic in 2022, Winbond introduced the COVID-19 hospitalization medical insurance as a new addition to our group insurance plan. This coverage allows confirmed cases to apply for hospitalization claims and receive a one-time “Caring Benefit” payment. Additionally, we provide employees with a one-day “Paid Vaccination Leave” for getting vaccinated against COVID-19 themselves. Moreover, if employees have children aged 11 or below who receive COVID-19 vaccinations, they can apply for a one-day "Paid Pandemic Care Leave" to support their caregiving needs for their families. These measures are designed to assist our employees and their families during these challenging times and promote a safer working environment.

— Total Employee Care —

### Bonuses

In 2022, Winbond utilized a diverse incentive bonus system to encourage employees to be innovative and enthusiastic learners. Three teams were recognized and rewarded with the "Winbond Star Bonus" for their outstanding achievements. The team themes were as follows: Accelerating the verification schedule of flash memory products using machine learning and data science, Construction and expansion of the Kaohsiung factory, and The establishment of D2SS dynamic random-access memory and the construction of the Kaohsiung factory.

— Diverse Incentive Bonuses —

<table>
<thead>
<tr>
<th>Item</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winbond Star Bonus</td>
<td>Each quarter, individuals and teams who exemplify Winbond's work culture (Conduct business with integrity and ethical behavior, Accountable team work, Enthusiasm of learning, Aggressively innovate, Sustainable contribution) and have made significant contributions to the company are recognized and commended.</td>
</tr>
</tbody>
</table>

### Allowances/Insurance: Childcare Allowance

In response to government’s encouragement of childbirth, Winbond has been implementing the "Childcare Allowance" policy since April 2011. Under this policy, each newborn child of Winbond employees receive a monthly allowance of NT$6,000, which continues until the child reaches the age of 4. This initiative has significantly contributed to improving the birth rate among our employees. Since the policy's inception in 2011 until 2022, a total of 1,667 employees' children have received the allowance. Winbond has become a strong supporter for employees in caring for their families. This initiative not only eases the financial burden for new parents but also increases the retention rate of employees who choose to continue their careers while raising their children. As a result, our employees' overall happiness and well-being have been positively impacted, fostering a more family-friendly and fulfilling work environment.

— Childcare Allowance Performance Statistics —

<table>
<thead>
<tr>
<th>Item</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| Effect              | • Cumulative number of applications and subsidy amount for children: From the implementation in 2011 to the end of 2022, a total of 1,667 children of employees have benefited from this program, with a cumulative disbursement of NT$298,832,873.  
  • Total allowances in 2022: NT$ 30,262,190 |
In addition to complying with legal requirements to provide labor insurance and national health insurance to all employees, Winbond also offers a comprehensive group medical insurance system. This system includes regular life insurance, accident insurance, hospitalization medical insurance, and cancer insurance. The coverage extends not only to employees themselves but also includes their spouses and children. Furthermore, we offer optional self-paid group insurance plans that cover employees, their spouses, children, and parents. This approach allows employees to choose different coverage options based on their individual needs. With these comprehensive family group insurance plans, we aim to provide complete protection for both our employees and their families’ healthcare needs, ensuring their peace of mind while working at Winbond. In 2022, the total premium payments for these insurance plans amounted to NT$22,247,000.

According to regulations, Winbond sets aside retirement reserves (under the old scheme) or contributes to retirement funds (under the new scheme) for each full-time employee. For the portion of retirement funds covered by the old scheme (Labor Standards Act), a contribution of 2% of the total monthly salary is allocated to the retirement reserve. The contribution rate is reviewed periodically every year. If the balance is insufficient to cover the retirement benefits for eligible employees who meet the statutory retirement conditions in the following year, the shortfall will be allocated to a dedicated account under the name of the Labor Pension Supervisory Commission, Taiwan Bank. As of the end of 2022, Winbond's planned fair value of assets (consolidated) amounted to NT$2,414,054,000. The amount required for future contributions as per the law has been recorded as accrued retirement benefit liabilities, resulting in a net defined benefit liability (consolidated) of NT$1,892,594,000.

Under the new retirement fund scheme (Labor Pension Act), Winbond contributes 6% of each employee’s monthly salary to their individual retirement fund account, based on the salary grade table. Employees also have the option to voluntarily contribute to their personal retirement fund account within the 6% range, as per their preference and willingness. In 2022, the total expenses for confirmed retirement reserve (old scheme) and retirement fund contribution (new scheme) amounted to NT$734,000,000. For further details, please refer to Winbond’s consolidated financial report for the year 2022.

In the event of significant operational changes, Winbond will comply with the regulations of each operating location and provide advance notice to employees. We will offer necessary assistance, such as internal transfers or support in applying for relevant government subsidies, to ensure a smooth transition during such changes.
Lifestyle Support: Foreign Employee Care

To enhance our processes and elevate the quality of our research and development talent, Winbond actively seeks to attract outstanding overseas professionals. When foreign employees relocate to Taiwan, they may initially face challenges adapting to their new living habits, language, and culture. When our colleagues and their families move to Taiwan, we ensure meticulous handling of their housing arrangements. We assign dedicated personnel to maintain close communication with the relocating individuals from pre-arrival to onboarding, enabling us to accurately understand the needs of our foreign colleagues and their families. We arrange airport pickups and accommodations in advance, and during the pandemic, we provide comprehensive guidelines for entry into Taiwan, ensuring real-time updates on epidemic prevention information. Winbond fully covers the costs of epidemic prevention hotels and offers flexibility for remote work in response to changing epidemic situations. Our goal is to ensure the well-being and health of our foreign colleagues throughout their transition and employment at Winbond.

Additionally, at Winbond, our dedicated team is always there to provide assistance to our foreign employees in every aspect of their life and work. This includes helping with residency permit applications, work document processing, arranging school enrollment for their children, assisting in finding accommodation in Taiwan, and providing guidance on company policies and government regulations. We take pride in being a solid support system for our foreign colleagues in this foreign land. As of the end of 2022, the average tenure of our foreign employees at Winbond is 7.61 years note, with 26 individuals having been with the company for 5 years or more. We cherish the contributions of our international workforce and remain committed to ensuring their well-being and success within our organization.

Note: Including duration spent working at Winbond subsidiaries.

Lifestyle Support: Health Promotion

In 2022, Winbond has been hiring professional masseurs to provide massage services for our employees. This initiative not only creates employment opportunities for people with disabilities but also enhances employee benefits by offering free massage services to our colleagues. Our aim is to help our employees alleviate fatigue, boost work efficiency, and create a more relaxed and productive work environment. To ensure convenience and efficiency, we have set up a user-friendly online reservation system for booking massage appointments. In 2022, a total of 3,405 employees enjoyed these massage services, which help to loosen muscles, alleviate shoulder and neck pain, and enable our employees to release work-related stress during their short breaks.

<table>
<thead>
<tr>
<th>Club Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sports Clubs</td>
<td>There is a total of 23 sports clubs, encompassing various ball sports, cycling, running, and other related activities, accounting for 57% of all clubs. Notably, several high-level executives actively participate in these clubs, setting an example and encouraging their departmental colleagues to engage in sports and foster a healthy lifestyle. Among these clubs, the CTSP Badminton Club and Softball Club have consistently achieved outstanding results in the &quot;CTSP Cup Annual Ball Sports Competition&quot; year after year.</td>
</tr>
<tr>
<td>Volleyball club activities</td>
<td></td>
</tr>
<tr>
<td>Pool club activity</td>
<td></td>
</tr>
</tbody>
</table>

Club

Winbond has established a variety of diverse clubs to encourage employees to engage in activities that promote health and well-being, as well as participate in community service. We have implemented the "Employee Welfare Committee Club Subsidy Management Measures" to support and promote these clubs’ activities. Through active club participation, we aim to foster emotional connections, improve mental and physical health, and enhance overall work efficiency. As of 2022, there are a total of 40 registered clubs, categorized into four types based on their activities: sports, leisure, arts and culture, and community service. Due to the impact of the COVID-19 pandemic in 2022, some clubs temporarily suspended in-person activities, while others shifted to online activities to continue their operations.
### Arts and Culture Clubs
There is a total of 4 cultural clubs, including the Biodiversity Club, Animation Club, Photography Club, etc., which account for 10% of all clubs. These cultural clubs make effective use of the company’s existing resources to organize educational lectures, annual photography exhibitions, movie appreciation events, and more. Among the various club categories, these cultural activities have the highest participation rate of employees bringing their families along.

### LOHAS Clubs
There is a total of 12 diverse clubs, including the Health and Wellness Club, Camping Club, Board Game Club, etc., which account for 30% of all clubs. These clubs offer a wide range of activities that allow employees to expand their horizons and cultivate their interests.

### Public Philanthropy Clubs
There is a total of 1 club, representing 2% of all clubs. Named “Silent Givers Club,” its mission is to silently engage in charitable activities, focusing on activities such as caring for the underprivileged, providing social services, and promoting environmental sustainability. The club aims to fulfill its corporate social responsibility as a good corporate citizen. Since its establishment in 2010, the Silent Givers Club has organized various initiatives, including environmental cleanups in local communities, dream-fulfilling events, environmental repairs in childcare institutions, environmental engineering projects, and the Happy Children’s Breakfast Program.

#### 4.2.4 Talent development and learning outcomes
Winbond annually designs and implements various training and development programs based on the company’s strategy, vision, business decisions, and core culture. These programs are tailored to different organizational levels, professional competencies, and specific target groups. The training initiatives are determined through surveys to assess training needs. Under the “dual-track” talent development system, employees have the flexibility to choose between enhancing their managerial skills or deepening their expertise in specific technical fields, based on their individual development goals and job requirements. Winbond provides a wealth of training resources, including both physical and online courses. In response to the COVID-19 pandemic in 2022, the company continued learning initiatives without interruption. Winbond continuously optimizes its cloud-based learning platform and increases the interactivity of live-streamed courses. By offering a diverse range of courses and learning methods, the company aims to empower employees to strengthen their competitiveness, achieve personal growth, and enhance their job performance.

![Camping activities](Image)

**Training Effectiveness Evaluation - 4 Levels of Training Evaluation**
To track and ensure the effectiveness of training programs, Winbond employs a four levels education and training evaluation model based on the nature of the courses. This evaluation process examines whether the training align with their intended objectives. Moreover, Winbond encourages employees to apply what they have learned directly to their work. As part of this approach, certain training include assessments, post-training assignments, project presentations, and one-on-one interviews to reinforce the principle of adult learning, which emphasizes the immediate application of acquired knowledge and skills.
Winbond provides a diverse range of training resources and activities aimed at enhancing the professional competence of its employees. For direct employees, the focus of training lies in on-the-job learning, machine operation training, and company culture or strategy promotion events. This approach ensures continuous improvement and development. For indirect employees, professional training is tailored according to their job functions and respective hierarchical levels. Given that a higher proportion of female employees work in administrative support units, their required professional knowledge and skills are primarily acquired through on-the-job learning. As a result, the average training hours for male employees are slightly higher than for female employees.

— Satisfaction with Talent Cultivation Courses in 2022 —

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Number of Courses Held</th>
<th>Total number of trainees</th>
<th>Total training hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core</td>
<td>129</td>
<td>9,843</td>
<td>11,093</td>
</tr>
<tr>
<td>Professional Specialization</td>
<td>1,637</td>
<td>85,580</td>
<td>89,181</td>
</tr>
<tr>
<td>Data Science</td>
<td>606</td>
<td>11,988</td>
<td>23,745</td>
</tr>
<tr>
<td>Management</td>
<td>259</td>
<td>10,115</td>
<td>18,691</td>
</tr>
</tbody>
</table>

— Number of Employees Receiving Professional Training Categorized by Employee Gender and Type —

<table>
<thead>
<tr>
<th>Category</th>
<th>Management</th>
<th>Non-Management</th>
<th>Total number of people</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>60</td>
<td>1,034</td>
<td>1,094</td>
</tr>
<tr>
<td>Male</td>
<td>454</td>
<td>1,842</td>
<td>2,296</td>
</tr>
<tr>
<td>Total</td>
<td>514</td>
<td>2,876</td>
<td>3,390</td>
</tr>
</tbody>
</table>

— Average Employee Training Hours Sorted by Gender and Employee Type —

<table>
<thead>
<tr>
<th>Category</th>
<th>Management</th>
<th>Non-Management</th>
<th>Total average training hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>61</td>
<td>31</td>
<td>32</td>
</tr>
<tr>
<td>Male</td>
<td>47</td>
<td>47</td>
<td>47</td>
</tr>
<tr>
<td>Total</td>
<td>49</td>
<td>41</td>
<td>42</td>
</tr>
</tbody>
</table>

Note: Management refers to section chief or higher grades responsible for supporting and directing employees in their department.

— Orientation Training —

In 2022, Winbond used an online learning platform to provide new employees with online training courses when they reported to work, including life guidance, culture promotion and introduction of various company policies. 21 courses were provided in total. The average satisfaction rating for all training courses in 2022 was 4.22 (out of 5) and the completion rate was 95.5%.

Winbond organizes a two-week “New Recruits Boot Camp” for new employees with less than three years of professional experience. The program aims to provide them with comprehensive training, including knowledge and skills acquisition, sharing of experiences from senior colleagues and supervisors, and immersive cultural experiences. The boot camp is designed to foster a sense of organizational identity and enhance employee retention. In 2022, in addition to holding one physical boot camp in Kaohsiung, Taichung, and Hsinchu, we made efforts to balance epidemic prevention measures with the effectiveness of the program. For the first time, we conducted the boot camp in Kaohsiung with two separate groups (Group A and Group B), overcoming space limitations. In total, there were four boot camp sessions held in 2022, with an average satisfaction rating of 4.5 (maximum 5).
Cultivating Management Talent and Leadership Succession

The well-established leadership talent development program enables smoother management operations within the company. In 2022, Winbond continued to prioritize the cultivation of management talent, focusing on nurturing grassroots supervisors in the new factory area. The systematic development of key talent pipelines was also carried out during this period. Looking ahead to 2023, the company plans to extend this talent development initiative from the factory units to include personnel within the product business group. By doing so, Winbond aims to further enhance leadership capabilities across different departments, ensuring a more seamless and effective approach to managing its operations.

Nurturing Management Talent for New Plant Locations

To achieve Winbond’s expansion and operational goals in Kaohsiung, the organization and leadership talent deployment at the Kaohsiung plant are crucial. Under the Winbond management competency framework, cultivating grassroots supervisors is essential for effective team building and improved communication and coordination skills. In 2022, the company implemented a development training program for entry-level talent at the Kaohsiung plant, following the framework of “Assess → Learn → Practice → Evaluate.” This initiative helps supervisors make informed talent selection decisions through a systematic selection process. It also assists them in setting effective goals for their subordinates, building their confidence and sense of responsibility, and promoting optimal performance within the performance management cycle. Additionally, given the large-scale recruitment of new employees for the new plant, creating a positive and trusting work environment and enhancing a sense of belonging and responsibility are key training focuses for Winbond in 2023.

Continuous Development of Key Talent Cohorts

Winbond places great emphasis on the selection and long-term development of mid to senior-level executives and key talent, considering the organization’s globalization and expansion needs. Over the years, the company has continuously collaborated with renowned external professional consulting teams. Through management competency assessments and personality trait evaluations, 95% of mid to senior-level executives have gained insights into their strengths and areas for development, facilitating discussions and planning for their personal development plans. In 2019, Winbond also implemented the SuccessFactor Learning Management System as part of its talent development mechanism. This system assists business unit leaders in identifying the depth of bench strength, personnel turnover risks, and the impact of key positions and talents. Through various development approaches such as management training programs (e.g., Carnegie), job rotations, project experiences, and external training at renowned international institutions (such as Stanford, Singularity University, INSEAD), Winbond nurtures and strengthens its leadership pipeline.

In 2022, Winbond placed a strong emphasis on cultivating talent pipelines within our factory units. By the end of 2022, we had implemented rotation and development programs for 32% of middle and senior-level management talent. Looking ahead to 2023, we plan to gradually conduct talent pipeline assessments across various business groups to identify and develop future leaders.

Differences Lead to Outstanding Achievements

In 2022, Winbond implemented various language subsidy initiatives to encourage diverse interactions among employees from different language backgrounds. We offered language assistance for English, Japanese, and Korean, providing a 50% subsidy for language training costs once employees reached the proficiency standards. Additionally, employees who achieved language proficiency certification could apply for an additional subsidy of 10,000 NT dollars, further incentivizing the autonomous learning of multiple languages. Furthermore, Winbond is committed to promoting training programs that aim to eliminate unconscious biases in the workplace. Through a comprehensive range of digital courses, we provide employees with insights into the benefits of diverse teams, fostering attitudes of respect and empathy.

