

2 Innovation Value

Management Approach

2.1 Developing New Businesses

- 2.1.1 Circular Economy
- 2.1.2 Product Design and Development
- 2.1.3 Low-Carbon Manufacturing and Energy Saving Innovations

2.2 Pursuing the Highest Quality

- 2.2.1 Green Products
- 2.2.2 Product Life Cycle Assessment

2.3 Maintaining Customer Relations

- 2.3.1 Product Quality
- 2.3.2 Customer Satisfaction
- 2.3.3 Privacy Protection



Management Approach

Topic	Strategies	2023 Targets	2023 Results	Status	2024 Targets	2030 Targets
Customer Relations	Increase customer satisfaction	Customer QBR ranking >= 83 %	83.1%	●	≥85%	≥90%
Product Design and Development	Maintain patent portfolio (6,000~8,000 active and granted patents)	Add 5%~10% new patent applications and release 5%~10% patents of the portfolio	The number of active and granted patents is around 6,300. Added 7.68% new patent applications and released 6.59% patents of the portfolio	●	Add 5%~10% new patent applications and release 5%~10% patents of the portfolio	Add 5%~10% new patent applications and release 5%~10% patents of the portfolio
	Expand technology fields and country coverages, enhance patent quality and increase overall patent value	Percentage of utility patents > 88%	91.71%	●	>89%	The ratio of patented technologies and products apart from computers, tablets, and servers > 50%; The ratio of patent countries other than Taiwan, China, and the U.S. > 10%
	Foster patent asset activation, e.g. transactions, licensing-out, or monetization	Participate in patent related projects	Participated in 1 patent related project	●	Participate in 1 or more patent related projects	Participate in 4 or more patent related projects; Annual growth of patent asset activation, monetization, and/or generated benefits
Hazardous Substance Management	Hazardous Substance Free (HSF)	100% compliance with Hazardous Substance Free standards and customer requirements	100%	●	100%	100%
Product Accountability	Improve environmental benefits of products	All product lines are 100% in compliance with customer requirements, environmental protection laws and regulations, energy consumption labels and safety regulations in various regions.	100%	●	100%	100%
		All product lines have attained 100% compliance with Waste Electrical and Electronic Equipment Directive (WEEE) regulations.	100%	●	100%	100%

● Over 95% ● 90%-95% ● Under 90%

2.1 Developing New Businesses

2.1.1 Circular Economy

As one of the world’s leading ICT product solution providers, Wistron is committed to R&D, design, manufacturing, and services across various industries. When designing and developing sustainable products, we consider the product life cycle, which encompasses raw material acquisition, manufacturing, distribution, product use, and waste recycling. This approach aims to reduce the environmental impact of our products, create sustainable value, and promote the circular use of resources. Since 2013, Wistron’s Recycling Business Group has been offering green services that facilitate closed-loop recycling for our brand customers and maximize benefits to the circular economy.



Item	2020	2021	2022	2023
Disposal of electronic waste (t)	10,000	7,300	4,660	4,360
PCR plastic materials shipping volume (t)	16,930	26,288	21,577	18,035
Reduction in use of new plastics (t)	7,620	11,131	11,047	9,471
Revenue (in RMB\$1M) of Wistron Advanced Materials (Kunshan) Co., Ltd.	921	1,680	1,380	1,165

Electronic Waste

In 2023, Wistron’s Texas Recycling Business Group processed approximately 4,360t of electronic waste. Over the past decade, they have been devoted to the recycling and reuse of e-waste, as well as collaborating with OEM customers in the circular economy. They have also partnered with technical partners to recycle cathode materials for reuse in lithium batteries. The regenerated cathode materials can be directly utilized in the manufacturing and application of lithium batteries, and trial production is scheduled to commence in Q1 of 2024. Wistron’s Texas Recycling Business Group has successfully developed equipment for recovering black powder from lithium batteries in 2024. We expect in-house equipment to be installed and tested in Q3 of 2024, which can complement the direct recovery production line.

Eco-friendly PCR Materials

In 2023, we shipped 18,035t of eco-friendly PCR (Post-consumer-recycled) materials and used 9,471t of raw materials recycled from e-waste. According to Simapro and the carbon footprint and carbon emission coefficient of recycled plastics in the database, we reduced 42,656t of CO₂e. In 2023, we secured 21 Yellow Cards (of the UL Solutions Plastics Recognition Program). We have extended the application of recycled plastics from monitors, desktop computers, and televisions to routers, servers, mice, keyboards, fans, and other fields.

Category	2023 Shipments (t)	2023 PCR Addition Amount (t)	2023 Reduction of Carbon Emissions (tCO ₂ e)
Recycled ABS Series	11,102	6,903	26,489
Recycled PC/ABS Series	2,902	1,456	10,598
Recycled HIPS Series	736	556	1,894
Recycled PC Series	786	412	3,126
Recycled Marine Material Series	169	143	550
Others	2,340	0	0
Total	18,035	9,471	42,656

Raw Materials and Technological Innovations

In the past ten years, Wistron’s Recycling Business Group has been dedicated to recycling and reusing electronic waste, collaborating with Wistron and our OEM customers to cultivate a circular economy, and delivering significant achievements and contributions. In 2023, they successfully expanded their customer base to include new OEM/ODM clients in various electronic products such as servers, fans, network communications, laptops, televisions, uninterruptible power systems, point-of-sale machines, among others. New materials are largely applied to peripheral accessories, network communications, and industrial computers.

Ocean-bound plastic has been successfully used to develop ABS/OBP, PBT+GF/OBP, and, recently, PC/OBP, which is applied to display case, key cap, fan, router and other components. In 2023, we shipped a total of 169t of OBP.

