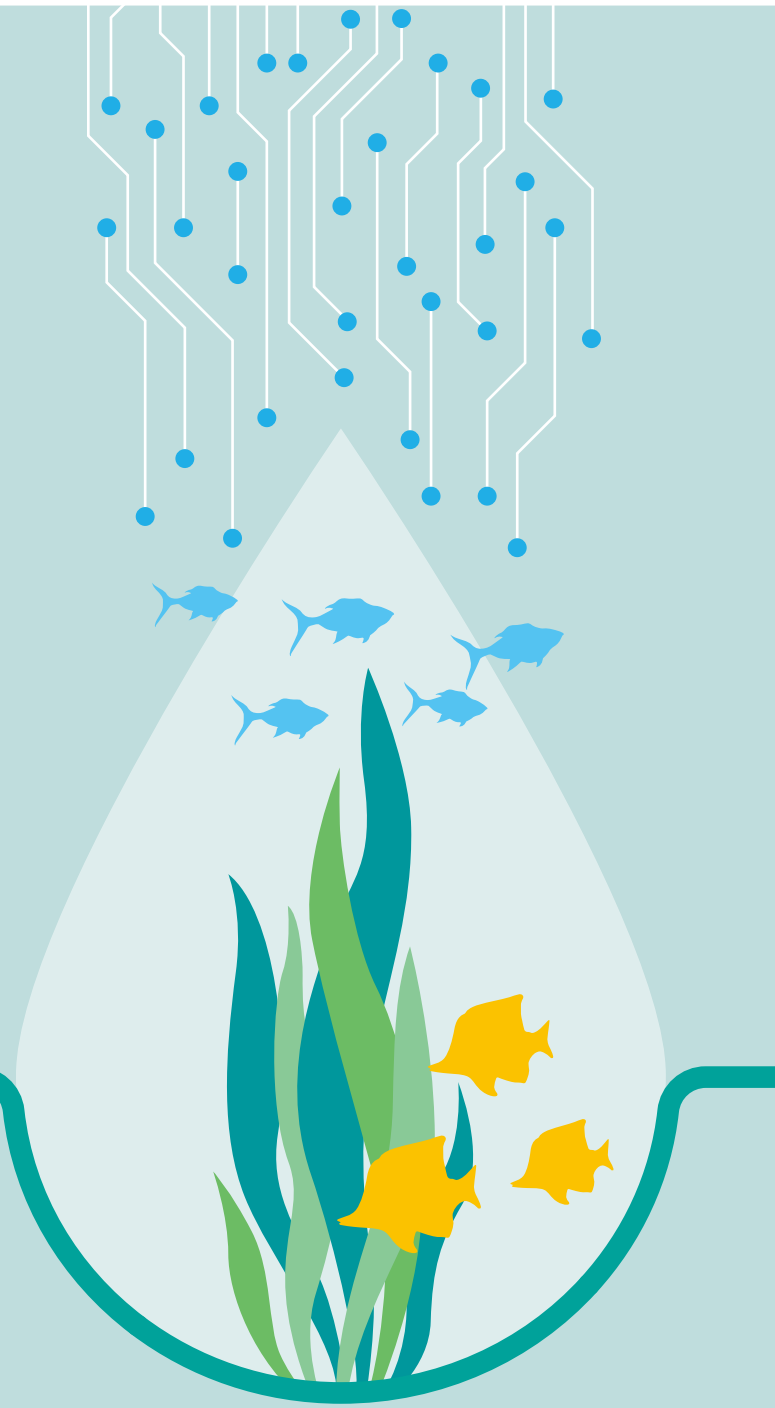
CORPORATE CITIZENSHIP

The community has played an important role supporting ASEH's growth. We therefore, have a responsibility to provide support and give back to the community in locations where we operate. An active participant in charitable activities, education programs and social work, ASEH's optimal allocation of resources deliver positive impacts that allow both ASEH and the community to prosper and grow.

As a leading enterprise in the global semiconductor industry, ASEH is fulfilling corporate citizenship by engaging with local communities, environmental NGOs, and stakeholders in the industry, government and academic sectors. The company seeks to establish mutually trusting long-term partnerships and invest in resources to promote overall social development and higher value creation. Externally, we are initiating sustainable development in core business areas to strengthen the value of our sustainable innovations that will result in employee cohesiveness, and higher stakeholder confidence.



2024 Key Performance

NT$ 1,139 Million
Environment Conservation Fund(ECF) Programs (2014 ~ 2024)

NT$ 68 Million
Community Engagement (2024)

NT$ 230 Million
Industry-Academia Collaboration (2024)

174,039 units
LED Lamps Installation (2014 ~ 2024)

261.05 hectares
Tree Planting (2013 ~ 2024)

SDGs	Business Actions	2024 Material Aspects	KPI	2024 Target	Status	2024 Performance	2025 Target	2030 Target
13 CLIMATE ACTION	Promote climate conscious behavior and build capacity for climate action	Social Involvement	Number of industry-academia collaboration projects on environmental technology	10 industry-academia collaboration projects on environmental technology	Not Achieved	8 industry-academia collaboration projects on environmental technology	10 industry-academia collaboration projects on environmental technology	Over 150 industry-academia collaboration projects on environmental technology
			Number of energy-saving LED tube lights installed and number of schools with LED tube lights installed	10,000 LED light tubes installed at 10 schools	Achieved	12,778 LED light tubes installed at 14 schools	10,000 LED light tubes installed at 10 schools	LED light tubes installed at 170 schools
			Total area planted with trees (global)	10 hectares planted with trees	Achieved	16.84 hectares planted with trees	10 hectares planted with trees	250 hectares planted with trees
1 NO POVERTY 4 QUALITY EDUCATION	Implement programmes to support higher education and access to free, equitable, and inclusive primary and secondary education		Number of students attending semiconductor course	100 students attending semiconductor courses	Achieved	615 students attended semiconductor courses	100 students attending semiconductor courses	2,000 students attending semiconductor courses
			Number of disadvantaged students in the community attending after school program	100 disadvantaged students in the community attending after school program	Achieved	485 disadvantaged students in the community attending after school program	100 disadvantaged students in the community attending after school program	2,000 disadvantaged students in the community attending after school program
8 DECENT WORK AND ECONOMIC GROWTH 17 PARTNERSHIPS FOR THE GOALS	Building a conducive environment for sustainable development and economic growth through investments in R&D for technological advancements, and fostering cross-sector collaboration		Number of innovative industry-academia collaboration projects	30 innovative industry-academia collaboration projects	Achieved	65 innovative industry-academia collaboration projects	30 innovative industry-academia collaboration projects	450 innovative industry-academia collaboration projects
			Number of legislative initiatives for issues related to the semiconductor industry and sustainability	2 legislative initiatives for issues related to the semiconductor industry and sustainability	Achieved	6 legislative initiatives for issues related to the semiconductor industry and sustainability	2 legislative initiatives for issues related to the semiconductor industry and sustainability	25 legislative initiatives for issues related to the semiconductor industry and sustainability

Corporate Social Involvement Focus, Benefits, and KPIs

Focus	SDGs Alignment	Business Drivers	Business Benefits & KPIs	Social/Environmental Benefits & KPIs	Impacts
Environmental Conservation		ASE is raising awareness in climate change mitigation and adaptation, impact reduction and early warnings through education, and intensifying R&D in environmental technologies and improvements in production efficiency to reduce environmental impacts. The primary factors driving the company's core operations are: • Increasing production efficiency; changing volatile organic compound treatment methods; reducing treatment costs; ensuring competitive pricing • Promotion of green products and services and implementation of community environmental education programs to encourage green consumer behavior and improve climate literacy	Improvements to environmental technology R&D and production efficiency in 2024: • 8 research projects on environmental technology in collaboration with academic, research institutes and suppliers • Development of microalgae technology for treating VOCs in flue gas emissions, achieving a VOC removal efficiency of up to 36.5% • Utilizing solar evaporation technology to recycle industrial wastewater – achieving a recovery efficiency of 1.3 tons/m^2 and energy savings of 4.6 kWh/m^2 annually • Conducting research on the low-carbon potential of recycled waste products is expected to increase the productization rate of waste to 75%. Completed the publishing of a handbook on the low-carbon potential coefficients of waste products that is shared with value chain partners, driving towards a circular economy 2015–2024 • 112 research projects on environmental technology in collaboration with academic, research institutes and suppliers * More information refer to appendix (Social Data – O. Social Involvement Key Performance)	Reducing environmental impact, improving quality of life, and raising environmental awareness in 2024: • 12,778 LED light tubes installed at 14 schools reduced energy use by approximately 276,005 kWh and carbon emissions by approximately 131 tCO_2e • Newly afforested areas totaled 16.84 hectares, resulting in the sequestration of 98.11 tCO_2e • Organized 52 coastal and beach cleaning events with a total of 2,556 participants, resulting in the removal of 5.86 tons of garbage • SPIL mobilized 400 volunteers and their families to remove 480 kg of Mikania micrantha, an invasive plant species, in an ecological restoration effort. In partnership with the Taichung City Government, proceeds from the vine removal were donated to Heping Elementary School in rural Taichung to support after-school education, demonstrating a shared commitment to both environmental protection and social responsibility • Implemented 93 environmental education courses; 5,214 students participated; 10 promotional videos on environmental education were produced • Transferring environmental research projects from industry–academia cooperation to 140 other semiconductor businesses 2013–2024 • From 2014 to 2024, replacing and installing 174,039 energy-saving LED tube lights in 169 schools, saving approximately 20,287,105 kWh in electricity and reducing about 10,245 tCO_2e • From 2013 to 2024, a total of 261.05 hectares of land were newly afforested and tended, resulting in the sequestration of 3,607.04 tCO_2e in 2024, for a cumulative total carbon sequestration amount of 12,977.57 tCO_2e [1] * More information refer to 8.2 Environmental Conservation	• **Improving environmental awareness:** Increasing employee and supply chain awareness in environmental protection and carbon reduction • **Adopting green production processes:** Using recyclable materials and green production processes in the development of new products, and improving waste disposal methods to minimize impacts on the environment • **Expanding adoption of green technology:** A total of 202 companies in the semiconductor industry and social organizations have drawn on the experiences of ASE's industry-academia collaborations to improve manufacturing eco-efficiency and fulfill environmental goals