In 2023, Winbond will continue to uphold its commitment to sustainable development and foster a diverse and inclusive workplace environment. The company recognizes the significance of female influence as an essential element of diversity and inclusion. As part of its initiatives, Winbond plans to organize courses and seminars to promote gender equality, empowering female colleagues to recognize their importance in the workplace, build self-confidence, embrace challenges, and learn how to expand their influence. Through these efforts, Winbond aims to encourage more female professionals to thrive and grow in their careers, ultimately creating a win-win situation for both the company and its employees.
4.3 Employer-Employee Relations

Winbond conducts regular market surveys to adjust its employee's salary and benefits standards in line with industry trends. This, combined with a robust performance evaluation system, allows the company to offer a competitive compensation package that exceeds legal requirements, aiming to attract and retain exceptional talent. Additionally, Winbond embraces a balanced approach to workforce planning, facilitating a strategic turnover of personnel to infuse the organization with fresh ideas and perspectives.

Open Employer–Employee Communications

While Winbond does not have a labor union, we believe in fostering open and transparent communication channels between labor and management. We hold regular labor-management meetings every quarter, providing diverse avenues for our employees to voice their opinions and concerns. These channels include physical suggestion boxes, a dedicated hotline (75234 - "I want to complain"), a Care Complaints mailbox, and a Sexual Harassment Employee Complaint Committee. Additionally, we conduct various functional meetings on a regular basis, such as labor-management meetings, supervisor management discussions, employee welfare committees, environmental and safety committees, production management meetings, and quality retraining meetings.

At Winbond, employees have access to various communication channels to express their opinions or provide suggestions, whether anonymously or with their names. We actively respond to feedback received, promote communication, and make the response content publicly available on the company's intranet homepage. Additionally, we collect employee opinions regularly or irregularly through focus groups and individual interviews, using them as a basis for improving management policies and service quality. We also provide training courses for all new employees to ensure that they are well-informed about these communication channels. Winbond strictly prohibits bullying, and if any related complaints are received, we follow workplace misconduct handling procedures and internal complaint policies. This includes initiating investigations, gathering information, and conducting interviews. We also hold misconduct review meetings to address the issue. After the resolution of the complaint case, we provide regular follow-up care to employees to prevent any retaliatory actions.

In 2022, Winbond received and addressed a total of 9 proposals through the suggestion box (both physical and online channels). The company diligently provided feedback to the relevant business units for improvement and communicated the responses back to the employees who submitted the suggestions, ensuring an open and effective internal communication channel. Regarding the "75234 Employee Complaint and Care Line," 7 cases were handled in accordance with the internal complaint procedure. Among these cases, 5 were related to communication issues between colleagues in the workplace, and 2 involved workplace misconduct. All cases underwent thorough investigation, review, and decision-making processes. For the workplace misconduct cases, a dedicated investigation team was established in accordance with national workplace misconduct guidelines. Once the decisions were made, communication was carried out with both the complainant and the accused to reach a consensus on the resolution. If any employee was found to have violated company regulations during the process or after the decision, appropriate disciplinary actions were taken in accordance with the company's rules and regulations. The effectiveness of the implemented solutions was continuously monitored, and the well-being of the employees who submitted complaints was closely followed up within three months to prevent any retaliatory actions. Currently, all 7 cases have been resolved following the proper procedures, and the individuals involved have been provided with appropriate care. In cases involving management issues or negative work attitudes and behaviors, announcements were made on the company's internal website or within the office premises. Additionally, the management was informed to provide employee education and training on work attitudes and rules. Through communication, training, and policy announcements, efforts were made to reduce negative impacts, improve the work environment, and prevent similar incidents from happening. Furthermore, 12 labor-management meetings were held, during which representatives from both the management and labor sides were appointed or elected. All employees participated in the election of labor representatives, and labor-related laws were regularly reviewed to ensure that work rules were in compliance with regulations and reported during labor-management meetings for joint review. Lastly, 4 manager management discussion meetings were conducted, with a total of 1,973 participants and an average attendance rate of 87%.
4.4 Occupational Safety and Health

Winbond Occupational Health and Safety Goals

- Zero accidents
- Zero work injuries
- Reduction of environmental impact

4.4.1 Occupational Safety and Health Management System

The Winbond endeavors to meet the advanced international safety, health and environmental standards and is committed to providing employees with a complying and healthy working environment through respect, caring and counseling, and participation mechanisms. Continuous improvement will be used to promote employee safety, eliminate hazards, reduce environmental, health, and safety, and asset risks, being committed to zero accidents, zero work-related injuries, and reducing environmental loads. Through the optimization of prevention and improvement measures, we will gradually reduce the rate of personnel injury, implement the concept of safety and health, and become a green enterprise with sustainable development.

— ESH Management Committee —

| Member | A total of 34 members, consisting of management representatives, representatives elected by employees of each unit, labor representatives voted by employees, and safety, health, environmental protection and health management personnel, among which labor representatives voted by employees, 15 of them in total, account for more than 1/3 |
| Frequency | Regular meetings are held every quarter to discuss safety, health and environmental protection issues |
| Responsibilities | Provide adequate channels for employees and managers to communicate face-to-face on safety, health and environmental protection issues; each department has a safety, health and environmental protection officer, who mainly assists, consults and promotes related safety, health and environmental protection business, so as to make all employees aware |
The participation of front-line workers is also important. Winbond has established relevant procedures to ensure that labor representatives can participate in ESH policy revisions and related safety proposals and communications. In the composition of the Winbond Occupational Safety and Health Committee, the proportion of labor representatives is better than the legal requirements, reaching 44%. The relevant proposals and communications in 2022 mainly fell into three categories: safety, health and environmental protection. The business management unit made responses in the meeting, which were confirmed by the Chairman; and all cases were closed.

Winbond has taken relevant front-line workers into consideration at the beginning of planning the safety and health plan, such as: The risk and hazard identification officers are all trained workers of such units, and labor representatives are also required to participate in the semi-annual environmental testing or abnormal accident discussions.

### Occupational Safety and Health Management System

Winbond has already obtained ISO 45001 Occupational Health and Safety Management System and Taiwan Occupational Health and Safety Management System (TOSHMS) certification. Internal audits are conducted every 6 months and external audits are conducted by an international certification company every year to ensure that the system is operating normally. Also, all workers have been 100% included, including the Kaohsiung Fab that was established in 2022, the ISO 45001 and TOSHMS certification of which were completed at the end of 2022. In order to comply with the goal of zero accidents in the ESH policy, Winbond continues to use quantitative indicators such as the annual Disabling Injury Frequency Rate (FR) and Disabling Injury Severity Rate (SR), along with the independent inspections by on-site unit supervisors, supervisor safety observations, on-site safety proposals and false alarm report incentives, to gradually reduce the personnel injury rate; and by setting medium and long-term goals, expecting to reach half of the industry average, and including relevant contractors into the relevant risk assessments, to avoid transferring high-risk operations to non-employees only.

#### — Number of Employees Covered by the Occupational Health and Safety Management System —

<table>
<thead>
<tr>
<th></th>
<th>2022</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of People Covered by Management System</td>
<td>Total Organization Personnel</td>
<td>Ratio (%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employees</td>
<td>Non-employees</td>
<td>Employees</td>
<td>Non-employees</td>
</tr>
<tr>
<td>Not audited</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Passed internal audit</td>
<td>3,508</td>
<td>167</td>
<td>3,508</td>
<td>167</td>
</tr>
<tr>
<td>Audited or verified by external body</td>
<td>2,783</td>
<td>167</td>
<td>2,783</td>
<td>167</td>
</tr>
</tbody>
</table>

Note: The number of persons is based on data from December 31, 2022.

### Accident Investigation and Injury Prevention

A complete standard operating procedure (SOP) on accident investigation has been established by Winbond to reduce accident damage and risk. The SOP is applicable to all Winbond employees, contractors, and visitors. In the event of an accident, different levels of investigation are carried out based on the severity and type of the accident. The level of investigation also determines the composition of the investigation team.

The operation of the ESH management system undergoes routine internal audit, review and update every 6 months. An external audit is also conducted every year so that Winbond can continue to ensure a safe working environment for employees, control potential risk factors and make continuous improvements.

#### — Standard Accident Investigation Process —

1. **Situation Investigation and Cause Analysis**
   - Apply cause analysis to the findings of the situation investigation to arrive at conclusions.

2. **Identify the Root Cause**
   - Verify the factors found during the analysis and eliminate factors of no significance to obtain the true cause of the anomaly.

3. **Strategy for Preventing Recurrence and Standardization**
   - Horizontally expand effective strategies to related machines or processes.

4. **Develop a Response**
   - Propose feasible improvement strategies and methods for the true cause of anomaly (taking cost effectiveness and risk improvement into consideration).
Analysis of Occupational Injuries and Work-Related Diseases in 2022

— Winbond ESH Policy Analysis and Management Process —

Data collection and analysis Referring to stakeholders + industry information
Identification of high-level risks
Deciding on major occupational safety and health related issues

1. Safety and health protection and health promotion of Winbond workers
   - Strengthening of self-control and health inspection, and compliance with Winbond safety and health requirements

2. Regulations for contractors
   - Identification of high-level risks
   - Planning of short-term, medium- and long-term safety and health quantitative goals

— Work-related Injuries Statistics for Employees —

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Hours of Work</th>
<th>Occupational Injury</th>
<th>Ratio of deaths due to work-related injuries</th>
<th>Ratio of severe work-related injuries</th>
<th>Ratio of work-related injuries on record</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>5,816,552</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0.52</td>
</tr>
<tr>
<td>2021</td>
<td>6,056,008</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2022</td>
<td>6,956,696</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0.43</td>
</tr>
</tbody>
</table>

In 2022, the main accident-causing items were 1 case of crushing injury caused by falling objects, 1 case of chemical splash injury, and 1 case of personnel fall accident; and there was no accident regarding the contractors; during 2020-2022, there was no death due to occupational disease or occupational disease or work-related disease confirmed by a specialist in occupational medicine.

For Winbond’s statistical analysis information on occupational injuries, based on the important disabling injury statistical indicators announced by the Ministry of Labor, the Disabling Injury Frequency Rate (FR) and the Disabling Injury Severity Rate (SR) are selected for analysis. The statistics do not include off-site traffic accidents. In 2022, there were 3 cases of employee disability injuries, the SR was 4, and the FR was 0.43, both were lower than the industry average, but the FR had not yet reached the set goal.

All three accidents in 2022 occurred in the Kaohsiung Fab. The Kaohsiung Fab is a newly built fab completed in 2022, and the safety awareness of its internal employees is still being strengthened. Among them, two accidents occurred during non-working hours. Therefore, in addition to strengthening various operations to prevent reoccurrence, the supervisors of each unit are also asked to convey the importance of safety awareness to the front-line employees through activities such as supervisor inspection and safety observation.

— Work-related Injuries Statistics for Non-Employees —

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Hours of Work</th>
<th>Occupational Injury</th>
<th>Ratio of deaths due to work-related injuries</th>
<th>Ratio of severe work-related injuries</th>
<th>Ratio of work-related injuries on record</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>880,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2021</td>
<td>842,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2022</td>
<td>334,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

In terms of supply chain / value chain impact management, Winbond has established relevant management regulations for contractors. After receiving orders, vendors will provide relevant fab codes of conduct, and monthly communication, counseling, and implementation of education and training with vendors will be conducted through engagement organizations. Last year, a total of 5,971 persons were trained on hazard notification in the fab area, and 1,439 persons were professionally certified for special operations personnel, and the evaluation results of each vendor were calculated through the evaluation method in the contracting procedure, which will be announced in the engagement organizations and relevant safety meetings, providing reference for the responsible unit head of each project to select contractors. When necessary, the chairman or vice-chairman of the Environmental Safety and Health Management Committee of the fab may request the supervisors of relevant units to report in the meeting.
### — Analysis and Statistics of Occupational Injury Types in 2022 —

<table>
<thead>
<tr>
<th>Occupational injury type</th>
<th>Number of cases</th>
<th>Subject</th>
<th>Description of the incident</th>
<th>Handling process</th>
<th>Improvement measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injury caused by falling objects</td>
<td>1</td>
<td>Employees</td>
<td>The employee placed the tablet on the trolley, and the tablet accidentally fell and injured the employee's right ankle</td>
<td>The employee went to the infirmary to report ankle discomfort, and after receiving medical treatment, the accident was handled according to the reporting procedure in the fab</td>
<td>Strengthen the improvement of the trolley fixing project and carry out the education and training of personnel skills</td>
</tr>
<tr>
<td>Chemical splash injury</td>
<td>1</td>
<td>Employees</td>
<td>When organizing chemicals, due to negligence in the operation, the chemical was sprayed, causing the right ear and left arm to be injured</td>
<td>Rinsed contact area in accordance with emergency response procedure. After simple treatment in the infirmary, the employee was transferred to the hospital for diagnosis of the affected part, and then the accident was processed according to the reporting procedure in the fab</td>
<td>Carry out education and training of staff operating techniques and strengthen protection promotion of chemicals</td>
</tr>
<tr>
<td>Employee fall accident</td>
<td>1</td>
<td>Employees</td>
<td>When walking on the ground of the construction area, the employee misstepped and fell down accidentally</td>
<td>The employee went to the infirmary to inform the landing on the right side (knee, elbow). After observation of the medical staff, there was no obvious swelling or deformation, and simple medical treatment was done. The employee then went to the hospital for evaluation accompanied by colleagues from the unit, after that, the accident was handled according to the reporting procedure in the fab</td>
<td>In addition to requiring that the existing construction fences be expanded to control the scope, education and training on the concept of personnel safety will be strengthened, and non-construction personnel shall avoid approaching the construction area</td>
</tr>
</tbody>
</table>

---

### Occupational Health and Safety Education and Training and Injury Prevention

Occupational health and safety education and training is conducted by Winbond every year to reduce the incidence of occupational injuries and to strengthen employees’ understanding of safety and health regulations; multiple channels have been established for online and physical courses, and employees can also watch relevant training videos through the learning system. The feedback is surveyed through questionnaires, including: satisfaction, the gap in understanding before and after the course, to ensure that the lecturers pass the corporate lecturer certification of the human resources division.

According to statistics, in 2022, a total of 13,205 people were trained, and the training hours were 17,931 hours.

For contract management, Winbond requires all 100% vendors to pass the fab entering hazard notification before they can apply for construction permits. To perform high-risk operations, a special operation education and training course shall be taken and the assessment shall be passed to obtain certification before performing the operation.

---

### — Occupational Health and Safety Training Performance —

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Participants</td>
<td>Hours of Training</td>
<td>Number of Participants</td>
<td>Hours of Training</td>
<td>Number of Participants</td>
<td>Hours of Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td>1,434</td>
<td>1,828</td>
<td>160</td>
<td>201.5</td>
<td>1,594</td>
<td>2,029.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Management</td>
<td>7,880</td>
<td>10,796.5</td>
<td>3,731</td>
<td>5,105</td>
<td>11,611</td>
<td>15,901.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
— Occupational Nurse Training Performance —

<table>
<thead>
<tr>
<th>Item</th>
<th>Content</th>
<th>Number of employees trained in 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPR and AED Training</td>
<td>Regularly conduct first aid training for all employees and the medical staff of the emergency response team so that there is no time difference in first aid.</td>
<td>In response to the epidemic, the employees are divided into groups, and 961 employees completed the training.</td>
</tr>
<tr>
<td>Advocacy of Unlawful Infringement Prevention in the Workplace - Management Training</td>
<td>Management regulations and relevant education and training were put into place to help all employees understand preventive measures and introduce them to the company’s internal complaints and reporting mechanisms. Promotion measures are provided for all employees every year as well.</td>
<td>A total of 82 people have completed the management level training course.</td>
</tr>
<tr>
<td>Crisis Response - Management Training</td>
<td>Advanced courses on crisis response impart correct concepts; managers may need to assist in emergencies or at-risk employees (special cases, mental illness, emotional breakdown, suicide risk, employees with pending complaint) in the workplace.</td>
<td>A total of 110 people have completed the management level training course.</td>
</tr>
</tbody>
</table>

In terms of occupational health services and worker health promotion, Winbond has nurses in place that are better than the regulations to provide health management and health promotion services. The service targets, including employees and non-employees, can all contact the fab nurse for consultation on health care and emergency medical assistance if necessary. For relevant non-employee workers, employers will also be required to provide relevant safety and health management in accordance with laws and regulations. The relevant health management performance in 2022 is as follows:

— Injury Prevention Management Performance —

<table>
<thead>
<tr>
<th>Item</th>
<th>Content</th>
<th>2022 performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevention and Management of Ergonomic Hazards</td>
<td>Caring for employees with musculoskeletal soreness: • Introduce e-questionnaire: Arrange fab employees to fill out questionnaires every 3 years, and arrange interview with occupational medicine specialist for persons with potential risk • Automated process development, employee muscular endurance and other health promotion</td>
<td>• Medical treatment improved 2 employees with suspected potential risk • The injury / disease benefits for occupational musculoskeletal injuries and diseases is 0 for three consecutive years</td>
</tr>
<tr>
<td>Preventing and Managing Abnormal Workload-triggered Disorders</td>
<td>The system automatically reminds supervisors and employees to pay attention to working hours on a daily and monthly basis • Annual questionnaire survey of all employees to conduct risk identification and risk level of employees with abnormal workload</td>
<td>• Winbond arranged interviews with professional doctors to guide 76 employees with potential risk • All employees received a health education e-mail from the nurse, providing expert consultation on stress relief and sleep improvement / referral to the Employee Assistance Program Center (EAPc) according to individuality</td>
</tr>
<tr>
<td>Management of Unlawful Infringement Prevention in the Workplace</td>
<td>Review the company’s internal workplaces every year, and evaluate and improve from the two aspects of “physical environment” and “workplace design” • Conduct hazard identification and risk assessment for workplace unlawful infringement prevention every 3 years</td>
<td>• There were no new potential risks, and for the identified risk factors, relevant control and protection measures have already been established • Conducted every 3 years</td>
</tr>
<tr>
<td>Maternal Health and Management for Female Employees</td>
<td>• Interviews with medical staff explaining hazard identification, risk assessment, work content confirmation, and postpartum health education during pregnancy • Taking the initiative to provide information about subsidies and allowances</td>
<td>21 pregnant female employees received maternal health protection</td>
</tr>
</tbody>
</table>
4.4.2 Environmental Safety and Health Risk Assessment

The “ESH Risk Assessment Operating Procedure” was defined by Winbond to ensure the personal safety of employees in the workplace and to minimize risks. The procedure involves the identification of ESH risks and opportunities to the environment, personnel and hygiene from activities, products or services.

