

IV. Sustainable Practices | Sustainable Supply Chain

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3. Sustainable Supply Chain

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

2022 Performance Highlights



15 Material Suppliers
Participated in ESG
Workshops



65 Material Suppliers
Sustainable supply chain
environmental surveys



8 packaging and testing
outsourcers
completed product carbon
footprint inventory and
verification

3.1 Supply Chain Composition and Overview

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

Note

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

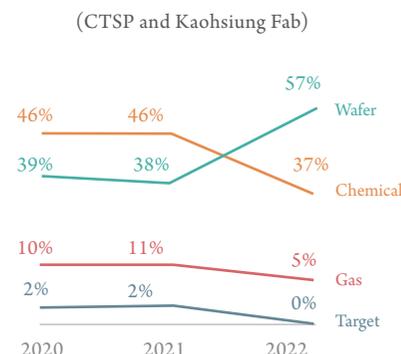
In order to effectively reduce the negative environmental impact deriving from long-distance shipping and global threats associated with international geopolitics, to help domestic suppliers research, develop technologies and innovate, Winbond frequently does suppliers chasing and sought to find second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

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

Composition of Winbond suppliers

- Raw materials
- Outsourced semiconductor assembly and testing (OSAT)
- Machinery and equipment
- Factory engineering operations
- Parts
- Maintenance and repair
- Logistics
- Waste processing

— Proportion of Raw Materials Procured Domestically for Past Three Years —



3.2 Sustainable Supply Chain Management Framework

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

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

Winbond Sustainable Supply Chain Management Strategies

Management Policy	Management Measures/Activity
 Ethical and Responsible Procurement	<ul style="list-style-type: none"> Evaluation of New Suppliers Winbond's Corporate Social Responsibility (CSR) and Integrity Policies WINBOND SUPPLIER CODE OF CONDUCT Hazardous Substance Free (HSF) Non Use for Conflict Minerals
 Strengthening Supply Chain Resilience	<ul style="list-style-type: none"> Regular supplier evaluations First-Tier (Non)Key Suppliers Identification Sustainable Risk Assessment and Audit
 Low Carbon Supply Chain	<ul style="list-style-type: none"> ESG co-learning workshops for key suppliers Environmental investigation of Sustainable supply chain management Sustainable Supply Chain Upgrading Forum ESG-KSA Upgrading Training for Purchasing Team

2022 Key Supplier Sustainability Management Results
Percentage of suppliers who have signed agreements with Winbond's Corporate Social Responsibility (CSR) and Integrity Policies 100%
Percentage of suppliers who have signed the Winbond Supplier Code of Conduct Commitment Letter 100%
Percentage of suppliers who have signed agreements not to use conflict materials 100%

Sourcing and Assessment of New Suppliers

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

— Percentage/Number of New Suppliers Selected Based on Economic, Social, and Governance Standards (Unit: %) —

Year	Number of new suppliers	Percentage of suppliers selected
2018	2	100
2019	11	100
2020	4	100
2021	3	100
2022	5	100
Total	25	100

Regular Evaluation and Audits of Key Suppliers

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

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

ESG aspect	Procurement category	Key Supplier/Outsourcer (providers of packaging and testing services)
Economic	ISO 9001 Quality Management Systems	100
	IATF 16949	100
Environmental	ISO 14001 Environmental Management Systems	100
	REACH	100
	RoHS	100
	HSPM Hazardous Substance Process Management	100
Social	RBA Social Responsibilities	100

— Economic, Social, and Governance Evaluation Results for Suppliers/ Outsourcers —

Supplier Category	Number of suppliers audited	Number of suppliers passed audit
Providers of packaging and testing services	12	12
Raw materials suppliers	5	5

— Supplier/Outsourcer Evaluation Management system —

Supplier Evaluation Grade	Grade A	Grade B	Grade C
	Excellent (Score ≥ 90)	Good ($80 \leq$ Score < 90)	Review Required (Score < 80)
Supplier Treatment	The original mode of collaboration shall be maintained with the supplier. Supplier shall be subject to periodic document audits.	<ul style="list-style-type: none"> The supplier shall sign and return the Notice of Improvement for Raw Materials Suppliers within 1 month, and provide us with measures for improvement Suppliers who received a B grade twice or more in a row shall be labeled as having a C grade. 	<ul style="list-style-type: none"> The supplier shall sign and return the Notice of Improvement for Raw Materials Suppliers within 1 month, and provide us with measures for improvement When necessary, Winbond shall reduce our purchases from C grade suppliers, or request the procuring unit to prepare evaluation plans for using other materials.

