

# 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.



Arthur Yu-Cheng Chiao  
Chairman and CEO



# 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.

## E 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.

## S 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.

## **G** 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 an 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.



**James Pei-Ming Chen**  
President

A handwritten signature in black ink, consisting of the Chinese characters 陳沛銘 (Chen Pei-Ming).

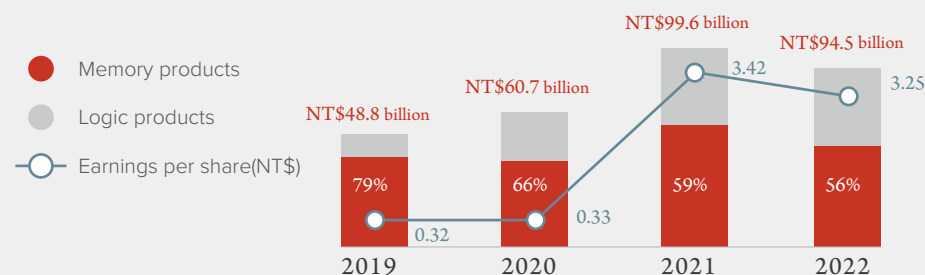
# Company Profile

## 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.



## Business Performance in 2022



**Leading Position** | **Global TOP1** NOR Flash supplier | **Global TOP5** DRAM supplier

**Revenue**  
NT\$94.53 billion

**Corporate Governance**  
Ranked top 6-20% in TWSE Corporate Governance Evaluation

**Earnings per share**  
NT\$3.25

**Net Profit**  
NT\$15 billion

## Product Information

### Main products

Code Storage Flash Memory, TrustME® Secure Flash, Specialty DRAM, and Mobile DRAM

### Link to product information

Code Storage Flash Memory	TrustME® Secure Flash Memory	Specialty DRAM	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

### Link to product applications

Automotive	Industrial	Communication	Computer	Consumer

## Important Events of Winbond

1987

- Established in Hsinchu Science Park

2004

- Built a 12-inch fab in CTSP

1995

- Listed on Taiwan Stock Exchange (TWSE)

2006

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

2008

- Logic product business spun off as Nuvoton Technology Co. established

2013

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

2010

- WEC transformed to be a Specialty Memory provider
- Nuvoton Technology Co. listed on TWSE