Risk level is calculated based on past operational history and the current situation. The potential situation, effect or impact (e.g. personnel injury, environmental impact, production disruption, or financial loss) and probability are assessed. Improvement measures are then drawn up for risk reduction in the following order: elimination, replacement, engineering control, signage/warning/management control, and personal protective equipment.

Internal audit is conducted by Winbond at least once a year along with annual reviews to ensure the effective implementation of the “ESH Risk Assessment Operating Procedure”; any major changes to production processes, facilities and operational content will all trigger a new assessment.

Winbond combines the management system and online system to improve the transparency and availability of relevant statistical data. In 2022, the number of medium and high-risk operations (safety and health risks) was zero. By Winbond’s internal proposal system, employees can reflect their needs through multiple channels, such as: hidden dangers and suggestions, to ensure the follow-up of the proposal and the reply of the management unit. In the education and training, it’s reminded that if a hazardous situation is found during the operation, the workers can immediately stop the operation and report. The priority is to protect the life safety and health of the workers, and they will not be punished for exercising the right of withdrawal.

In the assessment of class A dangerous workplaces, being better than the general practice, Winbond fully uses the HAZOP method to evaluate the workplace equipment; in the face of abnormal accident conditions, FMEA or 5-Why will also be used to find key risk factors. In addition, Winbond independently develops a chemical management system.
for hazard management. After reviewing the safety data sheet and hazard label content provided by the vendor, and confirming whether it is a prohibited and restricted substance in Winbond’s commitment, we conduct storage, supply, waste gas / liquid treatment assessment, related risk assessment, and propose countermeasures based on the results. A total of 1,662 chemicals are currently under management.

As for the exposure assessment of hazardous substances, Winbond independently conducts additional environmental monitoring on related allowable concentration, or the internationally established threshold limit value, which is better than the legal requirements. To pass the monitoring, it must be lower than 1/100PEL to meet Winbond’s standard, which is also stricter than that in the regulations; and re-monitoring is conducted every six months.

4.4.3 Emergency Response Measures

Winbond has defined emergency response procedures for internal anomalies and external natural disasters such as fire alert/alarm, gas leak alarm, chemical spills, earthquakes, and odors. The procedures are used by internal units as the basis for developing corresponding response processes, response teams, drills and training.

--- Occupational Health and Safety Risk Identification and Response Strategies ---

<table>
<thead>
<tr>
<th>Risk Type</th>
<th>Risk Identification</th>
<th>Strategy/Action Adopted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational Risks</td>
<td>• Fire</td>
<td>• The design of the fire protection system and its installation is based on international standards (NFPA, FM) and domestic fire safety regulations. It includes the fire detection and alarm system, various automatic fire suppression systems, and fire compartmentalization.</td>
</tr>
<tr>
<td></td>
<td>• Power Outage</td>
<td>• Installation of emergency generators and uninterruptible power systems.</td>
</tr>
<tr>
<td></td>
<td>• Chemical Spill</td>
<td>• Plant facilities and protection are designed and constructed to international industrial standards. Machinery and equipment must also conform to international safety standards (SEMI-S2, FM4910).</td>
</tr>
<tr>
<td></td>
<td>• Abnormal Emissions of Air Pollution/ Wastewater Emissions</td>
<td>• 24-hour monitoring system for emissions/wastewater treatment facilities.</td>
</tr>
<tr>
<td>Natural Disaster Risk</td>
<td>• Earthquake</td>
<td>• Plant buildings are designed to withstand earthquakes up to 7.0. Machinery and equipment incorporate shock-resistant design.</td>
</tr>
<tr>
<td></td>
<td>• Water Shortage</td>
<td>• Installation of reserve water tanks.</td>
</tr>
<tr>
<td>Regulatory Risk</td>
<td>• Occupational Safety and Health Act</td>
<td>• Regularly carry out compliance inspections.</td>
</tr>
<tr>
<td></td>
<td>• Fire Services Act</td>
<td>• Identify and respond to the impact of new regulations or amendments</td>
</tr>
<tr>
<td></td>
<td>• Environmental Protection Act</td>
<td>• Make regular inspections and reports as required by law.</td>
</tr>
</tbody>
</table>

--- Emergency Response Team Organizational Structure and Duties ---

An Emergency Response Team (ERT) is stationed in each area throughout the sites. The ERT is commanded by a division or higher level manager. ERT team members are required to undergo regular training and drills. In the event of an emergency, the mission of the ERT is to minimize casualties, financial losses and disruption to production.

<table>
<thead>
<tr>
<th>Commander</th>
<th>Coordination of emergency response (command and dispatch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deputy Commander</td>
<td>• Collection of factory affairs information and liaison</td>
</tr>
<tr>
<td></td>
<td>• Discussion of action plans and logistics resupplys</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Company Spokesperson</th>
<th>Internal and external communications</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Equipment Support Team</th>
<th>Dispatching and replenishing protective equipment and materials</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Medical Team</th>
<th>First-aid and arranging of medical evacuation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transportation of first-aid equipment and record-keeping</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rescue Team</th>
<th>Search for source of leakage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Leak/disaster prevention</td>
</tr>
<tr>
<td></td>
<td>On-site decontamination</td>
</tr>
<tr>
<td></td>
<td>Environmental monitoring</td>
</tr>
<tr>
<td></td>
<td>Site management/cordon</td>
</tr>
<tr>
<td></td>
<td>Assist personnel with gearing up or gear removal, equipment transport and record-keeping</td>
</tr>
</tbody>
</table>

--- Long-Term Preventive Emergency Measures ---

Winbond deliberates in safety-related meetings at all levels (such as monthly safety meetings in the fab and quarterly safety and health committee meetings), and also conducts relevant tracking through the company’s internal ESH management electronic system to ensure that relevant corrective and preventive measures can be 100% achieved. In 2022, there were 19 false alarm accidents. At the monthly safety meeting, Winbond provides prizes to those who actively report as a reward for reporting false alarm accidents.

A total of 157 emergency drills were conducted by Winbond for fire, chemicals leaks, gas leaks, massive water leaks, and other events in 2022. In addition to the relevant drills organized by employees and non-employees within the fab area, we also cooperated with the joint response team of the Science Park, and worked with the park bureau to expand the joint defense drill to surrounding factories and residents.

--- 2022 Emergency Response Drills ---
4.5 Social Impact

Winbond has been involved in charity for many years. “Care for the disadvantaged, care about environmental sustainability, and fulfill corporate social responsibility” are Winbond’s permanent commitments on corporate social responsibility. To put the beliefs in social care, public service and friendly environment in actions, Winbond gathers internal resources and our employees with their passion and love, focusing on areas such as “caring for youth and children”, “supporting the disadvantaged”, “academic cooperation”, and “promotion of charity and environmental education”. In the meantime, Winbond leverages core competencies of the industry, promoting digital work and constructing a field for scientific and technological innovation exchanges with concrete actions, to stimulate industrial development.

---

<table>
<thead>
<tr>
<th>Type</th>
<th>Amount Invested in 2022 (Unit: NTD)</th>
<th>Ratio of Total Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care for youths and children</td>
<td>4,658,000</td>
<td>26.86%</td>
</tr>
<tr>
<td>Supporting the disadvantaged</td>
<td>115,000</td>
<td>0.66%</td>
</tr>
<tr>
<td>Academic sponsorship</td>
<td>11,210,000</td>
<td>64.65%</td>
</tr>
<tr>
<td>Promotion of charity and environmental education</td>
<td>1,357,211</td>
<td>7.83%</td>
</tr>
<tr>
<td>Total</td>
<td>17,340,211</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Note: For the social impact in 2022, the investment amount included the amount of community investment, the amount of employee donations, and other project expenses disclosed in the company’s consolidated statements.

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Academic Cooperation

- **Research and development sponsorship for industry upgrading**

Through long-term support for International Symposium on VLSI-TSA and VLSI-DAT, Winbond can accelerate the upgrade of Taiwan’s information and communications industry and increase the exchange of industrial technologies domestically and abroad. We assist in promoting the exchange platform of leading-edge technologies for researchers related to semiconductor technology and design to enhance Taiwan’s semiconductor technology.

Care for Youths and Children

- **Happy Breakfast Program for School Children in Rural Areas**

To help improve the breakfast of school children in rural areas, since 2011, senior management has been making voluntary donations through a non-profit organization to fund the happy breakfast program for rural elementary schools in Hsinchu and Taichung. By breakfasts and support for rural schools, sustaining the basic needs and health of school children, so they can be physically and mentally equipped to explore the world. Winbond provided NT$530,000 in breakfast funding in 2022 to continue supporting healthy learning for school children. At the same time, our employees also conducted on-site visits to understand the benefits of the program for further evaluation and enhancement.
Supporting the Disadvantaged

Fundraising for Impoverished Students Education Financial Aid

To supplement education resources for children from impoverished families and help them to attend school on a regular basis, Winbond has been working with Taiwan Fund for Children and Families since 2017 by inviting employees to raise education financial aid. From the president to entry-level employees, our colleagues responded enthusiastically and 1,052 employees raised $4,128,000 in 2022, supporting 1,032 elementary school students for a whole year.

— Result of Fundraising for Impoverished Students Education Financial Aid —

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Donors</th>
<th>Number of Beneficiaries</th>
<th>Donation Amount (NT$10,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>166.8</td>
<td>500</td>
<td>417</td>
</tr>
<tr>
<td>2018</td>
<td>250</td>
<td>834</td>
<td>887</td>
</tr>
<tr>
<td>2019</td>
<td>884</td>
<td>721</td>
<td>976</td>
</tr>
<tr>
<td>2020</td>
<td>744</td>
<td>804</td>
<td>3,052</td>
</tr>
<tr>
<td>2021</td>
<td>952</td>
<td>1,032</td>
<td>412.8</td>
</tr>
<tr>
<td>2022</td>
<td>3,052</td>
<td>412.8</td>
<td></td>
</tr>
</tbody>
</table>

Promotion of Charity and Education Protection

2022 Southern Taiwan Science Park Charity Picnic

Winbond set up a booth at the “2022 Southern Taiwan Science Park Charity Picnic” for a charity sale, and the proceeds of NT$15,000 were all donated to charity. In addition, another NT$100,000 was donated to the Tainan City Government Bureau of Social Affairs to improve the basic life and learning quality of disadvantaged families around the Southern Taiwan Science Park, giving priority to assisting disadvantaged families in Sinshih, Shanhua, and Anding Districts where the Southern Taiwan Science Park is located, and Luzhu, Gangshan, and Yong-An Districts where Kaohsiung Science Park is located. A total of nearly 3,500 persons and nearly 1,000 disadvantaged families have received assistance.

Sponsoring Houfeng Bikeway

Winbond joined the ranks of sponsoring public recreational facilities in 2022, and worked with the Tourism and Travel Bureau, Taichung City Government in the Houfeng Bikeway enterprise sponsorship. Winbond is responsible for regular road cleaning, tree thinning, etc. President Pei-Ming Chen of Winbond led more than 500 employees and their families to participate on-site to maintain the appearance and safety of the Houfeng Bikeway, working together to keep the cleanliness of public recreational facilities in Taichung City and improve the quality of recreation, fulfilling corporate social responsibility and the spirit of common good with the local environment.

Fundraising for Impoverished Students Education Financial Aid

Volunteering at Houfeng Bikeway

Adoption ceremony of Houfeng Bikeway
Guard Fazi River: Do Sports for Charity, Stay Healthy for the Earth

Let our energy drive vitality! In 2022, Winbond invited employees to participate in the “Do Sports for Charity, Stay Healthy for the Earth” activity. The total number of calories consumed and accumulated by Winbond employees in their daily exercise was 2,422,660 kcal, converted to NT$605,655. In 2023, the amount was donated to sponsor the “The Society of Wilderness” to organize activities for Fazi River protection and environmental conservation. Winbond continues working with The Society of Wilderness, and the future donations will be used in environmental education actions such as know the environment, bird surveys, and river cleanup, calling on employees and their families to protect the rich ecology of Fazi River and feel the beauty, and encouraging employees to exercise to become healthy while experiencing the beauty and power of life.

— Fit for Nature —

| Calories accumulated by Winbond colleagues in daily exercise | Converted donation amount | River protection and environmental conservation |

Emergency Aid

Emergency Care for Employees:

Winbond has set up employee emergency aid and loan programs to help employees in financial distress when the employee or his/her family suffers sudden calamity, such as injury, disability, death, or accident, to make sure they can continue to work and live with assurance that their livelihood is secure.

Blood Donation Activity

Winbond also calls employees to donate blood in the annual blood drive which illustrates the Winbond’s belief in the value of life in actions. In 2022, 5 blood donation events were held, attracting a total of 219 participants, donating 362 bags of blood.
5. Corporate Governance

“Business integrity” is the foundation of the sustainable operation of the enterprise, and it is the highest corporate culture and spirit of Winbond. Winbond is committed to formulating comprehensive corporate governance regulations and management processes, and continuously monitoring and improving processes. With the efforts of all colleagues, Winbond has been ranked in the top 20% since the first corporate governance evaluation. Winbond will continue to embrace the corporate culture founded on business integrity to establish our trustworthy and reputable company reputation.

2022 Performance Highlights

<table>
<thead>
<tr>
<th>Action</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Publish the first independent TCFD report</td>
<td>Renewable energy investment NT$555 million</td>
</tr>
<tr>
<td>The carbon emissions generated on Family Day were retired through the purchase of blue carbon credits</td>
<td>Signed a NT$ 20 billion sustainability-linked loan, and maintained sustainable performance such as carbon reduction, power saving and corporate governance</td>
</tr>
<tr>
<td>100% coverage of integrity and ethics education and training</td>
<td>Winbond invested in the world’s largest blue carbon project, and obtained 1,000 tons of CO2e blue carbon</td>
</tr>
</tbody>
</table>
5.1 Corporate Governance

5.1.1 Board Operation

Board of Directors

For the operation of Winbond’s Board of Directors, the power and authority are exercised in accordance with relevant laws and regulations and the resolutions of the shareholders’ meeting. The directors create the maximum benefit for shareholders in line with the principle of sustainable operation. Winbond has established “Conflict of Interest Reporting and Recusal Instruction”, “Insider Trading Prevention Procedure”, “Instruction for Personal Finance Reporting by Employees at Specific Positions and Business Related Personnel and Suppliers”, “Rules for Receiving or Providing Gifts and Entertainment”, “Technical and Classified Data Management Instruction”, “Anti-Trust Code of Conduct”, etc. to prevent unethical behaviors. Winbond also has established “Ethical Management Violation Handling Instruction”, which describes explicitly the methods and channels for filing a complaint, and vigorously promotes and implements the Instruction, which has been regularly reviewed and revised, while meting out disciplinary action against violators.

