ASE HOLDINGS

TWSE: 3711
NYSE: ASX

2024 ASE HOLDINGS
Sustainability Report



As a leading provider of semiconductor packaging and test, ASE Technology Holding Co., Ltd. (ASEH, comprising key subsidiaries) is fully committed to growing its core business and strengthening research and development. The company advances its corporate sustainability strategy through a framework of four pillars: Low Carbon, Circular, Inclusive and Collaborative. In 2024, we continued our journey to create sustainable impact through the implementation of green energy and carbon reduction. We applied the SBTi (Science Based Reduction Targets) standards to establish our greenhouse gas reduction targets as well as for launching net-zero initiatives. At the same time, we managed to overcome methodological limitations of the OSAT industry to develop a set of industry-specific GHG inventory guidelines. A cross-group task force was also formed to support the adoption of the IFRS Sustainability Disclosure Standard across the company. To strengthen our green supply chain and accelerate decarbonization, we have formulated a low-carbon supplier selection strategy that will further encourage our suppliers to adopt carbon reduction practices. Overall, our actions allow us to respond quickly to industry trends and societal shifts, while fostering a strong sustainability culture that drives corporate social responsibility and delivers positive impacts.

The graphic design of this year's cover page is centered on the theme; “Soaring Green Technology, Driving Green Living”, much like the rising sun that brings forth hope and inspires green and sustainable living. It truly embodies our vision to harmonize technology with the environment through excellence in research and development, and fostering an innovative culture.

Beyond our relentless pursuit of technological innovation, we remain firmly committed to a green transformation that involves championing green manufacturing, smart management systems, and advanced water and resource recycling. Our ambition extends further, encompassing investments in reforestation and vital ocean conservation efforts. We're taking bold steps to lead the shift to net-zero, embracing a proactive leadership in sustainability that underscores our responsibility and vision.



TABLE OF CONTENTS

ABOUT OUR REPORTING 08
LETTER FROM THE CHAIRMAN 11

1 OPERATING MODEL 14

1.1 Company Profile 14
1.2 Mission and Vision 16
1.3 Financial Performance 17

2 SUSTAINABLE GOVERNANCE 18

2.1 Organization and Structure 18
2.2 Sustainability Strategies 24
2.3 UN Sustainable Development Goals and Sustainable Value Assessment 30
2.4 Materiality Assessment and Stakeholder Communication 38

3 INTEGRITY AND ACCOUNTABILITY 54

3.1 Board of Directors 56
3.2 Economic Performance and Tax Governance 59
3.3 Business Ethics 61
3.4 Risk Management 64
3.5 Human Rights Management 74
3.6 Regulatory Compliance 81
3.7 Information Security Management 82

4 INNOVATION SERVICE 88

4.1 R&D and Innovation 89
4.2 Sustainable Manufacturing 94
4.3 Products and Services 100

5 GREEN MANUFACTURING AND LOW-CARBON TRANSFORMATION 102

5.1 Climate Leadership 105
5.2 Energy and Carbon Management 122
5.3 Water Stewardship 130
5.4 Circular Resources 141
5.5 Air Emissions Control 146
5.6 Green Facility 148
5.7 Biodiversity 149
5.8 Environmental Expenditures and Investments 160

6 INCLUSIVE WORKPLACE 162

6.1 Talent Attraction and Retention 164
6.2 Talent Cultivation and Development 178
6.3 Occupational Health and Safety 185

7 RESPONSIBLE PROCUREMENT 194

7.1 Supply Chain Sustainability Management 196
7.2 Supply Chain Overview 198
7.3 Supply Chain Resilience 201
7.4 Supply Chain Management Framework 206
7.5 Supply Chain Sustainability Management 208
7.6 Responsible Minerals Compliance 212

8 CORPORATE CITIZENSHIP 214

8.1 Social Involvement Overview 219
8.2 Environmental Conservation 221
8.3 Industry-Academia Collaborations 225
8.4 Community Engagement 228
8.5 Public Advocacy 233

APPENDIX：Environmental Data 241
APPENDIX：Social Data 248
APPENDIX：Supply Chain Data 256
Third-Party Assurance Statement 257
GRI Content Index 258
Sustainability Accounting Standards Board 265
Sustainability Indicators 267
TCFD Index 268
TNFD Index 269
Operational Locations 270

Partnering with Startups to Advance Green Energy and Carbon Reduction

ASEH hosted its third Sustainable Innovation Competition to solicit groundbreaking and innovative ideas. By fostering meaningful partnerships with startups, we are able to collectively drive key sustainability priorities, including low-carbon development, circular regeneration, social inclusion, and shared value creation. The 2024 competition focused on two main themes: Green Energy & Low Carbon and Circular Economy. In addition to financial awards, we provided commercial support to the six finalist teams through mentoring and providing resources to help refine their proposals and business models, cultivating a robust and sustainable partnership. Such types of collaboration enables startup companies to leverage on ASEH's strengths to help drive environmental protection and amplify sustainable impact.

