

# SUSTAINABLE PRACTICES

## Corporate Governance

- 43 | 1.1 Corporate Governance
- 50 | 1.2 Business Integrity
- 52 | 1.3 Productivity and Business Performance
- 54 | 1.4 Risk Management
- 60 | 1.5 Green Investment & Sustainability-Linked Loan
- 62 | 1.6 Climate Change Management



“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 TWSE Corporate Governance Evaluation. Moving forward, we will continue to embrace a corporate culture founded on business integrity, establishing a trustworthy and reputable company.

### 2023 Performance Highlights

- 

**ESG Committee is Supervised by the Board**  
ESG Committee composed of the chairman and all independent directors, it guides matters related to the company’s sustainable development.
- 

**NT\$ 955 Million Renewable Energy Investment Plan**  
Cumulative investment in renewable energy development from 2022 to 2023. Continued alliances and exchanges with green industry suppliers.
- 

**Established a Senior Executive Development Committee**  
Strengthening succession teams to ensure sustainable business operations and foster talent development.
- 

**SEMI-E187**  
Introduction of Semiconductor Equipment Security Standards.
- 

**Join the Taiwan Carbon Solution Exchange (TCX)**  
Became one of the very first representative companies which purchased international carbon credits in TCX.

# 1.1 Corporate Governance

## 1.1.1 Board of Directors

The Board exercising powers and authorities are in accordance with relevant laws and regulations along with 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.

### Chih-Chung Chou

Chief Financial Officer, Finance Center



In addition to financial performance indicators, expectations from diverse stakeholders for sustainable development should be emphasized in corporate values. Winbond will fully implement ESG strategies through integrating financial information and promoting cross-departmental communication and collaboration. Winbond aims to establish long-term positive impact in contribution to sustainability and well-being, fostering mutual wellness and prosperity for both the environment and society.



For more information about the members of the Winbond Board of Directors, please scan the QR CODE

**Composition of Board of Directors**

The 13th Board of Directors consists of 11 directors, including 4 independent directors and 3 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 follows 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 circumstances, there are 4 independent directors among the Board of Directors.

**Major Shareholders**

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.

**2023 Attendance of the Board Meeting**

In 2023, 10 meetings of the Board of Directors were convened, with the average attendance rate of 100% (including actual attendance <93%> and proxy attendance <7%>). According to the material topics in 2023, the total number of key major events communicated with the highest governance until was 16 (business integrity, R&D innovation, productivity and business performance, energy and greenhouse gas, sustainable development and other topics).

**Election of Directors**

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.

- The members of the Board of Directors all have rich experience in industrial management, and their knowledge and professional experience cover different fields. Winbond recruits elites from across generations and diverse sectors, leading the company to continue to innovate and move towards diversified goals.
- More than 75 percent of the independent directors serve no more than 3 consecutive terms.
- Continuously increase the participation of female directors.

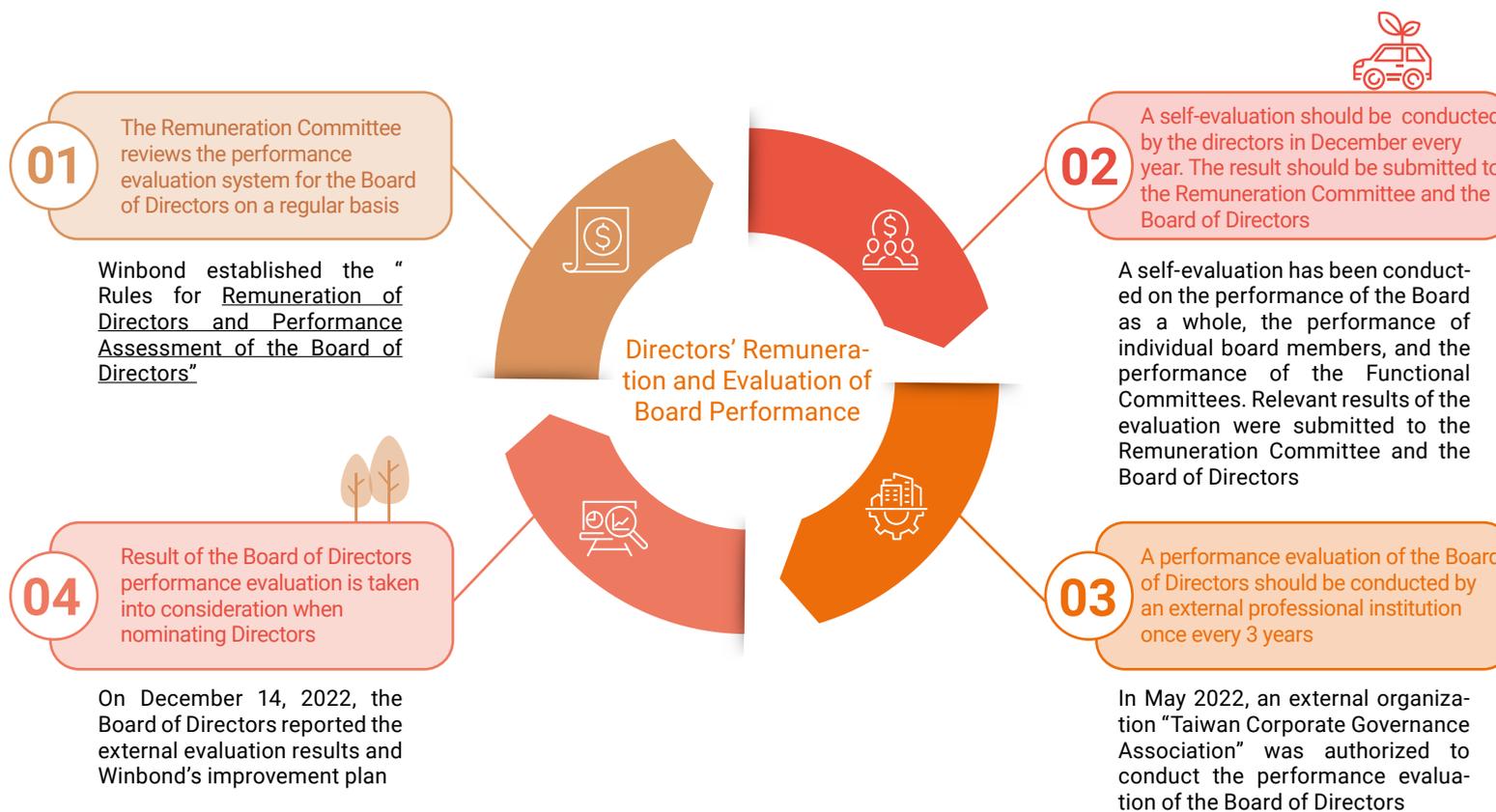
**Note** For Board and Committee proposals that involved the interests of the directors themselves, the directors had explained the reasons for recusal at the meeting and refrained from discussing and voting on such proposals to ensure the avoidance and mitigation of conflicts of interest. For relevant information, please refer to page 23, and 27 of [Winbond's 2023 Annual Report](#).

**13<sup>th</sup> Members of the Board ( term 2023/6 - 2026/5 )**

Title	Name	Gender	Age Distribution	Individual Director Background					Diversified Fields			Independent Director Ratio	Percentage of Directors who Hold Concurrent Company Managerial or Employee Positions
				Business Management	Leadership & Decision Making	Knowledge of the Industry	Finance & Accounting	IT	Environment	Economy	People		
Chairman	Arthur Yu-Cheng Chiao	Male	60-70	●	●	●	●	●	▲	▲	▲	<b>36%</b>	<b>27%</b>
Vice Chairman	Chin-Xin Investment Co., Ltd (Representative: Tung-Yi Chan)	Male	60-70	●	●	●	●	●	▲	▲	▲		
Director	Yung Chin	Female	60-70	●	●	●	●	●	▲	▲	▲		
Independent Director	Allen Hsu	Male	60-70	●	●	●	●			▲	▲		
Independent Director	Stephen T. Tso	Male	70-80	●	●	●		●	▲		▲		
Independent Director	Chung-Ming Kuan	Male	60-70		●		●		▲	▲	▲		
Independent Director	Jong-Peir Li	Male	60-70	●	●	●	●	●	▲	▲	▲		
Director	Walsin Lihwa Corporation (Representative: Fred Pan)	Male	60-70	●	●	●	●		▲	▲	▲		
Director	Jamie Lin	Male	40-50	●	●	●	●	●		▲	▲		
Director	Wei-Hsin Ma	Female	50-60	●	●	●	●	●	▲	▲	▲		
Director	Elaine Shihlan Chang	Female	40-50	●	●		●	●	▲	▲	▲		

## 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 or participate in multi-faceted training courses organized by Winbond. Training hours for director education and training and environmental sustainability related courses (For example: carbon credit, climate change, and sustainable finance) were 33 hours and for courses related to corporate governance and business (global economic, AI business management, and sustainable finance) were 43.5 hours. The training hours for legal compliance-related courses are 12 hours. In 2023, the directors obtained a certificate of study with an average of 8.05 hours.



✔ In 2023, the assessment results were submitted to the Remuneration Committee and the Board of Directors on March 8, 2024.

Self-assessment results of the Board of Directors in 2023:

1. The assessment result for “level of involvement in company operations” showed a significant decrease compared to 2022.
2. Improvement aspects:
  - (1) Increase communication between board members and the management team.
  - (2) Provide shareholder meeting and board meeting schedules in advance to allow directors to reserve time for attendance.
  - (3) Continue industry-related training courses.

Self-assessment results of the Functional Committees in 2023:

1. The assessment result for “level of involvement in company operations” also showed a significant decrease compared to 2022.
2. Improvement aspects:
  - (1) Increase meeting time to allow committee members to thoroughly discuss various issues.
  - (2) Provide committee meeting schedules in advance to allow committee members to reserve time for attendance.
  - (3) Enhance communication and interaction between the Audit Committee and accountants.

Note: For related information on director performance evaluation, please refer to the [2022 External Evaluation Results of Winbond’s Board Performance](#) and [Winbond’s 2023 Annual Report](#).



## 1.1.2 Operations and Responsibilities 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 5 functional committees: an Audit Committee, a Remuneration Committee, a ESG Committee, a Risk Management Committee and a Senior Executive Development Committee. Each functional committee is responsible to the Board of Directors and submits proposals to the Board of Directors for resolution.



### Audit Committee

- Composed of 4 independent directors, the convener is Mr. Allen Hsu
- In 2023, 8 meetings were convened, with the average attendance rate of 100% (including actual attendance <88%> and proxy attendance <12%>)

#### 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.



### Remuneration Committee

- Composed of 4 independent directors, the convener is Mr. Stephen T. Tso
- In 2023, 3 meetings were convened, with an actual attendance rate of 100% (including the actual attendance 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 "Rules for Remuneration and Performance Evaluations of Managerial Personnel" 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).



1. 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 are composed of all independent directors and are independent. Winbond does not have a remuneration claw back mechanism. For information on the remuneration of directors, President and Vice President, please refer to page 18 to page 23 of Winbond's 2023 Annual Report.