--- Board Composition ---

<table>
<thead>
<tr>
<th>Composition of Board of Directors</th>
</tr>
</thead>
<tbody>
<tr>
<td>The 12th Board of Directors consists of 11 directors, including 4 independent directors and 2 female directors. Directors who do not hold managerial positions of the Winbond and its subsidiaries make up more than two-thirds of board members. There are 3 persons having a spousal relationship or a familial relationship within the second degree of kinship with the directors, which is less than half of the board members and is in compliance with Article 26-3 of the Securities and Exchange Act. Winbond’s Chairman serving concurrently as CEO is to lead the management team to effectively implement the decisions of the Board of Directors. In response to the aforementioned circumstances, the number of independent directors on the Winbond Board of Directors has been increased from three to four, and more than half of the Board of Directors is not held by the company’s managers.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Major Shareholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional directors Walsin Lihwa Corporation and Chin-Xin Investment Co., Ltd are major shareholders of the Winbond. Among them, Walsin Lihwa Corporation is a founder of the Winbond, also the largest shareholder and a director since Winbond’s inception</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2022 Board Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>In 2022, 7 meetings of the Board of Directors were convened, with an average attendance rate of 100%. Including actual attendance (99%) and proxy attendance (1%) According to the material topics in 2022, the total number of key major events communicated with the highest governance unit was 16 (business integrity, R&amp;D innovation, productivity and business performance, energy and greenhouse gas, sustainable development and other topics).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Election of the Directors</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The composition of the Board of Directors is independent and diverse. The nomination of directors follows a rigorous selection process, adopting a candidate nomination system and voting at the shareholders’ meeting. Shareholders fully exercise their election rights.</td>
</tr>
<tr>
<td>• The members of the Board of Directors all have rich experience in industry management. Their knowledge and professional experience cover different fields; being cross-generational and recruiting elites from different fields to uphold the goals of innovation and diversification</td>
</tr>
<tr>
<td>• Wide age distribution</td>
</tr>
<tr>
<td>• More than half of the independent directors serve no more than 3 consecutive terms</td>
</tr>
<tr>
<td>• Participation of female directors</td>
</tr>
</tbody>
</table>

Note: For Board and Committee proposals that involved the interests of the directors themselves, the directors had explained the reasons for recusal at the meeting and refrained from discussing and voting on such proposals to ensure the avoidance and mitigation of conflicts of interest. For relevant information, please refer to pages 21 and 24 of Winbond’s 2022 Annual Report.
### 12th Members of the board (term 2020/6~2023/5)

<table>
<thead>
<tr>
<th>Title</th>
<th>Name</th>
<th>Gender</th>
<th>Age distribution</th>
<th>Individual director background</th>
<th>Diversified fields</th>
<th>Independent director</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chairman</td>
<td>Arthur Yu-Cheng Chiao</td>
<td>Male</td>
<td>60-70</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Vice Chairman</td>
<td>Tung-Yi Chan</td>
<td>Male</td>
<td>60-70</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Director</td>
<td>Yung Chin</td>
<td>Female</td>
<td>60-70</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Independent Director</td>
<td>Allen Hsu</td>
<td>Male</td>
<td>60-70</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Independent Director</td>
<td>Stephen T. Tso</td>
<td>Male</td>
<td>70-80</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Independent Director</td>
<td>Francis Tsai</td>
<td>Male</td>
<td>70-80</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Independent Director</td>
<td>Jerry Hsu</td>
<td>Male</td>
<td>40-50</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Director</td>
<td>Walsin Lihwa Corporation</td>
<td>Male</td>
<td>60-70</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Director</td>
<td>Chin-Xin Investment Co., Ltd</td>
<td>Male</td>
<td>60-70</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Director</td>
<td>Jamie Lin</td>
<td>Male</td>
<td>40-50</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Director</td>
<td>Wei-Hsin Ma</td>
<td>Female</td>
<td>50-60</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Business management</th>
<th>Leadership and decision making</th>
<th>Knowledge of the industry</th>
<th>Finance and accounting</th>
<th>IT</th>
<th>Environment</th>
<th>Economy</th>
<th>People</th>
</tr>
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</tbody>
</table>

- **Proportion of directors concurrently serving as managers of the parent company or subsidiaries:**

- **Chairman:** 12%
- **Vice Chairman:** 12%
- **Director:** 12%
- **Independent Director:** 12%

- **Independent director ratio:**
  - Male: 36%
  - Female: 27%

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**Winbond’s Story**

**Green Products**

**Environmental Sustainability**

**Sustainable Supply Chain**

**Human Rights and Social Inclusion**

**Corporate Governance**

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**Appendix**

**Preface**

**Contribution to Sustainability**

**Taking the Lead**
Professional Excellence of Directors

The 11 directors all have extensive business operations experience. The ages of board members cover different generations, and their professional background covers different industries. All board members possess the ability to perform their duties, supervise, and give constructive feedback and strategies. The directors take classes outside themselves or participate in multi-faceted training courses organized by Winbond. Training hours for director education and training and environmental sustainability related courses (carbon credit, climate change, sustainable finance) were 24.5 hours and for courses related to corporate governance (corporate governance, risk management) were 9 hours. The total training hours from 2021 to the end of 2022 were 49.5 hours. In 2022, the directors obtained a certificate of study with an average of 10.41 hours.

— Directors' Remuneration and Evaluation of Board Performance —

01  The Remuneration Committee reviews the performance evaluation system for the Board of Directors on a regular basis. Winbond established the "Rules for Remuneration of Directors and Performance Assessment of the Board of Directors".

02  A self-evaluation is conducted by the directors in December every year. It is submitted to the Remuneration Committee and the Board of Directors.

03  A performance evaluation of the Board of Directors is conducted by an external professional institution once every 3 years. In May 2022, an external organization "Taiwan Corporate Governance Association" was authorized to conduct the performance evaluation of the Board of Directors.

04  Result of the Board of Directors performance evaluation is taken into consideration when nominating directors. On December 14, 2022, the Board of Directors reported the external evaluation results and Winbond's improvement plan.

The results of the 2022 evaluation were submitted to the Remuneration Committee and the Board of Directors on March 14, 2023.

2022 self-evaluation results of the overall performance of the Board of Directors: The scores of the "election and continuing education of the directors" had dropped significantly compared to that in 2021.

Strengthening in 2023 is aimed at:
Continued provision of multi-faceted development courses

5.1.2 Operations and Main Duties of the Functional Committees

In order to improve the supervision function of the Board of Directors and strengthen the management function, the Winbond’s Board of Directors has set up an Audit Committee, a Remuneration Committee, a Risk Management Committee and a ESG committee. Each Functional Committee is responsible to the Board of Directors and submits proposals to the Board of Directors for resolution.

— Remuneration Committee —

Composition of 4 independent directors, the convener is Mr. Stephen T. Tso.

In 2022, 4 meetings of the Remuneration Committee were convened, with an actual attendance rate of 100%.

Responsibilities: Responsible for setting and reviewing the performance evaluation and remuneration policy, system, standard, and structure as well as individual compensation for Winbond directors and managers. The “Rules for Remuneration of Directors and Performance Assessment of the Board of Directors” and “Guidelines for Managers’ Remuneration and Performance Evaluation Management” were also drawn up to maximize the long-term effectiveness of the Board and to ensure a close linkage between the managers’ compensation and the company’s sustainability performance (economic, environmental, social).

Note: Winbond established the "Rules for Remuneration of Directors and Performance Assessment of the Board of Directors", which specifies the basis for directors’ remuneration, and submits it to the Remuneration Committee every year for review to see if adjustments are required. Both the Audit Committee and the Remuneration Committee of Winbond is composed of all independent directors and are independent. Winbond does not have a remuneration clawback mechanism. For information on the remuneration of directors, President and Vice President, please refer to page 17 - page 19 of Winbond’s 2022 Annual Report.
— Audit Committee —

- Composed of 4 independent directors, the convener is Mr. Allen Hsu.
- In 2022, 7 meetings of the Audit Committee were convened, with an average attendance rate of 100%. Including actual attendance (96%) and proxy attendance (4%)

Responsibilities: Supervises the fair presentation of the company’s financial statements, appointment (dismissal) of the CPA as well as the CPA’s independence and performance, and assists the Board of Directors in performing supervisory duties such as: Control of compliance with relevant laws and regulations and existing or potential risks by the company.

— ESG committee —

- The committee consists of three directors, the President and five to seven senior executives of relevant departments, convened by the Chairman himself.
- In 2022, 1 meeting of ESG committee was convened, with an attendance rate of 100%.

Established the ESG office and five task forces, including Environmental Sustainability, Green Products, Human Rights and Social Inclusion, Sustainable Supply Chain, and Corporate Governance, regularly report to the Board of Directors every year (fourth quarter) on the implementation results of ESG committee, thereby ensuring the promotion and implementation of works related to corporate sustainability. Regular meetings of ESG committee are held every quarter, and the promotion centers governed by it report the implementation progress (results) of the current year and submit the implementation plan for the next year.

5.1.3 Shareholder Relations and Rights

To maintain shareholder relations and rights, Winbond mainly manages through the following four measures to ensure that the communication process with shareholders is smooth and in line with due process, the information is open and transparent, and the active and positive interaction between the company and shareholders is effectively maintained:

1. Winbond has appointed a spokesperson and 2 deputy spokespersons, and relevant units like investor relations and stock affairs have also been established.
2. Monthly turnover, financial reports, and company annual reports are regularly disclosed on the official website.
3. An institutional investor conference is held by Winbond every six months with two of such conferences in 2022.
4. For more information on the rights and interests of shareholders, please refer to the videos and presentations from the institutional investor conferences.

- External channel of communication provided
- Regular disclosure on Winbond operations
- Uphold shareholders' interests
- Define management procedure for prevention of insider trading
- 2 institutional investor conferences and 1 general shareholders' meeting are hosted each year
5.1.4 Internal Controls and Audits

Winbond’s internal audit unit is directly under the Board of Directors. The appointment and dismissal of the audit chief shall be approved by the Audit Committee and the Board of Directors. In addition to reviewing and verifying the self-evaluation results of the internal control system for each unit and subsidiary, the internal audit unit also evaluates the control operations of various operating activities of Winbond’s internal control system to measure the effectiveness and compliance of the existing internal control and its impact. The frequency and content of each periodic audit are determined according to the laws and regulations as well as the risk assessment; other important procedures or special cases may be audited by the auditing personnel at any time or irregularly.

The audit unit conducts audits according to the annual audit plan approved by the Board of Directors to determine the effectiveness of the internal control system’s design and implementation. Audit findings are followed up until corrective actions have been completed to ensure the appropriate measures were taken by the relevant units timely. The audit chief reports to the independent director (convener of the Audit Committee) monthly after the completion of audit reports and the follow-up reports and delivers them to the independent directors for examination before the end of next month following the completion of the audit. The audit chief reports to the Board of Directors and Audit Committee quarterly. 2022 audit plan has been implemented in accordance with regulations, and audit results and follow-up improvements have been reported to the Audit Committee and the Board of Directors.

5.1.5 Tax Management

A unit responsible for tax governance has been established by Winbond to handle all tax reporting under the local tax laws and regulations. We also support government policies on business innovation, research and development, and tax credits by following the government’s special law on the repatriated offshore funds and use the funds for investment in the Kaohsiung Fab so as to increase the investment in Taiwan.

Winbond is committed to improving the transparency of tax information within the group. In order to stay in line with the global anti-tax avoidance trend, we actively update relevant tax knowledge and retain and consult external professional tax consultants to ensure proper compliance with tax regulations and reporting obligations.

- Six Principles of Taxation Policy
  1. Comply with local tax laws, report tax returns honestly, pay taxes on time, and fulfill our social responsibilities as taxpayers.
  2. Local and international tax reforms are thoroughly assessed to determine the impact and develop a swift response.
  3. Tax information is regularly disclosed in the financial statements and annual report to ensure information transparency.
  4. Transactions between affiliated enterprises are based on the Arm’s Length Principle, comply with the internationally accepted Transfer Pricing Guidelines defined by the Organization for Economic Cooperation and Development (OECD).
  5. Winbond has built a relationship based on mutual trust and honest communications with the tax authorities.
  6. All material transactions and decisions made by the company take the effect of tax and leases into account.

5.2 Business Integrity

“Business integrity” is Winbond’s highest ethical standard. The human resources unit is responsible for the establishment and development of the corporate culture of business integrity, and making colleagues familiar with the content of business integrity through the formulation of regulations, continuous improvement, supervision and control, and education and training; regulations are also formulated, such as “Corporate Governance Best Practice Principles,” “Ethical Corporate Management Best Practice Principles,” “Sustainability Development Best Practice Principles,” “Corporate Social Responsibility Manual,” “Code of Ethics for Directors” and “Employee Code of Conduct,” embedding business integrity into the company’s culture.

An annual report on business integrity management promotion and training is presented to the Board by the HR in the fourth quarter of each year. Internal
cultural promotion, weekly articles on corporate philosophy, and promotion of policy announcements published on the employees’ homepages are used to strengthen the implementation of education and training on labor rights, environmental protection, health and safety, ethical standards, and prevention of insider trading. Winbond strengthens internal ethical awareness to ensure compliance with corporate ethics and government regulations and implements sound business integrity management.

2022 Business Integrity Management Performance

- In 2022, the online course “Promotion of Ethics for Employees” was hosted, covering “business integrity” (insider trading prevention, fair trading, advertising and competition, identity protection, preventing retaliation, etc.) and labor rights, which was promoted to bases around the world. A total of 3,824 global employees have been trained, with a total of 1,530 hours. All directors and employees have completed the training.

- There were no economic or environmental violations at Winbond, nor were there any cases of corruption, anti-competitive behavior, or violations related to marketing and labeling.

- No complaints on violation of business integrity were submitted through the complaint channel in 2022.

---

5.3 Productivity and Business Performance

In 2022, Winbond’s consolidated revenue amounted to NT$94.53 billion, a slight decrease of 5% from 2021; our consolidated net earnings after tax reached NT$15 billion, and our after-tax EPS was NT$3.25. We paid a consolidated income tax of NT$4.03 billion, which accounted for 4.26% of our total revenue. For explanation and analysis of other categories of financial performance, please refer to Winbond’s 2022 Annual Report.

---

<table>
<thead>
<tr>
<th>Item</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Election of the Directors</td>
<td>60,683</td>
<td>99,570</td>
<td>94,530</td>
</tr>
<tr>
<td>Non-operating revenue (expense)</td>
<td>185</td>
<td>(205)</td>
<td>1,512</td>
</tr>
<tr>
<td>Direct economic value [A]</td>
<td>60,868</td>
<td>99,365</td>
<td>96,042</td>
</tr>
<tr>
<td>Operating cost</td>
<td>43,643</td>
<td>57,089</td>
<td>51,479</td>
</tr>
<tr>
<td>Employee remuneration and benefit expenses [A-B]</td>
<td>10,600</td>
<td>17,325</td>
<td>19,706</td>
</tr>
<tr>
<td>Payments to investors</td>
<td>788</td>
<td>1,175</td>
<td>4,482</td>
</tr>
<tr>
<td>Payments to the government</td>
<td>123</td>
<td>274</td>
<td>3,799</td>
</tr>
<tr>
<td>Community investment</td>
<td>10</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Direct economic value distributed [B]</td>
<td>55,164</td>
<td>75,869</td>
<td>79,473</td>
</tr>
<tr>
<td>Residual economic value [A-B]</td>
<td>5,504</td>
<td>23,496</td>
<td>16,569</td>
</tr>
<tr>
<td>Net profit before tax</td>
<td>1,812</td>
<td>18,223</td>
<td>18,046</td>
</tr>
<tr>
<td>Net profit</td>
<td>1,519</td>
<td>15,000</td>
<td>14,987</td>
</tr>
<tr>
<td>Earnings (loss) per share (NT$)</td>
<td>0.33</td>
<td>3.42</td>
<td>3.25</td>
</tr>
</tbody>
</table>
— 2022 Market Distribution —

<table>
<thead>
<tr>
<th></th>
<th>Asia</th>
<th>Europe</th>
<th>America</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales ratio (%)</td>
<td>90.1%</td>
<td>3.8%</td>
<td>5.7%</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

— Product categories and revenue ratios of their applications in 2022 —

<table>
<thead>
<tr>
<th>Dynamic random access memory (DRAM) products</th>
<th>Flash memory products</th>
<th>Logic products</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales ratio (%)</td>
<td>23.20%</td>
<td>31.59%</td>
<td>44.05%</td>
</tr>
</tbody>
</table>

Note: Total wafer production was 2,100,000 thousand pcs, while total die production was 3,397,345 thousand pcs.
Note: For Winbond’s financial performance and sales volume in 2022, please refer to our 2022 Annual Report.

## Investing in Taiwan

Winbond’s headquarters and the first fab were established in the Central Taiwan Science Park. Echoing the programs for investing in Taiwan, in 2020, we applied for the “Action Plan for Welcoming Overseas Taiwanese Businesses to Return to Invest in Taiwan” for the first time to increase investment in the Central Taiwan Science Park (CTSP) Fab to expand production capacity and upgrade technology, implement intelligent automation equipment and provide high value-added products. Construction of Winbond’s second fab was completed in the Kaohsiung Science Park in 2022. In March 2023, Winbond was granted the second approval of the “Action Plan for Welcoming Overseas Taiwanese Businesses to Return to Invest in Taiwan”, which was binding to the syndicated loan contract signed in April 2023. The funds will be used to expand the production capacity of the Kaohsiung Fab and the CTSP Fab, upgrade advanced manufacturing process, purchase advanced equipment and develop our own innovative technologies to cope with the long-term growth trend of the memory industry. The Kaohsiung Fab will continue to recruit employees and encourage local talents born in southern Taiwan to return to their hometown to work. In addition to gathering semiconductor supply chain in the Kaohsiung area, we will further implement the concept of investing in Taiwan.
5.4 Risk Management

Winbond belongs to the semiconductor manufacturing industry. Natural disasters, accidents, man-made accidents, changes in international political and economic situations, the introduction of new technologies in the industry, and changes in policies and regulations, etc., may all cause serious impacts on our operations and finances. Therefore, Winbond has set up a Risk Management Committee under the Board of Directors, and organizes existing departments or risk responsible units to carry out risk management on the areas of operation they are responsible for. In addition to formulating sound internal management regulations and operating procedures, Winbond actively manages the three types of risks faced by contemporary enterprises: “operation”, “finance” and “information”, develops a comprehensive plan and process for pre-assessment, risk avoidance, loss prevention and crisis management, and regularly reports to the management and governance units to ensure that all corporate risk control goals are achieved.

