

# CH3 Product Innovation and Supply Chain Management

Technology R&D	GRI 3-3, 201-1	46
Customer service	GRI 2-6	49
Supply chain management	GRI 2-6, 2-23, 2-24, 3-3	52
	GRI 308-1, 308-2, 414-1, 414-2	

## Performance Highlights

- ✓ Quality improvement: **2** products
- ✓ Overall customer satisfaction: **98%**
- ✓ Signing of the Supplier CSR Commitment

## Material Topics

Technology R&D  
SCM

## SDGs Correspondence



## Certified management system



ISO 9001 Quality Management Systems  
Validity: 3 May 2022 - 3 May 2025



# 3.1 Technology R&D

## Product R&D Projects

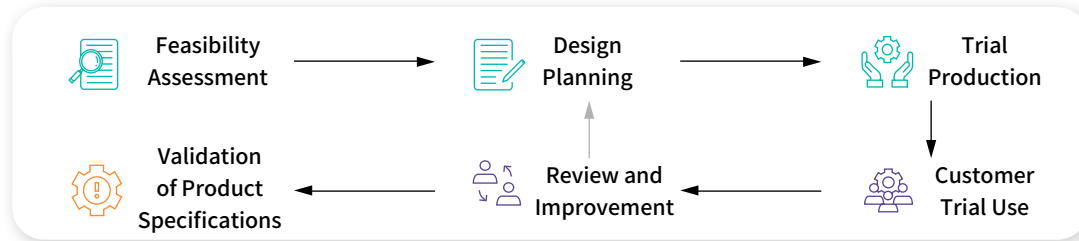
Material issue: Technology R&D; Corresponding sustainable development principle: Innovative technology GRI 3-3

Management Approach and Its Components	Impact Management	Targets and Performance of Management Approach	Evaluation of Management Approach
<p style="text-align: center;"><b>Significance to APC</b></p> <p>Continual product quality improvement and new product development inject market competitiveness and enable continual profit for sustainable development and survival.</p> <hr/> <p style="text-align: center;"><b>Management Practice and Target</b></p> <p>Collect information regarding market development trends, fulfill customer demands, set directions for product quality improvement and new product development, and improve product quality and market competitiveness.</p> <hr/> <p style="text-align: center;"><b>Strategy</b></p> <ul style="list-style-type: none"> <li>· Niche product development</li> <li>· High-value product development</li> </ul> <hr/> <p style="text-align: center;"><b>Goals</b></p> <ul style="list-style-type: none"> <li>· New product development or product quality improvement: At least one product each year</li> </ul>	<p style="text-align: center;"><b>Positive/Negative Impacts</b></p> <ul style="list-style-type: none"> <li>· Positive Potential Impact: Getting rid of the industry burdens through manufacturing transformation</li> <li>· Positive Potential Impact: Successful development of sustainable material.</li> <li>· Positive Actual Impact: New product development and product diversity</li> </ul> <hr/> <p style="text-align: center;"><b>Processes to remediate and prevent negative impacts</b></p> <p>NA</p>	<p style="text-align: center;"><b>2022 Goals</b></p> <ul style="list-style-type: none"> <li>· New product development or product quality improvement: At least one product each year</li> </ul> <hr/> <p style="text-align: center;"><b>2022 Performance</b></p> <ul style="list-style-type: none"> <li>· New product development: 2 (✔)             <ol style="list-style-type: none"> <li>1. Completed the trial production of the hot melt adhesive grade EVA product (part number V08085) and complies with the quality specifications.</li> <li>2. Completed the trial production of the hot melt adhesive grade EVA product (part number V19150) and complies the quality specifications.</li> </ol> </li> </ul> <hr/> <p style="text-align: center;"><b>2023 Goals</b></p> <ul style="list-style-type: none"> <li>· New product development or product quality improvement: At least one product each year</li> </ul> <hr/> <p style="text-align: center;"><b>Planning Medium- &amp; Long-Term Goals</b></p> <ul style="list-style-type: none"> <li>· Development of market-leading product: At least 2</li> </ul>	<p style="text-align: center;"><b>Effectiveness Assessment</b></p> <ul style="list-style-type: none"> <li>· Control product development progress with the “Product R&amp;D and Test SOP”.</li> <li>· Review R&amp;D direction through the quality meeting.</li> <li>· Exchange R&amp;D and development experience through the executive meeting.</li> </ul> <hr/> <p style="text-align: center;"><b>Grievance Mechanism</b></p> <ul style="list-style-type: none"> <li>· Customer Management Process</li> <li>· Customer Anomaly Management SOP</li> </ul> <hr/> <p style="text-align: center;"><b>Evaluation of the management approach</b></p> <p>The sales department collects market information and capture the market trends of products through technical customer service.</p>

### R&D Process

#### Data Collection

- The sales development collects market information and customer feedback and suggest product development or product improvement needs.
- Linyuan Plant improves product as necessary.