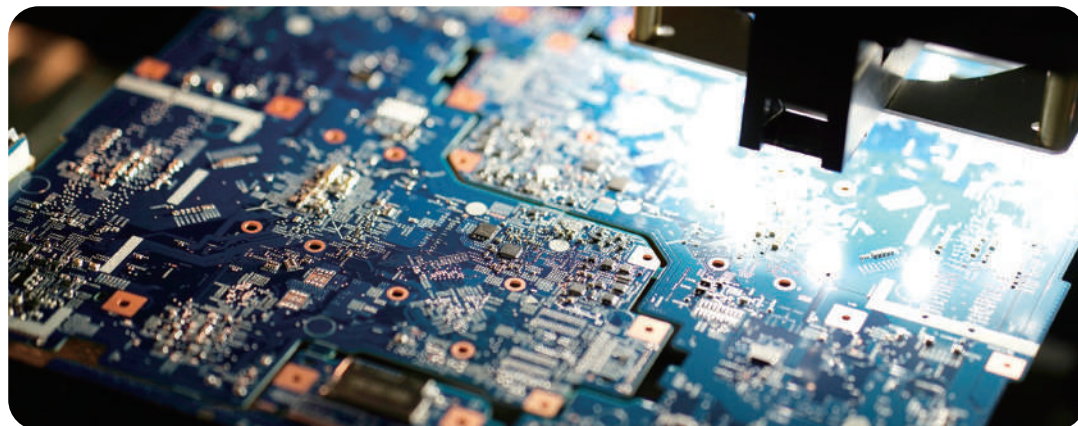
Sustainable and Recycle Materials

Considering the characteristics of Wistron, we prioritize control over the top three materials used in our product, namely plastic, aluminum, and steel/iron. In addition, we have introduced recycled materials into these three sustainable materials on GreenLeaf (GLF) projects. The recycling or renewable material ratio (plastic+aluminum+steel/iron) is 35.4%.

• 2023 GreenLeaf Project Outcomes

Item	2023 Target	2023 Outcomes
recycling or renewable material ratio	35.0	35.4

Note : GLF=Green Leaf



• 2023 Raw material usage

Raw material	Total Usage (ton)	Recycle material Use Ratio (%)
Plastic	3,977	17.8
Aluminum	576	14.9
Steel/Iron	1,503	0
Copper	237	0
Cobalt	0.01	0
Nickel	17.67	0
Lithium	0.64	0
Titanium	0.05	0

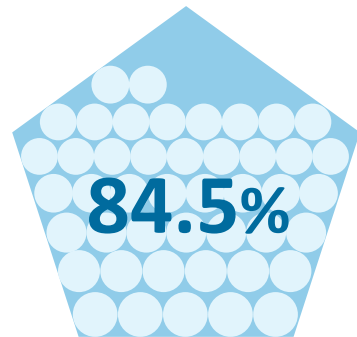
Note: Due to limitations of statistical methods, the usage amount of cobalt, nickel, lithium, and titanium are based on statistics on Wistron’s Full Material Disclosure System (FMD). Plastic, Aluminum, Steel/iron, and Copper are limited to business laptops and servers.

Item	Raw Materials/ Technologies	Item
Renewable Materials	Ocean-bound plastic	Ocean-bound plastic is applied to product development and has recently led to the development of PC/OBP, which is applied to display case, key cap, fan, router and other components. In 2023, we shipped a total of 169t of OBPs.
	Recycled materials	In 2023, we have achieved a 55% incorporation of recycled aluminum and 50% of low-carbon steel in our laptops. 50% recycling rate for galvanized steel sheets in desktop computers and monitors.
Innovative Technology	Lithium battery recycling	In 2023, a partnership was established with Princeton NeEnergy (PNE) to set up a lithium battery cathode material recycling refinery in the Recycling Business Group’s Plant in Texas, with an annual processing capacity of 500t. Mass production is scheduled to begin in Q1 of 2024. Lithium battery black powder recycling equipment has been developed in 2023, and the equipment is expected to be installed and tested in Q3 of 2024.

Green Products

In product design and development stages, Wistron uses "Green Product Design Guidelines and Review Procedures" and other specifications to consider waste disposal, recycling, and reuse from the design stage as we seek to minimize the impact on people and the environment after the products are discarded. Wistron's Recycling Business Group focuses on the recycling electronics and refining recycled plastics, continuing to cooperate with customers on PCR plastics for various products. In 2023, Wistron's shipped products using PCR plastics accounted for 84.51% of our hardware revenue, representing an increase of 4.2% compared to the previous year. This proves that Wistron's green brand continues to be recognized by the international market.

Wistron's product packaging is also designed to be eco-friendly and recyclable. From cartons and cushioning to printing inks, recyclable and reusable materials are used wherever possible. Moreover, we comply with country laws and regulations, such as: China's Blue Sky Plan, France's Mineral Oil Law, etc. We replace packaging materials with more eco-friendly ones to reduce our impact on the environment. In 2023, the products using Wistron's packaging design with recycled materials accounted for 99.3% of overall revenue. Among which, 96.5% of the external boxes were made from recycled pulp; 90.8% of the cushioning materials were made from recycled EPE; and 98.3% of the printed materials were printed with environmentally friendly water-based ink.



PCR Plastic Materials Revenue Percentage of Hardware Products



Packaging Designed with Recycled Materials Percentage of Hardware Revenue

• Products Using PCR Plastic Materials as Percentage of Hardware Revenue (%)

Item	2020	2021	2022	2023
Laptops	61.8	85.6	90.9	93.1
Desktop Computers	58.1	68.4	81.6	88.3
LCD Monitors	95.8	96.5	94.2	94.1
Servers	0	0.1	0.3	3.1
Voice over Internet Protocol (VoIP)	3.7	3.8	4.3	5.5
Total	58.7	79.1	80.3	84.5

Note : Hardware products refer to laptop/desktop computers, and all-in-one (AIO) computers/ monitors/ servers/ Voice over Internet Protocol (VoIP)

• Key Performance Indicators of Green Products (%)

Item	2020	2021	2022	2023
Percentage of products compliant to WEEE regulations	100	100	100	100
Percentage of products with environmental labels	89.5	90.7	85.1	83.2
Percentage of packaging designed with recycled materials	98.0	98.0	98.6	99.3
Percentage of products that use recycled plastic materials	58.7	79.1	80.3	84.5

Note : Data and examples of packaging designs using recycled materials before 2020 in Wistron Technology

• Product Packaging with Recycled Materials as Percentage of Hardware Revenue in 2023 (%)

Item	Recycled Pulp for Cardboard boxes	Cushioning Materials Using Recycled EPE	Eco-Friendly Water-Based ink for Printed Materials
Laptops	99.6	99.6	99.6
Desktop Computers & All-in-One (AIO) Computers	96.2	78.2	96.2
Monitors	95.1	67.6	95.1
Servers	100	95.7	100
Voice over Internet Protocol (VoIP)	100	100	100
Audio	0	0	100
Handheld Mobile Devices	100	100	100
IoT (Internet of Things)	0	33.9	100
Industrial or Application Devices	100	100	0
Body Gateway	100	100	100
Color Radio Assembly	100	100	100
Circuit Board	100	100	100
Network Security	64	64	64
Board/Card	99.6	9.4	10.6
Enterprise Switch	100	47.9	100
Storage	100	100	100
Total	96.7	91.0	98.4

2.1.2 Product Design and Development

Wistron continues to invest research and development efforts in product design, embracing the concept of innovative sustainability to develop diversified products and maintain a leading position in the industry. Our core principle of 'innovative breakthroughs' drives us as we focus on green design during development, utilize eco-friendly materials, and secure international product certifications. We strive to create innovative products that meet customer expectations.