Winbond has included climate change risk into the long-term operation and management of the enterprise, and in order to understand its impact on the environment and operations, since 2021, Winbond has adopted the Task Force on Climate-Related Financial Disclosures’ (TFCD) framework, and based on the observation on international regulatory trends and market outlook, every year, we regularly identify and disclose the financial impacts of climate-related risks and opportunities (both quantitative and qualitative), providing comments on the situation as well as proposing a management strategy. Winbond will continue to monitor the impact of risks brought by the climate, strengthen the company’s operational capabilities, promote various carbon reduction plans, improve energy efficiency, and steadily move towards sustainable development.

<table>
<thead>
<tr>
<th>Items for risk and opportunity identification</th>
<th>Description of impact assessment</th>
<th>Response measures</th>
<th>Performance management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abnormalities in product quality</td>
<td>Loss of customer trust and cancellation of product orders</td>
<td>When a product or manufacturing process fails to meet the requirements, employees responsible for corrective measures must be immediately notified to make sure that the defective product will not be shipped out to customers. Any products that may potentially be defective must be checked for defects and isolated. The responsible units shall analyze the cause of the defects and their adverse impact on the manufacturing process, as well as implement improvement measures</td>
<td>During the manufacturing process, products are subject to strict quality controls to improve product quality, which also helps us maintain long-term working relationships with our customers and improve customer satisfaction</td>
</tr>
</tbody>
</table>
I. Operational risk management

<table>
<thead>
<tr>
<th>Items for risk and opportunity identification</th>
<th>Description of impact assessment</th>
<th>Response measures</th>
<th>Performance management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rights Violations</td>
<td>Serious rights violations may constitute illegal behavior, and lead to the Winbond’s management taking on civil or criminal liability. In less serious cases, violations may lead to financial or goodwill losses for the Winbond</td>
<td>• Proactive Prevention When conducting product design and development, the RD department will closely work together with the intellectual property rights department to conduct relevant search, analysis and research on intellectual property rights. If necessary, it will obtain legal authorization or adopt methods such as design around, and strive to avoid infringement of intellectual property rights. • Effectively resolve violations after they happen: Upon alleged infringement in rare cases, the legal department will immediately clarify the facts with relevant units and actively protect the rights and interests of the company and customers</td>
<td>From 2016 onwards, Winbond has avoided becoming involved in any litigation or disputes over violations of intellectual property rights (prior to 2016, Winbond has been involved in an extremely few number of litigation cases, which have all been resolved without major adverse impact on Winbond)</td>
</tr>
<tr>
<td>Patent Rights</td>
<td>Unsuccessful patent licensing negotiations increase the risk of patent litigation.</td>
<td>We proactively consult external lawyers to discuss and establish response measures to any potential events where a rights-holder asks for unreasonably high patent licensing fees or files a patent lawsuit against the Winbond, regardless if these actions are to protect intellectual property rights, purely based on business interests, or for any other unknown reason.</td>
<td>Acting under the principle of looking for a win-win resolution, and by showing mutual respect and taking reasonable actions when interacting with the rights-holder, Winbond has effectively managed patent risk, and there has not been any patent risk incidents which have adversely impacted the Winbond.</td>
</tr>
<tr>
<td>Geopolitical risk</td>
<td>Under the co-opetition of world powers, policy and regulatory measures such as relevant restrictions or tariffs may have an impact on revenue.</td>
<td>Gradually construct local marketing talents to get closer to the market and provide customers with more timely services.</td>
<td>Due to strategic adjustments such as marketing, we are able to respond to changes in the division and reorganization of the global industrial chain in a timely manner</td>
</tr>
<tr>
<td>Export control</td>
<td>The rapid changes in the export of high-tech technologies and entity lists in various countries may affect shipments.</td>
<td>Establish an Internal Compliance Program (ICP) that incorporates the entity list, Export Control Classification Number (ECCN) and red alert management procedures for abnormal transactions</td>
<td>Incorporated relevant management regulations of the Taiwan Bureau of Foreign Trade and the US Bureau of Industry and Security (BIS) into the Internal Compliance Program to improve the overall delivery speed and management quality</td>
</tr>
<tr>
<td>Pandemic Risk</td>
<td>The pandemic can lead to employee health impacts, or cause losses through interruptions to business operations.</td>
<td>• Implement pandemic prevention management regulations, such as practicing separate warehouses and different working shifts or work from home according to changes in the pandemic situation, maintaining indoor air circulation and regularly cleaning and disinfecting the environment • Regular / irregular pandemic prevention meetings are chaired by senior executives, and rolling reviews are conducted on pandemic prevention management measures</td>
<td>In 2022, the pandemic has not impacted employee health, or caused losses through interruptions to business operations</td>
</tr>
</tbody>
</table>

II. Financial Risk Management

<table>
<thead>
<tr>
<th>Items for risk and opportunity identification</th>
<th>Description of impact assessment</th>
<th>Response measures</th>
<th>Performance management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exchange Rate Risk</td>
<td>The Winbond’s foreign exchange gains and losses are mainly incurred from the foreign currency derived from import and export business operations, as well as the derivative financial products which are used to hedge against the exchange rate risk incurred from this foreign currency.</td>
<td>• Transactions in derivative financial products are carried out with the purpose of hedging against the operational risks brought about by the Winbond’s business operations, and derivative financial products have been chosen with this main goal in mind. Additionally, trading counterparties have been selected for their credit-worthiness, in order to avoid situations where counterparties are unable to fulfill contract obligations, leading to losses for the Winbond. In addition, low credit risk financial institutions with good relationships with the Winbond and the ability to provide the Winbond with professional information will be chosen as trading counterparties. • The Winbond keeps abreast of financial market information, predicts market</td>
<td>In 2022, risks from exchange rate changes and foreign exchange gains and losses remained within a controllable range</td>
</tr>
<tr>
<td>Items for risk and opportunity identification</td>
<td>Description of impact assessment</td>
<td>Response measures</td>
<td>Performance management</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>----------------------------------</td>
<td>-----------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>II. Financial Risk Management</td>
<td>Interest Rate Risk</td>
<td>Strive to obtain favorable interest rate conditions based on the current market situation, in order to reduce the impact of interest rate fluctuations. Winbond issues New Taiwan Dollar-denominated corporate bonds at fixed interest rates, which are accounted at amortized cost and will therefore not affect cash flows or fair value during interest rate fluctuations.</td>
<td>• In 2022, the Winbond's consolidated interest income was NT$154,580 thousand, and the consolidated interest expenses were NT$94,874 thousand. • Winbond shall closely monitor the effect of interest rate trends on cash flow in order to evaluate whether the impact of interest rate changes on the Winbond's operations remain within a controllable range.</td>
</tr>
<tr>
<td>III. Information Risk Management</td>
<td>Information Security</td>
<td>Improve information security awareness: • Monthly issuance of information security advocacy • Quarterly information security education and training (social engineering training) • Annual personal data protection education and training • Information security current affairs or major event advocacy from time to time</td>
<td>• In 2022, the implementation rate of social engineering education and training courses reached more than 97%, and those who have not completed the training will be denied access to the Internet. • A total of 7 information security advocacy were issued.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Information security monitoring and abnormal event notification handling: • Provision of weekly monitoring records and analysis reports • Conduct weekly information security monitoring meeting to discuss, review incidents and take countermeasures</td>
<td>• Strengthened the notification mechanism, automated the anti-virus notification and abnormal logins to cloud services, directly notifying the parties concerned to handle to speed up the processing time. • No major information security incidents and impacts in 2022.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Weakness and vulnerability management: • The on-premises host performs vulnerability scanning operations on a quarterly basis, and regularly schedules downtime operations every month for major Microsoft update patching • For external services, monitor risk with SSC cloud scanning tool</td>
<td>• Material risk vulnerabilities of the on-premises host have been patched as scheduled. • The average total score of the SSC cloud monitoring platform is &gt; 90 points (level A); a total of 69 risks were patched, 30 of which were high / material risks.</td>
</tr>
<tr>
<td><strong>trends, familiarizes itself with financial products and related regulations and trading techniques, and provides complete and timely information to Winbond management and relevant Winbond departments for reference.</strong></td>
<td><strong>The Winbond sets the limit of unrealized loss on all financial derivatives contracts to 20% of the contract value or 3% of stockholders’ equity, whichever is lower. The Winbond’s finance unit evaluates the Winbond’s position on financial derivatives twice every month, and produces a report based on this evaluation which is submitted for review to the head of finance and senior management authorized by the Board of Directors, with hopes to predict the risk and potential losses from each transaction.</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### III. Information Risk Management

<table>
<thead>
<tr>
<th>Items for risk and opportunity identification</th>
<th>Description of impact assessment</th>
<th>Response measures</th>
<th>Performance management</th>
</tr>
</thead>
</table>
| Information Security                         | Threat detection, monitoring and early warning | Identity access control:  
- Cloud services use conditional access and multi-factor authentication. And only compliant devices and specific programs are allowed  
- Remote connection uses identity recognition + multi-factor authentication + device whitelist, only when the conditions are met can the connection be made | For cloud login and remote access information daily reports, device unregistered and attempted logins were analyzed and investigated, and there were no material / high-risk events in 2022 |
|                                               |                                 | Code security:  
- The application department will perform code security checks during program development and will patch the high-risk codes to improve program security when launched | A total of 7 new systems were launched in 2022, the high-risk code correction and improvement rate was 100%, and the program coverage rate of source code scanning was 100% |
|                                               |                                 | Mail security:  
- Enhanced mail server security settings; DKIM settings can prevent emails from being forged and tampered with and DMARC settings can identify unauthorized domains | All emails must be verified by legitimate email servers, and the success rate of external delivery is 100% |

### 5.5 Green Investment

The whole world is facing the impact of climate change. As one of Taiwan’s intensive electronics industry, we set up a green investment management unit to achieve the goal of green investment and create long-term value for investors and shareholders.

#### 5.5.1 Investment in Green Energy

In May 2022, Winbond acquired a 15% equity in CHIA-HO Green Energy Corporation for NT$555 million, whose main business is to develop solar energy fields. Considering that its parent company, Taiwan Cement Corporation, has valuable practical experience in the renewable energy industry, it will bring positive benefits to Winbond in fulfilling its corporate sustainable development goals, and help Winbond obtain part of the renewable energy electricity needed to move towards net-zero emissions goals.

#### 5.5.2 Obtaining the Carbon Credit of the World’s Largest Blue Carbon Project

In response to the international trend of carbon neutrality and the goal of net zero in 2050, Winbond obtained carbon credit from the Pakistan Mangrove Restoration Project in November 2022. This mangrove restoration project is a Delta Blue Carbon - 1 project, the largest blue carbon project in the world.

The Delta Blue Carbon - 1 project (DBC-1) is a reforestation and restoration project of mangroves and wetlands in the Indus Delta region of Pakistan. The project covers an area of 350,000 hectares and is expected to reduce carbon emissions by more than 142 million tons of carbon dioxide equivalent during the 60-year project period from 2015 to 2075.

The Indus Delta consists of a richly landscaped system of channels, low-lying islands, intertidal zones and mangroves. The mangroves here are the largest arid climate...
mangroves in the world and lie on the main migration routes of thousands of bird species. These mangroves have faced increased logging hazards in recent years, with major inducement of mangrove deforestation in the region being the use of mangroves as a source of fuel wood, fodder, and pasture for grazing, etc. Over 42,000 people live in the 60 coastal villages within the project area, over 70 percent of whom live below the poverty line, with many communities lacking access to clean drinking water, basic education, sanitation and sanitary facilities, and relying on agriculture as their primary income source; the depletion of freshwater has increased the salinity of mangrove and delta soils, and agricultural and coastal fisheries have gradually reduced their yields.

The DBC-1 project hopes to alleviate these problems and prevent biodiversity loss in this critical biodiversity area by regenerating mangroves and controlling the causes of mangrove deforestation and degradation, which will be achieved through the reforestation of more than 224,000 hectares of mangroves and by involving local communities in the planning and implementation of the project’s activities. Local residents participate in conservation activities in various ways, including the mangrove supervision agreement, in which local residents are hired as supervisors, and the local residents also work as partners on the project in mangrove forest restoration, protection and sustainable management; other program actions include increasing education, sources of safe drinking water and health care, improving law enforcement, developing local businesses, microfinance programs, promoting gender equality, preserving historic heritage, and developing revenue streams.

While focusing on the semiconductor industry, Winbond hopes to invest continuous and stable resources to participate in global activities related to carbon emission reduction and contribute our strength to the sustainable survival and development of the earth.

5.6 Sustainability-Linked Loan

In April 2023, Winbond secured a NT$20 billion sustainability-linked syndicated loan with 11 banks. It was the first syndicated loan linked to sustainability indicators arranged by Winbond with great support from the banks. The successful arranged represents the banks’ confidence and recognition on Winbond’s sustainability actions. In this project, the achievement of sustainability-linked indicators such as carbon reduction, electricity saving and corporate governance are assessed periodically, and the performance is directly linked to credit spread reduction. These all show that Winbond is willing to engage sustainability with practical actions and indicators, and strengthens its commitment and determination to the environment and society. At the same time, to strive on the sustainable society and environment with banks’ finance vision and support on the sustainability-linked syndicated loan.
### 5.7 Climate Change Management

2021: Winbond introduced the Task Force on Climate-related Financial Disclosures (TCFD) framework for the first time to assess the risks and opportunities that climate change may bring by referring to the TCFD issued by the Financial Stability Board (FSB) TCFD task force, which was strengthened and refined in 2022.

2023: Winbond released its first TCFD Report, which examines Winbond’s operational resilience in the face of climate issues and strengthens its response to and practice of climate change.

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<table>
<thead>
<tr>
<th>Aspect</th>
<th>Winbond strategy / and actions</th>
<th>2022 implementation status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance</td>
<td>• The Board of Directors, as the highest governance body for climate change, is responsible for guiding the company’s response to and decision-making on climate change</td>
<td>• Winbond restructured the “Winbond Corporate Social Responsibility (CSR) Implementation Committee” into the “ESG committee” in May 2022. The level of committee was raised to the level of the Board of Directors</td>
</tr>
<tr>
<td></td>
<td>• The ESG committee is established under the Board of Directors and chaired by the Chairman. It regularly reports to the Board of Directors every year on the implementation results of the ESG Committee related to climate change, etc., so as to ensure the promotion and implementation of the work related to the sustainable development of the enterprise</td>
<td></td>
</tr>
<tr>
<td>Strategy</td>
<td>• Discussion and identification of short-, medium- and long-term climate risks and opportunities by the interdepartmental TCFD</td>
<td>• 4 major climate risks and 7 minor climate risks were identified, as well as 5 major climate opportunities and 4 minor climate opportunities</td>
</tr>
<tr>
<td></td>
<td>• Assessment of the possible impact on the company’s financial or operation aspects for major risks and opportunities with high impact and high probability of occurrence</td>
<td>• Qualitative or quantitative analysis of the financial or operational impact of major risks and opportunities</td>
</tr>
<tr>
<td></td>
<td>• Scenario analysis for major transition risks and physical risks</td>
<td>• In terms of transition risks, three scenarios were used to simulate, including: (1) National Net-Zero Pathway; (2) SSP1-1.9 scenario of IPCC AR6; (3) Science-Based Targets Net-zero path. Regarding physical risks, Winbond followed the IPCC climate risk model, considered the three risk factors of hazard, vulnerability and exposure, and evaluated the risk value of the three potentials of flooding, debris flows and landslides caused by extreme rainfall under the four warming scenarios of RCP 2.6, RCP 4.5, RCP 6.0 and RCP 8.5</td>
</tr>
<tr>
<td>Risk Management</td>
<td>• Manage climate-related risks and integrate processes into the company-wide risk management framework</td>
<td>• The Risk Management Committee under the Board of Directors of the Winbond has established sound internal management regulations and operating procedures by organizing the existing departments or risk responsible units to carry out risk management on the areas of operation they are responsible for, and has incorporated climate change risk into long-term business operation management</td>
</tr>
<tr>
<td></td>
<td>• Establish a climate risk identification process with reference to the TCFD framework</td>
<td>• The interdepartmental TCFD was established by appointing relevant members from five task forces under the Windbond’s ESG committee, including Environmental Sustainability, Green Products, Human Rights and Social Inclusion, Sustainable Supply Chain, and Corporate Governance. The TCFD discussed the financial qualitative and quantitative impact of climate risk through 4 workshops</td>
</tr>
<tr>
<td></td>
<td>• For major risks and opportunities with high impact and high probability of occurrence, relevant units are asked to review and develop mitigation and adaptation measures</td>
<td>• Disclosed the climate risk and opportunity-related assessment results and response practices in the TCFD report for review by the Winbond ESG Committee and representatives of various department heads, as the basis for promoting climate mitigation and adaptation actions</td>
</tr>
</tbody>
</table>