[1] ASEH follows the 2006 IPCC Guidelines for National Greenhouse Gas Inventories to determine the carbon sequestration from afforestation

Focus	SDGs Alignment	Business Drivers	Business Benefits & KPIs	Social/Environmental Benefits & KPIs	Impacts
Industry-Academia Collaboration		The semiconductor industry is a high-tech industry that requires a large pool of talent in technological research and interdisciplinary R&D. We should leverage on the multiple professional and recruitment opportunities to attract talent and increase youth employability, by nurturing and equipping future employees with the relevant knowledge and professional skills to enhance the value of our human capital. The primary factors driving the company's core operations are: • Training potential talent (employees) for the future so as to enhance the value of the company's human capital • Developing next-generation semiconductor technologies and materials	**Fostering semiconductor talents to promote technological innovation and development in the semiconductor industry in 2024:** • 65 innovative industry-academia collaboration projects were conducted, covering research topics such as advanced packaging technologies, manufacturing process optimization, smart technologies, and information security • 615 students participated in the semiconductor courses 2015-2024 • Participated in 481 innovative industry-academia collaboration projects involving semiconductor assembly, advanced materials, manufacturing automation technologies, etc. • 3,153 students participated in the semiconductor courses * More information refer to appendix(Social Data - O. Social Involvement Key Performance)	**Talent development via cooperative education, internship, and technological collaborations in 2024:** • Recruited 686 interns • 113 students participated in innovative industry-academia collaboration projects • Awarded scholarships to 131 students • Collaborated with over 105 schools 2015-2024 • Recruited 5,992 interns * More information refer to appendix(Social Data - O. Social Involvement Key Performance)	• **Promoting innovative research and development of semiconductor technologies:** Working with top universities to establish the ASE Semiconductor Industry Institute, covering semiconductor assembly and testing, smart factories, and artificial intelligence; and continuing to promote industry-academia cooperation projects to induce the research and development of new technologies and propel industry development • **Improving the employability of young persons:** Enhancing the employability and competitiveness of young persons, cultivating relevant talent and strengthening the semiconductor industry talent pool
Community Engagement		ASEH is committed to bridge the economic, social and environmental development gaps between urban and rural areas in the communities where we operate. We are fostering stronger community bonds at each location through high levels of engagement in community development and caring for the disadvantaged. The primary factors driving the company's core operations are: • Ability to operate in a stable social environment • Enhanced corporate image and employee engagement	**Improving the centripetal force to the company through employees' participation in public welfare activities in 2024:** • 13,582 volunteer service hours • 4,384 volunteers 2015-2024 • 96,246 volunteer service hours • 28,717 volunteers * More information refer to appendix(Social Data - O. Social Involvement Key Performance)	**Corporate citizenship programs to improve mutual development with the local community in 2024:** • Participated in afterschool program for 485 students from disadvantaged households • Collaborated with 57 charities • Provided financial aid for 12,791 students from disadvantaged households 2015-2024 • Participated in afterschool program for 2,216 students from disadvantaged households • Provided financial aid for 84,707 students from disadvantaged households * More information refer to 8.4 Community Engagement	• **Long-term care for the elderly:** Our Smart Mobile Clinic and well-equipped Mobile Gym continue to travel to remote areas, providing medical and health care for the elderly and individuals with limited mobility. We conducted educational courses ranging from health, exercise,arts, environmental protection and handicrafts, to promote physical and mental health for the elderly in the surrounding communities • **Improved learning and living environments for disadvantaged children:** We are a long-term supporter of after-school care programs for disadvantaged students in remote areas. We continue to provide financial support and take active steps to improve their learning and living conditions, ensuring that they grow up happy and healthy

Focus	SDGs Alignment	Business Drivers	Business Benefits & KPIs	Social/Environmental Benefits & KPIs	Impacts
Public Advocacy	17 PARTNERSHIPS FOR THE GOALS	Sustainable development goals are achieved through the sharing of knowledge, expertise, technologies and financial resources. To that end, ASEH is promoting global partnerships in sustainable development, exchanging knowledge, expertise and technology knowhow with stakeholders, and expanding its sphere of influence through active involvement in industry organizations. The primary factors driving the company's core operations are: • Developing and formulating the next generation semiconductor technology blueprint and standards with the industry supply chain • Co-developing policy white papers with industry associations to serve as references for the establishment of policies and regulatory standards	**Driving innovation and development in semiconductor and electronic technologies and improving ASEH's leadership status in sustainable development** 2024 • Collaborated with 44 external organizations in areas related to core business • Active member of SEMI, the leading global industry association representing the electronics and design supply chain – Chairmanship of the SEMI Board of Directors – Driving technology and industry through representation at key SEMI committees; Assembly and Testing, Flextech, Smart Manufacturing, MEMS and Sensors, High-Tech Green Manufacturing, Materials, Testing, Cybersecurity and Sustainable Manufacturing 2015–2024 • Collaborated with 569 external organizations in areas related to core business	**Initiating and driving impactful sustainability agendas to advance the semiconductor industry** 2024 • Collaborated with 94 external organizations in sustainable development • 6 semiconductor and sustainability-related topics and legislative initiatives: Net-zero emissions, Silicon Photonics Alliance, air pollution prevention and control, waste management, Responsible Minerals Initiative (RMI Investor Network), Technical guidance on GHG reduction and inventory for the semiconductor industry 2015–2024 • 38 sustainability and legislative initiatives	• **Driving the development of the semiconductor industry:** Setting industry standards for advanced packaging and associated technologies. Collaborating across the industry chain to promote the advancement of the industry • **Developing a complete and sustainable semiconductor industry ecosystem:** Partnering with various relevant organizations to promote initiatives for the sustainable development of the semiconductor industry, influencing government policy-making and corporate operations, and raising public awareness of sustainability issues

8.1 Social Involvement Overview

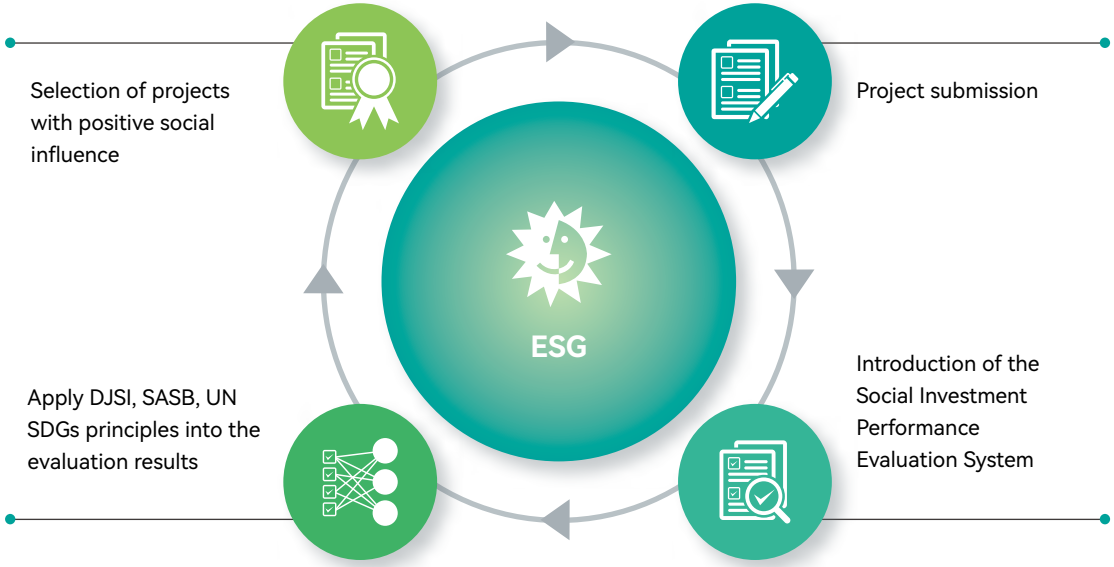
To achieve the common good for society, ASEH harnesses its power to stimulate positive social change, bringing about an increase in sustainable awareness and positive impacting behavioral change, skills development, and quality of life. Established as ASEH's highest level of organization for social involvement, the Corporate Sustainability and Information Security Committee (CSISC) is responsible for the planning, formulation, and implementation of social involvement policies and regulations, among which the "Public Affairs Engagement Policy"[1] is a set of guiding principles that provides foreign policy directions for all subsidiaries as well as support to organizations with similar ideologies as ASEH. Accordingly, ASEH has also established a supervision mechanism to evaluate the project performance of such foundations and social organizations to ensure that the investment of support and resources results in an actual impact.

ASEH conducts annual reviews to evaluate its campaigns and performance based on four development strategies—environmental conservation, industry-academia collaboration, community engagement and public advocacy. The CSISC Social Involvement Taskforce is responsible for implementing social involvement policies at company facilities worldwide, evaluating the risks and opportunities, planning and organizing activities in public engagement. Each facility is responsible for the creation of local organization teams to plan and execute the programs in compliance with corporate policies and development goals.