### R&D Outcomes

R&D Outcomes		Research Aim
2020	High-speed lamination-grade EVA (part number V18251) successful development and specification setting	<ul style="list-style-type: none"> <li>· Enhance the threshold of production technology of low-gel grade EVA.</li> <li>· Fulfill the market demand for high-speed lamination processing and application.</li> </ul>
2021	High-speed lamination-grade EVA (part number V18251) quality improvement and technology enhancement.	<ul style="list-style-type: none"> <li>· Enhance the threshold of production technology of low-gel grade EVA.</li> <li>· Fulfill the market demand for the technological improvement of production process.</li> </ul>
2022	Completed the trial production of the hot melt adhesive grade EVA products (part numbers V08085/V19150) and comply with the quality specifications.	<ul style="list-style-type: none"> <li>· Enhance the threshold of production technology of the hot melt adhesive grade EVA.</li> <li>· Respond to the mass production of the Gulei Project and product diversity.</li> </ul>

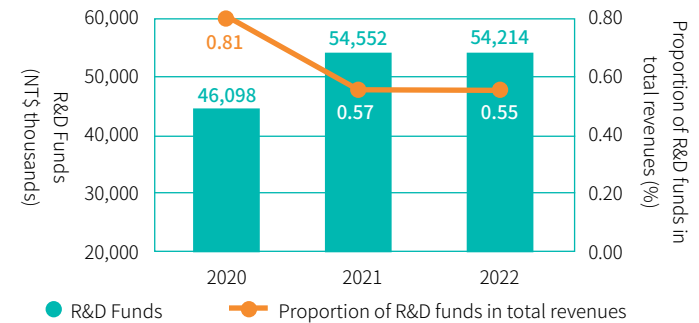
In response to the high-value product strategy and market demand change, apart from expanding the EVA capacity and developing high-end applications and products with high VA contents, we have set lamination-grade EVA products as our niche product range and the R&D focus in the past three years. [GRI 201-1](#)

### Resources Provision

#### R&D Funds

The amount of R&D funds in 2022 was NT\$54,214 thousand, accounting for 0.55% of the revenue. In addition to the R&D funds, USIG has also established a common R&D department to provide both R&D funds and human resources, to help accomplish the R&D targets with the group's power.

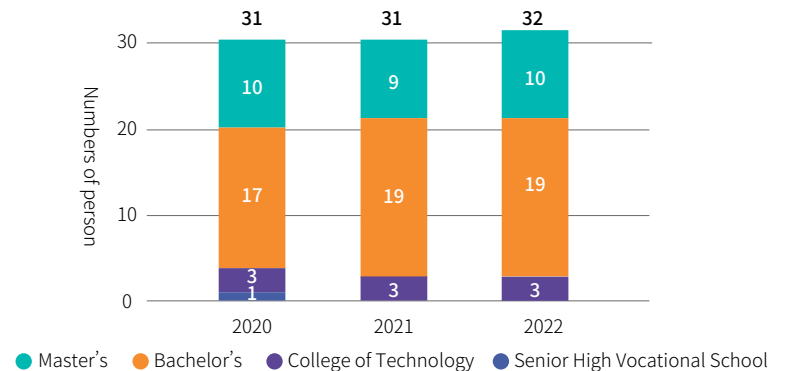
#### Proportion of R&D Funds in Total Registered Revenues in Past 3 Years



#### R&D Workforces

There were 32 R&D personnel in 2022, accounting for 13.7% of all employees. Most R&D personnel are outstanding talents holding a bachelor's or master's degree. The distribution of education attainments of R&D personnel in the past three years is as follows:

#### Distribution of Education Attainment of R&D Personnel in Past 3 Years



## Green products

### Non-toxic products

We consider the legal and regulatory requirements such as FDA, CNS, JIS, and RoHS right from the feasibility assessment of product development to ensure compliance with the standards, regulations, and laws governing human health and environmental impact. [SASB RT-CH-410b.2](#)

In 2009 we passed SONY's green partner certification (Green Partner Environmental Quality Approval System) to set up our corporate image of toxic substance free and clean production. To meet the legal and regulatory requirements for environmental protection and quality, we request suppliers to meet the relevant environmental protection and quality requirements to ensure no use of limited or restricted substances.

Apart from engaging in energy conservation and clean production in the product manufacturing process, we also develop EVA products suitable for the shielding layer of electric wires and cables for producing low-smoke, halogen-free wire and cable jackets to comply with the environmental protection requirements.

Our products have passed third-party verification. The standards we have passed are tabulated below:

Item	Standard	Product Model
1	US FDA Standards (Title21, Pt 177.1520)	LDPE
2	Halogen-free	LDPE
3	Plasticizer Test	M5100
4	EU Specifications (EU 10/2011)	C7100
5	EN 71-3:2013 - Part 3: Migration of certain elements (19 items)	LDPE/EVA
6	RoHS Specifications	LDPE/EVA
7	New Balance Specifications	C7100, EV101, EV102, EV303
8	US FDA Standards (Title21, Pt 177.1350)	EVA
9	Adidas Specifications	EVA
10	Article 4, Sanitation Standard for Food Utensils, Containers and Packages (Taiwan)	C7100
11	Specifications for Plastic Food Contact Materials (China)	C7100, C4100, F2201
12	Crocs RSL Specifications	EVA
13	Nike RSL Specifications	C7100
14	ASICS Specifications	EV101

## Product innovation

### 1 Project R&D progress

Year	R&D Project	Progress	R&D Funds (NT\$ thousands)	Estimated Time of Mass Production Duration	R&D Outcomes
2022	Develop Low crystal point, high-speed lamination of EVA grade	Mass production in progress	13,650	2022	1. Total V18251 production in 2021: 2,195MT 2. Total V18251 production during January to September in 2022: 1,274 MT