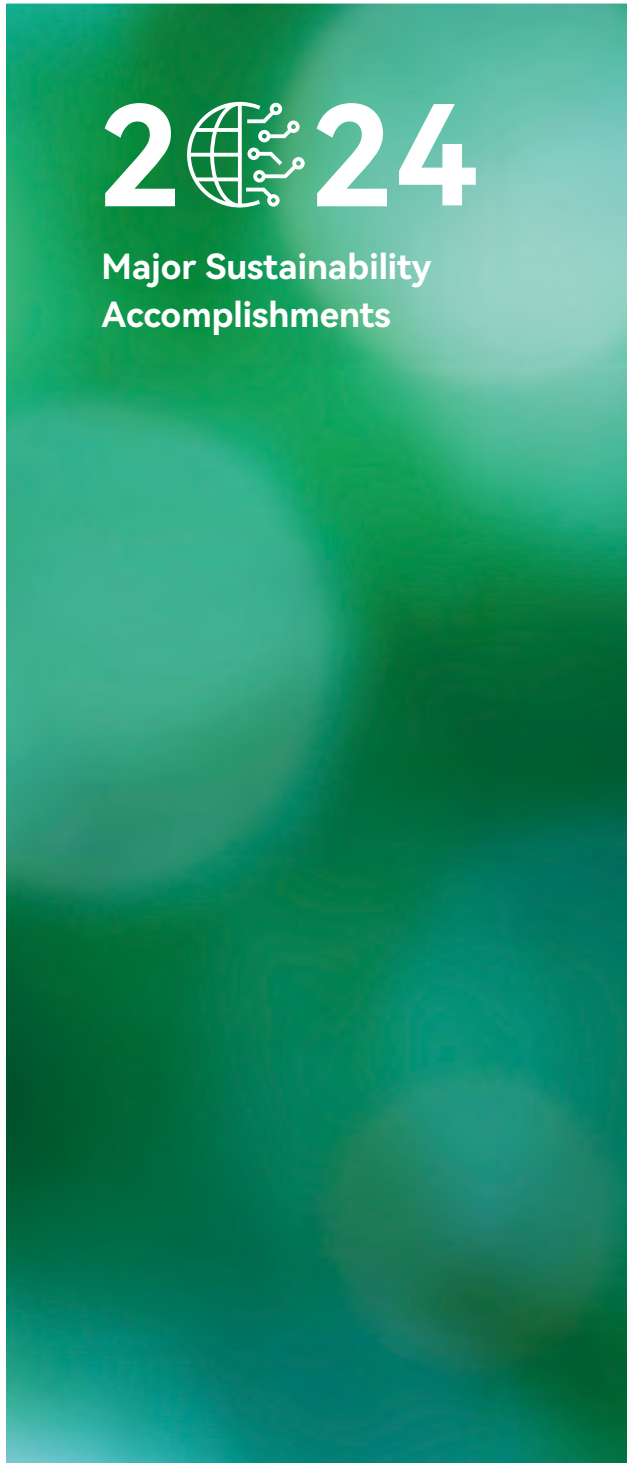
The winning team this year is Guangtai Green Energy who submitted a proposal on micro-hydropower technology with high commercial potential. Their methodology integrates micro-hydropower generation modules into ASEH's reclaimed water system, planning to use the elevation difference in existing pipelines to generate electricity for internal plant use. The methodology promulgated by Guangtai demonstrates broader application potential that will help advance Taiwan's development and resilience in the renewable energy sector.