2. Winbond stakeholders can express their opinions through various channels such as attending shareholder meetings or participating in employee engagement surveys. The Remuneration Committee regularly considers these opinions as one of the factors in determining compensation matters. There were no inquiries regarding director and employee compensation during the 2023 Annual General Meeting, as documented in the meeting minutes.



### ESG Committee

- The committee consists of 4 independent directors, convened by the Chairman, Arthur Yu-Cheng Chiao
- In 2023, 2 meetings were convened, with the attendance rate of 90%

#### Responsibilities

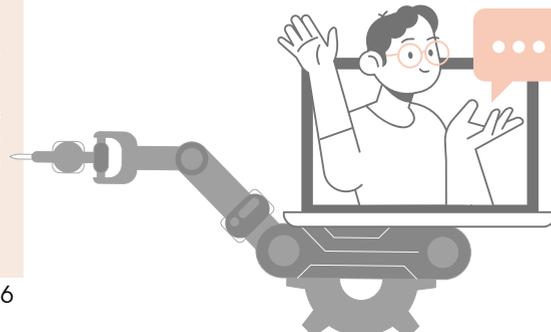
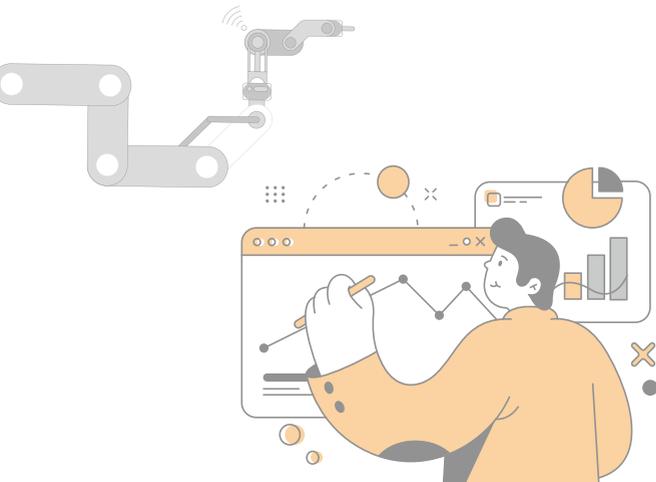
- Formulate corporate sustainability policies and related management guidelines.
- Develop short-term, medium-term, and long-term sustainable development strategies and goals.
- Review, track, and revise the implementation status and effectiveness of the company's sustainability initiatives.
- Regularly report the committee's execution results to the Board of Directors each year.

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 to ensure the promotion and implementation of relevant work for corporate sustainability. The committee is led by the chairman personally and consists of independent directors. It convenes meetings twice a year, where each task force reports on the progress (achievements) of the current year and submits plans for the following year.

In 2023, a total of 10 board meetings were held, covering 19 sustainability topics, including:

- Risk management
- Integrity implementation
- Intellectual property management plans and implementation
- Established a Senior Executive Development Committee
- Renewable energy procurement plans and implementation
- Establishment of the Managerial Personnel Remuneration Committee

The Board also fulfills its supervisory and guidance responsibilities by promptly asking questions and providing feedback to urge adjustments within the management team. For a comprehensive list of all topics, please refer to page 36.





## Risk Management Committee

- Composed of all the board members, the convener is the Chairman, Arthur Yu-Cheng Chiao
- In 2023, 1 meetings were convened with the attendance rate of 100% (including actual attendance <80%> and proxy attendance <20%>)

### Responsibilities

- Responsible for overseeing the overall risk management of the company, formulating risk management policies, frameworks, and establishing qualitative and quantitative management standards, adjusting as needed based on the company's actual development or objective environmental changes.
- Execute risk management decisions of the Board of Directors and review the development, establishment, and effectiveness of the company's overall risk management mechanisms.
- Set risk appetite and review and manage the company's overall risks.
- Assist and supervise various units in conducting risk management activities and coordinate cross-unit interactions and communication related to risk management.
- Adjust risk categories and assumptions based on environmental changes.
- Execute other responsibilities as required by the Board of Directors.



## Senior Executive Development Committee

- The committee members consist of directors from Winbond/Nuvoton, who serve as mentors, with the committee chair appointed by mutual recommendation among the directors, currently held by independent director, Chung-Ming Kuan. The mentees are senior executives from Winbond and Nuvoton, with the list of mentees discussed and adjusted annually by the board.
- Established on: December 22, 2023. The attendance rate of mentees at the inaugural meeting was 100%.

### Objectives

- To enhance the knowledge of the participating mentees beyond their professional field.
- To broaden the international perspective of the mentees.
- To allow directors to gain a better understanding of the company's internal operations.

### Method of Operation

#### 1. Study sessions for all mentee

Study sessions for all mentee held once a month in principle, except when the lecturer or students have special circumstances, the timing is adjusted accordingly. The speaker can be a director from Winbond/Nuvoton or an external expert, with the current planned topics as follows:

- International economic environment
- Industry trends and strategies
- SDGs & ESG trends and progress
- Technology and business innovation
- Leadership and management
- History and humanities

#### 2. Mentor/mentee mechanism between mentors and mentees

- The first version of mentor-mentee pairing has been established, allowing mentors to observe and guide mentees more closely.
- The pairing of mentors and mentees is adjusted annually, based on the increase or decrease of mentees or individual needs.





### 1.1.3 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:

#### Uphold Shareholders' Interests

External channel of communication provided

Winbond has appointed a spokesperson and 2 deputy spokesperson, and relevant units like investor relations and stock affairs have also been established.

Regular disclosure on Winbond operations

- Monthly turnover, financial reports, and Winbond's annual reports are regularly disclosed on the official website.
- Starting from 2024, the meeting dates of the Board of Directors will be announced before filing each quarter's financial report.

Define management procedure for prevention of insider trading

- In addition, directors are not allowed to trade their stocks during the closed period of 30 days before the announcement of the annual financial report and 15 days before the announcement of the quarterly financial report.
- Education on prevention of insider trading is conducted every month to prevent accidental violations of the relevant laws.

2 institutional investor conferences and 1 general shareholders' meeting are hosted each year

An institutional investor conference is held by Winbond every six months with two of such conferences in 2022.



For more information on the rights and interest of shareholders, please refer to the videos and presentations from the institutional investor conferences.

### 1.1.4 Tax Management



Winbond has established a unit responsible for tax governance, comply with the local tax regulations to handle various tax declarations. Winbond also supports government policies aimed at promoting corporate innovation, research and development, and tax incentives.

In response to the global anti-tax avoidance trend led by the OECD, Winbond ensures information transparency. Apart from timely completing transfer pricing documentation for headquarter and subsidiaries, also regularly discloses tax information in financial reports and annual reports. On the tax fairness front, in addition to completing local tax declarations for headquarter and subsidiaries within the deadlines, we also engage independent third-party professional consultants to ensure tax compliance across the group's various countries. Furthermore, Winbond monitors the list of non-cooperative tax jurisdictions released by EU, and evaluate investment structures then chose to liquidates some Controlled Foreign Companies (CFCs).



#### Seven Principles of Taxation Policy

- 1 Comply with the 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.
- 7 Do not transfer profits to low-tax countries or regions.



**Winbond has been awarded the 2023 outstanding business entity for electronic invoices by the Ministry of Finance.**

The National Taxation Bureau under Ministry of Finance elects outstanding e-invoice operators annually. The selection criteria are stringent, considering not only the usage rate of e-invoices and the implementation of energy-saving and carbon-reduction policies but also ESG considerations. This includes meeting the following conditions in the two years prior to selection: no instances of missing or misused uniform invoices, no overdue declaration of sales, no major violations or tax arrears (including tariffs), no violations of environmental protection, labor, or food safety and hygiene laws, and involvement in socially significant or landmark cases.

Under the jurisdiction of the Central Regional Taxation Bureau, there are over 282,000 businesses using uniform invoices. In 2023, Winbond has been awarded by the National Taxation Bureau as an outstanding entity by adopting e-invoice system, demonstrating Winbond's commitment to integrity and compliance.



**2023 The Distribution of Tax Payments by the Group**

Unit: NT\$ Million

Company	Income Tax Paid	%	Income Tax Payable	%
Winbond	589	40.10%	475	59.01%
Nuvoton	355	24.00%	239	30.00%
Other Subsidiaries	525	35.90%	91	10.99%
<b>Total</b>	<b>1,469</b>	<b>100.00%</b>	<b>805</b>	<b>100.00%</b>

Distribution of Group Tax Payments in 2023 : Winbond Group paid a total of NT\$1.469 billion in income tax in 2023, accounting for approximately 1.96% of consolidated operating revenue.

**Tax Reduction and Credit**

In 2023, Winbond and Nuvoton completed and filed FY2022 Taiwan corporate income tax, and applied for tax credit totaling NT\$735,851 thousand under Article 10 of the Statute for Industrial Innovation for research and development expenses and 5G smart machinery investment deductions. The tax filings of Winbond and Nuvoton through FY2022 have been assessed by tax authorities as of 2023.

**Investment Grants, Research and Development Grants, and Other Related Subsidies**

As of the end of 2023, Winbond obtained government-subsidized loans under the "Welcome Taiwanese Businesses Back to Invest in Taiwan Action Plan" amounting to NT\$5,131,600 thousand. After government grants, the interest rates ranged from 1.25% to 1.45%. These funds were used for the purchase of machinery and equipment as well as working capital turnover. The loan will be repaid in installments over a seven-year period. For more information, please refer to page 53 of [Winbond 2023 Consolidated Financial Statement \(Report\)](#).

**Note** The Large Leads Small supply chain project did not receive any grants in the fiscal year 2023.

## 1.2 Business Integrity

### 1.2.1 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 ethical compliance audits which is conducted quarterly in conjunction with internal control operations.

Winbond employees are familiar with the content of business integrity through the training of regulations , continuous improvement, supervision & control, and education & training; regulations are also formulated, such as “Corporate Governance Best Practice Principles,” “Procedures for Ethical Management and Guidelines for Conduct,” “Sustainability Development Best Practice Principles,” “Corporate Social Responsibility Manual,” “The Code of Ethics and Professional Conduct for Directors,” “Employee Code of Conduct,” and “Winbond Anti-Corruption Commitment” 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.



In 2024, Winbond will establish the “Winbond Anti-Corruption Commitment,” and adhere the value of “Conduct business with integrity and ethical behavior” to eliminate any corrupt practices.

### 2023 Results of Business Integrity Management



In 2023, “Human Rights and Labor Ethics Education Training” was held online. This course covers topics such as “Integrity in Business” (preventing insider trading, fair transactions, advertising and competition, identity protection, and retaliation prevention) and labor rights. It is promoted across all global locations.



#### Global Training Number of Employee

Total training number

**4,285** people



Total training time

**1,714** hours



The training rate for all directors and employees has reached

**100** %



Winbond has no incidents related to economy or environment violations, and also no instances of corruption, anti-competitive behavior, or marketing and labeling violations.



No cases of violation of integrity were reported through complaint channel in 2023.