ASEH adopts the LBG (London Benchmarking Group) framework and SROI (Social Return on Investment) model to measure the input, output and impact of social involvement activities, and conducts biannual performance reviews and reporting. For ASEH's social engagement programs (conducted by the ASE Environmental Protection and Sustainability Foundation), we performed analyses of the social return on investment (SROI) and established a social investment performance evaluation system to optimize the evaluation of our social involvements and more effectively manage social engagement programs.

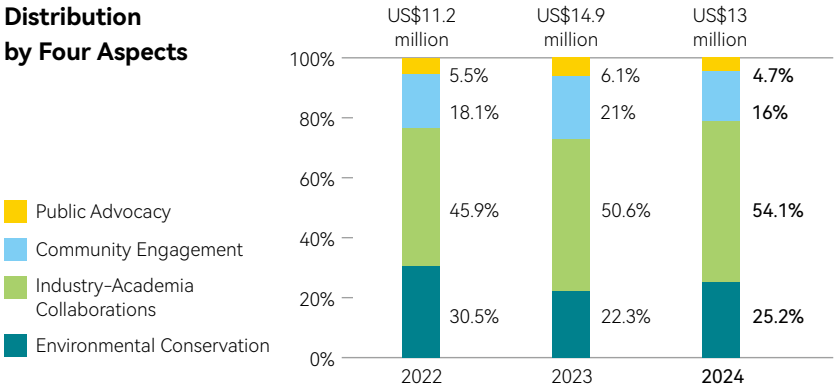
In 2024, we spent approximately US$13 million on social involvement activities, representing 1.02%[2] of ASEH's pre-tax net profit. The distribution ratio is similar to that in 2023. Industry-academia collaboration on education continues to account for the largest portion of our spending as we continue to focus on research and development of innovative technologies. The second largest portion of our investments was allocated to the conservation and protection of the environment. To that end, we recorded more than 13,500 hours of volunteer service performed by over 4,300 volunteers.

The Social Investment Performance Evaluation System

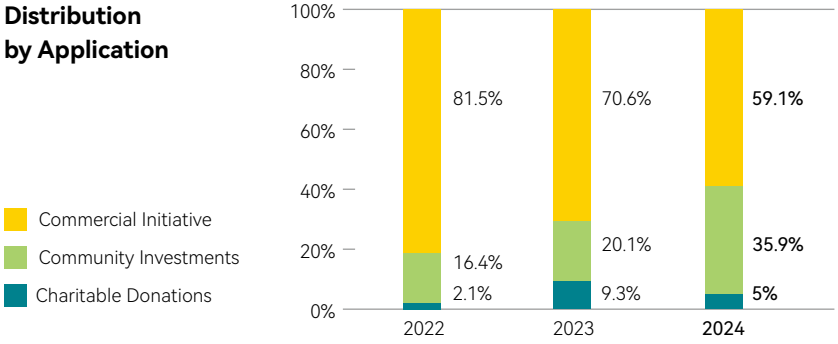


[1] ASEH Public Affairs Engagement Policy (https://www.aseglobal.com/en/pdf/aseh_public_affairs_policy.pdf)
[2] The 2024 pre-tax net profit was NT$41,733.4 million (for more information, please refer to ASEH Form 20-F)

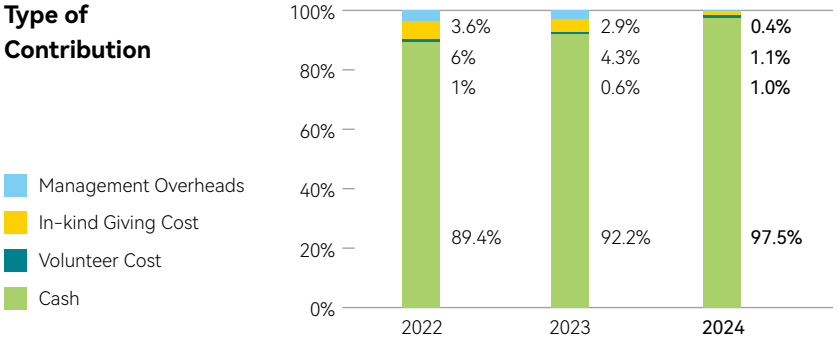
Distribution by Four Aspects



Distribution by Application



Type of Contribution



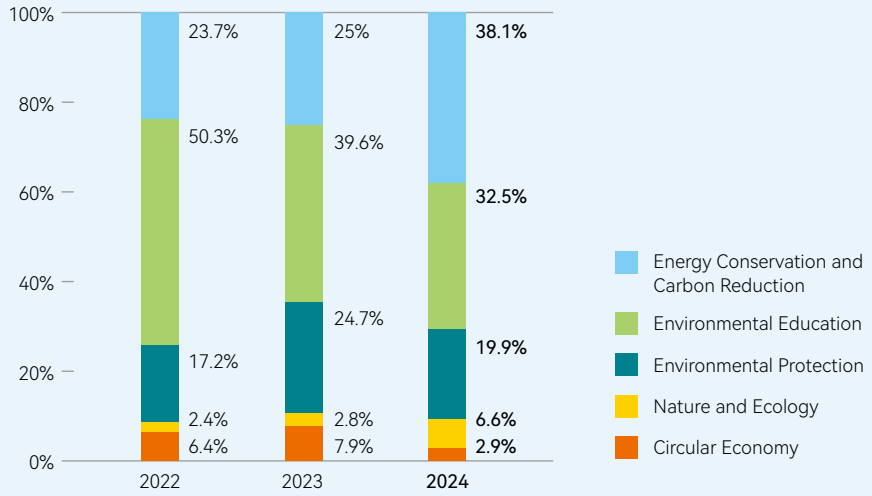
8.2 Environmental Conservation

To address the environmental impact caused by economic development and extreme weather, ASEH has designated the protection of the environment and public welfare as the cornerstones of our community engagement efforts. By bringing together local residents, government agencies, non-profit organizations, suppliers, customers and stakeholders to promote environmental projects, we aim to mitigate negative impacts and bring about positive developments. We remain committed to our 30-year goal (initiated in 2014) of investing a total of NT$3 billion towards environmental initiatives in Taiwan, whereby we will donate NT$100 million or more per year.

In 2024, to optimize resource utilization and deepen environmental sustainability efforts, NT$ 100 million was allocated to the ASE Environmental Protection and Sustainability Foundation (EPSF) for environmental projects focused on 5 key areas; energy conservation and carbon reduction, nature and ecology, environmental education, circular economy, and environmental protection. To date, a total of 37 projects are executed.

For more details on the projects, please visit our official website at: https://www.aseepsfund.org.tw/

Use of Funds in Environmental Conservation



2024 Accomplishments of ECF Programs

Programs	Major Projects
Energy Conservation and Carbon Reduction	• Reforestation Project • Campus LED installation projects • Green Supply Chain Guidance Project • Academic research projects on environment-related technologies • Forest Management and Carbon Sequestration Methodology Development Project
Environmental Education	• Funding for master's theses and doctoral dissertations on environmental protection issues • Proposal selection for the 'Smile Taiwan' creative teaching project • Dongguang Butterfly Garden Ecological Education Project • Da Gang Elementary School, Taoyuan City Aquaponics Operation and Maintenance Project • ASE Teen Sustainable Innovation Competition Camp • ASE Social Innovation Competition • Automated Smart Recycling Station Project
Environmental Protection	• ASE guardians of the seas • Sustainable River Protection Initiative – Water Quality Purification and Monitoring of Huangqian Creek, Taoyuan City • Design and development of Nanzih green parks • Sponsoring the International Environmental Protection Expo '2024 Smart City Summit & Expo'
Nature & Ecology	• Baseline Survey and Conservation Research for Protected Wildlife Species in Taiwan: Chinese Box Turtle • The ASE Conservation and Restoration Project for Taiwan's Native and Western Honeybee • Central Taiwan Science Park (Huwei Campus): Eco-forest Restoration Project
Circular Economy	• Supplier Sustainability Award

ASE Guardians of the Seas

The "ASE Guardians of the Seas" is a long-term marine conservation project established in 2022 by ASEH and the ASE Environmental Sustainability Foundation to safeguard marine biodiversity. In alignment with the UN World Oceans Day, we expanded the scale of activities with the organizing of the "ASE Ocean Day" on June 1, 2024 to raise public awareness and promote collaborative action for marine protection. The event brought together a total of 1,600 participants that included employees and their families from ASE, SPIL and USI in Taiwan as well as 22 supply chain partners, local residents, nonprofit organizations, and environmental groups. Synchronized beach cleanups were carried out across seven coastal locations, including Shimen Kite Park in New Taipei, Caota Sand Dunes and Chaoyin Coastal Trail in Taoyuan, Songbo South Dike and Songbo Port North Beach in Taichung, Qijin Beach and Sizihwan in Kaohsiung, and Wude Village Coastal Beach in Penghu. At the end of the event, a total of 2.8 metric tons of waste was collected. In the same year, we have also partnered with two diving centers—Taiwan Dive in Kenting and Water Player in Longdong, to conduct monthly beach and underwater cleanups. Over the course of the year, 18 beach cleanups and 32 underwater cleanups were organized, involving 2,356 participants and removing approximately 5 metric tons of marine debris. Additionally, we offer professional dive training and certification to interested employees and members of the public, equipping them with the expertise to support ongoing marine cleanup efforts.

To date, we have added another 70 newly certified dive members, significantly boosting our efforts in marine conservation.