We have continued to collaborate with past winners of the Sustainable Innovation Competition, leveraging their expertise in circular packaging and logistics systems, and applying these innovations across our supply chain. At ASE Kaohsiung, this partnership has successfully enabled the substitution of certain single-use packaging materials with circular alternatives. We also continue to rally our suppliers into this carbon reduction and circular economy initiative. In addition, ASEH has partnered with a startup to promote the recycling of PET bottles, aluminum cans, and batteries within its Kaohsiung facilities and the broader Kaohsiung region. This initiative encourages employee participation in plastic reduction and circular economy practices while reinforcing our commitment to environmental stewardship. Since the commencement of the recycling operations, we have collected over 960,000 bottles and more than 1,760 kilograms of batteries, with the program continuing to grow steadily. This effort extends beyond our plant premises as we actively engage surrounding communities by installing ECOCO Smart Recycling Machines to encourage public participation in recycling and promote circular economy awareness. To help promote recycling habits among community members, our program also incorporates incentives for participants such as the accumulation of reward points that are redeemable at partner retailers. Through concrete action, we are expanding the concept of low carbon lifestyles from our facilities to the entire city, advancing our vision of creating sustainable values for both enterprise and society.

The Journey Towards Net Zero

ASEH is firmly committed to achieving net-zero emissions and has aligned its greenhouse gas reduction goals within the framework of the Science Based Targets initiative (SBTi). Both our near-term (2030) and long-term (2050) reduction targets have been officially validated by SBTi. To advance these goals across all our subsidiary companies, we have launched net-zero initiatives based on five key strategies: carbon credit investments, renewable energy, low-carbon transportation, low-carbon products, and supply chain engagement. In parallel, we are actively exploring Taiwan-based carbon sinks. Since 2022, we have been evaluating the feasibility of forest-based carbon sinks and have partnered with the International Climate Development Institute (ICDI) to develop a methodology tailored to Taiwan's native forests that is aimed at enhancing carbon sequestration. We have also submitted a proposal to the Ministry of Environment and received approval for the 'Increasing Carbon Sink from the Low Stocking Forest' methodology. Looking ahead, we will be participating in forest management initiatives together with our subsidiary companies to proactively mitigate climate change while constructing a thriving local ecosystem and conserving biodiversity.

In 2025, through the collaborative efforts of the Taiwan Semiconductor Industry Association (TSIA), ASE Kaohsiung, ASE Chungli and SPIL, a groundbreaking milestone was achieved in global carbon management and emissions reduction practices that further strengthens greenhouse gas management in the semiconductor sector. The team managed to overcome methodological limitations and framework constraints currently affecting the packaging and testing sector, enhancing transparency and credibility as the industry advances toward net zero.





Adoption of IFRS Sustainability Disclosure Standards

With the growing global emphasis on corporate sustainability, disclosures in sustainability reporting has shifted from voluntary to mandatory reporting required by law. In 2023, the International Sustainability Standards Board (ISSB) issued the IFRS Sustainability Disclosure Standards (IFRS S1 and S2), providing a globally consistent framework for disclosing sustainability-related financial information. These standards aim to enhance the comparability of sustainability data and prevent greenwashing. In the same year, Taiwan's Financial Supervisory Commission (FSC) announced its decision to adopt IFRS standards, mandating listed companies to comply through regulations issued by the Taiwan Stock Exchange.

In 2024, our Chief Financial Officer (CFO) and Chief Sustainability Officer (CSO) were appointed to take the lead in meeting these new requirements. A cross-functional task force was established to bring together all subsidiary companies and include units responsible for risk management, sustainability, finance, and internal audit. The team conducted a comprehensive gap analysis between current practices and the IFRS Sustainability Disclosure Standards, and integrated existing Enterprise Risk Management (ERM) frameworks to manage sustainability-related risks and opportunities. It also established management objectives and implemented responsive strategies, while preparing for future disclosures by collecting relevant sustainability and financial data. In parallel, the company enhanced its internal control system for sustainability information management by making improvements to the processes for data collection, documentation, processing, compilation, reconciliation, approval, and disclosure to ensure the credibility of sustainability disclosures.

Starting in 2027, ASEH will include a dedicated chapter on sustainability-related financial disclosures in its annual report. This development will further increase transparency, boost investor confidence through honest and reliable reporting and contribute to advancing sustainable development while creating greater value for shareholders and the society, as a whole.