### Statistics of Ethics Code Advocacy Courses for Practitioners

Region/Subsidiary		Employee Type		Management/Non-management		Total	Total Hour (0.4hr/courses)
		Direct Employee	In-direct Employee	Management	Non-management		
Taiwan	Number of Trainees	483	3,015	542	2,956	3,498	
	Number of Completed Trainees	483	3,015	542	2,956	3,498	1,399
	Completion Rate	100%	100%	100%	100%	100%	
Asia Pacific	Number of Trainees	-	712	89	623	712	
	Number of Completed Trainees	-	712	89	623	712	285
	Completion Rate	-	100%	100%	100%	100%	
Europe and America	Number of Trainees	-	75	20	55	75	
	Number of Completed Trainees	-	75	20	55	75	30
	Completion Rate	-	100%	100%	100%	100%	
Total	Number of Trainees	483	3,802	651	3,634	4,285	
	Number of Completed Trainees	483	3,802	651	3,634	4,285	1,714
	Completion Rate	100%	100%	100%	100%	100%	

**Note** The following personnel were not included in the training scope:  
 1.Consultants 2.Mainly serving related companies 3.Unable to attend training due to special reasons (such as leave or expected resignation) 4.Non-full-time employees

### 1.2.2 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 internal control self-assessment results of the internal control system for each unit and subsidiaries, 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. 2023 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.

Winbond has established a complaint channel for stakeholders. The internal and external individuals may report to this channel anonymously or non-anonymously if employees engage in illegal activities, such as unfair business practices, bribery or earning illegal profits, fraud, and coercion. Reported cases are directly accepted by the audit unit of the Winbond and sent to the Audit Committee at the same time. The handling process is in accordance with the "Ethical Management Violation Handling Guidelines".

## 1.3 Productivity and Business Performance

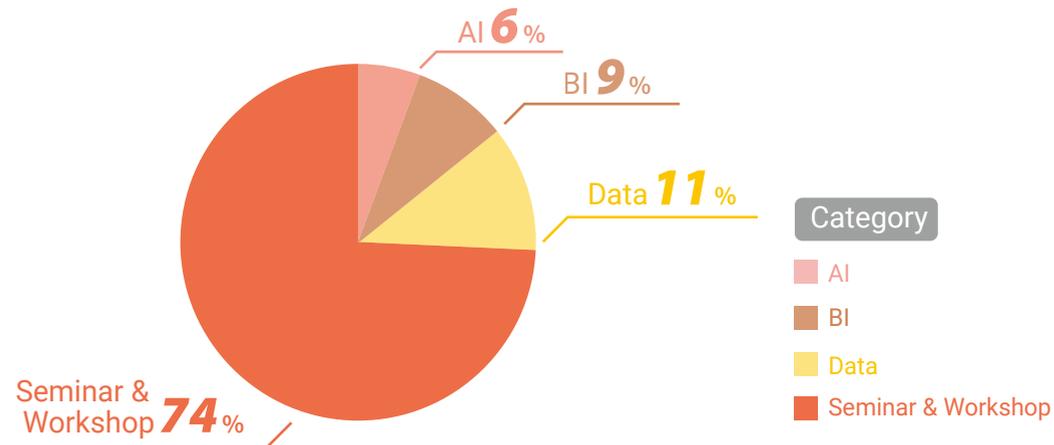
### 1.3.1 Productivity Performance

Productivity and operational performance are critical factors for continuous growth and enhanced competitiveness. By improving productivity, costs can be reduced, waste minimized, and revenue expanded, ultimately leading to increased profitability and operational efficiency.

In 2023, Winbond successfully completed 35 digital transformation initiatives and training sessions, surpassing the initial target of 24. These activities aimed to enhance employees' understanding and application of digital tools and processes, thereby improving overall work efficiency and productivity. As part of the short-term goals, Winbond plans to accomplish at least 72 digital transformation initiatives and training sessions between 2023 and 2025, laying a solid foundation for digital transformation and productivity enhancement.

Additionally, in 2023, Winbond achieved the optimization of the AP Request Portal, which was part of the Productivity Tracking System. Through this systematic approach, Winbond effectively tracks and manages productivity improvements across various departments resulting from IT system development. With ongoing enhancements to the productivity tracking system, the company has set a short-term goal to complete the system by 2025. Looking ahead, the company's medium, and long-term objective for 2030 is to achieve 100% employee participation in digital transformation and further enhance Winbond's productivity and stable profitability through continuous innovation and internal management optimization.

#### Number of the Training Sessions



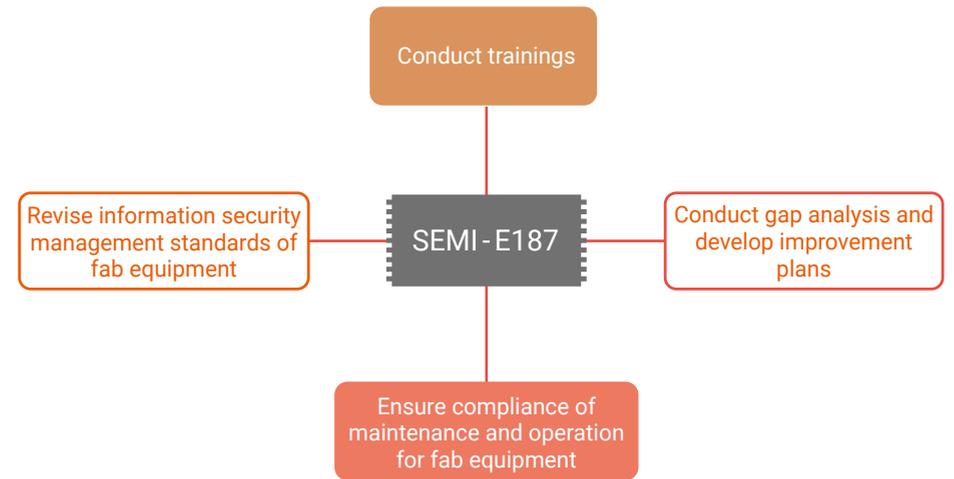
### Introduction of SEMI-E187 Specification for Cybersecurity of Fab Equipment

#### SEMI-E187 Specification for Cybersecurity of Fab Equipment

SEMI E187-Specification for Cybersecurity of Fab Equipment is the first Taiwan's security standard for semiconductor production line equipment. It was initiated by industry leaders and developed in collaboration with academic and research institutions. The standard covers four major aspects: operating system specifications, network security, endpoint protection, and information security monitoring. Its purpose is to define common and foundational information security requirements for wafer fab equipment, assisting manufacturers and their supply chains in enhancing their cybersecurity posture.

#### Purpose of Implementation

For Winbond, ensuring the stable operation of production lines is crucial for maintaining business continuity. If production line equipment is impacted by security incidents, it not only reduces production efficiency but can also cause severe financial and reputational damage to the company. By implementing the SEMI-E187 standard as a guiding principle for equipment procurement, installation, and maintenance, Winbond can further strengthen information security and operational stability in production operations. Additionally, this standard contributes to enhancing cybersecurity resilience among partners, collectively reducing operational risks.



### 1.3.2 Economic Performance

In 2023, Winbond's consolidated revenue amounted to NT\$75 billion, a decrease of 20.65% from 2022; our consolidated net earnings after tax reached NT\$34 million, and our after-tax EPS was negative NT\$0.29. For more explanation and analysis of financial performance, please refer to [Winbond's 2023 Annual Report](#).

### 2023 Consolidated Financial Performance



Item	2021	2022	2023
Operating Revenue	99,570	94,530	75,006
Non-operating Revenue (expense)	(205)	1,512	933
Direct Economic Value [A]	99,365	96,042	75,939
Operating Cost	57,089	51,479	52,610
Employee Remuneration and Benefit Expenses <small>(Personnel expenses)</small>	17,325	19,706	16,775
Payments to Investors	1,324	5,506	6,492
Payments to the Government	274	3,799	974
Community Investment	6	7	7
Direct Economic Value Distributed [B]	76,018	80,497	76,858
Residual Economic Value [A-B]	23,347	15,545	(919)
Net Profit Before Tax	18,223	18,046	(698)
Net Profit	15,000	14,987	34
Earning/Loss per Share <small>[Attributable to the parent company] (NT\$)</small>	3.42	3.25	(0.29)

### Sales Distribution and Product Categories and Revenue Ratios of Winbond Group's Applications in 2 Years

Item	Asia	Europe	America	Others
2023 Sales Ratio <sup>(100%)</sup>	92%	5%	3%	-
2022 Sales Ratio <sup>(100%)</sup>	90%	4%	6%	-

Item	Dynamic Random Access Memory (DRAM) Products	Flash Memory Products	Logic Products	Others
2023 Sales Ratio <sup>(100%)</sup>	19%	32%	46%	3%
2022 Sales Ratio <sup>(100%)</sup>	23%	32%	44%	1%

**Note** 1. Total wafer production was 407.6 (thousand pcs), while total die production was 7,153,705 (thousand pcs).  
 2. For Winbond's financial performance and sales volume in 2023, please refer to [Winbond's 2023 Annual Report](#).

### 1.3.3 Investing in Taiwan

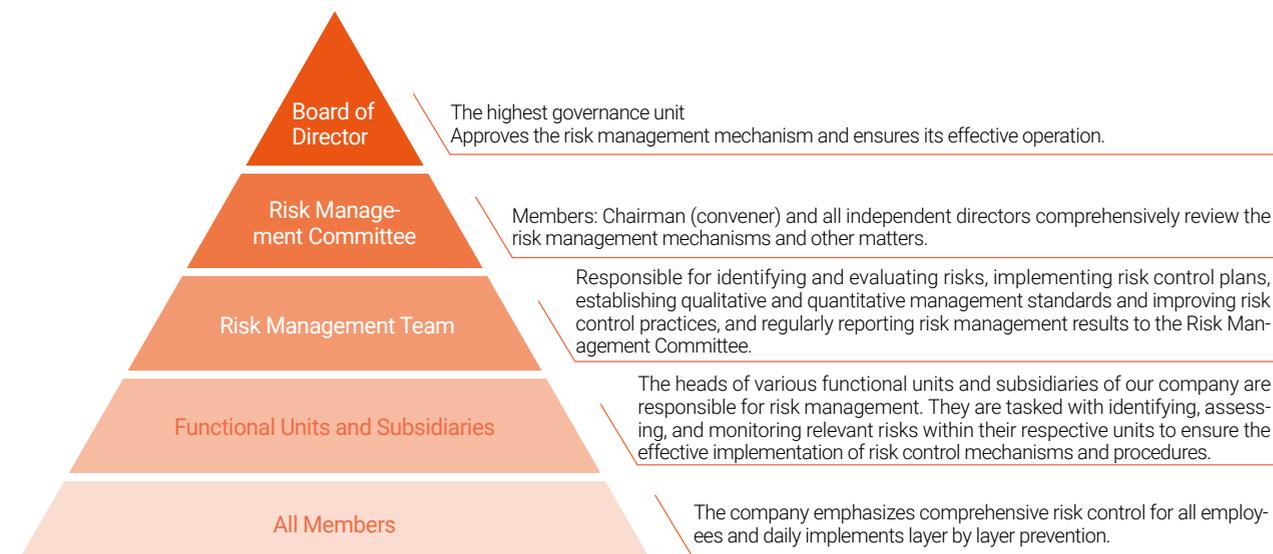
Winbond's headquarters and the first Fab were established in the Central Taiwan Science Park. Echoing the programs for investing in Taiwan, in 2020, we applied for the "Action Plan for Welcoming Overseas Taiwanese Businesses to Return to Invest in Taiwan" for the first time to increase investment in 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 sustainability-linked 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.