ASE Ocean Day Taichung Session (USI)

ASE Ocean Day Taichung Session (SPIL)


Clean Ocean Campaign

ASE Ocean Day Taipei Session (ASEH、ASE Environmental Sustainability Foundation)

ASE Ocean Day Taoyuan Session (ASE Chungli Facility)

ASE Ocean Day Kaohsiung Session (ASE Kaohsiung Facility)

Campus LED Installation Projects (Yongle Elementary School)

Campus LED Installation Projects

The ASE Environmental Protection and Sustainability Foundation continued to promote campus LED light installation projects. By assisting elementary and junior high schools in rural areas and communities surrounding ASE facilities to replace fluorescent tubes and light bulbs with LED lights, the projects help to protect the eyesight of schoolchildren. Since the project was first launched eleven years ago, we have installed 174,039 LED tube lights in 169 schools in the Taoyuan, Taichung, Nantou and Kaohsiung areas. Over the years, the LED projects have helped schools to save 20,287,105 kWh of electricity and reduce 10,245 tCO_2e. LED lighting also helps to create a well-lit environment, in turn improving teaching quality and at the same time achieving energy conservation and carbon reduction.

	School	LED Lamps	Electricitysaved annually (kWh)
2021	17	17,260	372,816
2022	21	27,360	590,976
2023	26	25,000	540,000
2024	14	12,778	276,005

Campus LED Installation Projects (Zhangxing Elementary School)

ASE Sustainability Exploration Camp

ASE Youth and Children's Sustainability Camps: Cultivating the Next Generation of Sustainability Leaders

In 2024, ASEH organized two educational camps – the ASE Teen Sustainable Innovation Competition Camp and the ASE Sustainability Exploration Camp, in collaboration with Ming Chuan University, the Affiliated Senior High School of National Taiwan Normal University (HSNU), and the Taipei Family Support Center of the Taiwan Fund for Children and Families. These programs, tailored for high school and elementary students respectively, aimed to instill sustainability awareness through diverse and engaging educational experiences.

The ASE Teen Sustainable Innovation Competition Camp was a six-month program designed to enhance high school students' understanding of environmental sustainability and foster their capacity for innovation. It was structured in three phases: a summer intensive camp, a project incubation period, and a final presentation. The five-day summer session included an introduction to the United Nations Sustainable Development Goals (SDGs), creative workshops and visits to social businesses. The top three winning teams from the 2023 ASE Social Innovation Competition were also invited to share with students their experiences, inspiring them to explore Taiwan's environmental and social challenges and develop innovative solutions. During the incubation phase, students refined their proposals under the guidance of their mentors. At the final competition, HSNU students presented five innovative sustainability projects. The winning team, "SnailTech Biotech," focused on the sustainable use of invasive golden apple snails by extracting high-value astaxanthin for use in health supplements and cosmetics, while also developing affordable, nutritious pet food. Their project has not only provided sustainable solutions to farming challenges caused by invasive species but also generated commercially viable biotech innovation. The high level of creativity and business acumen demonstrated by these students made an indelible impression on the judges, reaffirming the potential of youths in driving sustainable innovation.

ASE Sustainability Innovation Camp Results Presentation Ceremony

The 2024 ASE Sustainability Exploration Camp was organized together with the Taipei Family Support Center, and tailored for elementary school students from underprivileged backgrounds. The summer camp featured a variety of hands-on learning experiences designed to broaden students' horizons and deepen their understanding of sustainability. Activities included visits to aquaponics farms to learn about ecological cycles and innovative agriculture, participation in beach cleanups to experience the value of environmental stewardship, and a natural indigo dyeing workshop led by B Corp Canlove Culture, which introduced students to the concept of local revitalization. Through these interdisciplinary and hands-on learning opportunities, the camp aimed to nurture environmental awareness and responsibility in young children, encouraging them to stay engaged with sustainability issues and become positive changemakers in their communities.

8.3 Industry-Academia Collaborations

Rapid advancements in technology and the increased in demand for skilled professionals have greatly intensified the war for talent in the semiconductor industry. To support the growth momentum of the industry, ASEH has established long-term industry-academia collaborations with colleges and universities to develop future talent. We seek to address the talent shortage in the industry by providing students with an early understanding of industrial needs and advanced semiconductor technology development, as well as connecting knowledge acquired in the classroom with practical industrial applications. Industry-academic collaboration enables us to offer a range of industry-specific courses, academic programs, and internship opportunities that strengthen the bridge between academia and the industry, powering an energetic pool of semiconductor talent for a winning future.

ASEH has created key programs like "academia cooperation and corporate internship", "academic research collaboration", and "scholarships" to leverage on the expertise from these academic resources. In 2024, ASEH continued its collaborations with local schools, contributing over US$7 million, including US$1.1 million towards 65 innovative industry-academia collaboration projects and US$0.8 million for scholarships. We also recruited 686 interns and enrolled 615 students in the semiconductor courses. Nearly 100 schools and research institutions in Taiwan, China, Singapore, Malaysia, South Korea, Japan, etc. were involved in these collaborations.

	2021	2022	2023	2024
Number of interns	224	410	502	686
Number of people participated in the semiconductor courses	862	209	453	615
Number of innovative industry-academia collaboration projects	66	74	81	65
Investments in innovative industry-academia collaboration projects	US$1.8 million	US$1.8 million	US$3 million	US$1.1 million
Scholarships	US$0.3 million	US$1.1 million	US$0.7 million	US$0.8 million
Total invested in industry–academia collaborations	US$2.5 million	US$5.1 million	US$7.5 million	US$7 million

2024 Accomplishments of Industry-Academia Collaboration Programs

Programs	• Cooperative education and internships • Academic research collaborations • Scholarships
Projects	• ASE Industry-Academia Career Development Project/Employment Orientation Project • Semiconductor Assembly and Manufacturing Education Program • ASE Internship and Company Visits • Artificial Intelligence Colleges • NSYSU College of Semiconductor and Advanced Technology Research • University Corporate Mentorships • USI University • Semiconductor Assembly Technology Research Projects • Manufacturing Automation Research Projects • Advanced Semiconductor Materials R&D Projects
Stakeholders	• University Students • Academic Institutions and Research Institutes • Semiconductor Industry
Achievements	• Improving Career Prospects and Competitiveness of Students • Improving Academic R&D Capabilities • Cultivating Talented Personnel for the Semiconductor Industry

Industry-Academia Collaboration in Automation and Packaging: AI-Driven Semiconductor Innovation and Talent Development

ASE Kaohsiung is actively responding to the evolving needs and future trends of the semiconductor industry with a strong focus on industrial transformation and advanced packaging technologies. Since 2015, the company has embarked on automation research through industry-academia collaborations, with a total of 56 joint projects to date. In parallel, ASE has been continuously conducting research and development with universities in packaging technologies, deepening the company's interdisciplinary collaboration with academia, and driving progress in smart manufacturing. We are making great strides in cultivating sustainable talent and contributing to a greener future.

• Achievements in Automation Research

In collaboration with National Sun Yat-sen University, National University of Kaohsiung, and National Kaohsiung University of Science and Technology, ASE initiated seven projects in 2024. The collaboration includes the development of a graphic chart to detect emerging public opinion and issues; the creation of a dashboard for geopolitical and customer-related risk monitoring that enables real-time insights and faster decision-making; an AI application in cybersecurity that analyzes file access behavior and enhances defense capabilities; the use of smart manufacturing systems to identify high-risk combinations and key parameters, improving yield and anomaly detection; implementation of digital twin technology for energy monitoring in oven equipment, enhancing energy management decisions; integration of data quality checks and data lineage analysis to trace data origins and optimize the data infrastructure for effective crisis response. ASE is also advancing its Industrial AI (IAI) roadmap, having developed a No Code IAI 3.0 platform and trained over 10,000 individuals. This aligns with its "Everyday AI" strategy and earned ASE the TAIA (Taiwan AI Association) AI Award for Best Speaker in 2024. We are continuing to explore new methods to drive smart technology and create a better, technology-driven future.

Automation Technology Forum

• Achievements in Semiconductor Packaging Research

In 2024, ASE hosted the 12th Annual Packaging Technology Symposium in collaboration with National Sun Yat-sen University, National Chung Cheng University, National Cheng Kung University, and National Kaohsiung University of Science and Technology. 19 research projects were presented at the symposium. These research projects helped to integrate practical industry insights into academic settings, advancing academic knowledge and nurturing future talent.

Assembly Technology Forum

The research efforts centered on two primary themes: advanced packaging and optical module applications, and the development and improvement of packaging test processes. Notable achievements included the optimization of near-infrared filter materials using AI and big data analytics, as well as the development of multi-layer nano-coating technologies for ambient light sensors. Additionally, a predictive system for flip-chip magnetic lid design was introduced, significantly reducing design costs and improving production efficiency. In the area of environmental innovation, the team successfully developed an inorganic photoresist remover that substantially lowered chemical usage and carbon emissions. Improvements in wafer surface treatment also enhanced permeability and overall product performance. These research outcomes have been effectively implemented in ASE's production lines, contributing to higher yield rates, greater customization capabilities, and more efficient manufacturing processes—bridging the gap between academic research and industrial application.

University Corporate Mentorships

University Corporate Mentorships and Practical Application Training

To continue nurturing the much needed skillset and interest in semiconductor engineering, Silicon Precision Industries Ltd. (SPIL) has been building collaborative relationships with top universities. For eleven consecutive years, SPIL has co-organized the University Corporate Mentors program with the National Chung Hsing University. The program organized activities such as; challenges in the semiconductor engineering workforce forum, production line tours, mentor-mentee dinners, forum on graduate students' work life experiences, and the Team Silicon Adventure competition, for students to gain insights into industry dynamics and explore career interests. SPIL's program encourage greater student participation and engagement, and directly help to attract outstanding talents and prepare students for employment. In 2024, a total of 314 students participated in the University Corporate Mentors program, accumulating 1,563 hours of participation. In addition to providing students with knowledge and opportunities in the OSAT industry, the program serves as a means for the industry to contribute to schools and society.