Building Carbon Reduction Resilience through Supply Chain Collaboration

Scope 3 supply chain emissions represent a critical focus in our decarbonization roadmap. As such, we have formulated five key strategic supply chain initiatives :

1. Low-carbon supplier selection
2. Enhancing carbon data transparency across the supply chain
3. Promoting low-carbon transition in materials and equipment
4. Introducing low-carbon logistics upstream
5. Establishing a low-carbon supply chain ecosystem

To further encourage suppliers to adopt sustainable practices, ESG performance will constitute 10% of the supplier evaluation criteria, alongside traditional metrics such as quality, cost, and delivery. This practical integration of ESG into our procurement system is designed to drive sustainable performance across our supply chain. In 2024, based on a hotspot analysis of supply chain emissions and in alignment with ASEH's operational strategy, we identified priority suppliers for carbon reduction engagement and established more ambitious expectations for these key partners. These include:

- Participation in the CDP Supply Chain Program
- Achievement of ISO 14064-1 GHG inventory certification
- Third-party verification of the carbon footprint of designated raw materials based on ISO 14067
- Adoption of low-carbon and circular raw materials
- Use of more energy-efficient equipment

In addition to requiring suppliers to conduct carbon and product footprint assessments with third-party verification, we have also invested in external consultancy support to help suppliers strengthen their internal carbon inventory capabilities and reduce their carbon emissions. The consultancy program include support for identifying high-emission processes and formulating tailored reduction strategies. To date, 28 suppliers of raw materials and equipment have participated in our carbon advisory program and successfully obtained third-party certification. Marking another first for the company, we have achieved a significant milestone on a collaboration with 19 equipment suppliers to jointly develop energy-efficient equipment designs that aim to achieve a 20% energy savings target by 2030. Through deep collaboration and low-carbon transformation across the supply chain, ASEH is committed to driving decarbonization efforts, fostering innovation, and promoting sustainability across the global semiconductor value chain.

AWARDS

2024 ASEH Awards and Recognition

9 years in a row

Listed as a constituent of the Dow Jones Sustainability World Index and Emerging Markets Index 2016-2024

Member of
Dow Jones Sustainability Indices
Powered by the S&P Global CSA

9 years in a row

Listed on the S&P Global Sustainability Yearbook 2017-2025



Triple Leadership Status

- Maintained leadership ranking on climate change for 9 consecutive years
- Maintained leadership ranking on Supplier Engagement Rating for 6 consecutive years
- Recognition on the Water Security A List for 5 consecutive years

CDP
DISCLOSURE INSIGHT ACTION

TCSA

14 Awards

- **2024 Taiwan Corporate Sustainability Awards Executive Committee (TCSA):** Top 10 Domestic Companies Sustainability Model Award, Corporate Sustainability Report Award (Platinum), Climate Leadership Award, Water Resource Management Leadership Award, Circular Economy Leadership Award, Sustainable Supply Chain Leadership Award, Social Inclusion Leadership Award, Workplace Well-being Leadership Award ,Talent Development Leadership Award
- **Global Corporate Sustainability Awards (GCSA):** Sustainability Reporting Silver Award
- **Taiwan Sustainability Action Awards (TSAA):** Digital Transformation and Sustainable Manufacturing Excellence Award (SDG 9), the Circular Economy and Sustainable Manufacturing Gold Award (SDG 12), and Startup Alliances for Sustainable Co-Prosperity Silver Award (SDG8)
- **Taiwan Biodiversity Awards (TWBA):** Silver Award

10 years in a row

Listed on the 2024 FTSE4GOOD Emerging Markets Index for the year of 2024

FTSE4Good

8 Consecutive Years

Listed on the 2017-2024 FTSE4Good TIP Taiwan ESG Index, developed by FTSE4Good in partnership with Taiwan Index Plus Corp. (TIP), a Taiwan Stock Exchange's (TWSE) wholly-owned subsidiary

FTSE4Good
TIP Taiwan ESG Index
TIP
Taiwan Index Plus

Rated Again

Rated MSCI ESG "A" for the year 2024

MSCI
ESG RATINGS
A
CCC | B | BB | BBB | A | AA | AAA

Prime Status

Awarded ISS ESG Prime status for outstanding corporate sustainability performance

Corporate ESG Performance
Prime
RATED BY ISS ESG

Achieved best ranking

Ranked eighth in the Large Enterprises – Manufacturing Sector category and recognized among the top 100 corporations for talent sustainability. Additionally, ASEH was featured on the "Healthy 99" list of companies, receiving the 2024 Corporate Health Responsibility Awards

Strong ESG focus

2024 7th Online Reputation Leadership award for ESG Development and Strategic Excellence