### 2 Product R&D Project

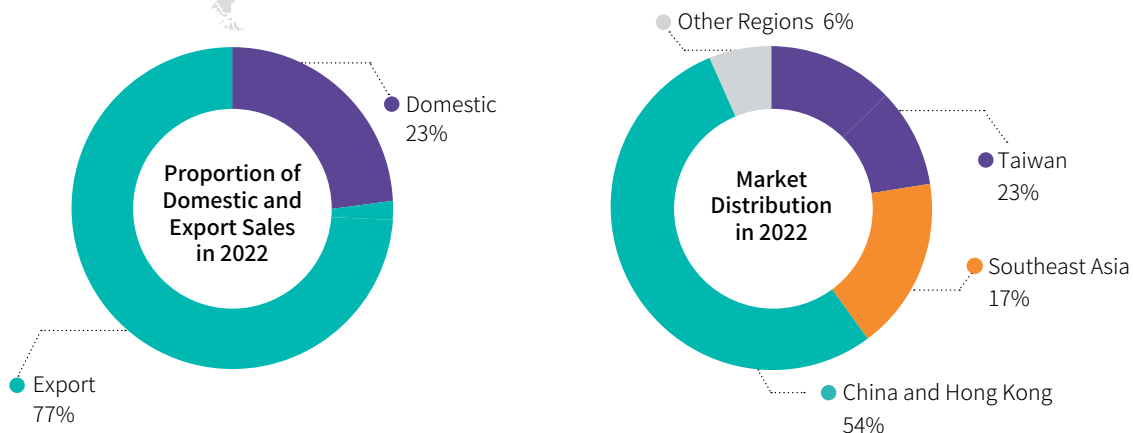
Year	R&D Project	Progress	R&D Funds (NT\$ thousands)	Estimated Time of Mass Production Duration	R&D Outcomes
2023	Trial productions of the hot melt adhesive grade EVA	1. Completed the trial production of two in June and October 2022 respectively. 2. The third trial production is scheduled in October 2023.	26,800	2023	We add a chiller to the manufacturing process to facilitate the development of higher-specification hot melt adhesives to meet the market demand. This will also increase revenues.

## 3.2 Customer service

The R&D department of Linyuan Plant assists the sales department by supporting customer services, product improvement, new product and new market development. It also supports the development of custom products and product characteristic improvement. In recent years, the sound collaboration of both departments has earned customer recognition.

### Product sales and markets GRI 2-6

Product markets: LDPE is primarily for domestic sales and EVA is for export sales. In addition to Taiwan, we also distribute products worldwide to mainland China, Hong Kong, Japan, Thailand, Vietnam, Malaysia, Singapore, the USA, Indonesia, Cambodia, India, Bangladesh, Pakistan, Sri Lanka, the UAE, Israel, Egypt, South Africa, and Russia. Our customers include processing plants and traders of packaging films, food packaging materials, microfibers, plastic injection molding, foaming shoe materials, sports goods, PV packaging films, pre-coating/lamination films. The proportion of domestic and export sales and market distribution in 2022 are shown below by sales volume.



## Customer privacy

In customer privacy confidentiality, the Group Credit Department establishes the Customer Personal Data Control Regulations in response to the Personal Data Protection Act to ensure customer data is controlled in compliance with the Personal Data Protection Act. The control process is as follows:

- 1 Cancel the access, including the system and file access privilege, to customer personal data over the Enterprise Resource Planning (ERP) system, except for the group credit personnel.
- 2 Obtain the “Personal Data Collection, Processing, and Use Notification and Agreement” in advance before collecting documents containing customer personal data.
- 3 After receiving customer personal data, the Group Credit Department should input paper data in the ERP system. Personnel should store paper documents in media files and cover text or data containing customer personal data before archiving. Except as otherwise required, destroy paper documents afterwards.

**There was no customer privacy right infringement or loss of customer personal data in 2022.**

## Handling Customer Complaints

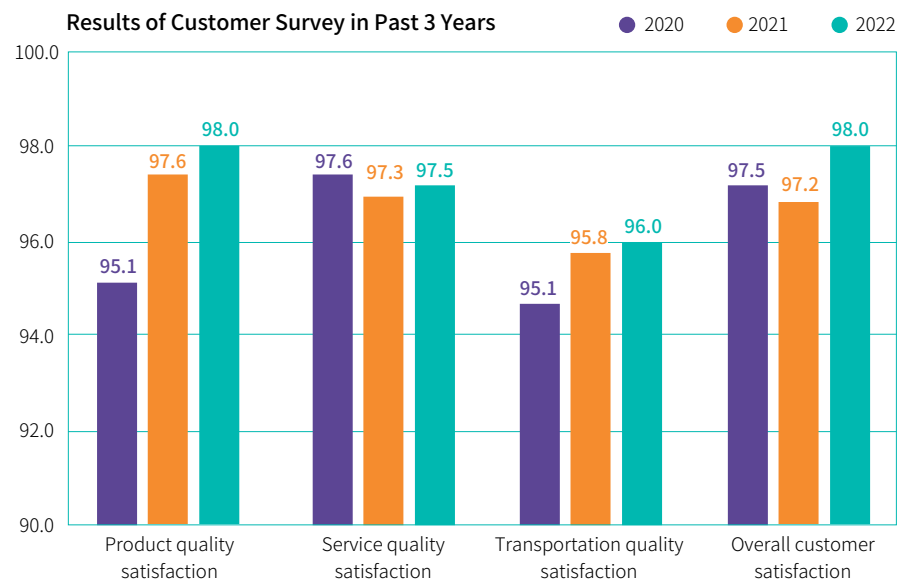
To optimize the customer complaint handling process, we have established the Customer Complaint Management Platform to digitize the customer complaint handling process, control and analyze the causes of customer complaints, and follow up the handling progress of responsible units and corrective and preventive actions so as to implement quality improvement activities and improve the quality of customer service.