USI Industry-Academia Collaborations and Internships

Employee education, training and transfer of skills rank highly at USI. To that end, the USI University was established in 2006 to provide free courses covering corporate experiences, management knowledge and the latest technology and industry trends. The USI University actively collaborates with industry and public associations, and universities and provides internally trained instructors to design the courses.

The USI University plays a vital role in preparing students for the workforce by offering a wide range of career readiness programs. These include training in Responsible Business Alliance (RBA) standards, comprehensive overviews of the semiconductor industry, career planning guidance, competitive industry analysis, and practical workshops on interview techniques and recruitment systems. Through these initiatives, students gain valuable exposure to real-world environments and the opportunity to engage directly with industry professionals, strengthening their career development. In 2024, USI University shared a total of 25 courses, with a cumulative duration of 2,855 hours, contributing to the enhancement of youth employability.


USI University

To cultivate students equipped with both practical and theoretical knowledge and integrate learning and application, USI offers industry-academia internships at multiple facilities. We recruit students from various universities for on-site internships and provide one-on-one mentorship and training. This prepares students for a smooth transition into the workplace upon graduation. In 2024, a total of 163 students participated in on-site internships. Besides internship opportunities, USI's Taiwan facilities collaborate closely with National Taiwan University and National Taiwan University of Science and Technology on advanced research projects. These include the development of RF desensitization models for smart handheld systems and the estimation of electromagnetic interference (EMI) alongside adhesive simulation techniques for electronic components. These collaborative efforts exemplify a mutually beneficial model of industry-academia partnership, fostering innovation while equipping students with the skills and experience needed to thrive in the evolving technology landscape. In 2024, a total of 1,447 students benefited from the industry-academia internship cooperation, accumulating a total of 144,833 hours of participation.

8.4 Community Engagement

Fostering a close relationship with people and the community is integral to ASEH's corporate sustainability development. We are highly focused on Community Development, Charitable Care, Emergency Assistance and Cultural Development to engage with the local communities where we operate and to promote a more diverse and inclusive society. Over the years, we have initiated programs to assist and support disadvantaged groups, long-term care for the elderly, children and youth, and business start-ups business owners. To facilitate our interaction with the community, we have also established a platform that stimulates communication between us, the local community and the general public.

ASEH's community welfare initiatives are executed through the ASE Charity Foundation, the ASE Cultural and Educational Foundation, and the Chang Yao Hong-Ying Social Welfare and Charity Foundation. The impacts of our efforts are further magnified through the addition of partner networks and various resources. In 2024, we contributed over US$2.1 million for community engagement activities. We provided afterschool care for 485 students and financial assistance to 12,791 students from disadvantaged families, and collaborated with 57 charities. ASEH strives to construct a conducive learning and living environment for all, expanding our influence on society and creating an environment that thrives on coexistence and integration.

	2021	2022	2023	2024
Community Engagement[1]	US$3.4 million	US$2 million	US$3.1 million	US$2.1 million
Beneficiaries	About 9,200	About 9,500	About 9,600	About 13,276
No. of disadvantaged students in the community attending after school program	254	263	222	485
No. of students from disadvantaged households receiving financial aid	8,963	9,281	9,393	12,791

[1] ASEH's facilities in Taiwan (Taoyuan City, Hsinchu County, Taichung City, Changhua County, Nantou County, and Kaohsiung City), U.S.A., China, South Korea, Japan, Malaysia, Singapore, Vietnam, and Mexico are all actively involved in various levels of community engagements

ASE Sustainability Innovation Competition

In 2024, ASEH hosted the third annual Sustainability Innovation Competition, designed to foster a sustainable entrepreneurial ecosystem that encourages startups to develop innovative technologies. With a total prize pool of NT$2.5 million, the competition attracted over 100 participating teams. This year's themes centered on Green and Low Carbon Energy, and the Circular Economy, aiming to provide concrete financial support for emerging business enterprises. The six finalist teams received customized empowerment programs, including business coaching and incubation support, to help refine their proposals and accelerate the development of viable business models.

To broaden outreach and strengthen the innovation pipeline, we partnered with leading organizations such as the NTU Innovation and Entrepreneurship Center, Yunus Social Business Center at National Central University, Tucheng Green Hub, and Flow Inc. These collaborations help to recruit promising startups and create a platform for knowledge exchange. Past winners also shared their experiences, providing guidance that enabled new participants to sharpen their focus and enhance their proposals. This approach nurtures a pipeline of high-potential solutions and fosters long-term sustainability partnerships with startup companies.

This year's Champion - Guangtai Green Energy, showcased a micro-hydropower generation technology with strong application potential. Their proposal involved integrating micro-hydropower modules into ASE's water recycling systems, and using the existing pipeline elevation differences to generate electricity for internal plant use. This solution not only supports localized green energy development but also enhances the resilience and autonomy of Taiwan's renewable energy sector.

We have also continued our collaboration with PackAge+, the 2023 runner-up team, by implementing their circular packaging solution at ASE's Kaohsiung facility. This has resulted in the successful replacement of a portion of single-use packaging materials, and we are gradually expanding the program across our supply to accelerate carbon reduction efforts.

We aim to leverage on our industry leadership to support Taiwan's startup ecosystem, fostering a balance between economic growth and sustainable development. ASEH remains committed to creating diverse employment opportunities and expanding its positive environmental impact through innovation and collaboration.

ASE Sustainability Innovation Competition - Award-Winning Teams Group Photo

ASE Sustainability Innovation Competition – Winners

Award	Team Name	Project Title
Champion – NT$1,000,000	Guangtai Green Energy Co., Ltd	Ultra-Micro Hydropower Generator for Factory Use
Second Place – NT$600,000	CarbonClean Energy Co., Ltd	CO_2 Electrolysis for High-Value Chemical Production
Third Place – NT$400,000	Strong and Wise Material Tech Company	Sustainable Material Applications from Recycled Textile Waste
Third Place – NT$400,000	Lab 22	Clozloop: Fully Circular PET Footwear

SPIL. Providing Care and Protection for Children and Youths

The devastating 921 earthquake (September 21, 1999), affected many local communities who had lost their homes, loved ones, and sources of livelihood. In response, SPIL employees came together to establish the "SPIL TFCF NT$100 Club" in 2001. This grassroots initiative encourages employees to voluntarily donate at least NT$100 per month to support children and youths under the care of the Taiwan Fund for Children and Families (TFCF). Over the past 23 years, the program has seen a cumulative total of 510,000 employee participation, raising a total of NT$100 million and benefiting approximately 110,000 children. The TFCF centers supported by SPIL employees include both the North Taichung and Changhua TFCF centers. With over 300 children sponsored under the program, SPIL has emerged as the corporate sponsor with the highest number of monthly adoptions.

Be a process engineer for a day

Beyond providing financial support, SPIL actively participates in volunteer efforts. In 2024, the company hosted 85 children and social workers from the North Taichung and Changhua TFCF centers at an amusement park for the "SPIL Wonderland Day". The event featured a custom-designed, theme-based puzzle-solving game, where 85 SPIL volunteers guided the children through interactive challenges that were both educational and entertaining. The goal was to provide underprivileged youth with meaningful outdoor experiences and opportunities for social engagement, creating joyful memories that enrich their development.

SPIL also organized a "Be a process engineer for a day" experience for 20 high school students from the Changhua TFCF center. Paired with 20 volunteer process engineers, the students were given hands-on exposure to the daily work of semiconductor professionals. Through site visits and experimental design activities, they gained valuable insights into the packaging and testing industry. This initiative seeks to nurture the next generation of industry talent by offering practical career guidance for the students, and encouraging them to consider joining the semiconductor sector in the future.


SPIL Wonderland Day

Philanthropic Library: Parent-Child Event

Glimmer of Love Reading Room

USI. Cultivating Reading Skills Amongst Underprivileged Children

Books are like beacons, illuminating the path ahead while reading sparks wisdom and lays the foundation for innovation. In line with its commitment to educational equity, USI has long invested in expanding children's horizons and cultivating passion for reading, especially among students in underserved communities both in Taiwan and abroad.

Since 2005, USI has contributed approximately NT$500,000 annually in support of the Taiwan Reading Culture Foundation through the "Library of Love," a program that provides reading materials to rural schools. In 2022, USI expanded the program with a NT$520,000 contribution to establish the "Glimmer of Love Reading Room" in remote areas overseas.

In 2024, USI and the ASE Cultural and Educational Foundation donated 20 boxes of books to Zhongliao Elementary School, 10 boxes to Xiling Elementary School in Nantou County, and 10 boxes to Daxing Junior High School in Changhua County; bringing the total number of donated book boxes to 847. The "Glimmer of Love Reading Room" was established at Hongdian Elementary School in Wenshan Prefecture, Yunnan Province, China. During the construction phase, USI launched a book donation campaign amongst employees, providing better quality educational resources for 441 children in the region. When the reading room was completed, it was filled with 1,693 books and 20 audio devices preloaded with 400 audiobooks donated by USI and its employees.

The "Library of Love" program engaged over 300 teachers and recorded more than 3,000 boxes of book loans throughout 2024. On average, each teacher borrowed 11 boxes of books for their students, positively influencing tens of thousands of children. These figures underscore the tangible impact of USI's book donations in broadening students' perspectives and enhancing their critical thinking skills.

Recognizing that different age groups require tailored reading guidance, USI also partnered with the Taiwan Reading Culture Foundation to host a series of educational events, including "Parent-Child Reading," "Meet the Author," and "Fun with Science". There were six such events organized in 2024, contributing to USI's ambition to expand investments in promoting local education, reading habits and interest in science amongst children. We continue to apply the social return on investment approach to measure and evaluate the impacts that the Philanthropic Library has on students and children. We discovered that 83% of primary school students reported that participation in the Fun Magic in the Mist events led to an increase in their scientific knowledge, while 74% of parents who participated in the Parent-Child Reading event believed that it improved the quality of reading for their families. Based on the analysis of the results through comprehensive calculation, a social value of NT$5.88 was generated for every NT$1 invested in the Philanthropic Library.