BEST REVIEWED ONLINE AWARDS 2024

2024 Awards and Recognition



ASE Kaohsiung

- Ministry of Environment - National Enterprise Environmental Protection Award: Silver Award (K7, K11)
- Ministry of Environment - Clean Water Sustainability Award:
  - First in the Energy and Resources High-Tech Industry Category (K11, K14B)
  - First in the smart management category (K7)
- The Energy Administration of Ministry of Economic Affairs - Energy Saving Benchmark Award: Gold Award (K5)
- The Water Resources Agency of Ministry of Economic Affairs - Outstanding Water Conservation Unit Award: Excellence Award (First Place) in the Industry Category (K9)
- The Industrial Development Administration of Ministry of Economic Affairs - Outstanding Greenhouse Gas Reduction Enterprises Recognized: Outstanding performance in GHG reduction (K11)
- The Occupational Safety and Health Administration, Ministry of Labor
  - The "OHS SDGs": Healthy Workforce Sustainability Leadership Award
  - Evaluation of Occupational Health and Safety Performance Disclosures in Corporate Sustainability Reports: Outstanding Enterprise Award
- The Health Promotion Administration of Ministry of Health and Welfare - Outstanding Healthy Workplace Award:
  - Health Management Award
  - Healthcare Award (K12)
- The Chung-Hua Institution for Economic Research - Taiwan Circular Economy Award:
  - Sustainable Supply Chain Award (ASEKH)
  - Innovative Technology Award (ASEE)
  - Sustainable Economic Activity Award (K12)
- TAISE - Building Sustainability Award: Gold Award (K12)



ASE Chungli

- National Sustainable Development Awards
- Outstanding Private Enterprises in Green Procurement
- Outstanding Corporate Participant in River Adoption Program



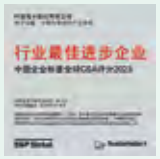
SPIL

- Air quality purification requires adoption of units

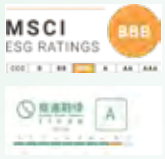
USI

- Top 1% S&P Global ESG Score 2023 in the S&P Global Sustainability Yearbook (China) 2024 (USI Zhangjiang)
- Industry Mover in the S&P Global Sustainability Yearbook (China) 2024 (USI Zhangjiang)
- Top 5% S&P Global ESG Score 2024 in the S&P Global Sustainability Yearbook 2025 (USI Zhangjiang)
- 2024 MSCI ESG Ratings "BBB" (USI Zhangjiang)
- 2024 EcoVadis Bronze Sustainability Rating (USI Zhangjiang)
- SynTao Green Finance 2024 ESG Rating "A" (USI Zhangjiang)

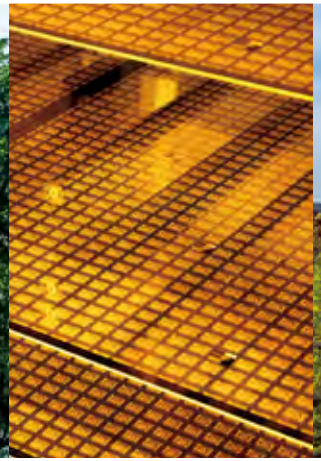











ABOUT OUR REPORTING

This is our 7th Sustainability Report for ASEH. This report has been prepared in accordance with the GRI Standards and SASB Standards. ASEH has reported in accordance with the GRI Standards for the period 2024/1/1-2024/12/31. Corporate CSR Division is in charge of data gathering, compiling and editing. This report is available in both Chinese and English. The complete electronic version can be downloaded from our website. https://www.aseglobal.com/csr/csr-download/

If you have any comments or suggestions regarding this report, please contact us at:

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ESG Website: https://www.aseglobal.com/csr/

Report Boundary

The report outlines disclosures on the economic, environmental and social performance of ASE (Advanced Semiconductor Engineering, Inc. and its subsidiaries), SPIL (Siliconware Precision Industries Co., Ltd. and its subsidiaries), and USI (USI Inc. and its subsidiaries). The scope of this report includes:

ASE Facilities: Kaohsiung, Chungli, Wuxi, Shanghai (Material), ISE labs China, Japan, Korea, Singapore, Malaysia and ISE Labs

SPIL Facilities: Da Fong, Chung Shan, Zhong Ke, Zhong Ke II, Zhong Gong, Hsinchu, Changhua and Suzhou

USI Facilities[1]: Nantou, Zhangjiang, Kunshan, Jinqiao, Huizhou, Mexico and Vietnam, Suzhou(ASTEELFLASH)

ASE Global Integrated Solutions Co., Ltd.