3.3 Low Carbon Supply Chain

Co-Sustainability Programs

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

ESG Workshops for Material (Key) Suppliers

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



ESG Co-learning Workshops with Powertech Technology Inc.



ESG Co-learning Workshops with Chipmos Technologies Inc.

Environmental investigation of Sustainable supply chain management

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

Sustainable supply chain management environmental surveys

Purpose

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

Reduction measures

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

Results Predicted for 2023

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

ESG-KSA Upgrading Training for Purchasing Team

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

Lack of procurement team understanding

Conflicting procurement priorities

Procurement incentives not aligned to climate



Net-Zero Challenge:
The supply chain opportunity



3.4 Sustainability Risk Assessment

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

Supplier ESG Self-Assessment Questionnaire

Purpose	Measures	Results Predicted for 2023
<ul style="list-style-type: none"> Identify supply chain risks and the severity of impact on supply chains through regular sustainability surveys and assessments Manage and reduce the operating risks faced by first-level suppliers with regard to sustainable business operations and RBA standards, gradually improving the internal resilience of the Winbond supply chain 	<ul style="list-style-type: none"> Implementing key supplier ESG self-evaluations Completing ESG risk analysis of key suppliers Planning supplier sustainability risk audits 	<ul style="list-style-type: none"> 100% of key supplier sustainable supply chain self-evaluation questionnaires completed Identifying high-risk suppliers and risk types Establishing supplier ESG performance as part of our supplier selection criteria

Content of supplier ESG risk assessments

Management	 Environment	 Society	 Governance
Definitions	Starting with product life cycle traceability and supply, Winbond has committed to requiring our partnered suppliers to operate in an environmentally-friendly and economic manner.	Suppliers are required to sign the Winbond Supplier Code of Conduct Commitment Letter, ensuring that our suppliers provide a safe and healthy workplace compliant with international labor rights standards.	Suppliers are required to conduct business operations ethically and with integrity, the highest standard for business ethics, and ensure that this standard is applied to all internal business operations.
Assessment items	<ul style="list-style-type: none"> Environmental Management Systems Air Pollution Prevention Water Management Greenhouse Gas Management Biodiversity Management Hazardous and Shared Substance Management 	<ul style="list-style-type: none"> Human Rights Protection Employment and Labor Rights Protection Occupational Health and Safety, and General Health Management Chemical Safety Fire Safety Equipment Safety 	<ul style="list-style-type: none"> Degree to Which Corporate Sustainability has been Formally Incorporated Sustainability Impact and Degree of Disclosure Business Continuity and Management Supply Chain Management Service Quality Management Business Ethics and Philanthropy Corporate Governance

3.5 Conflict Minerals

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

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

3.6 Sustainable Supply Chain Communication

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

restrictions related to time and location in order to spread information on sustainability activities more efficiently.

Supplier Conference

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



2022 Supplier Conference

Supplier/Outsourcer Guidance

Product Carbon Footprint

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

— 2022 Outsourcer Guidance Outcomes —

Content	Item Scope	Outcomes
Carbon footprint inventory	8 packaging and testing outsourcers conducted carbon footprint inventory and verification	In 2022, 8 packaging and testing outsourcers all 100% completed product carbon footprint inventory and verification

■ **Training for Security Personnel**

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

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

— Education and Training Outcomes —

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

Sustainable Communications for the Future



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

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

Digital management - Winbond Supplier ESG Interactive Website

Purpose

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

Measures

Completing planning and establishing content for each section

Completing preparing the platform for use by procurement employees for promotion and trainin

Completing the promotion and training of website for supplier's usage

Expected Results in 2023

- Digitalizing sustainability surveys and data collection
- Guiding suppliers on applying for and registering on the network
- Completing promoting use of the network to suppliers