2024 Taiwan Cultural Development Support Project Summary

Project	Content	Supported Unit	Amount (US$)
Chinese Historical and Cultural Animation	In collaboration with USTV, we produced the animated series "When an anchorman meets historical figures," a program designed to promote Chinese ethics and moral values through engaging storytelling. In 2024, six episodes were completed, each highlighting a prominent historical figure – Su Wu, Guan Yu, Fan Zhongyan, Sima Guang, Wen Tianxiang, and Zhan Tianyou. The series is currently available on the official websites and YouTube channels of both the ASE Cultural and Educational Foundation and USTV, where it has garnered a total of 131,191 views.	ASE Cultural and Educational Foundation	38,426
Short Film Series on the History of Western Art	In partnership with TVBS, we produced the series "A Fantastic Journey Through Western Art," with four episodes focusing on architecture, painting, music, and dance. The videos were released on the official websites, Facebook pages, and YouTube channels of the ASE Cultural and Educational Foundation and TVBS, with a total of 799,965 views. Episodes include: Ep. 5: "Voted London's ugliest building! Now a cultural hotspot." Ep. 6: "Beethoven's Symphony no. 9: A masterpiece he's never heard." Ep. 7: "A $3.5 billion painting: The most recreated art icon in modern times" Ep. 8: "Unsurpassed Classic: The Legendary Ballet Dancer"	ASE Cultural and Educational Foundation	5,124
Taiwan Arts and Culture Map	We collaborated with CommonWealth Magazine's "Smiling Taiwan" to launch an arts and culture map, documenting Taiwan's cultural assets through short videos and feature articles that introduced local cultural landmarks. In 2024, 9 features covering Taichung, Changhua, and Nantou were completed, with a total of 453,288 views.	ASE Cultural and Educational Foundation	24,398
National Theater and Concert Hall Senior Engagement Program	Sponsored the 2024 NTCH Senior Program, including: 1. Crossroads Theatre: Bridging Generations: This initiative brought together young people and seniors through theatrical performances, fostering meaningful conversations and enriching intergenerational exchange. A total of 637 participants joined the program. 2. Performing Arts on Social Prescription Pilot Program: Centered around auditory engagement, drama, and dance, this nine-week course was designed for individuals aged 55 and above who experience loneliness or social isolation. The program aimed to enhance their sense of well-being and quality of life, with 353 participants joining the sessions. 3. Three outreach workshops were held at ASE's Taipei, Chungli, and Kaohsiung sites. These workshops employed dance, drama, and auditory engagement to facilitate interactions between seniors and children through the arts.	ASE Cultural and Educational Foundation	30,497
Sponsorship of Taipei First Girls High School Marching Band trip to Canada	Provided support for the school's marching band to perform at the 2024 Calgary Stampede and the Taiwan-Canada Cultural Festival in Vancouver.	ASE Cultural and Educational Foundation	9,149
Sponsorship of ASE Humanities Lectures at National Taiwan University	Sponsored 12 advanced lectures, 7 summits, 1 dialogue session, and 1 major international academic conference hosted by NTU's Institute for Advanced Studies in Humanities and Social Sciences. Also supported the publication of 4 academic books, with approximately 1,500 participants.	ASE Cultural and Educational Foundation	15,249
ASE Charity Concert	Hosted a charity concert on November 17, 2024 featuring the Hormone Band. With 600 participants, donations from the public were matched by the ASE Cultural and Educational Foundation and distributed to 14 Charitable organizations.	ASE. ASE Cultural and Educational Foundation	41,202
Sponsorship of Rural Choirs in Kaohsiung for World Choir Games in New Zealand	Supported three youth choirs from Liugui District (Nibun Chorus, Bao Lai Junior High School Choir, Kahuzas Chorus) in representing Taiwan at the 13th World Choir Games in July 2024, where they earned a total of 3 gold medals and 1 silver medal.	ASE. ASE Cultural and Educational Foundation	6,099

Project	Content	Supported Unit	Amount (US$)
New Classical Chamber Orchestra Arts	Supported the New Classical Chamber Orchestra tour, which included two performances in Taipei from June 8 to June 9, 2024, and two performances in Kaohsiung from September 14 to September 15, 2024. The tour attracted a total of 7,500 attendees, contributing to the cultivation of young local talent in musical theater and the performing arts.	ASE. ASE Cultural and Educational Foundation	6,099
Taichung Zhongshan Hall Revitalization	Sponsored a series of cultural events at Taichung Zhongshan Hall which featured top local performing arts groups, engaging 1,300 participants.	SPIL. ASE Cultural and Educational Foundation	9,149
Sponsorship of Haifong Cup National Senior Go Tournament	To promote the culture of Go and provide a social platform for senior players, the Haifong Cup National Senior Go Tournament was held in October 2024, with events taking place in northern, central, and southern Taiwan. This initiative offered a meaningful opportunity for Taiwan's senior Go community to connect through competing, and building friendships. A total of 500 participants took part in the tournament.	SPIL. ASE Cultural and Educational Foundation	15,249
Sponsorship of Greater China Orchestra 20th Anniversary Concert	Sponsored the Greater China Orchestra's 20th Anniversary Concert, held on January 28, 2024, at Taichung Zhongshan Hall. This special event celebrated two decades of musical excellence and was open to the public with free admission. The concert aimed to promote the integration of music into everyday life and to make classical music more accessible to the general public, attracting an audience of 1,500 attendees.	SPIL. ASE Cultural and Educational Foundation	915
Project 'Library of Love'	The 'Library of Love' initiative supported rural education through the donation of 20 boxes of books to Zhongliao Elementary School, 10 boxes to Xiling Elementary School in Nantou County, and 10 boxes to Daxing Junior High School in Changhua County. To foster students' passion for reading and scientific discovery, six themed events were held in Nantou, including parent-child reading sessions, meet the author gatherings, and the interactive science activities. These activities helped foster children's passion for reading and science, engaging a total of 347 participants.	USI. ASE Cultural and Educational Foundation	15,249
Cloud Gate Dance Theatre Annual Tour Sponsorship Program	In 2024, we proudly sponsored the Cloud Gate Dance Theatre's annual tour, which took place from March 7 to March 24 across six locations in Taiwan. This initiative aimed to promote the performing arts and enrich cultural life by inviting ASE suppliers and employees' families to attend the performances. Through this sponsorship, we helped foster a deeper appreciation for the arts within the corporate community and supported the development of Taiwan's cultural landscape. The tour attracted a total audience of 10,500 people.	USI. ASE Cultural and Educational Foundation	30,497
Tsaotun Straw Craft Festival – Ming Hwa Yuan Performance	Sponsored a special performance by the renowned Ming Hwa Yuan Arts & Cultural Group during the Tsaotun Straw Craft Cultural Festival. The event took place on December 15, 2024, at Zhongshan Park in Tsaotun, offering the public a free opportunity to enjoy the rich heritage of Taiwanese opera. The performance drew an audience of 1,500, celebrating the fusion of local craftsmanship and performing arts in a vibrant cultural setting.	USI. ASE Cultural and Educational Foundation	25,923
ETTV "Focus on the World"	Sponsored the production of three exclusive ecological documentaries under ETTV's "Focus on the World" series. These documentaries showcased groundbreaking environmental stories and rare wildlife footage, including Taiwan's first-ever South-North pole crossing eco-documentary, exclusive coverage of Arctic terns' courtship rituals, and "Journey to the Antarctica" documenting the world's largest floating iceberg that is as big as 14 Taipei cities.	ASE. ASE Environmental Protection and Sustainability Foundation	54,895
Wild Taipei Documentary Production	ASE Social Enterprise funded the production of Wild Taipei, an educational documentary created by Full Light Entertainment. The film highlights 15 animal species living in Taipei's urban environment, focusing on their survival challenges. Its goal is to raise public awareness about wildlife conservation and environmental protection in city settings.	ASE Social Enterprise	274,474
Total			602,592

8.5 Public Advocacy

Public Advocacy and Management Framework

As a leading global provider of semiconductor assembly and testing services, ASEH strives to be an active participant in both domestic and international non-profit organizations with links to the industry. Our goal is to advance the semiconductor industry through joint efforts with the international community. We are fully committed to promoting initiatives and work relevant to our core business focus and areas of sustainable development (environmental, social, and economic aspects). These include climate change, net zero emissions, corporate sustainability, industrial development, technological innovation, environmental engineering, human rights, and supply chain.

The ASEH Public Affairs Engagement policy acts as a guideline for the company's participation in society and the community. Dtuang Wang, Chief Administration Officer (CAO) of ASEH, leads the Social Involvement Task Force (reporting directly to the CEO), and is responsible for executing the company's public affair strategies and plans. The CAO provides a status report to the Corporate Sustainability and Information Security Committee (CSISC) annually. The CSISC is the highest level of management responsible for the strategy and supervision of the company's sustainability development, and is comprised of board directors and the head of corporate governance. The CSISC oversees the progress and execution of public affair plans, budget, results, ascertains the level of participation in lobbying and public advocacy, and provides regular reports to the board of directors. In 2024, ASEH contributed US$0.62 million and was active in over 130 external organizations, allowing ASEH to share our value system with industry peers and supply chain partners, and extend a broader social impact.