## 1.4 Risk Management

Winbond belongs to the semiconductor manufacturing industry. Facing natural disasters, accidents, human-made incidents, changes in international political and economic situations, the emergence of new technologies, and changes in policies and regulations may all cause serious impacts on its operations and finances. Therefore, Winbond established a "Risk Management Committee" under the Board of Directors. This committee is one of the functional committees and organizes existing departments or units responsible for risk to enhance the overall risk management organizational structure. It formulates sound internal management regulations and operating procedures for each unit's scope of responsibility and conducts risk management.

In 2023, Winbond revised the "Risk Management Committee Chapter" and formulated the "Risk Management Policy and Procedures" after receiving approval by the Board of Directors. It actively manages the four major types of risks faced by contemporary enterprises: "strategic," "operational," "financial," and "information security." It develops comprehensive plans and processes for pre-assessment, risk avoidance, loss prevention, and crisis management for various operational activities and regularly reports to the management and governance units to ensure that all corporate risk control goals are achieved. The risk management team should pay attention to the development of international and domestic risk management systems and changes in internal and external operating environments, adjust control mechanisms, report to the Risk Management Committee and the Board of Directors for approval, and enhance the effectiveness of risk management implementation. For details on the operation of the Risk Management Committee, please refer to [Section 1.1.2 Operations and Main Duties of the Functional Committee](#).

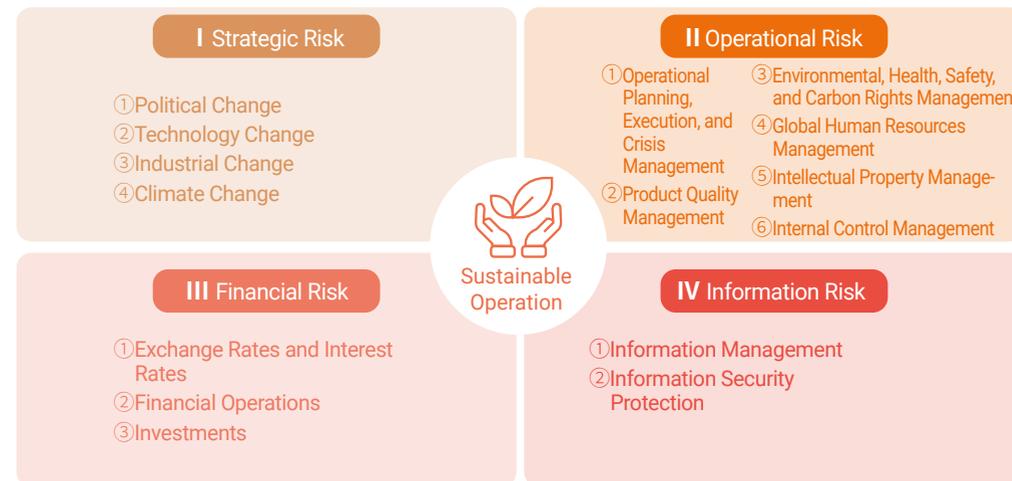
### Risk Management Committee Organizational Structure



Winbond Risk Management Policies and Procedures

- includes but not limit to
- ① Risk management objectives.
  - ② Risk management organizational structure and responsibilities.
  - ③ Risk management procedures.

### 4 Scope of Risk Management



Winbond Risk Management Objectives

Winbond aims to manage various risks that may impact the achievement of company goals through a comprehensive risk management framework. By integrating risk management into operational activities and daily management processes, Winbond aims to achieve the following objectives:

- ① Achieve company goals.
- ② Enhance management efficiency.
- ③ Provide reliable information.
- ④ Allocate resources effectively.

Winbond's risk management procedures include at least five elements: risk identification, risk analysis, risk assessment, risk response, and supervision and review mechanism. The specific procedures and methods for each element are as follows:

**1. Risk Identification:**

- Each functional unit and subsidiary should identify the risks of the short-, mid-, and long-term objectives and the business operations based on the company's risk management policies and procedures.
- Various feasible analysis tools and methods (such as process analysis, scenario analysis, questionnaire surveys, PESTLE analysis, etc.) should be used for risk identification. Risks should be analyzed from both top-down and bottom-up perspectives, considering internal and external risk factors, stakeholder concerns, etc., to comprehensively identify potential risk events that may affect the company's goals or cause losses or adverse impacts.

**2. Risk Analysis:**

- Each functional unit and subsidiary should analyze the probability and impact of identified risks based on existing control measures, past experiences, industry cases, etc., and calculate the risk value accordingly.

1. Risk Analysis Measurement Standards

- ✓ The risk management team should establish appropriate quantitative or qualitative measurement standards based on the company's risk characteristics as the basis for risk analysis.
- ✓ Qualitative measurement standards refer to expressing the probability and impact of risk events through textual descriptions, while quantitative measurement standards refer to expressing the probability and impact of risk events through specific measurable numerical indicators (such as days, percentages, amounts, numbers, etc.).

2. Risk Appetite

- ✓ The risk management team should develop risk appetite (risk tolerance) and report it to the Risk Management Committee and the Board of Directors for determining the company's acceptable risk threshold. Based on the risk appetite, the risk management team should discuss the corresponding risk levels for each risk value and the response methods for each risk level, serving as the basis for subsequent risk assessment and risk response.

**3. Risk Assessment:**

- Each functional unit and subsidiary should, based on the results of risk analysis, align with the risk appetite approved by the Risk Management Committee and the Board of Directors. They should then plan and execute subsequent risk response measures according to the risk levels.
- The relevant results of risk analysis and assessment should be accurately documented and reported to the Risk Management Committee.

**4. Risk Response:**

- After assessing business risks, each unit should propose appropriate risk response measures and control operations and report them to the risk management team for review.

**5. Supervision and Review:**

- The risk management team should regularly report the implementation results of risk management procedures to the Risk Management Committee as a reference, and report major risk events to the Risk Management Committee and the Board of Directors, as necessary.



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' (TCFD) 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. Please refer to 1.6 Climate Change Management for detailed information.



Risk Analysis Table | Strategic Risk

Risk Type	Description of Impact Assessment	Response Measures	Response / Performance Management
Strategical Risk	<p><b>Geopolitical and Economic</b></p> <ul style="list-style-type: none"> <li>▪ <b>International situation risk:</b> G2 geopolitical disputes have formed two major market segments dominated by China and the United States. The Chinese market has gradually turned to domestic products, while the European and American markets have gradually stopped using products produced by Chinese companies</li> </ul>	<ul style="list-style-type: none"> <li>▪ In response to the globalization market structure (globalization), it is rapidly developing towards regionalization (localization), actively expanding the European, American, Japanese and Korean markets and international Tier -1 customer orders, and developing Tier -1 High value-added products required by customers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Listed in the annual plan and regularly review the plan</li> </ul>
	<p><b>Technological</b></p> <ul style="list-style-type: none"> <li>▪ <b>Technological and technical risk:</b> PIM (Processor in Memory) technology may have a significant impact on traditional chip computing architecture; NOR Flash is approaching the limits of device performance and shrinkage</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pay close attention to PIM technology and invest some R&amp;D resources in research and development</li> <li>▪ In addition to process R&amp;D and emerging memory research, we strengthen research on the integration of heterogeneous memory and logic chips to generate innovative applications in large-capacity and fast read-write memories</li> </ul>	<ul style="list-style-type: none"> <li>▪ Listed in the annual plan and regularly review the plan</li> </ul>
	<ul style="list-style-type: none"> <li>▪ <b>Technology development risk:</b> New technology development may encounter unforeseen difficulties, leading to delays in the development schedule</li> </ul>	<ul style="list-style-type: none"> <li>▪ Maintain a strong relationship with major equipment suppliers to engage and exchange the latest solutions</li> <li>▪ Implemented <u>TFMEA</u> analysis to assess potential risks in advance and seek effective solutions</li> </ul>	<ul style="list-style-type: none"> <li>▪ Regularly hold technical seminars with major equipment suppliers</li> <li>▪ Technology development periodic review TFMEA</li> </ul>
	<p><b>Industrial</b></p> <ul style="list-style-type: none"> <li>▪ <b>Geopolitical and competitive risk:</b> G2 may cut customers and markets, affecting future performance scale. At the same time, science and technology are changing with each passing day, and industry models are shifting rapidly. If technology and products are relatively backward, the impact might be significant</li> </ul>	<ul style="list-style-type: none"> <li>▪ Develop a decentralized production strategy, understand the needs of specific customers, and reduce the risks and impacts that G2 may bring</li> <li>▪ In response to geopolitics and customer requirements, seek to diversify production bases and expand global markets; actively innovate to enhance product differentiation, and develop high-end customers to enhance operational competitiveness</li> <li>▪ Strengthen partnerships with key customers; hold regular meetings to understand customer needs; and ensure consistency of long-term development blueprints for both parties</li> <li>▪ Study the ecological chain of each application, understand its pain points and proactively provide customer solutions</li> </ul>	<ul style="list-style-type: none"> <li>▪ Adjust operating strategies and include them in annual plans</li> <li>▪ In response to the rapid shift of industry paradigms, technology and product development can be adjusted immediately, and the organization can be adjusted in a timely manner</li> </ul>
<p><b>Climate</b></p> <ul style="list-style-type: none"> <li>▪ <b>Climate change risk:</b> In the context of global warming and extreme climate intensification, transition climate risks and physical climate risks may have impacts on the company's financial and operational aspects</li> </ul>	<ul style="list-style-type: none"> <li>▪ Introduce the TCFD management structure to identify the sources of climate risks and assess their impacts, and formulate mitigation and adaptation measures accordingly to reduce the impact of climate risks and enhance the company's operational resilience</li> </ul>	<ul style="list-style-type: none"> <li>▪ Published a climate-related financial disclosure report (TCFD) to review Winbond's operational resilience in facing climate issues and improve information transparency</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ <b>Energy demand risk:</b> Renewable energy is not easy to obtain, and the production of low-carbon products is limited; energy costs increase, and production costs increase</li> <li>▪ <b>Carbon pricing risk:</b> Indirect costs increase, suppliers pass on costs, and procurement costs increase</li> </ul>	<ul style="list-style-type: none"> <li>▪ Set a goal of using 90% green electricity in CTSP Fab by 2030</li> <li>▪ Plan and purchase renewable energy power, and evaluate investments in renewable energy projects</li> <li>▪ Promote water-saving measures; install water storage equipment; increase the proportion of recycled water</li> <li>▪ Conduct energy resource usage surveys on suppliers every year to understand scope 3 carbon emissions and suppliers' carbon management levels, further plan reduction measures, and conduct regular tracking and communication</li> </ul>	<ul style="list-style-type: none"> <li>▪ The renewable energy usage rate of CTSP Fab in 2023 is 0.4%</li> <li>▪ The water recovery rate of the Fabs in 2023 is 82.2%</li> </ul>