Investments in Innovative Developments	2020	2021	2022	2023
R&D investments (NT\$100M)	190	208	250	239
R&D funding as percentage of revenue (%)	2.25%	2.41%	2.54%	2.8%
R&D personnel (number of people)	4,896	5,350	6,330	5,850
Percentage of R&D personnel per total employees (%)	7%	8.5%	13.4%	13.9%

International Certification for Products

According to the characteristics of the information and communication product, heat transfer, vibration, emission frequency, energy consumption, structure, and reliability design services are developed to ensure that the products can pass global or regional market quality assurances.

Integrated Design Services for Various Products

The services range from industrial design, electronic, software, mechanical and function testing, reliability testing services, and environmental considerations for packaging development.

Large Investments in R&D and Innovation

In addition to investing a large amount of research and development funds, we are also actively strengthening our R&D manpower and capabilities to expand our R&D portfolio. Encouragement for employees to invest in innovative research.

Green Design Concepts

When designing and developing products, we introduce life cycle assessments, the use of recycled materials, and modular designs to implement the circular economy.

Environmentally Friendly

In compliance with the Wistron Hazardous Substance Management Regulations and the Green Design Guide, we have imposed bans on hazardous substances, and we have introduced the reduction of resource waste and the designs of energy saving and recyclable, allowing the products to comply with customers' environmental protection requirements and related laws and regulations.



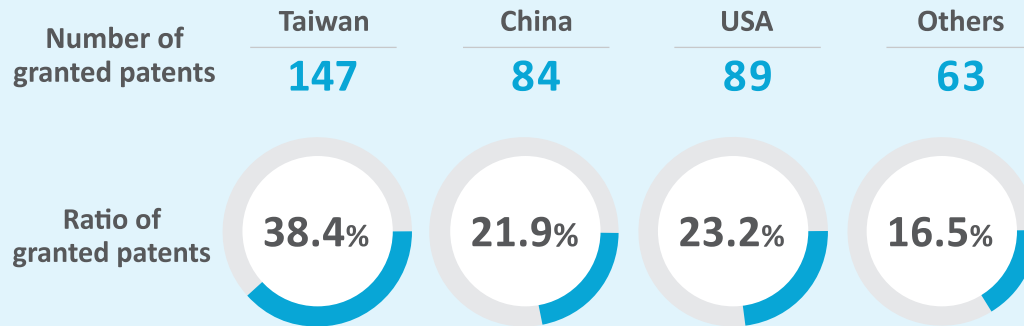
R&D Incentive System and Performance

To maintain our competitive edge in innovative technologies, Wistron issued the "Wistron Invention Reward Regulation" to encourage employees to innovate. The regulation provides incentives at different stages such as proposals, patent application, patent grant, and technology licensing. An annual patent award ceremony is held to stimulate innovative energy and enhance R&D competitiveness.

In 2023, Wistron allocated a large amount of resources to new technologies, new products, and new businesses, aiming to enhance the quality and value of our patents. We actively apply for patents directly related to the company's R&D future and business development, particularly in areas such as 5G+AI applications, smart healthcare, in-vehicle information and communication systems, and cloud technology services. This is to establish a robust global patent portfolio and enhance Wistron's competitiveness in related fields.

Award	2020	2021	2022	2023
Number of patent award winners	246	237	248	238
Number of patent applications	429	386	608	484
Number of granted patents	459	401	414	383

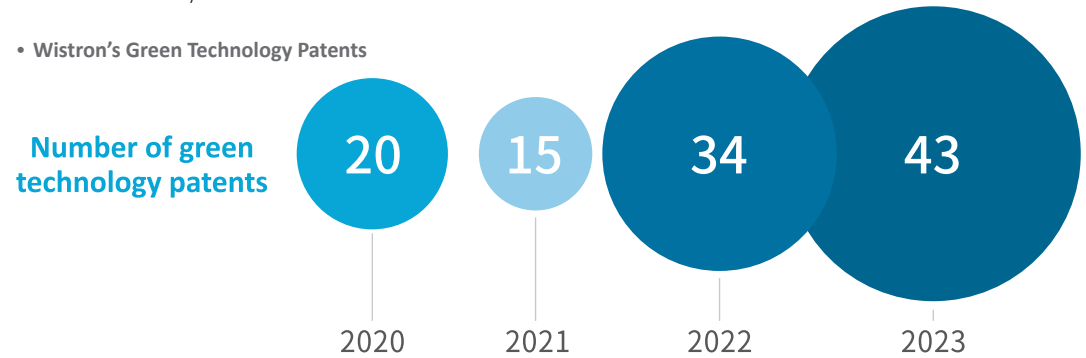
Note : Wistron was named one of the Top 100 Global Innovators™ by Clarivate in 2023 and one of the Top 20 Leaders in Sustainable Innovation by LexisNexis in 2023



Encourage R&D of Green Technologies

In order to reduce our environmental impact and achieve sustainable development, Wistron continues to invest in the research and development of green technologies. Among the patents obtained in 2023, there are a total of 43 patents related to green technologies for eco-friendly designs and manufacturing. Green technologies not only enhance our products' added value but also reduce environmental impacts through innovative technologies, creating a better world for our society.

Wistron's Green Technology Patents



Green Technology Patent Achievements in 2023

Power control method and related charging system

Patent Number **US11581751**

The invention's charging system can determine the power supply's charging protocol based on the transformer's power signal to then determine whether to use the amplifier chip, thereby improving the power utilization efficiency.

Network management method and network entity

Patent Number **TWI819874**

The invention's processor can continuously determine whether target events occur in the detected images and switches to use different network slices to save power according to the detection results.

Fan cage and electronic device having the same

Patent Number **US11604498**

The invention provides a fan cage with an adjustment member. The accommodation portion fitting the fan in size can be adjusted through the position of the adjustment member to achieve optimal heat dissipation according to airflow requirements of different areas without compromising costs.