Any boundary adjustments made to the scope of data is separately explained within the report. Financial information expressed in NT dollars in this report is prepared in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers and the International Financial Reporting Standards (IFRS), International Accounting Standards (IAS), Interpretations of IFRS (IFRIC) and Interpretations of IAS (SIC) endorsed and issued into effect by the Financial Supervisory Commission of the Republic of China. Financial information expressed in US dollars in this report is prepared in accordance with IFRS, IAS, IFRIC and SIC as issued by the International Accounting Standards Board. Both financial information is audited by Deloitte & Touche. All figures are presented in US dollars unless otherwise specified.

[1] The scope includes operations in Zhangjiang, Jinqiao, Huizhou, Kunshan, Nantou (Nantou-TT, Nantou-NK 1 & NK 2), Mexico, Vietnam and Asteelflash Suzhou (AFG-SUZ)

Internal Review and Approval

The disclosed information and data in this report were initially verified by the relevant managers of the data/information providers. The initial draft was compiled by the Corporate CSR Division. After being reviewed by the Corporate Finance and Regulatory Compliance Departments, the final report was approved and authorized for issue by the Chairman of Corporate Sustainability and Information Security Committee.

Other ESG/Sustainability Reports in ASEH

Within the ASEH, we have also published four separate Sustainability reports providing more detailed sustainability information of our ASE Kaohsiung and Chungli Facilities in Taiwan, SPIL and USI. The complete electronic version can be downloaded from https://www.aseglobal.com/csr/csr-download/



ASE Kaohsiung · Sustainability Report



ASE Chungli · Sustainability Report



SPIL · Sustainability Report



USI · Sustainability Report

External Assurance

In accordance with the ISAE 3000 (Revised), ASEH engaged Deloitte & Touche to perform a limited assurance engagement on this report that reflected disclosures presented in accordance with the GRI Standards, SASB Standards, and Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies. All ASEH sites have acquired certifications in environmental, social, information security and other relevant fields. The company's conformity with international standards ensures complete regulatory compliance in our management and control measures, and operating procedures. For more information, please refer to the chart on next page:

Facility \ Certification	ISO 14001	ISO 50001	ISO 46001	ISO 14064-1	ISO 22301	QC 080000	ISO 9001[2]	ISO 45001	ISO/IEC 27001	Global Lighthouse Network	UL2799 Zero Waste to Landfill, ZWTL
ASE Kaohsiung	V	V	V	V	V	V	V	V	V	V	Platinum level (K21)
ASE Chungli	V	V	V	V		V	V	V	V		
ASE Wuxi	V			V		V	V	V			
ASE Shanghai (Material)	V			V		V	V	V	V		
ISE Labs China	V	V		V		N/A[1]	V	V			
ASE Japan	V			V		V	V	V			
ASE Korea	V			V		V	V	V	V		
ASE Singapore	V			V		V	V	V			
ASE Malaysia	V			V		V	V	V			
ISE Labs	V			V		N/A[1]	V	V			
SPIL Da Fong	V	V	V	V	V	V	V	V	V		
SPIL Chung Shan	V	V		V	V	V	V	V	V		
SPIL Zhong Ke	V	V	V	V	V	V	V	V	V		
SPIL Zhong Ke II	V	V	V	V	V	V	V	V	V		
SPIL Hsinchu	V	V		V	V	V	V	V	V		
SPIL Changhua	V	V		V	V	V	V	V	V		
SPIL Suzhou	V	V		V	V	V	V	V	V		
SPIL Zhong Gong	V	V		V	V	N/A[1]	V	V			
USI Nantou	V	V		V	V	V	V	V	V		
USI Zhangjiang	V	V		V		V	V	V			Gold level
USI Kunshan	V	V		V		V	V	V			
USI Jinqiao	V	V		V		V	V	V			
USI Huizhou	V	V		V		V	V	V			
USI Mexico	V	V		V		V	V	V			
USI Vietnam	V	V		V		V	V	V			
Asteelflash Suzhou	V	V		V			V	V			

[1] QC 080000 is not applicable to ISE Labs China, ISE Labs and SPIL Zhong Gong, as these are pure testing facilities and do not engage in any manufacturing of products