**Risk Analysis Table** | Operational Risk

Risk Type	Description of Impact Assessment	Response Measures	Response / Performance Management
Operational Risk	<b>Planning, Executing, and Emergency Management</b> <ul style="list-style-type: none"> <li>▪ <b>Operational risk:</b> Due to increased shipments or unexpected quality abnormalities, it is necessary to quickly find out the real cause and propose improvement plans to avoid causing quality problems in the customer's products in the end market</li> </ul>	<ul style="list-style-type: none"> <li>▪ Utilize the latest instruments, quality management techniques and comprehensive education and training to strengthen the analytical ability to independently inspect product abnormalities, quickly implement improvement plans, improve interaction with customers and obtain immediate feedback, build mutual trust and increase cooperation opportunities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Promote Zero Defect 2.0 activities and implement them in all units of the company</li> </ul>
	<b>Product Quality Management</b> <ul style="list-style-type: none"> <li>▪ <b>Quality improvement risk:</b> Various requirements arising from customer product upgrades or development of new product applications, including: increasingly stringent product reliability and validity specifications, requirements for continuous improvement of yield rates, requirements for early introduction and use of new technologies for manufacturing, etc. Causes the quality of newly manufactured products to face unprecedented challenges</li> </ul>	<ul style="list-style-type: none"> <li>▪ In the face of emerging quality challenges, big data quality analysis and machine learning have been used to accelerate quality improvement; at the same time, new design tools are applied to improve product stability as well</li> </ul>	<ul style="list-style-type: none"> <li>▪ Kaohsiung Fab uses digital transformation to increase Virgin Yield</li> </ul>
	<b>Environment, Safety, and Health</b> <ul style="list-style-type: none"> <li>▪ <b>Epidemic risk:</b> The impact of the epidemic on personnel health or loss of business interruption</li> </ul>	<ul style="list-style-type: none"> <li>▪ Implement epidemic prevention management regulations, such as implementing separate warehouses and stratification for working from home according to changes in the epidemic, maintaining indoor air circulation and regularly cleaning the environment</li> <li>▪ Regularly / irregularly, senior managers hosts epidemic prevention meetings and conduct rolling reviews of epidemic prevention management measures</li> </ul>	<ul style="list-style-type: none"> <li>▪ There were no personnel health impacts or operational disruptions caused by the epidemic in 2023</li> </ul>
	<b>Carbon Credit Management</b> <ul style="list-style-type: none"> <li>▪ <b>Liquidity risk:</b> The domestic carbon rights market trading and swap regulations are not yet mature, and may face risks such as insufficient liquidity in carbon rights trading and high volatility</li> </ul>	<ul style="list-style-type: none"> <li>▪ Join the Singapore Carbon Exchange (CIX) and the Taiwan Carbon Exchange (TCX) to increase access to diverse carbon rights and continue to pay attention to the progress of carbon rights swap regulations</li> <li>▪ Participate in voluntary carbon rights market transactions and continue to track changes in carbon price trends</li> </ul>	<ul style="list-style-type: none"> <li>▪ Starting from 2022, Winbond has been participating in voluntary carbon rights market transactions and continuously expanding its channels for obtaining diversified carbon rights to respond promptly to market changes. As of 2023, carbon rights issues have had no negative impact on Winbond's operations</li> </ul>
	<b>Global Talent Management</b> <ul style="list-style-type: none"> <li>▪ <b>Human rights risk:</b> Ignoring human rights in corporate governance may bring risks of legal action, supply chain misconduct, regulatory compliance issues, brand reputation damage, and loss of support from socially responsible investors; ignoring employee trust in the company can also increase the risk of losing talent</li> </ul>	<ul style="list-style-type: none"> <li>▪ Implement human rights education and training, with a global training rate target of 100%</li> <li>▪ Conduct human rights due diligence every three years to understand potential risks</li> </ul>	<ul style="list-style-type: none"> <li>▪ Chairman signed Winbond Human Rights Policy in 2022</li> <li>▪ Conducted the first company-wide human rights due diligence in 2022. Among the 28 issues, there were no high-risk issues that require immediate resolution</li> </ul>
	<b>Patent Risks Management</b> <ul style="list-style-type: none"> <li>▪ <b>Infringement risk:</b> It may constitute an illegal act and cause the management bears civil and criminal liability in serious cases. In minor cases, it may also cause losses to the company's finances or goodwill</li> </ul>	<ul style="list-style-type: none"> <li>▪ Active prevention in advance: The R&amp;D department works closely with the intellectual property department when conducting product design and development to conduct relevant searches, analysis and research on intellectual property rights. If necessary, it will obtain legal authorization or adopt methods such as design around to do its best to avoid infringement</li> <li>▪ Effective response after the fact: In the rare case of being accused of infringement, the legal department immediately works with relevant units to clarify the facts and actively safeguard the rights and interests of Winbond and its customers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Since 2016 to date, Winbond has not been involved in any infringement lawsuits or disputes</li> </ul>
	<ul style="list-style-type: none"> <li>▪ <b>Intellectual property risks:</b> Unfavorable patent licensing negotiations, increased royalties and the possibility of patent litigation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Regardless of whether the rights holder resorts to demanding high royalties or even filing patent litigation based on protection of intellectual property rights, commercial considerations, or other unknown purposes, we actively discuss and develop countermeasures with external lawyers</li> <li>▪ Continue the patent layout of key technologies and consider the quality of the patents as bargaining chips for licensing negotiations or counter-claims</li> </ul>	<ul style="list-style-type: none"> <li>▪ Adhering to the principle of seeking win-win results, and relying on mutual respect and rational interaction with rights holders, Winbond has effectively controlled patent-related risks, and no adverse results have occurred to Winbond</li> </ul>



**Risk Analysis Table** Financial Risk

Risk Type	Description of Impact Assessment	Response Measures	Response / Performance Management
Financial Risk	<p><b>Exchange Rate &amp; Interest Rate</b></p> <ul style="list-style-type: none"> <li>▪ <b>Exchange rate risk:</b> Primarily arises from foreign currency positions related to import and export business, as well as derivative financial instruments associated with corresponding commitments. These measures are implemented to mitigate the exchange rate risk stemming from foreign currency positions</li> </ul>	<ul style="list-style-type: none"> <li>▪ When engaging in derivative financial product transactions and selecting objects, the first priority is to consider credit risk to avoid losses due to the failure of the other party to perform the contract</li> <li>▪ Winbond keeps abreast of financial market information, judges trends, is familiar with financial products, regulations and investment operation techniques, and provides sufficient and timely information for the reference of management and relevant departments</li> <li>▪ For derivative financial product transactions, the financial unit regularly evaluates twice a month, prepares reports, and submits them to the head of the financial unit and senior executives authorized by the Board of Directors for review</li> </ul>	<ul style="list-style-type: none"> <li>▪ The exchange rate fluctuation risk and the exchange gain or loss in 2023 were both within manageable limits</li> </ul>
	<ul style="list-style-type: none"> <li>▪ <b>Interest rate risk:</b> Mainly occurs from floating interest rates on long-term borrowings incurred for operational needs such as improving manufacturing processes or expanding production capacity</li> </ul>	<ul style="list-style-type: none"> <li>▪ Strive for better interest rate conditions based on current market conditions to reduce the impact of interest rate fluctuations. The corporate bonds issued by Winbond have fixed interest rates, are denominated in New Taiwan dollars, and are measured at amortized cost, so interest rate fluctuations will not affect its cash flow and fair value</li> </ul>	<ul style="list-style-type: none"> <li>▪ It was estimated that the impact of interest rate changes on the company's operations in 2023 within the controllable range</li> </ul>
	<p><b>Financial Operation</b></p> <ul style="list-style-type: none"> <li>▪ <b>Credit risk:</b> Excessive financial leverage or poorer than expected risk assessment may cause the company to fall into credit risks such as default</li> </ul>	<ul style="list-style-type: none"> <li>▪ Through continuous and dynamic financial simulation, we can truly understand the company's capital flow and possible future changes in order to reduce uncertainty</li> </ul>	<ul style="list-style-type: none"> <li>▪ 2023, in response to operational needs, we raised funds through multiple channels to ensure a stable long-term financial structure</li> </ul>
<p><b>Investment</b></p> <ul style="list-style-type: none"> <li>▪ <b>Investment risk:</b> Mainly occurs from investment income and asset impairment of strategic investment and financial investment</li> </ul>	<ul style="list-style-type: none"> <li>▪ Establish a prudent investment decision-making process, conduct a comprehensive assessment of the technology, products, market, management, finance and other aspects of the investment target before investing, set different investment decision-making approval standards according to the investment amount, and regularly track management and evaluation during the holding period. To maximize investment returns and prevent the occurrence or expansion of losses.</li> <li>▪ The finance department submits management reports quarterly, examines whether there have been adverse changes in the significance of investment targets in terms of finance and operations, and timely proposes disposal recommendations</li> </ul>	<ul style="list-style-type: none"> <li>▪ The investment decision-making process in 2023 was in compliance with Winbond's internal and external regulations of the competent authorities</li> </ul>	

**Risk Analysis Table** Informational Security Risk

Risk Type	Description of Impact Assessment	Response Measures	Response / Performance Management
Informational Security Risk	<p><b>Cybersecurity</b></p> <ul style="list-style-type: none"> <li>▪ <b>Hacker attack risk:</b> It may lead to network interruption, data theft / deletion / encryption and blackmail</li> </ul>	<ul style="list-style-type: none"> <li>▪ Perform vulnerability and vulnerability management, including completing security monitoring reports and anomaly event analysis on a weekly basis, arranging monthly downtime operations for major Microsoft updates and patching, performing vulnerability scans quarterly, and using Security Scorecard to monitor external service risks, while collaborating with information security advisors and intelligence centers to quickly assess and remediate reported vulnerabilities</li> </ul>	<ul style="list-style-type: none"> <li>▪ There was no major security incidents in 2023, and we have been actively repairing high-risk weaknesses to ensure that the Security Scorecard score remains above A class</li> <li>▪ Continuously conduct information security monitoring and reporting and processing of abnormal events, strengthen abnormal event analysis and investigation reports, and plan and implement improvement measures</li> </ul>
	<ul style="list-style-type: none"> <li>▪ <b>Social engineering attack:</b> It may result in loss of property and reputation, and increase the risk of hacker attacks</li> </ul>	<ul style="list-style-type: none"> <li>▪ Enable the phishing email blocking mechanism and enhance employees' information security awareness; and organize education and training to enhance employees' information security awareness</li> </ul>	<ul style="list-style-type: none"> <li>▪ In 2023, we completed 12 information security promotions, with a total of 14,500 people trained</li> <li>▪ Effectively blocks phishing emails and handles reported incidents immediately, without any incident</li> </ul>
	<p><b>Information Security</b></p> <ul style="list-style-type: none"> <li>▪ <b>Sensitive information leakage risk:</b> It may affect the company's competitiveness and corporate reputation, property losses, and legal liability</li> <li>▪ <b>Application of emerging technologies:</b> Careless use of generative AI tools may lead to the leakage of sensitive information</li> </ul>	<ul style="list-style-type: none"> <li>▪ For sensitive data, evaluate data classification and solutions, and develop data protection and control mechanisms</li> <li>▪ Precautions related to the use of generative AI tools, and evaluate the introduction of technical control tools</li> </ul>	<ul style="list-style-type: none"> <li>▪ Completed crafting data protection strategies and preliminary implementation plans as well as the evaluation of data classification</li> <li>▪ Conducted 2 information security promotions and 1 training of using Generative AI tools in 2023</li> </ul>
<p><b>Disaster Recovery for Information Systems</b></p> <ul style="list-style-type: none"> <li>▪ <b>Malicious attacks risk:</b> It may modify or destroy the data in the system database</li> </ul>	<ul style="list-style-type: none"> <li>▪ Establish critical system database backup solutions and recovery procedures</li> </ul>	<ul style="list-style-type: none"> <li>▪ Completed the construction of critical system database backup solutions and recovery procedures</li> </ul>	

## 1.5 Green Investment & Sustainability-Linked Loan

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.