2.1.3 Low-Carbon Manufacturing and Energy Saving Innovations

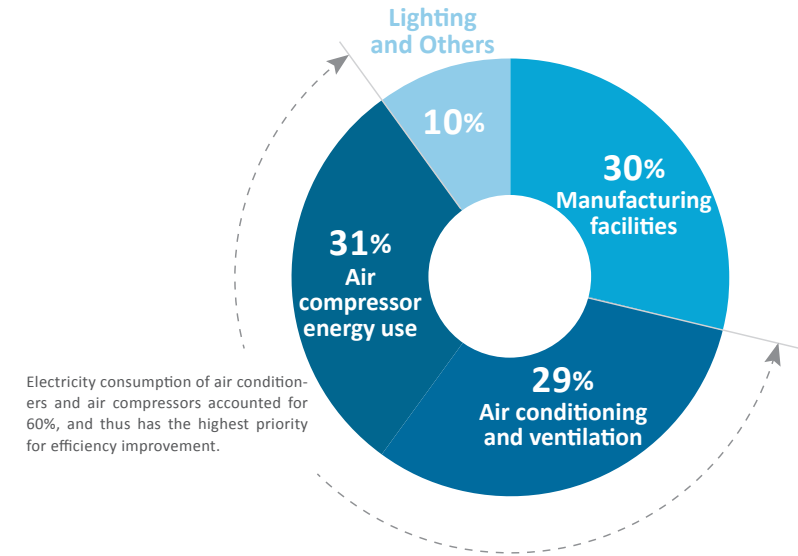
With the 2030 carbon neutral goal in mind, Wistron is proactively driving real carbon reduction in addition to increasing renewable energy use. We implement low-carbon manufacturing processes, smart energy conservation technologies, and energy efficiency improvement measures to achieve our energy conservation goals. All sites carry out energy-saving projects to practice low-carbon production. Such projects target six dimensions: air conditioning, air compressor, manufacturing, management, green lighting and others. We hope the projects can help us introduce smart energy management systems and strengthen of management and data base. Diversified solutions have also been drawn up to realize low-carbon manufacturing and energy saving innovations.

Under long-term efforts to roll out energy-saving actions, Wistron’s plants have achieved remarkable carbon reduction across the six energy-saving dimensions mentioned above. Air-conditioning and air compressor power consume the most energy in Wistron manufacturing sites. As such, carbon reduction efforts seek to target these two energy consumption hotspots through taking stock of hardware equipment and diagnosing energy use. The goal of effective management is achieved through the introduction of smart energy conservation technology, combined with AI and IoT control technology in addition to replacing old energy-intensive equipment. In 2023, we saved 17,917 MWh of electricity. Wistron will continue to commit to low-carbon innovative manufacturing with the help of smart solutions. We are combining digital platforms and virtual factories to realize the vision of sustainable management through energy management, intelligent repair and maintenance systems, and cold water systems.

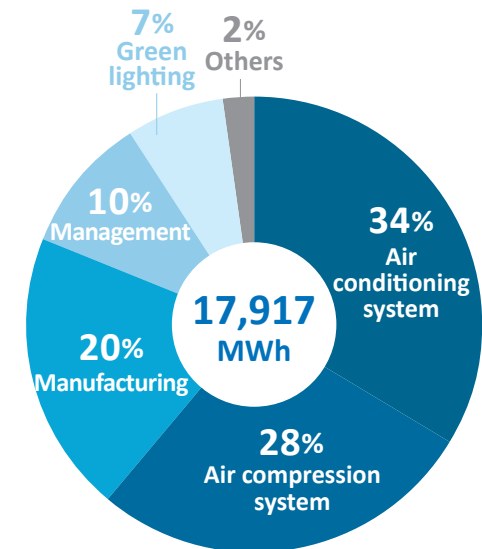
Low-Carbon Manufacturing/ Energy Saving Initiatives

- 1. Air conditioning:** The reflow soldering furnace is an important part of the production process that generates a lot of heat. As such, cooling facilities are required to sustain its operations over long periods. Originally, each reflow soldering furnace was equipped with a chiller for cooling. However, the chiller itself generates heat during the cooling process, resulting in secondary energy consumption. The built-in fan produces significant noise and occupies workshop space. After evaluation, it was decided to introduce a water chiller for cooling. By reworking the pipelines, the original chiller for refrigeration and cooling was replaced with a chilled water plate heat exchanger for cooling. This solution not only solves the cooling problem of the reflow soldering furnace but also reduces workshop noise, workshop space occupation, and electricity expenses.
- 2. Air compressor:** After evaluation, low-noise fans were used to replace air compression gas cooling. This change can still prevent equipment from overheating during long test processes, which could damage the circuit boards. This improvement can reduce both electricity consumption and the use of compressed gas.
- 3. Manufacturing:** The new central nitrogen supply system has high air exchange rate characteristics and provides stable supply, while also reducing workshop noise and area, and decreasing air compression electricity usage. Currently, the Zhongshan site is gradually introducing the central nitrogen supply system, resulting in significant energy-saving benefits.