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### Metrics and Targets

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Winbond strategy / and actions</th>
<th>2022 implementation status</th>
</tr>
</thead>
</table>
|                               | • Set the corporate goals for renewable energy use and net-zero emissions  
• Promote climate risk mitigation and adaptation actions in terms of green products, sustainable supply chains, energy and greenhouse gas management, water resource management, etc. and set relevant management goals  
• Every year, statistics are gathered on the greenhouse gas emissions and water consumption of the CTSP Fab, and in 2022, the Kaohsiung Fab was included. In addition, the key performance indicators (KPI) - greenhouse gas emissions per unit of product and water recovery rate are set. Among them, the greenhouse gas emissions are verified by a third-party unit every year (ISO 14064-1) | • The goal was to use 90% of renewable energy in the CTSP Fab (based on the electricity consumption in 2021), and achieve net zero emissions in 2050  
• Invested in process research and development to reduce power consumption and increase productivity  
• Planned and implemented sustainable procurement strategies and activities, sustainable risk assessment and management, and digital management of supplier ESG activities  
• Through the ISO 50001 energy management system, the equipment for major energy use was optimized. In 2022, new measures saved about 35.9 million kWh of electricity per year  
• In 2022, the greenhouse gas emission per unit of product was 13.2 kg CO2e/layer, and the company-wide water recovery rate was 80.5%, both meeting the self-defined target value |

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- set the corporate goals for renewable energy use and net-zero emissions
- promote climate risk mitigation and adaptation actions in terms of green products, sustainable supply chains, energy and greenhouse gas management, water resource management, etc. and set relevant management goals
- every year, statistics are gathered on the greenhouse gas emissions and water consumption of the CTSP Fab, and in 2022, the Kaohsiung Fab was included. In addition, the key performance indicators (KPI) - greenhouse gas emissions per unit of product and water recovery rate are set. Among them, the greenhouse gas emissions are verified by a third-party unit every year (ISO 14064-1)

- the goal was to use 90% of renewable energy in the CTSP Fab (based on the electricity consumption in 2021), and achieve net zero emissions in 2050
- invested in process research and development to reduce power consumption and increase productivity
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- through the ISO 50001 energy management system, the equipment for major energy use was optimized. In 2022, new measures saved about 35.9 million kWh of electricity per year
- in 2022, the greenhouse gas emission per unit of product was 13.2 kg CO2e/layer, and the company-wide water recovery rate was 80.5%, both meeting the self-defined target value
5.7.1 Climate Governance Framework

Winbond belongs to the semiconductor manufacturing industry. Natural disasters, accidents, man-made accidents, changes in international political and economic situations, the introduction of new technologies in the industry, and changes in policies and regulations, etc., may all cause serious impacts on our operations and finances. The Risk Management Committee and ESG committee are set up under the Board of Directors to review the policy and structure of risk management and sustainable development.

<table>
<thead>
<tr>
<th>— Risk Management Committee —</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Convener</strong></td>
</tr>
<tr>
<td><strong>Frequency</strong></td>
</tr>
<tr>
<td><strong>Responsibilities</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>— ESG committee —</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Convener</strong></td>
</tr>
<tr>
<td><strong>Frequency</strong></td>
</tr>
<tr>
<td><strong>Responsibilities</strong></td>
</tr>
</tbody>
</table>

5.7.2 Identification Process for Climate Change Risks and Opportunities

In 2022, Winbond established a TCFD with more than 40 members, of whom more than 60% were above the department managerial level. The members of the task force were grouped according to the nature of their business, and each group discussed the climate change issues based on their business relevance. Through 4 workshops and educational training, 4 major climate risks and 7 minor climate risks were identified, as well as 5 major climate opportunities and 4 minor climate opportunities.

<table>
<thead>
<tr>
<th>01</th>
<th>Form a TCFD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composed of personnel from more than 20 units, and the participating units include R&amp;D, sales, facility, supply chain management, environmental safety, finance, legal, and human resources.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>02</th>
<th>Work with external experts to create a list of climate risks and opportunities</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>03</th>
<th>Define the evaluation criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluate from three aspects: impact degree, possibility of occurrence and time of occurrence.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>04</th>
<th>Generate risk matrix and opportunity matrix of each group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each group identifies short-, medium-, and long-term major risks and opportunities based on the degree of impact and possibility of occurrence, while considering their own business relevance.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>05</th>
<th>Develop the consolidated risk matrix and opportunity matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compile the identification results of each group to produce the Winbond climate risk / opportunity matrix.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>06</th>
<th>Assess the financial impact of major risks and opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario simulation of the possible impact on the company’s financial aspects for major risks and opportunities with high impact and high probability of occurrence.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>07</th>
<th>Discuss how to respond</th>
</tr>
</thead>
<tbody>
<tr>
<td>For major risks and opportunities, relevant units are asked to review and formulate countermeasures.</td>
<td></td>
</tr>
</tbody>
</table>
5.7.3 Major Climate Change Impacts and Responses

### Climate Risk Matrix

<table>
<thead>
<tr>
<th>Degree of Impact</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree of Impact</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td><img src="image1" alt="High Risk" /></td>
<td><img src="image2" alt="Medium Risk" /></td>
<td><img src="image3" alt="Low Risk" /></td>
</tr>
<tr>
<td>Medium</td>
<td><img src="image1" alt="High Risk" /></td>
<td><img src="image2" alt="Medium Risk" /></td>
<td><img src="image3" alt="Low Risk" /></td>
</tr>
<tr>
<td>Low</td>
<td><img src="image1" alt="High Risk" /></td>
<td><img src="image2" alt="Medium Risk" /></td>
<td><img src="image3" alt="Low Risk" /></td>
</tr>
</tbody>
</table>

#### Major Risks
- 1. Demand for renewable energy
- 2. Carbon tax/carbon fee
- 3. Unstable electricity supply
- 4. Extreme rainfall and drought

#### Minor Risks
- 5. Changes in customer behavior
- 6. Greenhouse gas emissions regulations
- 7. Changes in rainfall patterns and distribution
- 8. Demand for low-carbon products and services
- 9. Changes in natural resource availability
- 10. Signing of Voluntary agreements
- 11. Fuel tax/energy tax

#### Climate Opportunity Matrix

<table>
<thead>
<tr>
<th>Degree of Impact</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree of Impact</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td><img src="image1" alt="High Opportunity" /></td>
<td><img src="image2" alt="Medium Opportunity" /></td>
<td><img src="image3" alt="Low Opportunity" /></td>
</tr>
<tr>
<td>Medium</td>
<td><img src="image1" alt="High Opportunity" /></td>
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<td><img src="image1" alt="High Opportunity" /></td>
<td><img src="image2" alt="Medium Opportunity" /></td>
<td><img src="image3" alt="Low Opportunity" /></td>
</tr>
</tbody>
</table>

#### Major Opportunities
- 1. Changes in customer behavior
- 2. Participation in renewable energy projects
- 3. Process optimization and R&D innovation
- 4. Development of low-carbon products and services
- 5. Improvements in energy efficiency
- 6. Water resource management
- 7. Use of recycled materials
- 8. Exploration of alternative and diverse resources
- 9. Participation in carbon credit markets

#### Short-term 1-3 years
- 1-3 years

#### Medium-term 3-5 years
- 3-5 years

#### Long-term more than 5 years
- more than 5 years

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**Appendix Preface**

Contribution to Sustainability

Taking the Lead
<table>
<thead>
<tr>
<th>Type</th>
<th>Climate Risk</th>
<th>Time of Occurrence</th>
<th>Potential Financial or Operational Impacts</th>
<th>Response Measures</th>
</tr>
</thead>
</table>
|                      | Demand for renewable energy           | Medium-term        | • Higher green electricity prices result in increased production costs (−)  
• Reducing carbon emissions leads to a decrease in carbon tax/fees (+)  
• Suppliers pass on their renewable energy expenditures, leading to increased procurement costs (−)  
• Limited production due to difficulty in acquiring renewable energy (−) | • 90% green energy target for CTSP Fab in 2030  
• Planning to procure renewable energy electricity and evaluation of the purchase of T-RECs  
• CTSP Fab has installed a 499kW rooftop renewable energy generation system and continues to assess the feasibility of installing additional renewable energy generation systems  
• Investment in Chia-ho Green Energy Corporation in 2022, with ongoing evaluation of other renewable energy projects  
• Planning to establish a Customer Green Energy Demand Survey System to accurately understand our customers’ green energy demand  
• Annual environmental surveys on key suppliers to identify carbon emissions sources, reduction plans, and management, with continuous monitoring |
|                      | Carbon tax/ carbon fee                 | Medium-term        | • Increase in indirect costs (−)  
• Suppliers pass on their carbon tax/fee expenditures, leading to increased procurement costs (−)  
• Limited capacity expansion (−) | • Company-wide target of net-zero emissions in 2050  
• Development of carbon emissions information platform for ongoing management and tracking, with plans to develop a carbon accounting system  
• Planning to procure renewable energy electricity and evaluation of the purchase of T-RECs.  
• Joining Singapore CIX platform to participate in carbon credit market and continuous monitoring of carbon offset mechanisms  
• Implementation of ISO 50001 energy management system with 21 energy-saving measures completed in 2022, resulting in a savings of 35.9 million kWh of electricity and a reduction of 16,485 tons of greenhouse gas emissions  
• Hold focused ESG exchanges to communicate supply chain decarbonization goals and encourage suppliers to reduce their carbon emissions |
|                      | Unstable electricity supply            | Long-term          | • Production impacts lead to reduced revenue (−)  
• Supplier supply disruptions affect Winbond’s production (−) | • Planning for diversified power sources to mitigate the risks associated with electricity procurement and usage  
• Installation of emergency power generator systems and uninterruptible power supply systems to establish backup power sources for at least 80% of the fab’s electricity consumption  
• Communicating electricity management measures to suppliers, including the need to establish emergency power distribution equipment and progressively increase the proportion of green energy |
|                      | Extreme rainfall and drought           | Medium-term        | • Production impact leading to reduced revenue (−)  
• Continuous operation of automated production lines with increased labor costs due to overtime payments in compliance with regulations (−)  
• Supplier supply disruption affecting Winbond’s production (−)  
• Increased cost of natural disaster insurance (−) | • Promoting water conservation measures and installing water storage equipment  
• Adopting automation in production processes to reduce the need for manual operations.  
• Utilizing digital tools to enhance efficiency in remote work  
• Communicating relevant response measures to suppliers, such as strengthening facility infrastructure and drainage systems, conducting regular flood response drills, increasing water recycling rates, and preparing alternative water sources |
## — Major Climate Opportunities —

<table>
<thead>
<tr>
<th>Climate Opportunity</th>
<th>Time of Occurrence</th>
<th>Potential Financial or Operational Impacts</th>
<th>Response Measures</th>
</tr>
</thead>
</table>
| Changes in customer behavior | Medium-term | • Product portfolio changes that accelerate positive development across entire supply chain  
• Obtaining orders and expanding revenue  
• Increased order stability and reduced revenue fluctuations  
• Improved company reputation | • Promoting the introduction of new product designs (design in) to meet customer needs  
• Increasing the portfolio of green or low-energy consumption products  
• Establishment of carbon information platform to assess product carbon footprints and hotspots, and formulation of reduction pathways and optimization plans  
• Evaluating and responding to customer requests for energy efficiency and carbon reductions, as well as requirements for renewable energy use  
• Participation in domestic and international sustainability evaluations to enhance transparency and reputation in terms of sustainability practices |
| Participation in renewable energy projects | Short-term | • Reduction in carbon emissions leading to a decrease in carbon tax/fee expenditures (+)  
• Diversified sources of electricity to mitigate risks  
• Support for compliance with renewable energy regulations and achieving corporate goals | • Planning to procure renewable energy electricity and evaluation of the purchase of T-RECs  
• Investment in Chia-ho Green Energy Corporation in 2022, with ongoing evaluation of other renewable energy projects  
• CTSP Fab installed a 499kW rooftop renewable energy generation system and continues to assess the feasibility of installing additional renewable energy generation systems |
| Process optimization and R&D innovation | Short-term | • Reduction in carbon emissions leading to a decrease in carbon tax/fee expenditures (+)  
• Reduction in water consumption leading to lower production costs  
• Obtaining orders and expanding revenue | • Continuing investment in process development to reduce carbon emissions and water consumption  
• Supporting packaging suppliers in innovating and optimizing their processes to reduce product carbon footprint, thereby enhancing Winbond’s product competitiveness |
| Development of low-carbon products and services | Short-term | • Increased product prices  
• Expansion in market share and increase in revenue | • Investment in the design of green or low-energy consumption products, continuing research and development of innovations based on product carbon footprint analysis and verification  
• Acceleration of process evolution to increase the portfolio of green or low-energy consumption products  
• Understanding customer needs and evaluating the possibility of customization to provide low-carbon/green products |
| Improvements in energy efficiency | Short-term | • Reduced production and operational costs | • In 2022, a focus on energy-saving initiatives in four major areas: new technology adoption, usage management, component replacement, and equipment upgrades  
• Planning of multiple energy-saving projects for 2023, including the continuing replacement of natural gas boilers with electric boilers, replacement of rotating equipment, and implementation of energy-saving measures in the MAU water-washing system  
• Implementation of ongoing energy-saving measures in office areas, such as adjusting the operating hours of air conditioning and exhaust systems and adjusting air conditioning according to space usage |
Transition Climate Risk Scenario Analysis

Conduct transition risk simulations in three scenarios, including (1) National net-zero pathway, mainly assessing domestic regulatory risks; (2) The SSP1-1.9 very low GHG emission scenario in the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report; (3) Implement the annual 4.2% reduction rate required in the Science-Based Targets Net-zero (SBT-NZ).

<table>
<thead>
<tr>
<th>External Scenario</th>
<th>Description</th>
<th>Assessed sources of emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Net-Zero Pathway</td>
<td>Based on Taiwan’s current net-zero target</td>
<td></td>
</tr>
<tr>
<td>SSP1-1.9</td>
<td>Based on the SSP1-1.9 pathway in the IPCC Sixth Assessment Report</td>
<td>Scope 1 + Scope 2</td>
</tr>
<tr>
<td>SBT-NZ</td>
<td>Based on the emissions reduction pathway required to achieve the SBT’s net-zero criteria by 2050</td>
<td></td>
</tr>
</tbody>
</table>

It is expected that the issue of climate change may have a financial impact on Winbond in terms of regulations, technology, market and reputation. Among them, the introduction of carbon tax / fee and the use of renewable energy power due to the application of the terms for intensive electricity users are estimated to cause a financial impact of about 0.1~2% of revenue in 2030.

<table>
<thead>
<tr>
<th>External Scenario</th>
<th>Assumption</th>
<th>Financial impact on revenue in 2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Net-Zero Pathway</td>
<td>Estimated at US$2~10 per ton CO₂e from 2021 to 2050 by referring to SSP2-4.5</td>
<td>&lt;0.1%</td>
</tr>
<tr>
<td>SSP1-1.9</td>
<td>It will reach about US$650 per ton CO₂e in 2050 by referring to SSP1-1.9</td>
<td>1-2%</td>
</tr>
<tr>
<td>SBT-NZ</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Physical Climate Risk Scenario Analysis

Winbond follows the IPCC climate risk model to assess the risks of flooding, debris flows and landslides under extreme rainfall conditions. By referring to the data of the Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP), National Science and Technology Council (NSTC) and National Science and Technology Center for Disaster Reduction (NCDR), scenario simulation has been conducted with multiple climate models to avoid deviations in output results.

The results show that before the end of the 21st century, the risk value of Winbond’s main fab areas and offices (including CTSP Fab, Kaohsiung Fab and Zhubei Building) under the four temperature rise scenarios is 0, that is, the possibility of flooding, debris flows and landslides is extremely low.
Appendix

128 Appendix 1  About this Report
130 Appendix 2  Participation in industry associations
131 Appendix 3  GRI Standards Disclosures Comparison Table
135 Appendix 4  Sustainability Accounting Standards Board (SASB) Reference Table
137 Appendix 5  Sustainability Indicators - Semiconductor Industry Comparison Table
138 Appendix 6  Climate-Related Information Disclosure Comparison Table
141 Appendix 7  Independent Third-Party Assurance Statement
### Appendix 1  About this Report

**About this Report**

Winbond Electronics Corporation (“Winbond”) began publishing the "Corporate Social Responsibility Report" in 2015. In 2022, it is renamed as "Corporate Sustainability Report" according to the government regulations. The report provides transparent and complete disclosure on the impact of our business operations in the Environmental, Social and Governance (ESG) aspects as well as our actions on sustainability topics. The report shows that in addition to Winbond’s focus on sustainability, topics such as social justice, community welfare, employee development and environmental protection are important to the company as well. Related measures have been implemented through the promotion and spread of business activities as a response to stakeholder expectations and requirements of Winbond’s sustainability and management.