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

Green Products

Environmental Sustainability

Sustainable Supply Chain

Human Rights and Social Inclusion

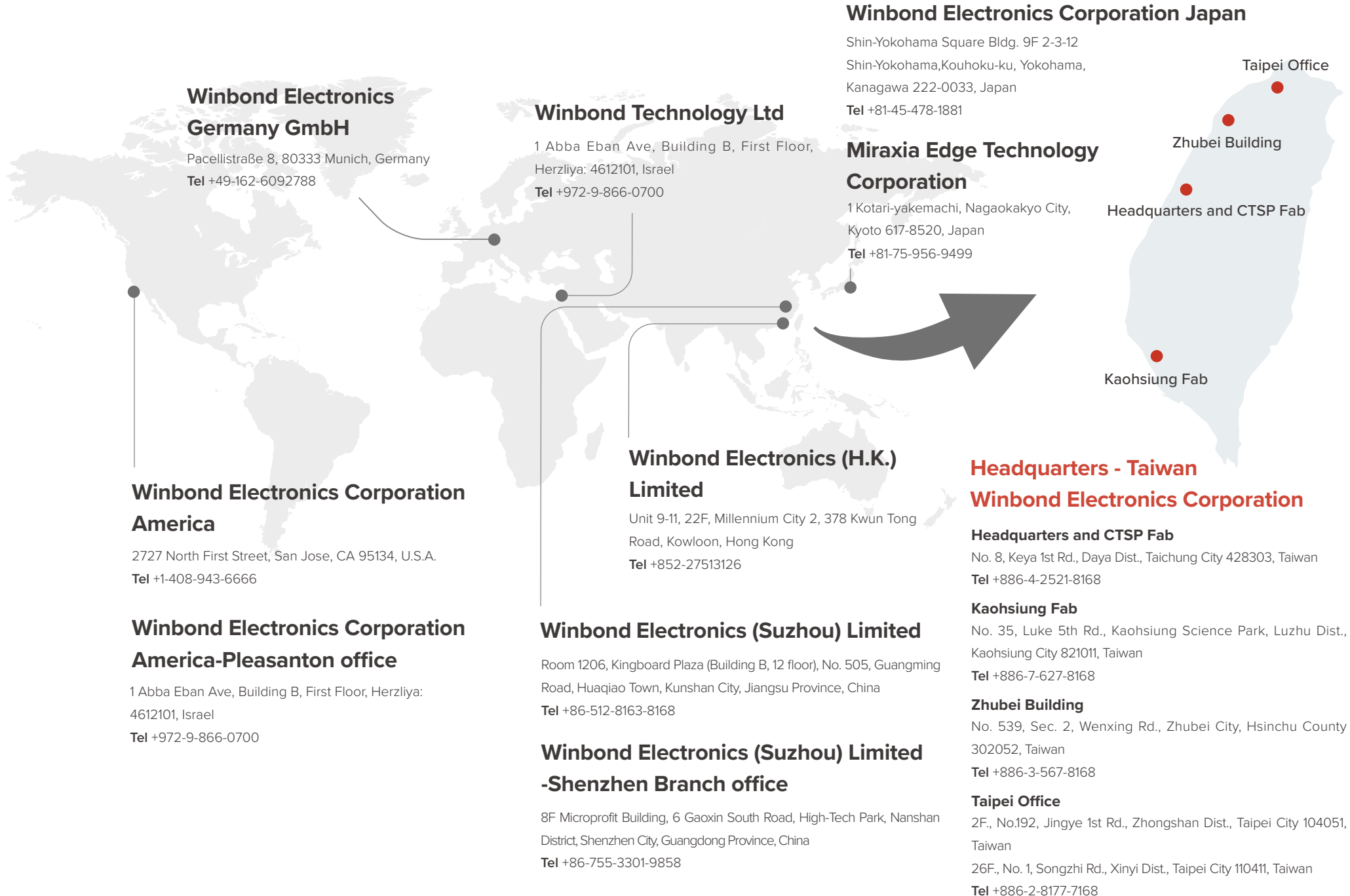
Corporate Governance

Preface

Winbond's Story