• Energy Consumption before Smart Energy Conservation



• Energy Saving Projects



2.2 Pursuit of Quality



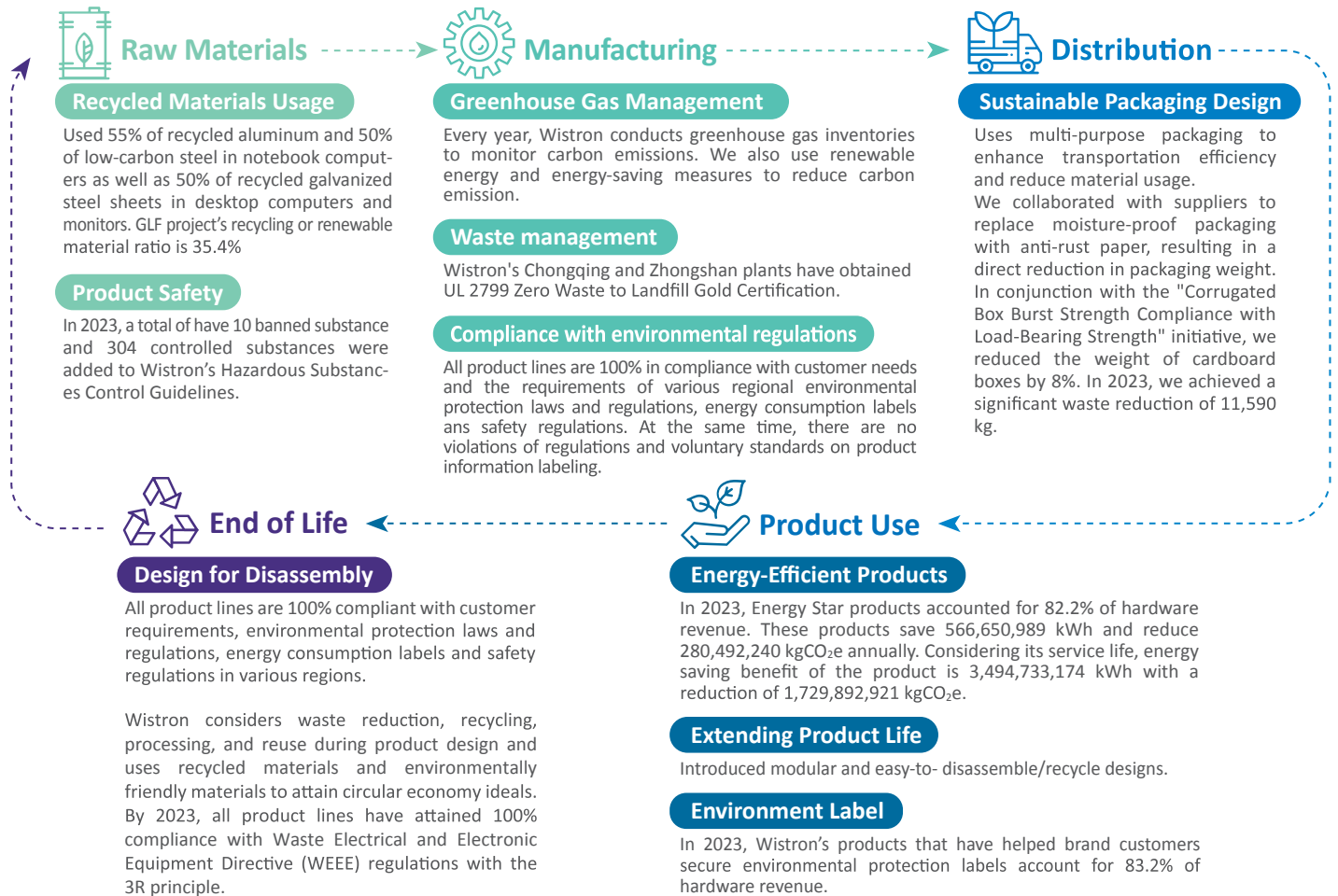
Information System and Management Procedures

- Invention and innovation reward scheme
- Project tracking system (PTS)
- Quality management system (ISO 9001)
- Hazardous substance process management system (IECQ QC 080000)
- Green-design guide
- Product lifecycle management (PLM)
- Green product management (GPM) system
- SAP system
- RoHS Directive
- Registration, evaluation, authorization, and restriction of chemical substances (REACH)
- International safety regulations (BSMI, CB, CCC, CUL, UL, and TUV certification from different countries)

2.2.1 Green Products

Wistron follows the framework of ISO9001 and QC080000 management system in the product development stage. The Green-design Guide is adopted to introduce the concept of life cycle assessment into products. Moreover, Wistron can design compliant products to meet customer needs, environmental protection laws and regulations, energy consumption labels and safety regulations in various regions.

In 2023, green product practices and achievements across each life cycle stage are as follows:





Wistron strictly complies with the import laws, regulations and directives of various countries. Achieving a passing rate of 100% in previous years

Laws, Regulations and Directives	Wistron's Products
EU RoHS directive: Control of substances hazardous to the environment	100% compliant
REACH	100% compliant
WEEE: Recycling of electronic/appliance waste	100% compliant
CA65	Products exported to California are 100% compliant
POPs (Persistent organic pollutants)	Products exported to EU are 100% compliant
VOCs	Products exported to China are 100% compliant
Mineral oil laws of France	Products exported to France are 100% compliant

• Other Certification Standards – Wistron Product Pass Rate

Laws, Regulations and Directives	2020	2021	2022	2023
Energy Star Products (Baseline: hardware revenue)	86.7	89.5	84.3	82.2
Energy Star Products (Baseline: total revenue)	40.0	51.9	41.1	58.0
Products meeting EPEAT certification or equivalent standards (Baseline: hardware revenue)	62.4	74.6	77.9	81.3
Products meeting EPEAT certification or equivalent standards (Baseline: total revenue)	28.7	43.2	38.0	57.4

Note 1: Hardware products refer to laptop / desktop computers, and all-in-one (AIO) computers/monitors/servers/Voice over Internet Protocol (VoIP)
 Note 2: Compliance with EPEAT certification or equivalent standards, including Taiwan's Environmental Protection Label, China's Environmental Label, U.S.A EPEAT, and TCO

• Number of Products to Obtain Important Environmental Protection Labels in 2023

Label name	Product Type and Quantity
Taiwan Green Mark	114 personal computer products (including 86 laptop computers, 28 desktop computers, and all-in-one computers) and 8 monitor products obtained the Taiwan Green Mark
China Environmental Labelling	214 personal computer products (including 147 laptop computers, 67 desktop computers and all-in-one computers) and 126 monitor and 4 server products obtained the China Environmental Labelling
U.S.A EPEAT	392 personal computer products (including 301 laptop computers, 91 desktop computers and all-in-one computers), 108 monitor products obtained US EPEAT certification
TCO certification	197 personal computer products (including 153 laptop computers, 44 desktop computers and all-in-one computers) and 524 monitor products obtained TCO certification
US Energy Star	507 personal computer products (including 367 laptop computers, 140 desktop computers and all-in-one computers) and 172 monitor products obtained US Energy Star certification

• Sales of Products with Important Environmental Protection Labels as Percentage of Hardware Revenue in 2023(%)

Item	Energy Star	EPEAT / TCO / Taiwan Green Mark / China Environmental Labelling
Laptop computers	92.8	90.9
Desktop computers and all-in-one (AIO) computers	66.9	64.9
Monitors	91.0	93.0
Servers	8.6	0
Voice over Internet Protocol (VoIP)	4.3	11.1
Total	82.2	86.4

Product Safety Management and Guidelines

In order to ensure that raw materials are free from hazardous substances, in compliance with international environmental protection regulations and customer regulations on hazardous substances, Wistron has formulated "Wistron Hazardous Substance Management Regulations" and "Control Operation Procedures for Products Containing Hazardous Substances" by following the IECQ QC080000 management framework. We have developed Product Lifecycle Management (PLM) and Green Product Management (GPM) on our own to confirm that all parts and packaging materials used in products must comply with international environmental protection regulations and customer regulations on hazardous substances.