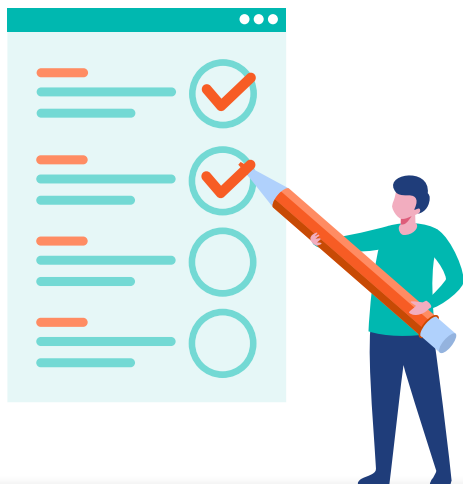
## Customer satisfaction survey

To gather the opinions regarding our products and services from customers, in addition to the telephone interview or visit of sales representatives, we also conduct a questionnaire survey on customer satisfaction each year to ensure that customer requirements are fully understood and properly addressed. Then, we hold the “management review meeting” to propose improvement plans based on the customer opinions and follow up their results so as to maintain continual quality improvement of products and services.

Respondents of the customer satisfaction survey are selected from the top 25 customers by purchasing quantity of domestic sales and export sales respectively. If the collected responses are insufficient, we will select respondents of lower ranks. The survey is conducted among 50 customers to assess the product quality, service quality, transportation quality, and overall satisfaction of APC products. The satisfaction score is calculated based on the proportion of 'highly satisfied' and 'satisfied' responses. **In 2022, a total of 50 valid responses were collected, and the overall satisfaction was 98%**, which is similar to that of 2021. We appreciate the vast majority of customers for their recognition of our product and service quality. We will make continual improvement to repay the long-time support of customers. Customer satisfaction in the past three years is shown below:



Suggestions gathered from customer satisfaction survey have been transferred to the relevant units, such as “assistance in solving processing problems by the technical service unit”, “selection of shipping companies with better punctuality and more reasonable transportation cost by the customs department to meet the shipment expectation of customers”, “provision of standby plastic pallets”.



## Product responsibility and technical support

We pay special attention to product quality and services. Hence, we provide the catalogs and safety data sheet (SDS) that include the specifications, performance, and application description of existing and new products in the “Product” section on the corporate website for customers to access related product information and meet their demands.

To maintain the rights and interests entitled to customers for using our products, we have established the technical service and marking units under the sales department to develop the new application of products to help customers improve processing issues and facilitate technological cooperation and exchange.

All APC products comply with the relevant legal and regulatory requirements and contain no Health and Environmental Hazardous Substances as categorized in the Globally Harmonized System (GHS). **SASB RT-CH-410b.1**

In 2022 there was no legal non-compliance or fine in relation to product labeling.

After analysis and organization, questions reflected in the 2022 satisfaction survey are as follows:



### Product Quality

None.



### Service Quality

1. No onsite service from sales and technical personnel due to COVID-19.
2. Products have price advantages. More products are expected from APC so as to reciprocate both parties.



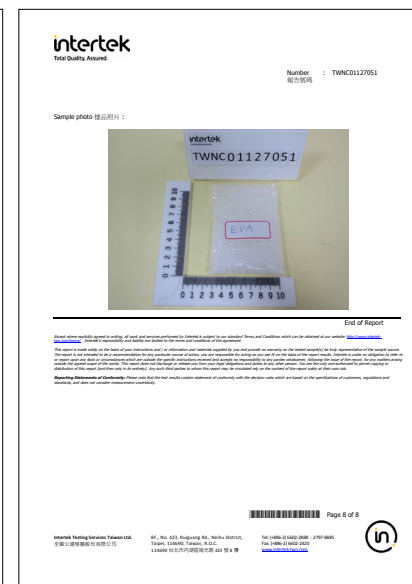
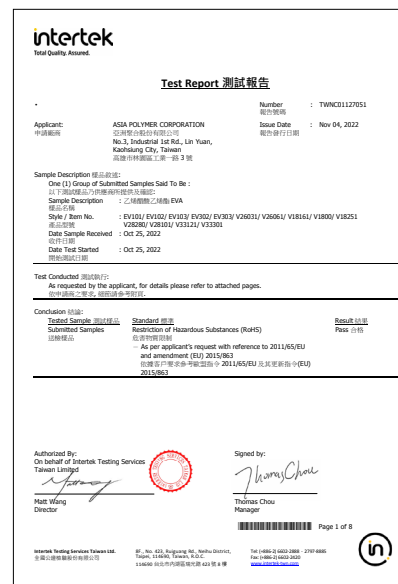
### Transportation Quality

A higher percentage of broken package when unloading by drives, causing inconveniences to both parties.