Participation in Major Trade Associations in 2024

Association	Major Activities	Resources invested (US$)
Semiconductor Equipment and Materials International (SEMI)	The SEMI is a global electronic manufacturing supply chain industry association, with over 3,000 members. ASEH is actively involved in public policy initiatives and highly supportive of international SEMI events, the promotion of collective interests, and the focus on education, business, technology and sustainable development. As a member of SEMI for over 2 decades, ASE has gradually stepped up and taken the leadership to drive impactful agendas and direct the industry towards achieving common goals. We have undertaken important roles in many of SEMI's committees, serving positions such as the chairman of the International Board of Directors' Executive Committees, chairman of the SEMI Foundation Board of Directors, chair of SEMI Taiwan Packaging and Testing Committee and honorary vice chair of SEMI Taiwan Smart Manufacturing Committee. We are also a member of the MEMS & SENSORS Committee, High-Tech Green Manufacturing Committee, Semiconductor Materials Committee, FlexTech Committee, Test Committee, Semiconductor Cybersecurity Committee, and Sustainable Manufacturing Committee. The key SEMI initiatives of 2024 are as follows: 1. **SEMI Semiconductor Climate Consortium (SCC).** ASE is a founding member of the SEMI Semiconductor Climate Consortium (SCC), established in 2022. SCC member companies have pledged to support the goal of limiting global warming to 1.5°C, as stipulated by the Paris Agreement and its related protocols. A white paper titled "*Challenges and Solutions in Procuring Low-Carbon Energy in Taiwan*" was recently published by the SCC-led SEMI Energy Collaborative (EC), examining Taiwan's current energy policies. The report provided an in-depth analysis of the challenges in developing and sourcing renewable energy as well as a proposal outlining four strategic action plans. 2. **SEMI Silicon Photonics Industry Alliance (SiPhIA).** The Silicon Photonics Industry Alliance (SiPhIA) was established by SEMI together with TSMC and ASE as the founding sponsors. The initial members included more than 30 companies such as AUO, Hon Hai (Foxconn) and MediaTek. The alliance aims to strengthen industry collaboration and advance the development of silicon photonics in Taiwan by sharing knowledge, resources, and expertise to build a robust silicon photonics ecosystem. 3. **SEMICON Taiwan 2024.** The 2024 conference and expo drew a record of over 85,000 industry attendees with approximately 1,100 domestic and international exhibitors spread across 3,700 booths. More than 20 international forums were held over the three-day event, covering key industry topics including advanced manufacturing processes, equipment and materials, heterogeneous integration, compound semiconductors, smart manufacturing, green manufacturing, cybersecurity, and talent development. ASE participated actively at the event, presenting and sharing insights at the Industry Masters Forum, Silicon Photonics Forum, 3DIC/CoWoS Forum on AI Chip Innovations, and Heterogeneous Integration Summit.	206,000

Association	Major Activities	Resources invested (US$)
Taiwan Semiconductor Industry Association (TSIA)	ASE Inc. is a founding member and board director of the TSIA, and chairs the EHS packaging and testing committee. As a member of the association, ASE participates actively in discussions on sustainability topics and prepares recommendations to government agencies for formulating policies and regulations that affect the semiconductor packaging and testing industry. The key initiatives and programs promulgated by TSIA in 2024 are as follows: 1. **Regulatory policy discussion and advocacy to mitigate industry impact.** We continued advocating for the exemption of the packaging and testing industry from the 'mandatory installation of continuous automatic monitoring equipment for stationary pollution sources in public and private premises, as well as the mandatory reporting of monitoring results to the competent authorities.' In line with this, we supported the establishment of a 1.3 kg threshold to ensure proportionate monitoring requirements and reduce the burden on enterprises. In addition, we participated in policy discussions on revising air pollution control and emissions standards for the semiconductor manufacturing industry. Following the promulgation of Taiwan's three supporting regulations under the carbon fee scheme, we encouraged enterprises to invest in environmental protection technologies, promote autonomous environmental management models, and optimize related operational processes. Additionally, we participated in the drafting and review of industrial waste disposal policies and provided the latest global semiconductor industry laws and regulations to support the development of early response plans, thereby reducing the impact on the industry. 2. **Supplier guidance and assessments for waste disposal vendors.** The Waste Disposal Vendor Evaluation Taskforce was formed jointly by TSIA, together with the Taiwan TFT-LCD Association (TTLA) and the Taiwan Optoelectronic Semiconductor Industry Association (TOSIA). Based on TSIA's Self-Regulatory Convention for Waste Disposal and Reuse, the taskforce completed audits of 22 waste removal and treatment vendors at the source level of the packaging and testing industry in 2024. Audit results were used to generate evaluation scores and offer improvement recommendations, establishing an effective tracking and management mechanism to reduce environmental risks and enhance Taiwan's waste management performance. 3. **Update to GHG reduction technologies and inventory guidelines.** In response to requests from the World Semiconductor Council (WSC) and Taiwan's Climate Change Administration under the Ministry of Environment, TSIA adopted the *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories* and implemented multiple updates and revisions to the GHG emissions inventory guidelines for semiconductor manufacturing processes. New emission factors to calculate GHG emissions from fluorinated gases and N_2O was also introduced in accordance with the World Semiconductor Council's guidelines on fluorinated gases and N_2O reporting and reduction targets, as part of a broader action to improve environmental protection across the industry.	82,000
IOWN Global Forum	ASE is a member of the IOWN Global Forum, an industry alliance with more than 150 leading global companies that was founded in 2020 by NTT, Intel, and Sony. IOWN aims to develop an All-Photonics Network and data center infrastructure that utilizes photonic communications to replace traditional electronic methods, providing greater capacity, lower latency, and higher energy efficiency for future communication and computing architectures. In 2024, the forum released the *Key Values and Technology Evolution Roadmap*, based on three fundamental approaches: integrated collaboration, practical implementation, and system-level design. The goal is to establish, by 2030, a fully photonics-based infrastructure that delivers extreme performance, ultra-high energy efficiency, low latency, and seamless integration across networks and computing systems.	50,000
Responsible Business Alliance (RBA)	Founded in 2004 by a group of leading electronics companies, the Responsible Business Alliance (RBA) is a nonprofit organization comprised of electronics, retail, auto and toy companies committed to supporting the rights and well-being of workers and communities worldwide affected by the global electronics supply chain. RBA members commit to and are held accountable to a common Code of Conduct, and utilize a range of RBA training and assessment tools to support the continued improvement of the social, environmental, and ethical responsibility of their supply chains. RBA regularly engages in dialogue and collaborations with workers, governments, civil society, investors and academia to gather the necessary range of perspectives and expertise to support its members in achieving the RBA mission of a responsible global electronics supply chain. ASE joined the RBA as a member in 2015 and has since administered annual self-assessment questionnaires (SAQs) at its facilities worldwide in order to identify labor, environmental and ethical risks. In 2024, the Responsible Minerals Initiative (RMI) of RBA announced the launch of the RMI Investor Network to advance responsible sourcing and further engage institutional investors crucial to the renewable energy transition.	35,000

Association	Major Activities	Resources invested (US$)
Taiwan Institute for Sustainable Energy (TAISE)	The Taiwan Institute for Sustainable Energy (TAISE) aims to connect Taiwan's sustainability efforts with global developments and is focused on six major areas – climate change, green energy, corporate sustainability, academic sustainability, UN SDGs, and sustainable healthcare. Its priorities include policy advocacy, the promotion of sustainability education, international exchange, and organizing the Taiwan corporate sustainability awards. As a member, ASE supported TAISE to form the Taiwan Alliance for Net Zero Emission, committing to the Net Zero X 2030/2050 initiative. Key initiatives and events in 2024 are as follows: 1. **Forum on Taiwan's Net Zero Policies and Developments.** Promoting dialogue to advance Net Zero goals. 2. **Promotion of the Net Zero Label Certification.** TAISE actively promotes the Net Zero Label initiative, encouraging participation from the government, industry, academia, and research institutions. The certification is organized into two phases; a commitment phase and an achievement phase, and supports net-zero goals through energy-saving measures, process improvements, energy substitution, forest management, carbon capture and storage (CCS), and carbon credit offsetting. It calls on organizations to lead by achieving net-zero emissions at office locations by 2030, and at production and service sites by 2050. 3. **SDG Asia 2024.** In support of global sustainability developments, the 2024 expo was organized under the theme 'Sustainability Wave'. The event was categorized into seven key areas: net-zero emissions, low-carbon cities, circular economy, sustainable fashion, talent cultivation, sustainability action, and international partnerships, aiming to elevate the economic value and soft power of Taiwan's role in sustainability development. On the showfloor, ASEH's booth highlighted 6 of the company's major sustainability developments including the publishing of the Smart Sustainable Factory and Packaging & Testing White Paper, Biodiversity Conservation, Social Innovation Talent Cultivation and Long-Term Care Initiatives, Net Zero Emissions, Guardians of the Seas, and Forest Conservation. The event successfully brought together various sectors through the integration of cross-disciplinary sustainability initiatives, highlighting the synergy of collaboration. On the whole, the event attracted the participation of 153 international companies and organizations, and more than 35,000 visitors.	25,000

Lobbying and Participation in Trade Associations on Climate Alignment

In the face of the challenges posed by climate change, ASEH fully supports the goals of the Paris Agreement and adheres to environmental policies and regulations in the countries where it operates, including Taiwan's Climate Change Response Act, the EU's *European Climate Law*, and Mainland China's *Action Plan for Reaching Peak Carbon Emissions by 2030*. These policies and regulations all align with the objectives of the Paris Agreement with Taiwan and the EU's commitment to achieving net-zero emissions by 2050, and Mainland China's aim to reach carbon neutrality by 2060. Each framework incorporates carbon pricing mechanisms, such as Taiwan's carbon fee system and the emissions trading systems (ETS) implemented in the EU and Mainland China. In addition, these policies prioritize the development of renewable energy, improvements in energy efficiency, the promotion of energy conservation and carbon reduction, and the adoption of climate adaptation strategies. In alignment with these frameworks, ASEH has developed a *Climate Change Response Strategy* [1], committing to sustainable manufacturing, enhanced energy efficiency, low-carbon transformation, strengthened climate resilience, and a just transition. This strategy allows us to work closely with our business partners and stakeholders in facilitating a low-carbon transition and fulfilling our collective responsibility to protect the global environment.