Currently, Wistron has 10 banned substance and 304 regulated substances. Wistron re-examines regulations and customer standards every six months to amend Wistron regulations for compliance with raw material regulations and customer specifications. Wistron's packaging materials mainly use renewable materials. We compile statistics every year based on the import/export customs declaration system for the weight of product materials and packaging materials.

Item	2021	2022	2023	2024
Banned Substances	10	10	10	
Regulated substances	283	297	304	

Regulatory plan:
 •Strengthen regulation of Bisphenol-A (in addition to the previously regulated areas of thermal paper and surface materials that come into contact with the skin; we will add all other usage areas by Q1 2024).
 •Establish new controls based on customer requirements.

Note1 : Wistron regulated substances: Product (Banned Substances + Regulated Substances) + regulated substances in packaging
 Note2 : Banned substances: 10 substances restricted by the EU Directive on the Restriction of Hazardous Substances in Electrical and Electronic Equipment (RoHS), which include lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyls, polybrominated diphenyl ethers, di(2-ethylhexyl) phthalate (DEHP), butyl benzyl phthalate (BBP), dibutyl phthalate (DBP), and diisobutyl phthalate (DIBP)

In addition, Wistron regularly takes stock of volatile organic compounds use in major manufacturing sites (please refer to section 3.4.2 Air Pollution Control). Furthermore, in 2023, the Hsinchu plant implemented a project aimed at reducing the usage of organic solvents, resulting in a 61.3% decrease in total usage. The next phase of the project will extend to other stages of production, such as maintenance, ensuring a continuous reduction in the proportion of organic solvent usage while maintaining product quality.

Use of Product Materials and Packaging Materials

• Historical Use of Product Materials and Packaging Materials (Volume)

	2020	2021	2022	2023
Product material usage volume (t)	196,097	238,388	219,161	176,360
Packaging material usage volume (t)	63,101	78,979	76,947	57,361
Percentage of renewable materials (%)	32.2	28.6	35.1	32.5

Notes 1: The weight of all materials and packaging materials is denominated in "gross weight," which is defined as the total weight that includes the weight of packaging materials.
 Notes 2: Product material usage volume (t) = product weight + packaging material weight
 Notes 3: Packaging material usage volume (t) = packaging material weight
 Notes 4: Percentage of renewable materials = (total renewable materials/total materials) x 100%

Wistron's Hazardous Substance Management Regulations

In accordance with international environmental protection regulations and customer environmental protection requirements, Wistron has formulated "Hazardous Substance Management Regulations" to define the standards for restricted use of hazardous substances such as components, packaging materials, and auxiliary materials used in products. This is used to establish a list of control and monitoring items, and cooperate with suppliers to reduce environmental impact and protect human health.

- 1 Hazardous substances restricted by the EU RoHS Directive.
- 2 Wistron restricted items : Established based on IEC62474 of the Material Declaration Standards and eco-friendly requirements from brand customers.
- 3 Wistron monitoring items : Include substances of concern that have yet been banned. We collect information on the usage status as the basis of evaluation for future reduction schedule or new bans.
- 4 Halogen-free or low-halogen product regulated items : Halogen-free or low-halogen regulations for specific products are introduced in response to customer demands.
- 5 Substances of Very High Concern (SVHC) under REACH.
- 6 Battery regulations : Batteries contain a lot of chemicals and should therefore be recycled and separated before disposal to avoid environmental pollution. The batteries are all marked with recycling marks in accordance with customer requirements and the requirements of various countries.
- 7 Packaging material regulations : This will largely apply to packaging materials for final product shipments, such as : corrugated boxes, packaging bags, cushioning materials, labels, tapes, pads, etc.

2.2.2 Product Life Cycle Assessment

Through life cycle assessment, enterprises can evaluate the potential impact on the environment of various inputs and outputs in the process of product or service life cycle. In addition, the evaluation results are applied to the commodity, manufacturing or service stages so we can consistently deliver eco-friendly products. In 2023, Wistron complied with ISO 14040 and 14044 life cycle assessment standards to assess laptop computers. The scope of the system boundaries has been defined according to the product category rules (PCR) for IT equipment by the EU Environmental Footprint Category. The boundaries have been defined as cradle to grave, which includes raw material, manufacturing, distribution, use, and end of life stages. The LCA analysis tool is used to conduct the computational analysis to obtain the environmental impact assessment results and carbon footprint of the product. Currently, products that have completed LCA analysis account for 22.50% of Wistron's total revenue.

Wistron established a standard operating procedure for product life cycle assessment. Our colleagues are trained through e-learning classes, and we established an LCA analysis team to continue to strengthen the knowledge and capabilities of our product life cycle assessment. In addition, Wistron's Product Carbon Footprint System (PCF System) was officially launched in January 2023. It obtains product-related information by connecting Wistron's internal systems, allowing for rapid calculation of carbon footprint and significantly reducing the manual work time for life cycle assessment. The system also enables carbon emission hotspot analysis to assist the product development team in developing low-carbon products.

In 2023, Wistron completed carbon footprint calculations for a total of 30 laptop models through the PCF system, accounting for 3.79% of Wistron's total revenue.

Item	Index	Unit	2021	2022	2023
Life cycle assessment method	Full life cycle assessment	%	12.64	20.24	22.50
	Simple LCAs	%	0	0	3.79
	Others (green products that comply with international regulations and customer requirements)	%	87.36	79.76	73.71

Note: Other regulation includes RoHS, REACH

• Carbon Footprint Analysis of Each Life Cycle Stage

Product Scope	Raw Materials	Manufacturing	Distribution	Product Use	End of Life	Total Carbon Emissions
Laptop computer (13 inches) (Chengdu Plant)-A	53.34	6.32	20.33	31.46	1.28	112.73
Laptop computer (14 inches) (Chengdu Plant)-B	88.34	3.50	15.85	12.90	1.41	122.00
Laptop computer (15 inches) (Chengdu Plant)-C	89.24	4.15	24.59	26.68	1.82	146.47
Laptop computer (13 inches) (Chongqing Plant)-D	56.72	1.00	16.40	15.72	1.13	90.97
Laptop computer (14 inches) (Chongqing Plant)-E	72.29	4.48	6.49	21.72	0.75	105.74
Laptop computer (14 inches) (Chongqing Plant)-F	67.08	3.56	19.06	23.02	1.34	114.05