### Other Suggestions

1. Punctual shipment is expected.
2. Development of functional and eco-friendly products with energy conservation and carbon reduction performance.



# 3.3 Supply chain management GRI 2-6

**Material issue: Supply chain management; Corresponding sustainability principle: Sustainable development GRI 3-3**

Management Approach and Its Components	Impact Management	Targets and Performance of Management Approach	Evaluation of Management Approach
<p style="text-align: center;"><b>Significance to APC</b></p> <hr/> <p>As an indicative business in Taiwan, apart from pursuing profit, it is also our responsibility and obligation to assume the sustainable supply chain responsibility together with suppliers.</p> <p style="text-align: center;"><b>Management Practice and Target</b></p> <hr/> <p>Establish the mechanism for supply chain sustainability risk assessment and prevention to develop a supply sustainability management culture.</p> <p style="text-align: center;"><b>Strategy</b></p> <hr/> <ul style="list-style-type: none"> <li>· Enhance purchasing performance and establish partnership.</li> <li>· Develop safety awareness and improve the workplace environment.</li> <li>· Share corporate social responsibility.</li> </ul> <p style="text-align: center;"><b>Goals</b></p> <hr/> <p>We are committed to developing communication channels with suppliers to increase the opportunities for opinion exchange so as to achieve environmental protection, industrial safety, and human rights for sustainable operations together with suppliers.</p>	<p style="text-align: center;"><b>Positive/Negative Impacts</b></p> <hr/> <ul style="list-style-type: none"> <li>· Positive Actual Impact: Proper supply chain management</li> </ul> <p style="text-align: center;"><b>Processes to remediate and prevent negative impacts</b></p> <hr/> <p>NA</p>	<p style="text-align: center;"><b>2022 Goals</b></p> <hr/> <ul style="list-style-type: none"> <li>· Added the Supplier CSR Commitment as a requirement for new supplier evaluation.</li> </ul> <p style="text-align: center;"><b>2022 Performance</b></p> <hr/> <ul style="list-style-type: none"> <li>· Added the Supplier CSR Commitment as a requirement for new supplier evaluation, with a 100% accomplishment rate (✔).</li> </ul> <p style="text-align: center;"><b>2023 Goals</b></p> <hr/> <ul style="list-style-type: none"> <li>· Develop the “Supplier Code of Conduct and Quality Requirements Self-Assessment Form” to preliminarily identify the potential risks in the follow five management aspects: labor and human rights (S), health and safety (S), environment and resources (E), integrity and ethics (G), and management and quality (G).</li> <li>· Completed the trial visits on 2 suppliers</li> <li>· Ensure all suppliers sign the “Supplier CSR Commitment”.</li> </ul> <p style="text-align: center;"><b>Planning Medium- &amp; Long-Term Goals</b></p> <hr/> <ul style="list-style-type: none"> <li>· Conduct on-site audits on 2 suppliers each year and include the sustainability self-assessment questionnaire in the on-site audit. Based on the on-site audit results, build an opinion exchange platform with suppliers and ask related USI professionals to make recommendations for their inadequacies and help them make corrective planning.</li> <li>· After the preliminary identification of risks in the above five aspects, we will conduct statistical analysis on the identification results and develop solutions.</li> </ul>	<p style="text-align: center;"><b>Effectiveness Assessment</b></p> <hr/> <p>The table below shows the information regarding the supply chain ESG risk management and performance.</p> <p style="text-align: center;"><b>Grievance Mechanism</b></p> <hr/> <p>We have a grievance hotline and a suggestion email on the corporate website for filing grievances.</p> <p style="text-align: center;"><b>Evaluation of the management approach</b></p> <hr/> <p>Internally, conduct supplier evaluation and project construction evaluation periodically, discuss the results, and make adjustments; externally, hold irregular supplier opinion exchange conferences to discuss and share opinions on unspecific topics.</p>



## Supplier category and procurement proportion

With the rise in the awareness of the issues related to sustainable development and supply chain risk management, apart from proactively performing social responsibilities and contributing to society, we have gradually realized the need to understand the supplier’s ESG impacts on APC in order to implement supplier management.

Our major suppliers include materials suppliers, equipment suppliers, and project contractors. Additionally, the procurement from information hardware and software suppliers and office supplies were omitted as the proportion was statistically insignificant. To effectively integrate group resources, we implement procurement in collaboration with the Group Procurement & Logistics Division. Through the internal e-procurement system, we ensure the transparency and impartiality of procurement, uphold business integrity and ethics, and develop a steady partnership with suppliers.


APC Supplier Category and Proportion of Transaction Amount in 2022

Supplier Type	Materials Supplier	Equipment Supplier	Project Contractor
Definitions	Suppliers supplying materials for product manufacture	Suppliers supplying equipment or parts for product manufacture	Suppliers to which projects are outsourced
Proportion of procurement amount (%)	84	12	4

Source: APC amount statistics 2022


## Supply chain sustainable development policy GRI 2-23

Apart from requesting suppliers to provide high-quality products and high-efficiency services, we are committed to expanding communication channels for suppliers to increase opportunities for exchange so as to achieve the goals of environmental protection, labor safety, and human rights.