Contribution to Sustainability  
— Taking the Lead

Appendix

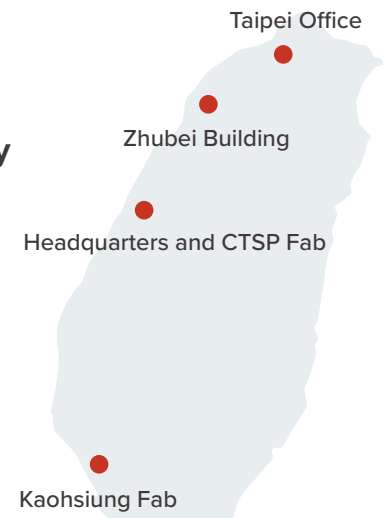


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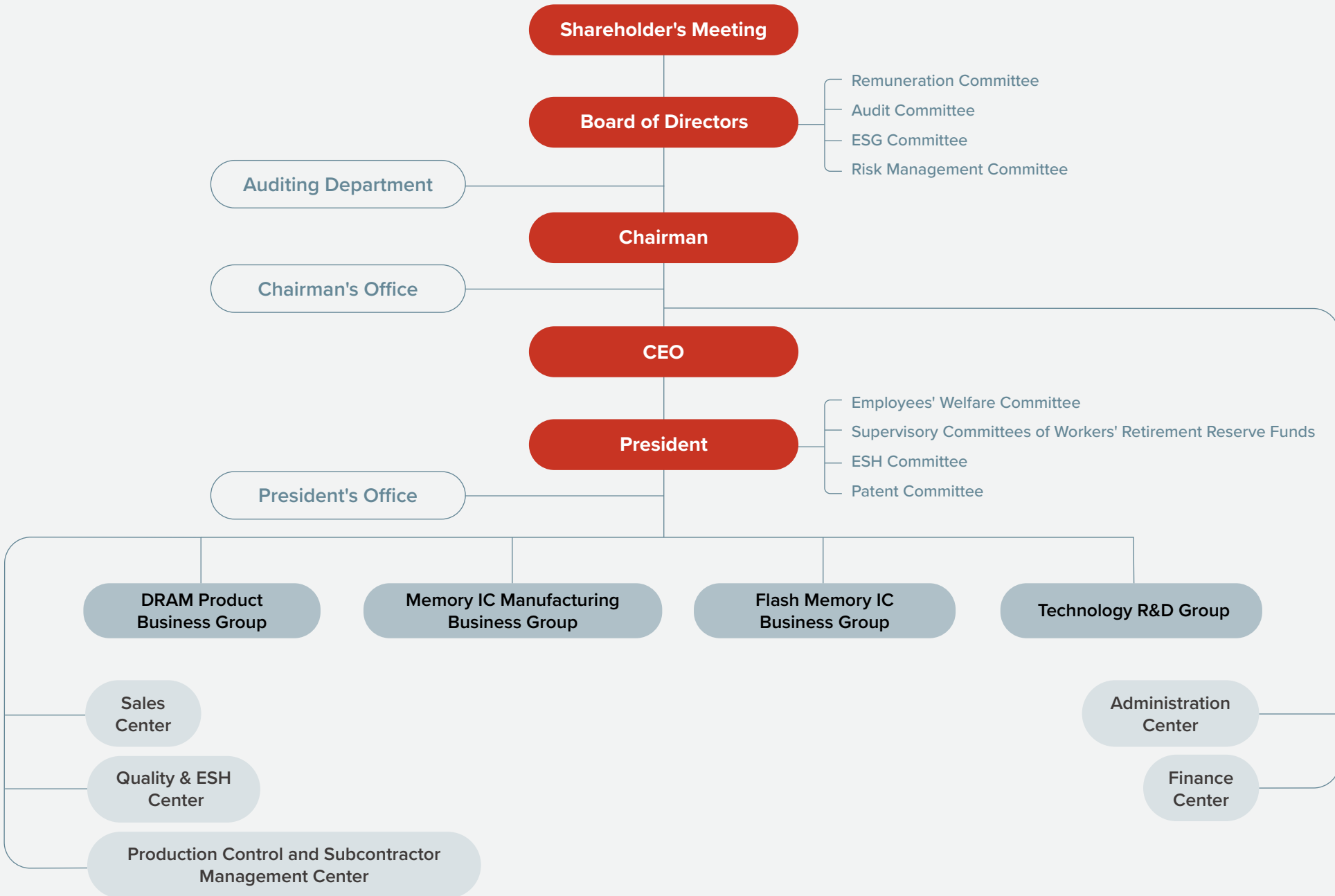
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# Winbond Organization Chart