Note: Unit: kgCO₂e



• Results of Environmental Impact Assessment

Impact Category	Unit	Environment Impact Results					
		Laptop computer (13 inches) (Chengdu Plant)-A	Laptop computer (14 inches) (Chengdu Plant)-B	Laptop computer (15 inches) (Chengdu Plant)-C	Laptop computer (13 inches) (Chongqing Plant)-D	Laptop computer (14 inches) (Chongqing Plant)-E	Laptop computer (14 inches) (Chongqing Plant)-F
Global warming	kg CO ₂ eq	114.53	123.90	148.76	92.36	107.58	115.84
Stratospheric ozone depletion	kg CFC-11 eq	0.000053	0.000063	0.000080	0.000047	0.000054	0.000056
Ionizing radiation	kBq Co-60 eq	10.12	11.35	17.74	8.15	9.75	12.26
Ozone formation, human health	kgNO _x eq	0.33	0.38	0.43	0.29	0.33	0.35
Formation of fine particles	kg PM _{2.5} eq	0.23	0.27	0.34	0.21	0.25	0.26
Ozone formation, terrestrial ecosystems	kgNO _x eq	0.34	0.38	0.44	0.30	0.34	0.35
Soil acidification	kg SO ₂ eq	0.49	0.58	0.70	0.47	0.54	0.55
Freshwater eutrophication	kg P eq	0.09	0.11	0.13	0.88	0.10	0.10
Ocean eutrophication	kg N eq	0.02	0.03	0.03	0.02	0.04	0.03
Terrestrial ecotoxicity	kg 1,4-DB eq	1,953.75	2,101.36	2,592.87	1,635.00	1,696.06	1,863.95
Freshwater ecotoxicity	kg 1,4-DB eq	30.05	33.85	44.65	31.7	30.52	35.07
Ocean ecotoxicity	kg 1,4-DB eq	39.55	44.68	58.48	41.55	40.20	46.13
Carcinogenic human toxicity	kg 1,4-DB eq	10.11	11.07	15.27	9.20	10.54	14.03
Non-carcinogenic human toxicity	kg 1,4-DB eq	477.52	535.80	692.65	492.15	495.00	555.94
Use of land	m ² a crop eq	3.45	4.43	4.94	3.52	3.65	3.98
Water resources consumption	m ³	1.88	1.97	2.58	1.78	1.94	2.31
Scarcity of mineral resources	kg Cu eq	30.75	32.17	39.39	26.18	27.55	30.30
Scarcity of fossil resources	kg oil eq	0.97	1.06	1.37	0.73	0.96	1.02

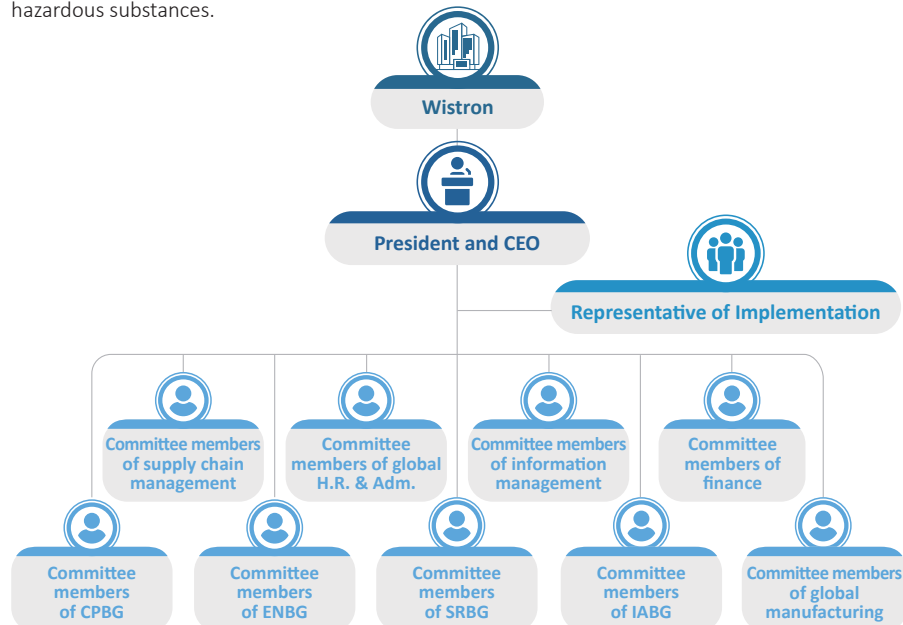
2.3 Customer Relations

2.3.1 Product Quality

Wistron not only focuses on product quality, but also continues to leverage years of design and manufacturing experience to win the trust of customers with complete product testing and strict quality control. The long-term quality management goal of Wistron's quality policy is to "deliver zero-defect and competitive products and services to customers on time."

As a global leader in technology services, Wistron provides innovative ICT products, services, and systems, adhering to the implementation of the ISO 9001 quality management system and the IECQ QC080000 hazardous substance process management system. Throughout the service process from product research and development to manufacturing, Wistron meets the quality standards required by customers, establishes optimization and improvement mechanisms, continuously improves product quality, and achieves customer satisfaction. In 2023, Wistron did not experience any major quality incidents.

Wistron has established a 'Quality and Hazardous Substance Process Management System Implementation Committee', chaired by the President and CEO. Each business unit have steering committees to implement the relevant requirements of quality and hazardous substance management in their respective units, ensuring that all products meet the standards for quality and hazardous substances.



Quality Verification and Testing

In order to meet the quality requirements of our customers, Wistron's products must pass related quality inspections and tests to ensure that the products meet specifications and customer quality requirements before starting mass production. Quality tests include function verification, compatibility verification, reliability verification, environmental specifications and requirements, and DfX (design for manufacture / assembly / testing / service) requirements. In the early periods of design and development, we use risk assessments and the Lessons Learned database to jointly and continuously improve product design capabilities, ease of production, and product quality with Wistron plants.

To enhance product design and quality, reduce production costs, and generate customer-recognized values, Wistron's product development process includes planning, design, production pilot run, and mass production, ensuring our products meet customer demands in the design phase. We've also introduced a digital transformation project to automate and standardize design verification. Design problems are avoided in the front-end design to reduce the time and cost of the R&D unit's debugging on the back-end and repeated testing on the verification-end.



Product Development Process

1.Planning



- Confirm product specifications & development schedule
- Establish project teams
- Design & review green products

2.Design



- Risk assessment & Lessons Learned database
- Design failure mode and effect analysis
- DfX

3.Production Pilot Run



- Ensure product's functionality, compatibility, & reliability meet requirements
- Process failure mode and effect analysis
- Verify product manufacturability & yield
- Production parts approval process
- Mean time between failures

4.Mass Production



- First article inspection
- Open box audit
- Annualized failure return rate
- Continuously mitigate dead on arrival

2.3.2 Customer Satisfaction

Wistron values customer satisfaction and quality. We seek to understand customer needs and optimize existing product portfolios through diverse communication channels. We also provide products and services that exceed customer expectations and is committed to being a trusted partner for its customers.