**Scope**

The scope of information of Windbond disclosed in this report covers from January 1, 2022, to December 31, 2022. The report boundary includes Taiwan headquarters (the Kaohsiung Fab was included in 2022). In addition to the presentation of data from Winbond, the report also includes material information on suppliers, demonstrating Winbond’s influence and sense of responsibility towards the value chain. For the scope of information and data in the report, the financial information consolidates all entities of Winbond, which is consistent with the disclosure of the financial statements. There are no restatements of information in this year’s “2022 Corporate Sustainability Report” compared to the “2021 Corporate Sustainability Report” last year.

#### Management method

**Internal Audit**
- The contents of this report were reviewed and approved by the heads of departments, Winbond ESG Committee, the general manager and the chairman of the board.
- Being raised to the level of the Board of Directors, the ESG committee established the ESG Office and five task forces, including Environmental Sustainability, Green Products, Human Rights and Social Inclusion, Sustainable Supply Chain, and Corporate Governance. Meetings are convened regularly at least 2 times a year and chaired by the Chairman to report to the Board of Directors on the implementation results of the ESG committee.

**External Audit**
- The financial data was audited and verified by the accounting firm Deloitte Taiwan. The default currency is New Taiwan Dollars.
- Independent verification of this report was conducted by BSI Taiwan in May 2023 in accordance with the AA 1000 APS 2018 Addendum Type I Assurance Standard. Please refer to the independent assurance declaration included in the appendix of this report for more details on the results.
- ISO 14064-1 GHG emissions and ISO 27001 Information Security Management System (ISMS) were verified by BSI Taiwan and DNV Taiwan.
- IATF 16949, ISO 14001, ISO 45001 and TOSHMS certification were approved by DQS Taiwan Inc.

**Editorial Principles and Guidelines**

Winbond compiles and researches material economic, environmental and social topics in Taiwan and abroad. The topics of concern to stakeholders are then determined through materiality analysis. All the relevant departments are interviewed to establish their implementation performance and to set the relevant topics as the core disclosures of this report. This report was compiled following the GRI Standards issued by the Global Reporting Initiative, the industry standards issued by the Sustainability Accounting Standards Board (SASB), and the TCFD framework issued by the Task Force on Climate-related Financial Disclosures (TCFD) established by the Financial Stability Board (FSB).
Publication Time

The Winbond Sustainability Report is published annually and this is the 9th report. Paperless operations are promoted by Winbond to save energy, reduce carbon emissions, protect the environment, and care for planet Earth. This report therefore continues the tradition of being published in an electronic format on the Winbond website for all stakeholders to read.

Current version  To be published in August 2023
Previous version  To be published in August 2022
Next version  To be published in June 2024

Feedback

If you have any questions or suggestions regarding this report, please do not hesitate to contact us. Our contact details are as follow:

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Sustainability Development Department
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Zhubei City, Hsinchu County 30273
Tel: +886-3-567-8168
E-mail: ESG@winbond.com
Winbond Website: www.winbond.com
## Appendix 2  Participation in industry associations

<table>
<thead>
<tr>
<th>Participation in industry associations</th>
<th>2022 participation</th>
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<tbody>
<tr>
<td><strong>Taiwan Climate Partnership (TCP)</strong></td>
<td>Chairman Arthur Yu-Cheng Chiao served as the director</td>
</tr>
<tr>
<td>TCP responds to the requirements of international brand customers with practical actions, and at the same time raises the attention of Taiwanese companies and all walks of life to the issue of climate change through international initiatives and linkage.</td>
<td></td>
</tr>
<tr>
<td><strong>Taiwan Electrical and Electronic Manufacturers’ Association (TEEMA)</strong></td>
<td>Chairman Arthur Yu-Cheng Chiao served as the strategy consultant</td>
</tr>
<tr>
<td>TEEMA serves as a bridge between the government and the industry. It provides members with a diverse range of services on expanding international trade, promoting international relations, supporting industry development, information services, legal advice, and talent development.</td>
<td></td>
</tr>
<tr>
<td><strong>Taiwan Semiconductor Industry Association (TSIA)</strong></td>
<td>President Pei-Ming Chen served as the director</td>
</tr>
<tr>
<td>TSIA activities are aimed at building consensus on industry development in order to promote cooperation in competition and the sound development of the industry as a whole.</td>
<td></td>
</tr>
<tr>
<td><strong>The Allied Association for Science Park Industries</strong></td>
<td>Vice President Wen-Hua Lu served as the supervisor</td>
</tr>
<tr>
<td>The Association serves as a bridge for communication of policies and feedback between the government and industry. It coordinates industry efforts and promote the stable development of science park industries.</td>
<td>Vice President Hsiang-Yun Fan served as the director (2023/05/25)</td>
</tr>
<tr>
<td><strong>Taiwan High-Tech Facility Association</strong></td>
<td>TECHNOLOGY EXECUTIVE Ming-Jun Lu served as the director</td>
</tr>
<tr>
<td>The Association provides a communication platform for direct dialogue and collaboration between academia and industry, business owners and cooperating vendors, so as to work together to improve the technology and management of Taiwan’s high-tech factory facilities.</td>
<td></td>
</tr>
<tr>
<td><strong>Cross-Strait CEO Summit</strong></td>
<td>Chairman Arthur Yu-Cheng Chiao served as the executive supervisor</td>
</tr>
<tr>
<td>During the Cross-Strait CEO Summit, working with all members and members of the industrial collaboration promotion team, it’s hoped to develop a new picture and new vision for cross-strait industrial cooperation, so as to promote the mutual benefit and common prosperity of the cross-strait economies.</td>
<td></td>
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## GRI Standards Disclosures Comparison Table

Usage statement: Winbond Electronics Co., Ltd. has followed the GRI guidelines to report the content from January 1, 2022 to December 31, 2022.

### GRI 1: Foundation 2021

<table>
<thead>
<tr>
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<td>2-2</td>
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<td>Reporting period, frequency and contact point</td>
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<td>2-4</td>
<td>Restatements of information</td>
<td>Appendix 1 About this Report</td>
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<td>There were no restatements of information</td>
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### Activities and workers

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<td>Activities, value chain and other business relationships</td>
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<td>4.2.1 Workforce Structure</td>
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<td>Workers who are not employees</td>
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### Governance

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<td>Nomination and selection of the highest governance body</td>
<td>5.1 Corporate Governance</td>
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<td>Chair of the highest governance body</td>
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<td>Message from the Chairman and CEO</td>
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### Strategy, policies and practices

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<td>4 Human Rights and Social Inclusion</td>
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<td>Embedding policy commitments</td>
<td>3.2 Sustainable Supply Chain Management Framework</td>
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<td>41 Human Rights Due Diligence Inclusion</td>
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<td>Appendix 2 Participation in industry associations</td>
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**Stakeholder engagement**

| 2-29 | Approach to stakeholder engagement | III. Materiality Analysis and Stakeholder Engagement | 33 |
| 2-30 | Collective bargaining agreements | 4.3 Employer-Employee Relations | 96 |
|      |                                   | There are no collective bargaining agreements as no union has been formed |

**GRI 3 Material Topics 2021**

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**Productivity and Business Performance**

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**Business Integrity and Corporate Governance**

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**GRI 3 Material Topics 2021**

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<td>Anti-corruption 2016</td>
<td>205-1 Operations assessed for risks related to corruption</td>
<td>5.14 Internal Controls and Audits</td>
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<td>GRI 206</td>
<td>Anti-competitive Behavior 2016</td>
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<td>Energy 2016</td>
<td>302-1 Energy consumption within the organization</td>
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<td>Emission 2016</td>
<td>305-1 Direct (Scope 1) GHG emissions</td>
<td>2.1.2 Greenhouse gas management</td>
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<td>Sustainable Supply Chain 2018</td>
<td>306-1 Interactions with water as a shared resource</td>
<td>2.2.2 Water Usage</td>
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**Energy and Greenhouse Gas Management**

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<td>3-3 Management of material topics</td>
<td>2 Environmental Sustainability</td>
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<tr>
<td>302-1</td>
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<td>2.1.1 Energy Management</td>
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<tr>
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<td>302-3 Energy Intensity</td>
<td>2.1.1 Energy Management</td>
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<tr>
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<td>305-2 Energy indirect (Scope 2) GHG emissions</td>
<td>2.1.2 Greenhouse gas management</td>
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<td>305-3 Other indirect (Scope 3) GHG emissions</td>
<td>2.1.2 Greenhouse gas management</td>
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<td>305-5 Reduction of GHG emissions</td>
<td>2.1.2 Greenhouse gas management</td>
<td>62</td>
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<tr>
<td>305-7</td>
<td>305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions</td>
<td>2.4 Air Pollution control</td>
<td>68</td>
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</table>

**Water Management**

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<tr>
<td>303-1</td>
<td>303-1 Interactions with water as a shared resource</td>
<td>2.2.2 Water Usage</td>
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<td>303-2</td>
<td>303-2 Management of water discharge-related impacts</td>
<td>2.2.4 Wastewater Management</td>
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<td>Waste diverted from disposal</td>
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<td>III. Materiality Analysis and Stakeholder Engagement</td>
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<tr>
<td>GRI 390</td>
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<td>GRI 390</td>
<td>3-3 Management of material topics</td>
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<td>GRI 401</td>
<td>401-1 New employee hires and employee turnover</td>
<td>4.2.2 Talent Recruitment and Performance Evaluation</td>
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<td>GRI 401</td>
<td>401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees</td>
<td>4.2.3 Compensation and Benefits</td>
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<td>4.2.3 Compensation and Benefits</td>
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<tr>
<td>GRI 401</td>
<td>403-2 Hazard identification, risk assessment, and incident investigation</td>
<td>4.4.2 Environmental Safety and Health Risk Assessment</td>
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</tr>
<tr>
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<td>4.4.1 Occupational Safety and Health Management System</td>
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<tr>
<td>GRI 401</td>
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<td>4.4.1 Occupational Safety and Health Management System</td>
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**Waste Management**

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**Human Resources Management***

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**Supply Chain Management***

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<td></td>
</tr>
<tr>
<td>GRI 390</td>
<td>3-3 Management of material topics</td>
<td>3 Sustainable Supply Chain</td>
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### Green Products Environmental Sustainability Sustainable Supply Chain Human Rights and Social Inclusion Corporate Governance

#### Appendix

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<td><strong>Material Topics 2021</strong></td>
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<tr>
<td>GRI 308 Supplier Environmental Assessment 2016</td>
<td>308-1 New suppliers that were screened using environmental criteria</td>
<td>3.2 Sustainable Supply Chain Management Framework</td>
<td>72</td>
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<tr>
<td>GRI 308</td>
<td>308-2 Negative environmental impacts in the supply chain and actions taken</td>
<td>II. Materiality Analysis and Stakeholder Engagement</td>
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<td>GRI 308</td>
<td>3.3 Low Carbon Supply Chain</td>
<td>3.2 Sustainable Supply Chain Management Framework</td>
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<tr>
<td>GRI 414 Supplier Social Assessment 2016</td>
<td>414-1 New suppliers that were screened using social criteria</td>
<td>3.2 Sustainable Supply Chain Management Framework</td>
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<tr>
<td>GRI 414</td>
<td>414-2 Negative social impacts in the supply chain and actions taken</td>
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#### Product and Service Quality

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<tr>
<td>GRI 417 Marketing and Labeling 2016</td>
<td>417-2 Incidents of non-compliance concerning product and service information and labeling</td>
<td>5.2 Business Integrity</td>
<td>112</td>
</tr>
<tr>
<td>GRI 417</td>
<td>417-3 Incidents of non-compliance concerning marketing communications</td>
<td>5.2 Business Integrity</td>
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#### Information security and personal information protection

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#### Green Product*

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<td>3-2 List of material topics</td>
<td>III. Materiality Analysis and Stakeholder Engagement</td>
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<td>GRI 3</td>
<td>3-3 Management of material topics</td>
<td>III. Materiality Analysis and Stakeholder Engagement</td>
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<td>1 Green Product</td>
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<td>43</td>
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</table>
### Appendix 4  Sustainability Accounting Standards Board (SASB) Reference Table