December 31, 2022

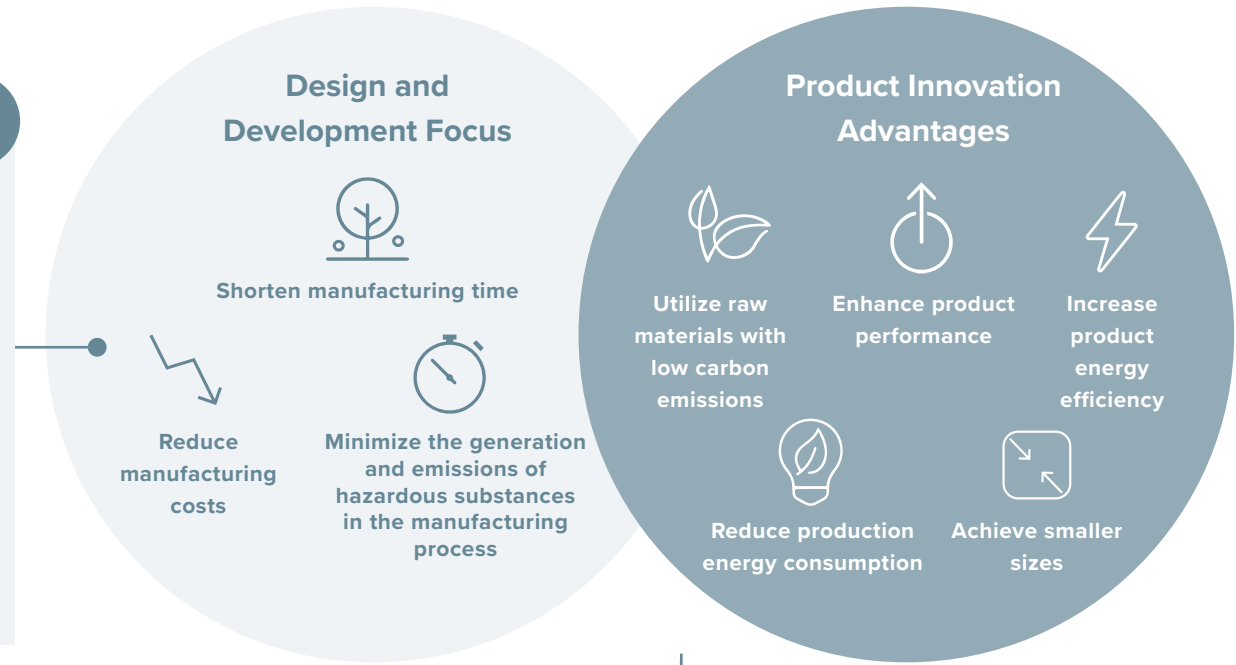


# Winbond's Values



## Embracing Future Trends, Practicing Core 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

### Explanation

### Applications and Products

#### 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.

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

#### 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.

- 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

#### 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.

- 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

#### 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.

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

#### Consumer Electronics

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

- 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

### Taiwan Corporate Sustainability Awards

- TCSA Corporate Sustainability Report Award (Electronics): - Platinum
- Top 100 Sustainability Model Award
- People Development Award



### Responsible Business Alliance (RBA)

Platinum, VAP (Validated Assessment Program)



### FTSE4Good

Selected as

- Constituent company of FTSE4Good Index Series
- Constituent company of FTSE4Good TIP Taiwan ESG Index



## Corporate Governance

### Taiwan Stock Exchange Corporation (TWSE)

Selected as

- Constituent company of the TWSE Corporate Governance 100 Index
- Constituent company of TWSE RAFI® Taiwan High Compensation 100 Index
- Ranked top 6~ 20% of listed companies of the 9th Corporate Governance Evaluation



### 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



### 2.1 million tons CO<sub>2</sub>e Reduction

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 CO<sub>2</sub>e



### 380 GWh electricity Saving

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



### Develop Carbon Emissions Information Platform

Winbond collaborates with Microsoft to develop Carbon Emissions Information Platform



### Rooftop solar power system generated a total of 660,000 kWh

Central Taiwan Science Park Facility has installed rooftop solar power generation equipment, and the power generation capacity reached 660,000 kWh in 2022



### Water Recycling Rate reached 80.5%

The water recycling volume reached 11.15 million cubic meters, and the plant-wide water recycling rate reached 80.5%



### Water Conservation of 3,530 megaliters

Cumulative water conservation of 3,530 megaliters from 2018 to 2022



### Waste recycling rate 90.1%

8,633 metric tons of waste were recycled, resulting in a recycling rate of 90.1%



### ISO 50001

Certified ISO 50001 Energy Management System in 2022

## Social



### 100% coverage of human rights due diligence investigation

In 2022, human rights due diligence were implemented for all employees for the first time



### Childcare subsidy has exceeded 290 million

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



### 82% utilization rate of LOHAS leave in 2022 (7 days LOHAS leave per year)



### The average salary of non-supervisors is 1.93 million

The average salary of non-supervisor full-time employees is 1.93 million



### Weighted employment of disabled individuals increased by 147%

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



### Invest nearly NT\$10 million

Nurturing cross-disciplinary talent in the semiconductor field, collaborating with National Cheng Kung University to promote the 'Semiconductor Program'



### The average training hours of staff is 42 hours



### Human Rights Due Diligence Report

First independent Human Rights Due Diligence report published in 2023

## Governance



### TCFD Report

Publish the first independent TCFD Report in 2023



### Winbond Zero-carbon family day

The first purchase of blue carbon credits to offset the carbon emissions for the family day, to achieve a zero-carbon family day



### Investing NT\$555 million in green energy development

Investing in renewable energy development projects and continuing alliances and exchanges with green industry suppliers



### NT\$20 billion sustainability-linked syndicated loan

Signed a NT\$20 billion sustainability-linked syndicated loan joint credit agreement with 11 banks, and maintained sustainable performances such as carbon reduction, power saving and corporate governance



### Taiwan Climate Partnership (TCP)

Join the Taiwan Climate Partnership in 2022, and the chairman served as a member of the alliance



### 1,000 tons of CO<sub>2</sub>e blue carbon credits

Invested in Pakistan's mangrove conservation project, which is currently the largest blue carbon project in the world



### ISO 27001

Certified ISO 27001 Information Security Management System, and set up Chief Information Security Officer



### Winbond Group selected as one of the Top 100 Global Innovators from Clarivate