**Supply Chain Sustainable Development Policy**

- Optimize partnership and share sustainable business opportunities
- Enhance workplace safety and enforce environmental protection
- Take social responsibility and enhance competitiveness





## Supply chain risk management GRI 308-2, 414-2

Risk Assessment and Prevention	Impact Response	Future Planning
<ul style="list-style-type: none"> <li>Review the special conditions (including chemical process risk, handling premises, fugitive emissions of VOCs, and the operation of environmental controlled substances) of chemical suppliers in addition to the supply chain safety requirements.</li> <li>Establish long-term cooperation with suppliers; cultivate a second source or multiple sources and maintain cooperation to coordinate long-term material preparation.</li> <li>Develop an internal safety stock mechanism and set a purchase base point according to the supply schedule to prevent the risk of supply disruption.</li> <li>Provide purchasers with education and training for supply chain sustainable development and contractors with EHS education and training.</li> <li>Implement the supplier sustainability self-assessment questionnaire on 2023 to provide information for preliminary risk assessment.</li> </ul>	<ul style="list-style-type: none"> <li>Adjust the supply proportion of suppliers, timely supplement or dispatch from other suppliers.</li> <li>For construction projects, the ESH unit immediately investigates personnel safety, equipment damage, and environmental impact. After consolidation, the ESH unit will hand over the results to related units to address and understand the situations.</li> </ul>	<ul style="list-style-type: none"> <li>Apart from setting chemical suppliers as the focus, a risk assessment mechanism will also be established based on the procurement amount, project outsourcing amount, or project importance, and the on-site audit results of the said sustainable development strategy.</li> <li>Conduct statistical analysis and plan future handling methods based on the above risk assessment and identification mechanisms and the risk levels.</li> </ul>

## Performance in supply chain ESG risk management GRI 2-24

Risk and Attribute	Supplier (chemicals)	Project Contractor
	Environmental (E), Social (S), and Governance (G) Aspects	
<b>Potential Risk</b>	<ul style="list-style-type: none"> <li>a. Chemicals manufacturing process (E)</li> <li>b. Dusty, high-temperature, noisy, and humid operating premises (E)</li> <li>c. Risk of fugitive emissions of VOCs (E)</li> <li>d. Labor-intensive industries (S)</li> <li>e. Supply chain disruption/delay risk (G)</li> <li>f. Quality risk (G)</li> </ul>	<ul style="list-style-type: none"> <li>a. Dusty, high-temperature, noisy, and humid operating premises (E)</li> <li>b. Work at height risk (E, S)</li> <li>c. Labor-intensive (S)</li> <li>d. Industrial safety risk of cutting or welding (S)</li> <li>e. Project disruption/delay risk (G)</li> <li>f. Project quality risk (G)</li> </ul>
<b>Number of audited and visited suppliers</b>	Trial audits of 2023	
<b>Audit Details</b>	Environmental (E): Regulatory compliance of the manufacturing and storage of environmentally controlled substances. Governance (G): Management of quality, production, and orders; customer satisfaction follow-up. Employee education and training and external processing management.	Implemented alongside the project construction evaluation of contractors.

**Promotion of Supplier’s Code of Conduct (Supplier CSR Commitment)** GRI 308-1, 414-1

Sustainable development indicators such as environmental, labor, human rights, and social impacts have been getting increasing public attention in recent years. In addition to APC, we will also review the completeness of the code of conduct of suppliers. In 2022 we already completed the revision of our SOPs to include the Supplier CSR Commitment as a required document for new supplier evaluation.

Currently, apart from including these sustainable development indicators as part of the criteria for new supplier selection and supplier evaluation, we also request new suppliers to sign related undertakings to comply with the following:



**Labor and human rights**

No forced labor; no child labor; provision of due wages and benefits; guarantee for working hours and breaks; elimination of workplace sexual harassment, bullying, and discrimination; and no conflict minerals.



**Health and safety**

Measures required for occupational safety, emergency response, industrial health, protection against machinery injuries, public health, food and accommodation, and health and information safety information.



**Environment**

Operation permit; pollution prevention and resource conservation; hazardous substances; effluents; non-toxic solid waste; noise; exhaust emissions; product and service limitation; energy/resource consumption; and GHG emissions.



**Ethics and integrity**

Ethical corporate management; respect for intellectual property rights; abidance by non-disclosure agreements; privacy protection; and avoidance of the conflict of interest.

Apart from setting the Supplier CSR Commitment as an incentive, we have also requested suppliers to sign and comply with the commitment. We have revised our SOPs to include the Commitment as one of the required documents for new suppliers. Currently, major suppliers of bulk materials and the top five materials suppliers are requested to sign the Commitment. After all suppliers sign the Commitment, an unannounced onsite supplier audit for compliance with the Commitment will be implemented from time to time.

Currently, major feedstock suppliers and contractors Taiwan CPC and Dairen Chemical and partner CTCI have become our sound sustainable developer corporate suppliers. We adopt the “active risk management” policy to investigate suppliers with potential negative impacts, including irregular visit of THAU BING to check for the offences or news regarding suppliers’ violation of the said terms and assess if such offences or news will bring negative or potential impacts (such as punishment or suspension order of competent authorities). In addition, we will take related risk controls and countermeasures for the potential raw materials supply crisis based on their offences.