To enhance customer satisfaction, Wistron conducts a Quarterly Business Review (QBR) with customers every quarter, carefully listening to their feedback and proposing appropriate solutions to areas that need improvement. In 2023, the customer satisfaction rate was 83.1%, exceeding the annual target of 83%. Wistron will continue to optimize supply chain management to establish close cooperative relationships and strengthen production automation. By applying AI to various stages of the production line and through human-machine collaboration, we aim to improve production efficiency and quality while reducing labor costs.



Customer Satisfaction

Consistently maintaining high levels of customer satisfaction



Innovative Products and Services

Improvement of product quality, creation or development of new services and methods to serve customer and market activities



Partnership with Customers

Build far-reaching partnerships centered on customer value

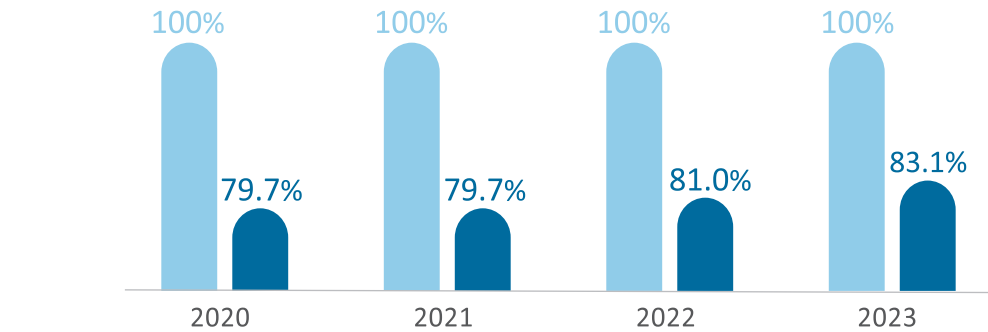


Helping customers improve their competitiveness

Providing customers with first-class products and services; leading the industry and sharing product designs or new technological trends with customers

Wistron also obtains customer feedback by issuing questionnaires through our customer satisfaction system, thereby understanding customer feedback on various aspects such as quality, cost, delivery, service, technology, and green products, providing direction for operational management and improvement for various units. Since 2022, we've conducted satisfaction surveys for all (100%) customers. The customer satisfaction rates for 2022 and 2023 were 83.3% and 85.7%, respectively. Wistron also conducts root cause analysis and improvement and responds to customer needs based on customer feedback to provide customers with higher quality service.

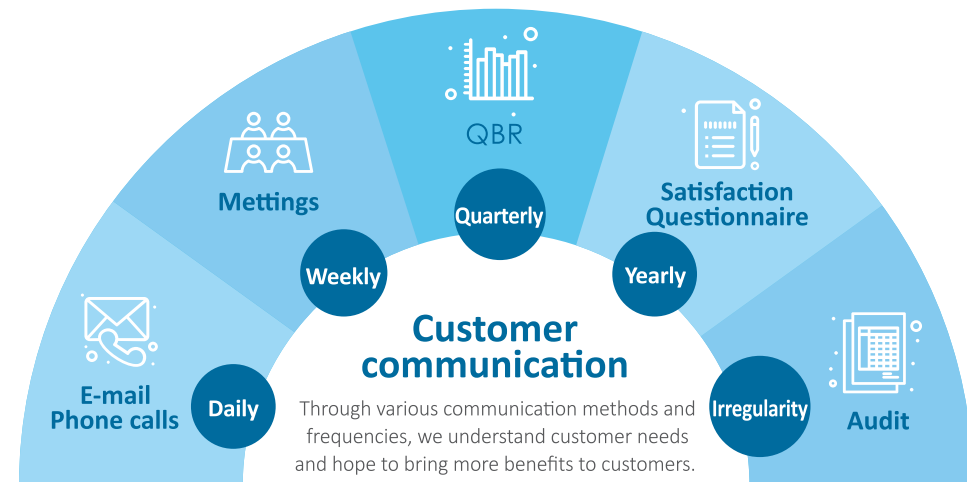
Customer Quarterly Business Review (QBR)



● Coverage(%) ● Customer Satisfaction rate(%)

Note 1: 2022 customer satisfaction rate updated according to customer ranking

Note 2: Increased coverage by inquiring all customers about QBR through meetings, phone calls, or emails



2.3.3 Privacy Protection

To ensure personal data protection and management, Wistron formulated the [Privacy Policy](#) with reference to the laws and regulations of jurisdictions we operates in and the relevant requirements of the European Union's General Data Protection Regulation (GDPR) as the highest guiding principle for privacy protection. The policy covers all Wistron personnel, subsidiaries, and joint ventures on which Wistron has significant influence, as well as suppliers, contractors, external consultants and other third parties. The policy has clear specifications and requirements for the use and protection of personal data and other related matters. We also require all members and third parties to adhere strictly to our privacy policy to protect personal data and related rights and interests.

Wistron's audit department conducts internal audit activities (ICS, Internal Control System) every six months. The scope of the audit activities includes the collection, processing and movement of personal data to ensure that relevant operations comply with local laws and regulations and the internal code of conduct of the Company.

Wistron has reporting and grievance procedure for privacy issues. Anyone can contact us through the privacy protection hotline +886-2-6616-9999 extension 25740 or email (ethic@wistron.com) to raise a complaint or report any concerns of privacy infringement or violation of the privacy policy. Wistron adopts a zero-tolerance policy for privacy infringements. Anyone who violates this policy will be disciplined in accordance with the relevant provisions of the [Code of Conduct](#).

To ensure privacy protection, Wistron rolled out the policy and emphasizes the importance of privacy protection in our 14 operating locations around the world through internal electronic bulletin boards, emails, physical bulletin boards and other channels. We expect to launch education and training starting from the Q2 of 2024. "Security notice of privacy and data protection" training courses will be arranged for all employees in global operating locations (in 10 languages) to further strengthen employees' understanding and compliance with relevant issues.

"Strictly guarding customer confidentiality and adhering to the principle of integrity" is Wistron's commitment to customer privacy. Wistron adheres strictly to the privacy policy for the confidentiality of customer information and will not use customer information for secondary purposes. Therefore, 0% of personal data kept by Wistron has been used for secondary purposes. From 2020 to 2023, there has been no complaints or penalties regarding privacy rights from external parties or from regulatory agencies.