### Green Investment Management Unit

As the basic operating unit, the Finance Department further submits relevant proposals to the board of directors for resolution, and the board of directors to participate in relevant decision-making together.



### Responsibility

Assess the environmental, social and governance risks of investment projects, ensure that projects meet sustainable development goals, and make sustainable investment decisions.

In 2022, Winbond carried out a comprehensive renewable energy usage plan for the future electricity consumption of the enterprise itself, and had an in-depth understanding of the status of various types of renewable energy industries and whether they could be applied to Winbond's electricity usage. Apart from establishing on-site solar photovoltaic systems to create a renewable energy source, Winbond has also invested in the renewable energy development company, CHIA-HO Green Energy Co., Ltd., in 2022, to participate in solar photovoltaic field development, marking a significant first step towards a net-zero emissions pathway.

Winbond successfully completed its first renewable energy procurement in 2023, with an estimated annual generation of nearly 10 million kwh of renewable energy. This surpasses the electricity consumption of Winbond non-production facilities within Taiwan service locations. By taking practical actions, Winbond contributes to mitigating climate change and simultaneously enhances the company's operational resilience.

### 1.5.1 Green Energy Investment



#### NT\$955 million renewable energy investment plan

Cumulative investments in renewable energy development from 2022 to 2023, continuing collaboration and communication with green industry suppliers.

In May 2022, Winbond acquired 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.

In November 2023, Winbond announced its participation in the joint establishment of Kai-Hong Energy Co., Ltd., with an investment of NT\$400 million. Kai-Hong Energy's primary business involves investing in solar power generation and wind power generation infrastructure projects in Taiwan. Winbond's involvement in this joint venture not only aligns with the global and Taiwan 2050 net-zero goals, but also demonstrates its proactive engagement in green energy development. Apart from contributing to the company's net-zero emissions target through renewable energy, Winbond is progressively fulfilling its commitment to sustainable development.

As of April 2024, the Board of Winbond has approved a cumulative NT\$955 million in renewable energy investment plan. Going forward, Winbond will continue to seek suitable targets for green energy investment, laying the foundation for achieving net-zero emissions goal.

### 1.5.2 International Voluntary Carbon Credits



#### A total of 13,500 tCO<sub>2</sub>e carbon credits

have been obtained since 2022 from voluntary carbon credit projects in 9 countries across Asia and Africa, creating diverse sustainable benefits.

In response to the global carbon neutrality trend and the 2050 net-zero goal, Winbond not only joined Singapore's global carbon exchange Climate Impact X (CIX) in 2022 and continued to participate in international carbon trading, but also became one of the first international carbon credits purchasers on Taiwan Carbon Solution Exchange (TCX) in 2023. By the end of 2023, Winbond had cumulatively obtained 13,500 metric tons of voluntary carbon credits from 9 countries in Asia and Africa.

The carbon credits obtained by Winbond are issued by international independent organizations such as Verra or Gold Standard. These credits cover various areas, including nature conservation, high-efficiency stoves, clean water sources, solar power generation, and wind power generation. The goal is not only to offset the company's own carbon emissions through carbon trading but also to achieve diverse sustainable benefits, such as protecting terrestrial and marine ecosystems, restoring water-related ecosystems, promoting investment in energy infrastructure and clean energy technology, and respecting the rights of local residents. Winbond's carbon credit projects align with 16 out of the 17 United Nations Sustainable Development Goals (SDGs).

While focusing on the semiconductor industry, Winbond also dedicates continuous and stable resources to participating in global carbon reduction initiatives, contributing to the sustainable survival and development of our planet.



The carbon credit projects include international voluntary carbon credit initiatives related to nature conservation, high-efficiency stoves, clean water sources, solar power generation, and wind power generation.

 Carbon Credit Investment Story

**Delta Blue Carbon – The world largest blue carbon project**

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. In recent years, the major inducement for mangrove deforestation in the region has been the use of mangroves as a source of fuelwood, 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.DBC-1.

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.

**Why Blue Carbon**

Blue carbon typically occurs in coastal wetlands dominated by mangroves, salt marsh plants, and seagrass. These wetlands, similar to terrestrial forests, store carbon through biomass. However, their uniqueness lies in their ability to capture mobile carbon from upstream sources, acting like a filtering system that captures carbon in vast river deltas. Thanks to this dual carbon capture process, coastal wetlands remove carbon at a rate forty times faster than terrestrial forests. The blue carbon project is currently one of the most effective and valuable carbon removal systems. Additionally, coastal wetlands contribute to protecting the surrounding environment from the numerous impacts of climate change.

Verification	Location	Type
VCS-2250(CCB)	Pakistan	Removals Afforestation, reforestation, and rehabilitation (ARR) Wetland restoration and conservation (WRC)
Year of Issue	Regional Area	Expected Annual Carbon Reduction
2016-2021	350,000 Hectares	2,407,629 tCO <sub>2</sub> e



Protect and restores **350,000** ha in the Sindh Indus Delta Region



Expected to remove **142** million tCO<sub>2</sub>e over the project's 60-year lifetime



Over **42,000** residents are benefits from this projects



**400** people daily are provided with clean drinking water through the rehabilitation and management of reverse osmosis plants



**15,100** people benefit from the health condition improved by this project



**34,600** people benefits from the increasing fishing



### 1.5.3 Sustainability-Linked Loan

#### Achieve sustainability indicator performance

Winbond signed a NT\$20 billion Sustainability-Linked Loan in April 2023, incorporating specific sustainability indicators such as carbon reduction, power saving, and corporate governance into condition assessments, regularly checking the performance of actual sustainability indicators, and connecting the performance to interest rate reduction. In June 2023, the bank confirmed that Winbond has achieved the annual sustainability indicator performance, and the interest reduction conditions would be applied to subsequent drawdowns until the next annual review time. Winbond also regularly tracks the achievement of various indicators within the company to ensure the implementation of sustainable actions and move towards the goal of sustainable finance together with the banking group.

### 1.5.4 Sustainability Fixed Deposits

In response to the international sustainability trend, Winbond has progressively engaged in sustainable development time deposits with banks since 2023, with a minimum deposit period of at least 3 months. The funds are lent by the bank to other companies for use in green financing projects that comply with regulations or to support green industries such as investments and financing for renewable energy or solar power plants. Winbond's participation in diverse channels of sustainable finance further demonstrates its commitment to sustainable development.

## 1.6 Climate Change Management

Winbond introduced the Task Force on Climate-related Financial Disclosures (TCFD) framework 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. Winbond released its first TCFD Report, examining Winbond's operational resilience in the face of climate issues and enhancing climate information transparency. In the same year, Winbond also established the TCFD platform, providing a convenient management tool for climate change issues. The independent [2023 Task Force on Climate-related Financial Disclosures Report](#) has been released in the first half of 2024.



**Climate Change Management Framework (TCFD) Implementation Overview**

Winbond Strategy/ Actions	 <b>Governance</b>	 <b>Strategy</b>	 <b>Risk Management</b>	 <b>Metrics and Targets</b>
2023 Implementation Status	<ul style="list-style-type: none"> <li>The Board of Directors passed a number of important climate-related proposals and reports to actively respond to the risks and challenges brought about by climate change, including the joint establishment of Kai-Hong Energy Co., Ltd., the proposed increase budget for energy-efficient equipment, and renewable energy electricity procurement.</li> </ul>	<ul style="list-style-type: none"> <li>7 major climate risks and 7 minor climate risks were identified, as well as 5 major climate opportunities and 7 minor climate opportunities.</li> <li>Qualitative or quantitative analysis of the financial or operational impact of major risks and opportunities.</li> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Manage climate-related risks and integrate processes into the companywide risk management framework.</li> <li>Establish a climate risk identification process with reference to the TCFD framework.</li> <li>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.</li> <li>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.</li> <li>The interdepartmental TCFD project team was established by appointing relevant members from five task forces under the ESG Committee, including Environmental Sustainability, Green Products, Human Rights and Social Inclusion, Sustainable Supply Chain, and Corporate Governance. The TCFD project team discussed the impact of climate risks and opportunities toward finance and operations through workshops.</li> <li>Established the TCFD platform, which enhanced the efficiency of the TCFD project team by systematic tools.</li> <li>Disclosed the climate risks and opportunities related assessment results and response practices in the TCFD report for review by the Winbond ESG Committee and representatives of various department heads to enhance the basis of promoting climate mitigation and adaptation actions.</li> </ul>	<ul style="list-style-type: none"> <li>Every year, statistics are gathered on the greenhouse gas emissions and water consumption of the CTSP Fab and the Kaohsiung Fab. The key performance indicators (KPI) - greenhouse gas emissions per unit of product and water recovery rate are set.</li> <li>The greenhouse gas emissions are verified by a third-party unit every year (ISO 14064-1).</li> <li>Target: Reduce greenhouse gas emissions by 60% by 2030 and achieve net-zero emissions by 2050.</li> <li>Winbond obtained/used green power in September and received the first renewable energy certificate (T-REC) in December 2023.</li> <li>Promoted the tree-planting and carbon reduction project at the Kaohsiung Fab, and completed tree planting activities in 2023.</li> <li>Invested in process research and development to reduce power consumption and increase productivity.</li> <li>Through the ISO 50001 energy management system, the equipment for major energy use was optimized. In 2023, new measures saved about 29.98 million kWh of electricity per year.</li> <li>Committed to sustainable procurement strategies and activities, sustainable risks assessment and management, and digital management of supplier's ESG activities.</li> <li>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 2023, Winbond emitted 15.5 kilograms of carbon dioxide equivalents per layer, which is approximately a 17.4% YoY increase (kilogram of carbon dioxide equivalent/Layer - wafer photomask) in carbon emissions per product unit. This is due to the global economic downturn in 2023 leading to lower total production capacity, and the new Kaohsiung Fab not yet reaching full economic scale, which in turn had caused carbon emission per product unit to rise.</li> <li>The company-wide water recovery rate was 82.2%, both meeting the self-defined target value.</li> </ul>

### 1.6.1 Climate Governance Framework

Winbond established the Winbond Corporate Social Responsibility (CSR) Committee in 2015 to serve as the key driver of the Company's sustainable development; in May 2022, the ESG Committee, which operates directly under the Board of Directors, was officially established as well. The Committee meeting should be held at least twice a year and is chaired by the Chairman. The purpose of the Committee is to plan the Company's sustainable development strategy and goals, formulate action plans, integrate company resources, and implement sustainability initiatives to enhance operational competitiveness.