New suppliers in 2022	6
New suppliers that have signed the undertaking	6

## SCM mechanism

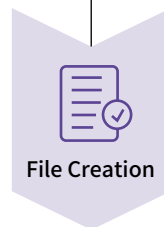
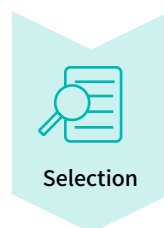
With quality, ability, and environmental policy as conditions, we perform corporate social responsibility in collaboration with outperforming suppliers on a long-term basis. We also communicate with contractors and transporters our environmental policy, comply with the EU’s RoHS directive, enhance environmental education and training, and care about the safety of contractors working in our plants in order to ensure the safety of all operations, protect the life, safety, and health of personnel, and optimize risk management.

We establish long-term strategic partnership with raw materials suppliers and determine the safety stock based on materials preparation lead-time to ensure supply chain smoothness. Additionally, the Group Procurement & Logistics Division evaluates suppliers periodically in terms of quality, delivery performance, environmental protection, industrial safety, packaging, quality certification (ISO 9001), and service.

Apart from conducting the annual supplier evaluation to ensure that all APC suppliers comply with our commitment to environmental sustainability and sustainable operations, we also hold supplier conferences from time to time to communicate with suppliers so as to maintain long-term cooperation and opinion exchange. In addition to new product promotion, new technology and market intelligence exchange are also included in the conferences to ensure the steady supply of major materials.

Additionally, during the project construction of contractors, the supervision and management of plant onsite personnel are key to construction quality control, and the quality monitoring of the engineering and industrial safety units is crucial to ensure environmental safety, occupational safety, human rights, and labor practices. Results are reported to HQ for management to keep up with the latest condition.

Source: Qualified Supplier Selection and Withdrawal Regulations, Supplier Evaluation Regulations, Capital Expenditure Requests (CER) Project Outsourcing Management Regulations.



### Selection of New Suppliers and Contractors

- Requirements for new suppliers of raw materials:
  - ✓ CNS, UL, JIS, ISO certificates
  - ✓ Compliance with the required technical capabilities for sole agents or distributors
  - ✓ Quality validation of raw materials by the technology department
  - ✓ Agreement to comply with the APC environmental protection requirements
- Submission of samples by new suppliers of raw materials to the recipe section and the related units for examination, assessment, or trial use.
- Delivery of the “Project Contractor Investigation Form” to contractors for them to fill out the form and submit the relevant certifications to facilitate and evaluation and grading of the procurement unit.

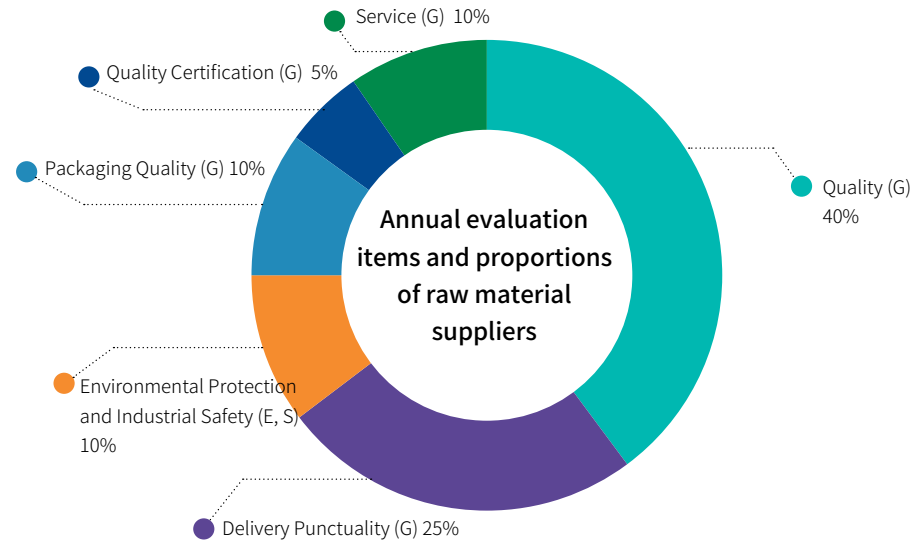
### File creation of qualified suppliers and contractors

- After sample validation, the procurement unit reports new materials suppliers the chief of the engineering department, plant director, and president for approval, includes them in the qualified vendor list (QVL), and timely reviews and updates the QVL.
- After filling out the “Project Contractor Investigation Classified Catalog”, the procurement unit will grade the contractors, create a file for each of them, and maintain a record alongside their certifications for the reference of project outsourcing and price inquiries. The procurement unit also updates the investigation contents from time to time.