<table>
<thead>
<tr>
<th>Topic</th>
<th>Code</th>
<th>Category</th>
<th>Metric</th>
<th>2021</th>
<th>2022</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenhouse Gas Emissions</td>
<td>TC-SC-110a.1</td>
<td>Quantitative</td>
<td>(1) Gross global Scope 1 emissions</td>
<td>38,760 metric tons CO₂e</td>
<td>44,373 metric tons CO₂e</td>
<td>• Not subject to Scope 1 related emission controls</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(2) Mount of total emissions from perfluorinated compounds</td>
<td>12,86 metric tons CO₂e</td>
<td>13,071 metric tons CO₂e</td>
<td>• Please refer to 2.1.2 Greenhouse gas management (P62)</td>
</tr>
<tr>
<td></td>
<td>TC-SC-110a.2</td>
<td>Discussion and Analysis</td>
<td>Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets</td>
<td>Please refer to 2.1.2 Greenhouse Gas Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy Management in Manufacturing</td>
<td>TC-SC-130a.1</td>
<td>Quantitative</td>
<td>(1) Total energy consumed</td>
<td>About 2,232,751 GJ</td>
<td>About 2,807,178 GJ</td>
<td>• Please refer to 2.1.1 Energy Management (P60)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(2) Percentage grid electricity</td>
<td>89.0%</td>
<td>88.3%</td>
<td>• Please refer to 2.1.1 Energy Management (P60)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(3) Percentage renewable</td>
<td>-</td>
<td>-</td>
<td>• No renewable energy has been used</td>
</tr>
<tr>
<td>Water Management</td>
<td>TC-SC-140a.1</td>
<td>Quantitative</td>
<td>(1) Total water withdrawal</td>
<td>3,293 megaliters</td>
<td>4,131 megaliters</td>
<td>• Please refer to 2.2.2 Water Usage (P65)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(2) Total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress</td>
<td>-</td>
<td>-</td>
<td>Locations of operations in Taiwan are all located in low-risk areas of water resource pressure</td>
</tr>
</tbody>
</table>
| Waste Management              | TC-SC-150a.1 | Quantitative         | Amount of hazardous waste from manufacturing, percentage recycled   | • 3,509 metric tons hazardous waste 88% | • 4,608 metric tons hazardous waste 84% | • Please refer to 2.3 Waste Management (P67) |```
```
<table>
<thead>
<tr>
<th>Topic</th>
<th>Code</th>
<th>Category</th>
<th>Metric</th>
<th>2021</th>
<th>2022</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee health &amp; safety</td>
<td>TC-SC-320a.2</td>
<td>Discussion and Analysis</td>
<td>Total amount of monetary losses as a result of legal proceedings associated with employee health and safety violations</td>
<td>No penalties associated with Occupational Safety and Health violations in 2022</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recruiting &amp; managing a global &amp; skilled workforce</td>
<td>TC-SC-330a.1</td>
<td>Discussion and Analysis</td>
<td>(1) Percentage of employees that are foreign nationals</td>
<td>1.2%</td>
<td>1.3%</td>
<td>• Please refer to 4.2.1 Workforce Structure (P82)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(2) Percentage of employees that are nationals located offshore</td>
<td>0.0%</td>
<td>0.0%</td>
<td>• Please refer to 4.2.1 Workforce Structure (P82)</td>
</tr>
<tr>
<td>Product Lifecycle Management</td>
<td>TC-SC-410a.1</td>
<td>Quantitative</td>
<td>Percentage of products by revenue that contain IEC 62474 declarable substances</td>
<td>No IEC 62474 declarable products</td>
<td></td>
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<tr>
<td></td>
<td>TC-SC-410a.2</td>
<td>Quantitative</td>
<td>Processor energy efficiency at a system-level for:</td>
<td>No production of servers, desktops or laptop products</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(1) servers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(2) desktops</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(3) laptops</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Materials Sourcing</td>
<td>TC-SC-440a.1</td>
<td>Discussion and Analysis</td>
<td>Description of the management of risks associated with the use of critical materials</td>
<td>• A sustainable supply chain team is set up under the ESG committee to be responsible for developing supplier management policies and related sustainable development issues 2022 Supplier Sustainability Management Results:</td>
<td>• Percentage of suppliers who have signed agreements with Winbond to uphold its Ethics and Integrity Policy: 100%</td>
<td>• Please refer to 3.2 Sustainable Supply Chain Management Framework (P71-72)</td>
</tr>
<tr>
<td>Intellectual property protection &amp; competitive behavior</td>
<td>TC-SC-520a.1</td>
<td>Quantitative</td>
<td>Total amount of monetary losses as a result of legal proceedings associated with anti-competitive behavior regulations</td>
<td>There were no violations of anti-competitive regulations in 2022</td>
<td></td>
<td>• Please refer to 5.2 Business Integrity (P113)</td>
</tr>
<tr>
<td>Activity Indicator</td>
<td>TC-SC-000.A</td>
<td>Quantitative</td>
<td>Total production</td>
<td>• Total wafer production was 1.1 thousand pcs</td>
<td>• Total wafer production was 2.1 thousand pcs</td>
<td>• For financial performance and sales volume in 2022, please refer to Winbond's 2022 Annual Report</td>
</tr>
<tr>
<td></td>
<td>TC-SC-000.B</td>
<td>Quantitative</td>
<td>Percentage of output from self-owned factories</td>
<td>100%</td>
<td>100%</td>
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</table>
### Appendix 5  Sustainability Indicators - Semiconductor Industry Comparison Table

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>Indicator type</th>
<th>Annual disclosure</th>
<th>Page</th>
</tr>
</thead>
</table>
| I   | Total energy consumption, percentage of purchased electricity and utilization rate of renewable energy | Quantitative     | • The total energy consumption is about 2,807,178 GJ  
• 100% purchased electricity  
• No renewable energy has been used | 60   |
| II  | Total water withdrawal and total water consumption                         | Quantitative     | • The total water withdrawal is 4,131 thousand m³  
• The total water consumption is 960 thousand m³ | 65   |
| III | Weight and recycling percentage of hazardous waste generated               | Quantitative     | • 4,608 metric tons of hazardous waste  
• Hazardous waste accounted for 84% of waste recycling | 67   |
| IV  | Description of the type, number and rate of occupational accidents         | Quantitative     | • Occupational accident types: crushing injury caused by falling objects, chemical splash injury, personnel fall accident  
• Number of employees with work-related injuries on record: 3 entries  
• Ratio of work-related injuries on record: 0.43 | 99   |
| V   | Disclosure of life cycle thinking management: including the weight of end-of-life products and electronic waste and the percentage of recycling (Note 1) | Quantitative     | Please refer to 2.3 Waste Management  
• Produced waste: 9,584 metric tons  
• The overall waste recycling rate reached 90.1% | 67   |
| VI  | Description of the risk management related to the use of critical materials | Qualitative description | Please refer to 3.2 Sustainable Supply Chain Management Framework  
A sustainable supply chain team is set up under the Sustainability ESG committee to be responsible for developing supplier management policies and related sustainable development issues  
2022 Supplier Sustainability Management Results:  
• Percentage of suppliers who have signed agreements with Winbond to uphold its Ethics and Integrity Policy: 100%  
• Percentage of suppliers who have signed the Winbond Supplier Code of Conduct Commitment Letter: 100%  
• Percentage of suppliers who have signed agreements not to use prohibited materials: 100% | 71-72 |
| VII | Total pecuniary damages resulting from legal proceedings related to anti-competitive conduct regulations | Quantitative     | There were no violations of anti-competitive regulations in 2022 | 113  |
| VIII| Output of main products by product category                                | Quantitative     | • Total wafer production was 2.1 thousand pcs  
• Total die production was 3,397,345 thousand pcs | 114  |

**Note 1** Including the sale of leftovers or other recycling, relevant descriptions shall be provided.
### Appendix 6  Climate-Related Information Disclosure Comparison Table

#### Risks and opportunities brought by climate change to the company and related countermeasures taken by the company (Please refer to 5.7 Climate Change Management or TCFD independent report)

<table>
<thead>
<tr>
<th>Item</th>
<th>Implementation status</th>
</tr>
</thead>
</table>
| **1. Description of the Board of Directors’ and management’s oversight and governance of climate-related risks and opportunities** | • The Board of Directors, as the highest governance body for climate change, is responsible for guiding the company’s response to and decision-making on climate change  
• The ESG Committee is established under the Board of Directors and chaired by the Chairman. It regularly reports to the Board of Directors every year on the implementation results of the ESG Committee related to climate change, etc., so as to ensure the promotion and implementation of the work related to the sustainable development of the enterprise |

**Climate risk**  
(1) Demand for renewable energy (medium-term):  
• The price of renewable energy is higher, and the production cost increases  
• Reduce carbon emissions and reduce carbon tax / fee expenditures  
• Suppliers pass on their renewable energy expenditures, increasing procurement costs  
• Renewable energy is difficult to obtain, limiting the production  
(2) Carbon tax / carbon fee (medium-term):  
• Increased indirect costs  
• Suppliers pass on their carbon tax / fee expenditures, increasing procurement costs  
• Limited capacity expansion  
(3) Unstable electricity supply (long-term):  
• Affect production, reduce revenue  
• Affect suppliers’ and affect Winbond’s production  
(4) Extreme rainfall and drought (medium-term):  
• Affect production, reduce revenue  
• The automated production line has no down time, and overtime pay is paid according to law, which increases labor costs  
• Affect suppliers’ supply and affect Winbond’s production  
• Increase in natural disaster insurance premiums  

**Climate opportunities**  
(1) Changes in customer behavior (medium-term):  
• Changes in product portfolio, accelerating the positive development of the overall supply chain  
• Acquire orders and expand revenue  
• Improve order stability and reduce revenue fluctuations  
• Enhance company reputation  
(2) Participation in renewable energy projects (short-term):  
• Reduce carbon emissions and reduce carbon tax / fee expenditures  
• Diversify electricity risk  
• Helps comply with renewable energy regulations and achieve corporate goals  
(3) Process optimization and R&D innovation (short-term):  
• Reduce carbon emissions and reduce carbon tax / fee expenditures  
• Lower water consumption and lower production costs  
• Acquire orders and expand revenue  
(4) Development of low-carbon products and services (short-term):  
• Increased product unit price  
• Expanded market size and increased revenue  
(5) Improvement in energy efficiency (short-term):  
• Reduced production and operating costs

**2. Description of how the identified climate risks and opportunities affect the business, strategy and finances of the company (short-, medium- and long-term).**

**3. Description of the financial impact of extreme weather events and transition actions.**

**4. Description of how the identification, assessment, and management processes for climate risks are integrated in the overall risk management system.**

• In 2022, Winbond established a TCFD with more than 40 members, of whom more than 60% were above the department managerial level. The members of the task force were grouped according to the nature of their business, and each group discussed the climate change issues based on their business relevance.  
• Through 4 workshops and educational training, 4 major climate risks and 7 minor climate risks were identified, as well as 5 major climate opportunities and 4 minor climate opportunities.
<table>
<thead>
<tr>
<th>Item</th>
<th>Implementation status</th>
</tr>
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</table>
| 5. If scenario analysis is used to assess resilience to climate change risks, the scenarios, parameters, assumptions, analysis factors and major financial impacts used shall be explained. | Conduct transition risk simulations in three scenarios, including  
- National net-zero path, mainly assessing domestic regulatory risks  
- The SSP1-1.9 very low GHG emission scenario in the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report  
- Implement the annual 4.2% reduction rate required in the Science-Based Targets Net-zero (SBT-NZ)  
**External scenarios / assumptions / Financial impact on revenue in 2030**  
(1) Imposition of carbon tax  
- National net-zero path / estimated at US$2~10 per ton CO\textsubscript{2}e from 2021 to 2050 by referring to SSP2-4.5 / <0.1%  
- SSP1-1.9 / reaching about US$650 per ton CO\textsubscript{2}e in 2050 by referring to SSP1-1.9 / 1~2%  
- SBT-NZ / reaching about US$650 per ton CO\textsubscript{2}e in 2050 by referring to SSP1-1.9 / 1~2%  
(2) Imposition of carbon tax  
- National net-zero pathway / estimated at NT$1,500 per ton CO\textsubscript{2}e / <0.1%  
(3) Use of renewable energy power  
- Government net-zero path / procurement costs are estimated based on the average wholesale price of Taipower’s renewable energy power plus power supply costs / <0.01%  
- SSP1-1.9 / procurement costs are estimated based on the average wholesale price of Taipower’s renewable energy power plus power supply costs / <0.01%  
- SBT-NZ / procurement costs are estimated based on the average wholesale price of Taipower’s renewable energy power plus power supply costs / <0.01%  
**Transition plan for climate-related risks**  
(1) Green product:  
- Increase productivity  
- Reduce the power consumption of the products  
- Reduce power dissipation and extend battery life  
- Support low-temperature soldering process that is environmentally friendly and low production power consumption  
(2) Sustainable supply chain:  
- Sustainable procurement strategy and activities  
- Sustainability risk assessment and management  
- Winbond Supplier ESG Interactive Website  
(3) Energy and greenhouse gas management:  
- Implement electricity conservation measures  
- Renewable energy use planning  
- Introduce greenhouse gas management process  
(4) Water resource management:  
- At present, all locations of operations in Taiwan are all located in low-risk areas of water resource pressure  
**Climate-related management indicators and goals**  
(1) GHG emissions:  
- In 2023, the CTSP Fab will reduce another 15,700 tons CO\textsubscript{2}e  
- In 2030, the CTSP Fab will reduce by 60% (with 2021 as the baseline year)  
(2) Renewable energy power percentage: In 2030, 90% of CTSP Fab will use renewable energy power  
(3) Fab-wide water recycling rate: ≥ 80%  
(4) Supply chain carbon reduction: Reduce carbon emissions from our supply chain by 10% by 2030. (with 2021 as the baseline year)  
(5) Disruption of operations due to weather disasters (number of days): 0 days  
6. If there is a transition plan for managing climate-related risks, describe the content of the plan, and the indicators and goals used to identify and manage physical risks and transition risks.  
**Activity for climate-related goals**  
- Process gas reduction, process tail gas reduction  
- Energy efficiency improvement, zero carbon energy, low carbon value chain  
- Carbon offset |
9. Greenhouse gas inventory and assurance situation

Please refer to 1-1 Greenhouse Gas Inventory and Assurance Situation

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<tr>
<th>Item</th>
<th>Implementation status</th>
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| 2021-2050 net zero emission path | - 2030: 90% of the electricity in CTSP Fab uses renewable energy; 60% carbon reduction in CTSP Fab (including supply chain)  
- 2050: Annual net zero emissions |

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### Basic information

- **Companies in the steel or cement industries with a capital of more than NT$10 billion**
- **Companies with a capital of more than NT$5 billion but less than NT$10 billion**
- **Companies with a capital of less than NT$5 billion**

### According to the provisions of the sustainable development roadmap of the TWSE/TPEx-listed companies, the disclosure shall at least include

- **Parent company only inventory**
- **Inventory of subsidiaries in the consolidated financial statements**
- **Parent company only assurance**
- **Assurance of subsidiaries in the consolidated financial statements**

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### Greenhouse Gas Inventory and Assurance Situation

**Total Emissions (metric tons CO₂e)** | **Intensity (metric tons CO₂e / thousand NTD)** | **Assurance provider** | **Description of the assurance situation**
---|---|---|---
**Scope 1**
Winbond | 44,373 | 0.0009 | • BSI Taiwan  
• DNV Taiwan | For the 2022 greenhouse gas inventory, verification opinion has been obtained on 6, 30, 2023
Total | 44,373 | 0.0009 |

**Scope 2**
Winbond | 353,523 | 0.0069 | • BSI Taiwan  
• DNV Taiwan | For the 2022 greenhouse gas inventory, verification opinion has been obtained on 6, 30, 2023
Total | 353,523 | 0.0069 |

**Scope 3 (voluntary disclosure)**
Winbond | 443,204 | 0.0087 | • BSI Taiwan  
• DNV Taiwan | For the 2022 greenhouse gas inventory, verification opinion has been obtained on 6, 30, 2023

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INDEPENDENT ASSURANCE OPINION STATEMENT

Winbond 2022 Sustainability Report

The British Standards Institution is independent to Winbond Electronics Corporation (hereafter referred to as Winbond in this statement) and has no financial interest in the operation of Winbond other than for the assessment and verification of the sustainability statements contained in this report.

This independent assurance opinion statement has been prepared for the stakeholders of Winbond only for the purpose of assuring its statements relating to its sustainability report, more particularly described in the Scope below. It was not prepared for any other purpose. The British Standards Institution will not, in preparing this independent assurance opinion statement, accept or assume responsibility (legal or otherwise) or accept liability for or in connection with any other purpose for which it may be used, or by any person by whom this independent assurance opinion statement may be read.

This independent assurance opinion statement is prepared on the basis of review by the British Standards Institution of information presented to it by Winbond. The review does not extend beyond such information and is solely based on it. In performing such review, the British Standards Institution has assumed that all such information is correct and accurate.

Any queries that may arise by virtue of this independent assurance opinion statement or matters relating to it should be addressed to Winbond only.

SCOPE

The scope of engagement agreed upon with Winbond includes the following:

1. The assurance scope is consistent with the description of Winbond 2022 Sustainability Report.
2. The evaluation of the nature and extent of the Winbond’s adherence to AA1000 Accountability Principles (2013) in this report is conducted in accordance with type I of AA1000AS v3 sustainability assurance engagement and therefore, the information disclosed in the report is not verified through the verification process.

This statement was prepared in English and translated into Chinese for reference only.

Opinion Statement

We conclude that the Winbond 2022 Sustainability Report provides a fair view of the Winbond sustainability programmes and performances during 2022. The sustainability report subject to assurance is free from material misstatement based upon testing within the limitations of the scope of the assurance, the information collected and data provided by the Winbond and the sample bases. We believe that the performance information of Environment, Social and Governance (ESG) is fairly represented. The sustainability performance information disclosed in the report demonstrates Winbond’s efforts recognized by its stakeholders.

Our work was carried out by a team of sustainability report assurance in accordance with the AA1000AS v3. We started and performed this part of our work to obtain the necessary information and explanations considered. We provided sufficient evidence that Winbond’s description of its approach to AA1000AS v3 and its self-declaration in accordance with GRI Standards were fairly stated.

Methodology

Our work was designed to gather evidence on which to base our conclusion. We undertook the following activities:

— a review of issues raised by external parties that could be relevant to Winbond’s policies to provide a check on the appropriateness of statements made in the report.
— discussion with managers on approach to stakeholder engagement. However, we had no direct contact with external stakeholders.
— 28 interviews with stakeholders involved in sustainability management, report preparation and provision of report information were carried out.
— review of key organizational developments.
— review of the findings of internal audits.
— review of supporting evidence for claims made in the report.
— an assessment of the organization’s reporting and management processes concerning this reporting against the principles of Inducibility, Materiality, Responsiveness and Impact as described in the AA1000AS (2018).

Conclusions

A detailed review against the Inducibility, Materiality, Responsiveness and Impact of AA1000AS (2018) and GRI Standards is set out below.

Inducibility

This report has reflected that Winbond has continuously engaged with the sustainability report and established material sustainability topics, as the participation of stakeholders has been involved in developing and achieving an accountable and strategic response to sustainability. There are a few reporting and disclosures for the information of Environment, Social and Governance (ESG) in this report, so that appropriate planning and targeting will be supported. In our professional opinion the report covers the Winbond’s Inducibility issues.

Materiality

Winbond has established detailed criteria and processes in management level, on the issues which were identified by all departments have been prioritized according to the extent of impact and applicability criterion for sustainable development of organization. Therefore, material issues were completely analyzed and the relative information of sustainable management was disclosed to enable its stakeholders to make informed judgments about the organization’s management and performance. In our professional opinion the report covers the Winbond’s material issues.

Responsiveness

Winbond has implemented the strategies to respond to the expectations and perceptions of its stakeholders. An Ethical Policy for Winbond has been developed and continually provides the opportunity to further enhance Winbond’s responsiveness to stakeholder concerns. Topics that stakeholders concern about have been responded timely. In our professional opinion the report covers the Winbond’s responsiveness issues.

Impact

Winbond has identified and fairly represented impacts that were measured and disclosed in a clearly balanced and effective way. Winbond has established processes to monitor, measure, evaluate and manage impacts and to lead to more effective decision making and results-based management within the organization. In our professional opinion the report covers the Winbond’s impact issues.

GRI Sustainability Reporting Standards (GRI Standards)

Winbond provided us with their self-declaration in accordance with GRI Standards 2021. For each material topic covered in the GRI sector standards and relevant GRI Topic Standards, we have reviewed the reporting requirements for disclosure.

Based on our review, we confirm that sustainable development disclosures in accordance with GRI Sustainability Reporting Standards are material, partially reported or omitted. In our professional opinion the self-declaration covers the Winbond’s sustainability topics.

Assessment Level

The independent assurance report is in accordance with AA1000AS v3 in our review, as defined by the scope and methodology described in this statement.

Respectfully

The sustainability report is the responsibility of the Winbond’s chairman as declared in his responsibility letter. Our responsibility is to provide an independent assurance opinion statement to stakeholders giving our professional opinion based on the scope and methodology described.

Competency and Independence

The assurance team was composed of experts with relevant expertise and knowledge, and trained in a range of sustainability, environmental and social standards including AA1000AS, ISO 14001, ISO 45001, ISO 14064 and ISO 26000. BSI is a leading global standards and assessment body founded in 1901. The assurance is carried out in line with the BSI Fair Trading Code of Practice.

For and on behalf of BSI:

Peter Pu, Managing Director BSI Taiwan

AA1000

Limited Liability

Taiwan

2022-06-14

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A Member of the BSI Group of Companies