The ESG Office and its five functional teams focusing on the areas of Environmental Sustainability, Green Product, Human Rights and Social Inclusion, Sustainable Supply Chain, and Corporate Governance were formed under the ESG Committee, which gives annual reports regarding the performance of the Committee to the Board of Directors to ensure the progress and implementation of corporate sustainable development. Members of the functional teams with the requisite expertise were tapped to form the TCFD project team.



### 1.6.2 Procedures for Identifying Climate Change Risks and Opportunities

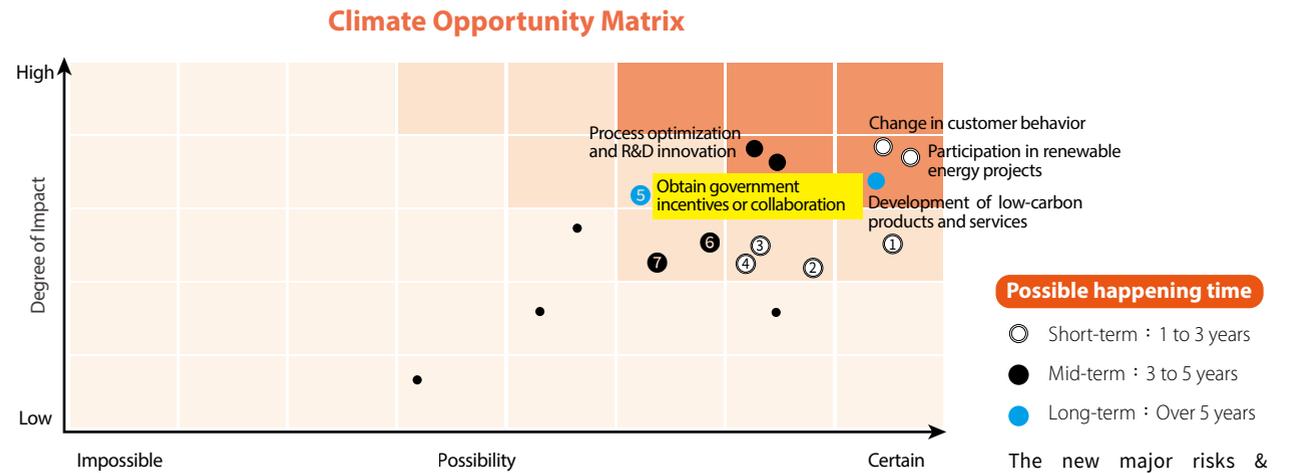
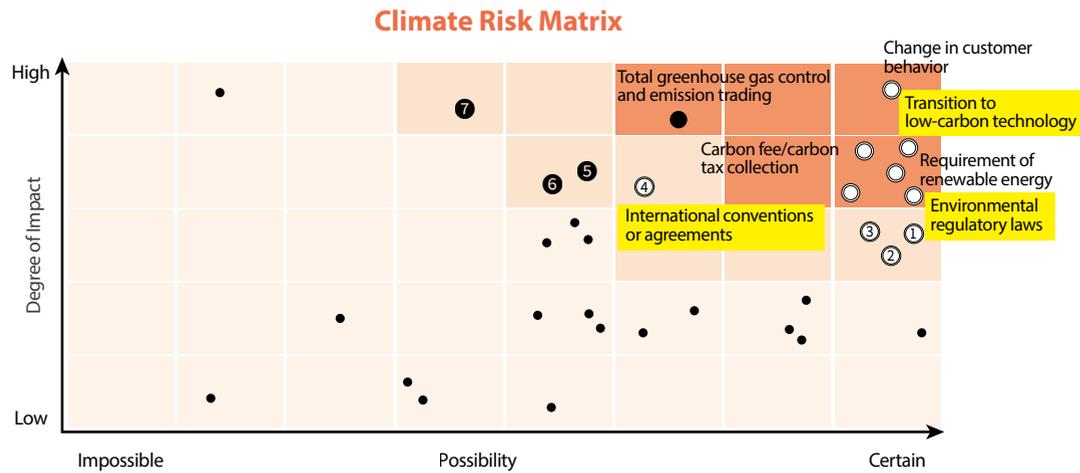
Continuing the framework and workflow from the previous year's TCFD, in 2023, Winbond convened 15 department-level units and nearly 30 members to establish the TCFD project team. Members were divided into teams according to the nature of their job. Each team discussed climate change issues with relevance to their area of operations, utilizing Winbond TCFD platform to identify and generate the matrixes. The evaluation results had been reported in the ESG Committee meetings.



- 01 Form a TCFD project team**  
 Formed by members from over 15 units, including R&D, Sales, Marketing, Fab Facility, Procurement, Environmental Safety and Health, Finance, Legal, and Human Resources.
- 02 Create climate risk and opportunity lists**  
 Includes 35 climate risks and 18 climate opportunities.
- 03 Define evaluation criteria**  
 Conducted evaluation based on impact degree, possibility of occurrence and time of occurrence.
- 04 Generate risk matrix and opportunity matrix for each team**  
 Each team identified major short-term, medium-term, and long-term risks and opportunities based on their impacts, possibility of occurrence, while considering their own business relevance.
- 05 Develop the consolidated risk matrix and opportunity matrix**  
 Aggregated the results from each team to generate the Winbond Climate Risk Matrix and Opportunity Matrix.
- 06 Evaluate the financial and operational implications of major risks and opportunities**  
 Conducted qualitative and quantitative analysis to assess potential financial impacts resulting from high-impact and high-likelihood risks and opportunities.
- 07 Discuss response measures**  
 Engaged relevant units to review and develop response measures for major risks and opportunities.

### 1.6.3 Climate Risk and Opportunity Matrix

Through the course of workshops and educational training, and by utilizing Winbond TCFD platform to identified climate risks and opportunities. Winbond has identified seven major climate risks and seven minor climate risks from 35 climate risks, as well as five major climate opportunities and seven minor climate opportunities from 18 climate opportunities.



**Possible happening time**

- Short-term : 1 to 3 years
- Mid-term : 3 to 5 years
- Long-term : Over 5 years

The new major risks & opportunities added in 2023 are highlight **in yellow**

**Major Risks**

- ① Changes in customer behavior
- ② Low-carbon technology transformation
- ③ Carbon tax/carbon fee
- ④ Requirement of renewable energy
- ⑤ Environmental regulations
- ⑥ International conventions or agreements
- ⑦ Greenhouse gas emissions regulations and trading

**Minor Risks**

- ① Productivity and labeling regulations
- ② Generate negative feedback
- ③ Lack of regulations and legality
- ④ Legal litigation
- ⑤ Changes in rainfall patterns and distribution
- ⑥ Uncertainty of physical risks
- ⑦ Changes in natural resource availability

**Major Opportunities**

- ① Change in customer behavior
- ② Participation in renewable energy projects
- ③ Development of low-carbon products or services
- ④ Process optimization and R&D innovation
- ⑤ Obtain government incentives or collaboration

**Minor Opportunities**

- ① Improvement in energy efficiency
- ② Development of new fund resources
- ③ Use of low-carbon energy
- ④ Water resource management
- ⑤ Energy-saving buildings
- ⑥ Exploration of alternative and diverse resources
- ⑦ Changes in transportation modes