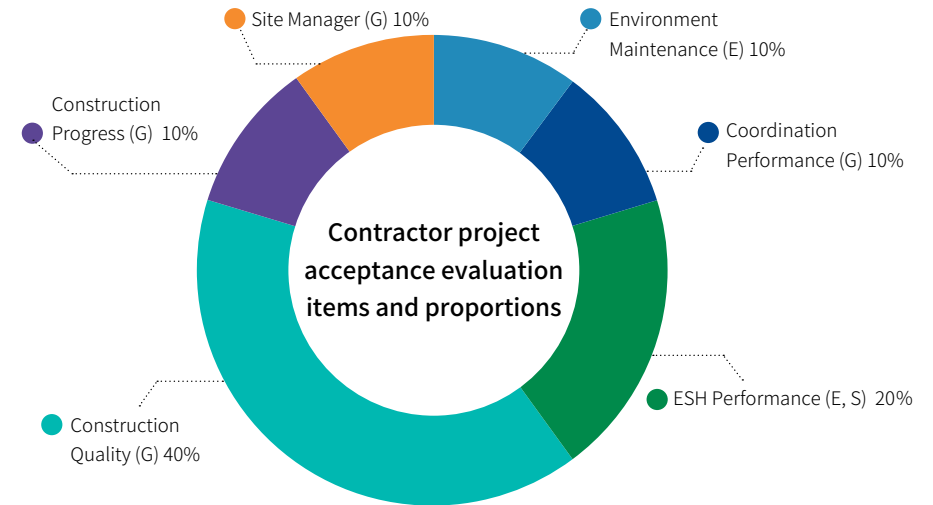
### Annual evaluation of qualified suppliers and contractors

- We rate the quality, delivery, and industrial safety performance of materials suppliers in terms of four grades for the reference of procurement management.
- We supervise the construction process of contractors and perform inspection and acceptance of projects for the reference of project outsourcing management.

### Materials supplier evaluation and contractor evaluation



E, S and G represent respectively environmental, social, and governance aspects



E, S and G represent respectively environmental, social, and governance aspects

#### Results of Materials Supplier Evaluation in Past 3 Years

Item	2020	2021	2022
Suppliers Evaluated	24	31	33
Pass Rate	100%	100%	100%

1. Source: APC supplier evaluation
2. Grading criteria:  
A: 85-100 marks, B: 75-84 marks, C: 60-74 marks, D: 59 marks and below. Grade B and above suppliers are qualified suppliers.
3. For grade A suppliers, we will prioritize transactions or increase the procurement volume.
4. For grade C suppliers, we will advise them to make improvement and reduce or suspend transactions with them until they complete improvement and pass the re-evaluation.
5. For grade D suppliers, we will stop transactions with them and remove them from the QVL.
6. Suppliers rated grade A for three consecutive years are exempted from evaluation for three years. As a results, only 24 suppliers were evaluated in 2019 and 2020.

#### Results of Contractor Construction Evaluation in Past 3 Years

Item	2020	2021	2022
Suppliers Evaluated	40	28	6
Pass Rate	100%	100%	100%

1. Source: APC Contractor Construction Evaluation
2. Contractors receiving 70 or more marks are qualified contractors.
3. Contractors receiving 60-69 marks will be suspended from price inquiry for six months.
4. Contractors receiving 50-59 marks will be suspended from price inquiry for one year.
5. Contractors receiving 49 or less marks will be prevented from tendering and transaction.

In 2022 the amount of procurement of major materials accounted for 83% of the total amount of procurement. To secure the sustainable supply of material sources and stimulate market circulation, we actively cultivate new material sources and increase bulk material suppliers to 16 companies, including 3 domestic suppliers and 13 foreign suppliers.

Materials procurement will be prioritized for local suppliers with reliable and stable supply. Due to the longer annual repair duration, the supply of domestic ethylene suppliers reduced in 2022, and the procurement thus reduced over 2021. As the annual repair duration of domestic suppliers was similar to that of 2021, local VAM procurement only increased slightly by 1%.

### Support for local procurement

To promote local economic development, simplify the transportation process, and reduce transportation risks, we prioritize local procurement when the procurement conditions are similar. In 2022, the proportion of local procurement, including materials and equipment procurement and project outsourcing, accounted for about 83%. In consideration of the need to increase stock due to delivery delay as a result of shipment problems, local procurement increased by 2% over 2021.

#### Amount and Proportion of Local Procurement of Major Materials in Past 3 Years (%)

Year	2020		2021		2022	
	VAM	Ethylene	VAM	Ethylene	VAM	Ethylene
Locations/Materials						
Taiwan	92	59	83	73	84	65
Foreign	8	41	17	27	16	35
Source	2 Taiwan suppliers and 12 foreign suppliers		3 Taiwan suppliers and 13 foreign suppliers		3 Taiwan suppliers and 13 foreign suppliers	

Source: APC amount statistics 2022

### Procurement of energy-efficient and eco-friendly equipment

We have been implementing energy conservation and carbon reduction in recent years, and the procurement unit has also prioritized support for eco-friendly materials by establishing SOPs to prioritize inquiries to products certified for using the Green Mark by the Environmental Protection Administration (EPA); or products complying with EPA's

requirements for recycled materials, recyclable products, low pollution, or energy conservation; or products that increase social benefits or reduce social costs.

Green procurement in 2022 included lamps and equipment carrying the Green Mark and Energy Label and the energy-efficient equipment replacement projects of Linyuan Plant, reducing energy consumption to achieve energy conservation and carbon reduction.

The overall green procurement amount accounted for about 1% of equipment construction amount. We will continue to enhance the equipment energy efficiency to practice environmental sustainability towards corporate sustainable development.

#### Proportion of Local Procurement Amount of Materials and Equipment and Project Outsourcing in Past 3 Years (%)

Location	Proportion of purchasing amount		
	2020	2021	2022
Taiwan	76	81	83
Foreign	24	19	17

Source: APC amount statistics 2022