Internally, the company has established a robust action plan towards Net Zero which is further augmented by active involvement in external organizations or associations on climate change. We are also heavily involved in public advocacy to help policy makers understand our industry and to make recommendations in support of Taiwan's pathway to Net Zero.

Management System for Climate Lobbying Activities and Trade Associations

We have established a management system that covers the global sites of ASEH and the three major subsidiaries to ensure that our lobbying activities and participation in trade associations comply with our corporate policies on sustainability and climate change, and aligned with the goals of the Paris Agreement.

Direct Lobbying

ASEH is fully committed to support government policies that align with the Paris Agreement. With regard to political donations, ASEH is obligated to comply with Article 7 of the Taiwan Political Donations Act that prohibits donations from companies where more than 30% of the shares are held by foreign citizens or corporations. As foreign citizens and corporations hold more than 30% of ASEH shares, our engagement with the government is mainly conducted through participation in trade associations where we advocate for policies and provide recommendations.

We comply strictly with local lobbying regulations when initiating lobbying campaigns. ASEH management procedures for lobbying are as follows:

1. The purpose must align with ASEH's policies on sustainability and climate change, and the Paris Agreement.
2. The lobbying campaign must first be evaluated by the Social Involvement Task Force and submitted to the ASEH Corporate Sustainability and Information Security Committee for final approval.
3. The Social Involvement Task Force is responsible for tracking progress, and updating the progress and outcome to the CSISC.
   (1) If the regulations, policies, and bills meet the goals of the lobbying objectives, the campaign shall be continued.
   (2) If the regulations, policies, and bills partially deviate from the lobbying objectives, a negotiation process shall commence to steer the campaign back on track.
   (3) If the regulations, policies, and bills completely deviate from the lobbying objectives, the campaign shall be cancelled.
4. The CSISC is obligated to report the status regularly to the board of directors.

[1] ASEH Climate Change Response Policy (https://www.aseglobal.com/en/pdf/climate-change-response-policy-en.pdf)

Trade Associations

ASEH plays an active role in climate organizations and associations. We also take up leadership and consultative roles in various committees within the associations. ASEH's management procedures for trade association and engagement are as follows:

1. Evaluating trade associations that are irrelevant to mitigating climate change:
   (1) Assessing global trade association performance through membership.
   (2) Identifying organizations with missions closely associated to climate change mitigation and/or the Paris Agreement, or actively advocating, promoting awareness, campaigning, or lobbying on climate related issues.
2. Evaluating and monitoring our engagement with, and activities of trade associations to ensure compliance with climate change mitigation and the Paris Agreement.
   (1) Annual assessment of participating climate-focused trade associations.
   (2) Evaluating the public stance of trade associations in supporting the Paris Agreement including below 2℃ or 1.5℃ , Net Zero 2050, energy-saving and carbon reduction.
   (3) Evaluating the activities and actions of the trade associations, to ensure that public statements, promotional activities, educational training, initiatives, and policy proposals, support and comply with the Paris Agreement.
   (4) Classifying associations into those who comply with the Paris Agreement and those who do not. We would continue to engage with the former while taking other measures for the latter.
3. For trade associations that fall short of ASEH's expectations,
   (1) We would engage in discussions to seek alignment within 2 years, and would cancel our membership if alignment fails.
   (2) We would cancel our membership with associations that do not align with our climate policies and goals.

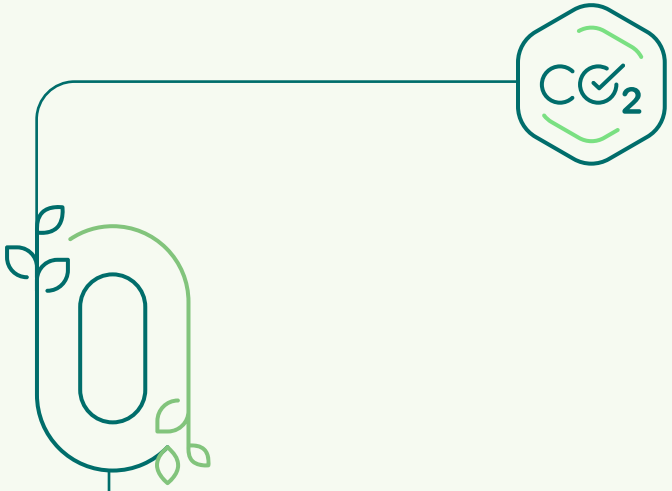
2024 Evaluation Results

Direct Lobbying

ASEH did not conduct any direct lobbying in 2024.

Trade Associations

In 2024, ASEH recorded participation in 138 trade associations covering a wide scope including climate change, technology and R&D, labor rights, supply chain, industry development, commercial operation and investment, auditing, legal, environmental protection, sustainable development, and human rights. Among the 138 associations, 18.8% or 26 are focused on climate change, and are closely assessed by ASEH through our Trade Association Management Framework.



Number of trade associations in full alignment with ASEH goals : 26

	Name	Remarks on Assessment
1	Asian Venture Philanthropy Network	Recognizes climate risks, launched the Climate x Health: Asia Lighthouse Fund to support the development of climate adaptation solutions.
2	Institute of Electrical and Electronics Engineers	Recognizes climate risks, established the IEEE Technology Climate Center (ITCC) to facilitate practical technological approaches and solutions to address climate change. The organization also hosts climate-related conferences and events.
3	Responsible Business Alliance	Recognizes climate risks, promoted the Responsible Environmental Initiative (REI), launched emission management tools and organized decarbonization-related training and programs.
4	Semiconductor Equipment and Materials International	Recognizes climate risks, supports the Paris Agreement, established the Semiconductor Climate Consortium (SCC), and promotes the Pathway to Net Zero through conferences and public advocacy.
5	Shanghai Foreign Investment Association	Recognizes climate risks, established the Green, Low-Carbon Development Branch, and holds energy conservation and carbon reduction conferences and activities.
6	Yamagata Prefecture Environmental Conservation Council	Recognizes climate risks, holds energy conservation and carbon reduction conferences and activities.
7	Yamagata Environmental Network Association	Recognizes climate risks, organizes conferences and activities focused on global warming prevention, energy conservation, and carbon reduction.
8	China Association for Public Companies	Recognizes climate risks, holds energy conservation and carbon reduction conferences and activities.
9	Chinese National Association of Industry and Commerce	Recognizes climate risks, supports the Paris Agreement, and promotes the Pathway to Net Zero through conferences and public advocacy.
10	The Third Wednesday Club	Hosts lectures and speeches related to Taiwan's net-zero policies, and holds conferences to promote the Pathway to Net Zero.
11	Taiwan Semiconductor Industry Association	Recognizes climate risks, supports net zero goals, and holds conferences to promote the Pathway to Net Zero.
12	Taiwan Net Zero Emissions Association	Recognizes climate risks, pledged to help Taiwan achieve net zero, and promote the Pathway to Net Zero through conferences and public advocacy.
13	Taiwan Alliance for Sustainable Supply	Recognizes climate risks, supports the development of a sustainable supply chain, and holds conferences to promote the Pathway to Net Zero.
14	Taiwan Institute for Sustainable Energy	Recognizes climate risks, supports the Paris Agreement, established the Taiwan Alliance for Net Zero Emissions, and promotes the Pathway to Net Zero through conferences and public advocacy.
15	Net Zero Carbon Association	Pledged to help Taiwan achieve net zero, and holds conferences to promote the Pathway to Net Zero.
16	Taiwan Carbon Capture Storage and Utilization Association	Recognizes climate risks, and promotes and holds carbon reduction-related projects and conferences.
17	Taiwan Advanced Automotive Technology Development Association	Recognizes climate risks, supports net zero goals, and holds conferences to promote the Pathway to Net Zero.

	Name	Remarks on Assessment
18	Taiwan Telematics Industry Association	Recognizes climate risks, supports net zero goals, and holds conferences to promote the Pathway to Net Zero.
19	Taiwan Electrical and Electronic Manufacturers' Association	Recognizes climate risks, supports net zero goals, provides recommendations for government policies on net zero and energy, and holds conferences to promote the Pathway to Net Zero.
20	Taiwan Transportation Vehicle Manufacturers Association	Recognizes climate risks, releases publications, and hosts conferences to discuss net zero emissions issues.
21	Taiwan Printed Circuit Association	Supports net zero goals, and holds conferences to promote the Pathway to Net Zero.
22	Taiwan IOT Technology and Industry Association	Recognizes climate risks, organizes conferences and activities focused on Net Zero, energy conservation, and carbon reduction.
23	Taiwan High-Tech Facility Association	Recognizes climate risks, organizes conferences and activities focused on Net Zero, energy conservation, and carbon reduction.
24	Taipei Computer Association	Recognizes climate risks, supports net zero goals, and holds conferences to promote the Pathway to Net Zero.
25	The Business Council for Sustainable Development	Recognizes climate risks, supports net zero goals, and conducts initiatives and promotes the Pathway to Net Zero through conferences.
26	CommonWealth Sustainability League	Recognizes climate risks, supports net zero goals, promotes corporate sustainability development, and conducts initiatives and promotes the Pathway to Net Zero through conferences.

Number of trade associations that are partially misaligned with ASEH goals: 0

Name	Remarks on Assessment
None	None

Number of trade associations that are completely misaligned with ASEH goals: 0

Name	Remarks on Assessment
None	None