## Major Climate Risks

Climate Risk	Time of Occurrence	Potential Financial or Operational Impacts (-) represents a negative impact (+) represents a positive impact	Response
<b>Changes in customer behavior</b>	Short-term	<ul style="list-style-type: none"> <li>Decrease in sales of non-low-carbon products (-)</li> <li>Increased communication with customers, which also resulted in higher labor costs (-)</li> </ul>	<ul style="list-style-type: none"> <li>Continuously stay informed about the requirements and specifications for green products from clients. Compile this information into a database to facilitate the provision of low-carbon, carbon-reduction, and energy-efficient green products that meet demand.</li> <li>Promoting the introduction of new product designs (design in) to meet customer needs, increasing the portfolio of green or low-energy consumption products.</li> <li>Utilize carbon information platform to assess product carbon footprints and hotspots, and formulation of reduction pathways and optimization plans</li> <li>Participation in domestic and international sustainability evaluations to enhance transparency in terms of sustainability practices.</li> </ul>
<b>Low-carbon technology transformation</b>	Short-term	<ul style="list-style-type: none"> <li>Capital expenditure for new equipment (-)</li> <li>R&amp;D cost increase (-)</li> <li>Reduction in carbon emissions leading to a decrease in carbon tax/fee expenditures(+)</li> </ul>	<ul style="list-style-type: none"> <li>Devote efforts to process improvement to reduce greenhouse gas usage. This includes accelerating the replacement of energy-saving components at machine terminals and installing tail gas treatment equipment. Continuously execute energy-saving projects for production machinery and facility infrastructure.</li> <li>Incorporate renewable energy sources to decrease greenhouse gas emissions.</li> <li>Engage in ongoing discussions with outsourcing partners regarding low-carbon technologies and production planning.</li> </ul>
<b>Carbon tax / Carbon fee</b>	Short-term	<ul style="list-style-type: none"> <li>Increase in indirect costs(-)</li> <li>Suppliers pass on their carbon tax/fee expenditures, leading to increased procurement costs (-)</li> <li>Limited capacity expansion(-)</li> </ul>	<ul style="list-style-type: none"> <li>Company-wide target of net-zero emissions in 2050.</li> <li>Develop a carbon accounting system.</li> <li>Devote efforts to process improvement to reduce greenhouse gas usage. This includes accelerating the replacement of energy-saving components at machine terminals and installing tail gas treatment equipment. Continuously execute energy-saving projects for production machinery and facility infrastructure.</li> <li>Incorporate renewable energy sources to decrease greenhouse gas emissions.</li> <li>Encourage high-electricity-consuming suppliers to conduct greenhouse gas inventories. Monitor and collect information on suppliers listed by environmental agencies.</li> <li>Provide training courses on carbon costs and valuation to increase supplier awareness and motivation for carbon reduction. Maintain a resource usage investigation mechanism for sustainable supply chain management, adjusting survey questions based on annual results and regulatory trends.</li> <li>Join the Singapore Carbon Exchange (Climate Impact X, CIX) and the Taiwan Carbon Solution Exchange (TCX) to diversify carbon credit acquisition channels and stay informed about developments in carbon offset systems.</li> </ul>
<b>Requirement of renewable energy</b>	Short-term	<ul style="list-style-type: none"> <li>Higher green energy prices result in increased production costs(-)</li> <li>Reducing carbon emissions leads to a decrease in carbon tax/fees (+)</li> <li>Suppliers pass on their renewable energy expenditures, leading to increased procurement costs(-)</li> <li>Limited production due to difficulty in acquiring renewable energy(-)</li> </ul>	<ul style="list-style-type: none"> <li>Establish a Customer Green Energy Demand Survey System to accurately understand our customers' green energy demand.</li> <li>Communicate customer requirements for green energy to suppliers and discuss related plans with packaging and testing outsourcing partners based on Winbond's resolution on renewable energy usage.</li> <li>Collect information on the impact of purchasing green energy on negotiation prices and devise corresponding strategies.</li> <li>In 2023, complete the first purchase of renewable energy electricity, with an expected annual supply of nearly 10 million kilowatt-hours of renewable energy. Continuously plan for additional renewable energy purchases.</li> <li>In 2023, participate in the establishment of Kai-Hong Energy Co., Ltd. and continue evaluating other renewable energy investments.</li> <li>The rooftop renewable energy generation system at the CTSP fab will be converted to self-use in 2024. Also, additional renewable energy generation are under continuous evaluation.</li> <li>Plan and implement an REC management system to systematically manage green energy demand and internal and external production planning.</li> </ul>
<b>Environmental regulations</b>	Short-term	<ul style="list-style-type: none"> <li>Compliance costs increase due to regulatory requirement(-)</li> <li>Penalties for non-compliance(-)</li> <li>Rising environmental fee as indirect costs(-)</li> </ul>	<ul style="list-style-type: none"> <li>Plan effective compliance management systems, including inventory unit compliance execution methods and designing a compliance platform.</li> <li>Increase human resources for researching relevant regulations and actively participate in legislative discussions.</li> <li>Implement three measures for supply chain management: real-time information aggregation and dissemination, organizing ESG workshops for suppliers, and conduct regular surveys on the usage of supplier resources.</li> </ul>
<b>International conventions or agreements</b>	Short-term	<ul style="list-style-type: none"> <li>Indirect costs arising from post-agreement commitments(-)</li> <li>Capital expenditures resulting from post-agreement commitments (-)</li> <li>Reducing carbon emissions decreases carbon tax/fee expenses(+)</li> </ul>	<ul style="list-style-type: none"> <li>In 2023, the Taiwan Semiconductor Industry Association declared a joint goal of achieving net-zero emissions: using 2020 greenhouse gas emissions as a baseline, aiming for an absolute reduction of 10% by 2030 (compared to BAU reduction of 40%). The goal is to achieve net-zero emissions by 2050.</li> <li>Commit to process improvements to reduce greenhouse gas usage: accelerate the replacement of energy-saving components in machinery, install exhaust treatment equipment, execute energy-saving projects for production machinery and facilities, and utilize renewable energy to lower emissions.</li> </ul>
<b>Greenhouse gas emissions regulations and trading</b>	Mid-term	<ul style="list-style-type: none"> <li>Penalties for excessive emissions increase indirect costs(-)</li> <li>Early replacement of existing equipment reduces asset value(-)</li> <li>Introducing renewable energy increases production costs(-)</li> <li>Capacity expansion constraints(-)</li> </ul>	<ul style="list-style-type: none"> <li>Increase human resources for researching relevant regulations and actively participate in legislative discussions.</li> <li>Continuously monitor voluntary greenhouse gas reduction projects and the management of incremental emissions offsets.</li> <li>Acquire carbon credits at advantageous prices to offset excess emissions and closely track carbon price trends.</li> </ul>



## Major Climate Opportunities

Climate Opportunities	Time of Occurrence	Potential Financial or Operational Impacts	Response
<b>Changes in customer behavior</b>	Short-term	<ul style="list-style-type: none"> <li>Product portfolio changes that accelerate positive development across entire supply chain</li> <li>Obtaining orders and expanding revenue</li> <li>Increased order stability and reduced revenue fluctuations</li> <li>Improved company reputation</li> </ul>	<ul style="list-style-type: none"> <li>Continuously stay informed about the requirements and specifications for green products from clients. Compile this information into a database to facilitate the provision of low-carbon, carbon reduction, and energy-efficient green products that meet demand.</li> <li>Drive the design and integration of new products to meet customer needs, emphasizing green or low-energy consumption product combinations.</li> <li>Utilize carbon information platforms to assess product carbon footprints and identify carbon hotspots. Establish reduction pathways and optimization plans for product carbon emissions.</li> <li>Participate in sustainability evaluations both domestically and internationally to enhance sustainability transparency.</li> </ul>
<b>Participation in renewable energy projects</b>	Short-term	<ul style="list-style-type: none"> <li>Reduction in carbon emissions leading to a decrease in carbon tax/fee expenditures</li> <li>Diversified sources of electricity to mitigate risks</li> <li>Support for compliance with renewable energy regulations and achieving corporate goals</li> </ul>	<ul style="list-style-type: none"> <li>In 2023, complete the first round of renewable energy electricity procurement, aiming to provide nearly ten million kilowatt-hours of renewable energy annually.</li> <li>Plan for additional renewable energy electricity procurement.</li> <li>Invested in Jiawei Green Energy Co., Ltd. in 2022 and participated in the establishment of Kai-Hong Energy Co., Ltd. in 2023, evaluating other renewable energy investment opportunities.</li> <li>The rooftop renewable energy generation facility at the CTSP fab will transition to self-use in 2024, with ongoing assessments for additional renewable energy installations.</li> </ul>
<b>Development of low-carbon products or services</b>	Long-term	<ul style="list-style-type: none"> <li>Increased Product Prices</li> <li>Expansion in market share and increase in revenue</li> </ul>	<ul style="list-style-type: none"> <li>Understand customer needs and evaluate possibilities to customize low-carbon/green products</li> <li>From the supply chain perspective, we focus on specific products or services with low carbon potential based on raw material carbon emission factors and factory usage.                             <ul style="list-style-type: none"> <li>✓ Organize sustainable supply chain upgrade forums and advanced packaging technology forums to enhance supplier awareness of product carbon footprints and low-carbon technology development.</li> <li>✓ Collaborate with outsourcing partners to explore advanced low-carbon packaging technologies.</li> <li>✓ Participate in the Ministry of Economic Affairs' "Large Lead Small" low-carbon subsidy program, conducting product carbon footprint assessments for suppliers with high carbon intensity at the CTSP fab. Specific suppliers are required to identify improvement areas during the assessment process and submit improvement reports.</li> </ul> </li> </ul>
<b>Process optimization and R&amp;D innovation</b>	Mid-term	<ul style="list-style-type: none"> <li>Reduction in carbon emissions leading to a decrease in carbon tax/fee expenditures</li> <li>Reduction in water and resource consumption leading to lower production costs</li> <li>Obtain orders to expand revenue.</li> </ul>	<ul style="list-style-type: none"> <li>Invite suppliers to share energy-saving keys related to products and technical services, as well as how to utilize advanced electronic materials to stabilize specific process quality.</li> <li>Collaborate with outsourcing partners to explore advanced low-carbon packaging technologies.</li> </ul>
<b>Obtain government incentives or collaboration</b>	Mid-term	<ul style="list-style-type: none"> <li>Reduce capital expenditures by obtaining government subsidies.</li> <li>Lower indirect costs by obtaining government subsidies.</li> <li>Enhance the company's reputation.</li> </ul>	<ul style="list-style-type: none"> <li>In 2023, collaborate with 13 suppliers to apply for the Ministry of Economic Affairs' "Large Lead Small" low-carbon subsidy, receiving a full subsidy of NT\$30 million. The total investment for this project exceeds NT\$200 million, with an expected annual reduction of 5,886 tCO<sub>2</sub>e from the project's completion.</li> </ul>

**Transition Risk Scenario Analysis**

Winbond conducted risk simulations using three scenarios:(1)National Net-Zero Pathway, in Taiwan which mainly assesses domestic regulatory risks.(2)SSP1-1.9 Low Emission Scenario from the Intergovernmental Panel on Climate Change (IPCC): Derived from the IPCC’s sixth scientific assessment report.(3)An annual reduction rate of 4.2% as required by the Science-Based Targets Net-Zero (SBT-NZ) Standard for carbon emissions.

External Scenarios	Description	Assessed Sources of Emissions
National Net-zero Pathway	Based on Taiwan’s current net-zero target	
SSP1-1.9	Based on the SSP1-1.9 pathway in the IPCC Sixth Assessment Report	Scope 1 +
SBT-NZ	Based on the emissions reduction pathway required to achieve the SBT’s net-zero criteria by 2050	Scope 2

Climate change issues may have financial implications for Winbond in terms of regulations, technology, the market, and reputation. In particular, the implementation of carbon tax and carbon fee, compliance with regulations for intensive electricity users to use of renewable energy electricity are expected to result in a financial impact of approximately 0.3-4.0% of revenue in 2030.

Carbon Tax Imposition			
External Scenarios	Assumption	Financial Impact on Revenue in 2030	
		Amount	Revenue Impact
National Net-zero Pathway	Estimated at US\$2 to 10/tCO <sub>2</sub> e from 2021 to 2050 by referring to SSP2-4.5	<NT\$0.2 billion	0.1% to 0.2%
SSP1-1.9	It will reach about US\$650 per ton CO <sub>2</sub> e in 2050 by referring to SSP1-1.9	> NT\$1 billion	2.0% to 4.0%
SBT-NZ			

Carbon Fee Imposition			
External Scenarios	Assumption	Financial Impact on Revenue in 2030	
		Amount	Revenue Impact
National Net-zero Pathway	Carbon exemption quota of 25,000 metric tons per year is estimated at NT\$1,500 per metric ton of CO <sub>2</sub> equivalent.	<NT\$0.2 billion	0.1% to 0.2%

**Note:** Considering the current international trend towards carbon taxation, carbon fee collection is only considered in the National net-zero pathway scenario.

**Regulation of Renewable Energy**

External Scenarios	Assumption	Financial Impact on Revenue in 2030	
		Amount	Revenue Impact
National Net-zero Pathway			
SSP1-1.9	Procurement costs are estimated based on the average wholesale price of Taipower’s renewable energy	< NT\$50 million	< 0.03%
SBT-NZ	power plus power supply costs		

**Physical Risk Scenario Analysis**

Winbond follows the IPCC’s Climate Models to evaluate the risks of flooding, debris flows, and landslides resulting from extreme precipitation. We conduct scenario simulations using data from the Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP), National Science and Technology Council (NSTC), National Science and Technology Center for Disaster Reduction (NCDR), and various climate models to avoid biased results.

The following results show that by the end of the 21st century, Winbond’s main fabs and offices (including the CTSP Fab, Kaohsiung Fab and Zhubei Building) have a risk level of 0 (low possibility of flooding, debris flows, and landslides) under the four global warming scenarios.

For further information related to climate risk financial disclosure, please refer to Winbond’s annual independent 2023 Task Force on Climate-related Financial Disclosures Report.

**Physical Risks Scenario Analysis for Winbond Major Factories and Office Locations**