[2] ISO 9001 third-party organization: TUV NORD (ASE Kaohsiung, ASE Chungli, USI Vietnam); BSI (ASE Shanghai(Material)); SGS (ASE Korea, ASE Japan, USI Huizhou, USI Kunshan, USI Zhangjiang, USI Suzhou(ASTEELFLASH)); SIRIM QAS (ASE Malaysia); UL (SPIL Facilities); DQS(USI Nantou, USI Mexico); Intertek (USI Jinqiao); ACM Certification Limited (ISE Labs China)



Letter from Chairman

Navigating the Crossroads of an Intelligent and Low-Carbon Economy

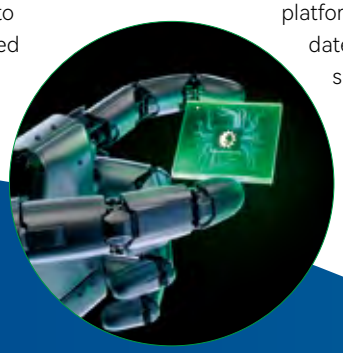
The world is entering a transformative era where artificial intelligence (AI) is reshaping the industry and redefining how we live and operate. Driven by the rapid advancement of AI, the global semiconductor market is forecast to surpass the USD 1 trillion mark within the next decade, solidifying AI as a cornerstone of the intelligent economy. At the same time, climate change can no longer be perceived as a distant risk with the increasing frequency of extreme climate events. In fact, it is a persistent challenge that businesses must confront. Throughout 2024, the global average temperature exceeded the pre-industrial level by more than 1.5° C for the first time, deviating from the Paris Agreement's goal of limiting global warming to below 1.5° C. This phenomenon highlights the urgency for global action and the critical need for enterprises to accelerate their transition towards low-carbon business models.

Regardless, we remain optimistic that the coming decade will be a golden era for the semiconductor industry. The company has established clear strategic goals, committing fully to collaborating with key global partners to drive innovation, overcome technological barriers, and seize strategic opportunities amid an increasingly complex geopolitical landscape. Our ambition is to reshape the semiconductor value chain into a resilient, competitive, and sustainable model anchored by three core pillars: low-carbon manufacturing, digital transformation and localization. At ASEH, we firmly believe that progress is built not only on technological breakthroughs but also on the unwavering commitment to environmental stewardship and social inclusion. We will leverage our pivotal role within the global semiconductor ecosystem to harness the power of technology and contribute meaningfully to a smarter and more sustainable future.

Harnessing AI for Sustainable Manufacturing

ASEH is committed to building a future-ready manufacturing ecosystem powered by AI and aligned with global sustainability goals. Since joining the Science-Based Targets initiative (SBTi), the company has formulated ambitious carbon reduction pathways for 2030 and 2050. We continue to uphold our corporate social responsibility to both stakeholders and the planet through a holistic approach anchored in five key areas: carbon credit investments, renewable energy adoption, low-carbon transportation, low-carbon product development, and supply chain engagement. As of 2024, 19% of our manufacturing facilities' energy consumption is sourced from renewables, with 88% of facilities utilizing renewable energy and 10 sites achieving RE100 certification. To accelerate net-zero progress across the company, internal carbon pricing was implemented at 100% of all global sites, with adequate budget allocated for ongoing decarbonization initiatives. In Taiwan, 14 of our facilities have achieved Green Factory Certification. In addition, environmental meetings are conducted quarterly to explore innovative and effective carbon reduction strategies. By addressing both our operational processes and employee behaviors, we are transforming carbon reduction into a company-wide movement.

At the same time, we are accelerating the adoption of AI technologies across our manufacturing operations from production scheduling to automated dispatching and yield optimization. AI integration at ASE Kaohsiung has led to a 67% increase in production efficiency and a 39% reduction in order lead time, demonstrating significant agility and resource optimization. Additionally, the company's smart energy management systems use AI algorithms to automatically optimize energy consumption based on real-time data, maximizing operational efficiency and minimizing waste. We have also integrated wastewater quality monitoring and organic fluorescence detection with AI at the final stage of the production process to optimize water recovery processes and improve reuse rates.



Building a High-impact Decarbonized Supply Chain

A robust supply chain is integral to maintaining ASEH's growth and leadership influence. To that end, we work closely with our supply partners to drive low-carbon management through 5 key pillars: sustainable supplier selection, comprehensive carbon data transparency, low-carbon transformation of materials and equipment, upstream low-carbon transportation, and the development of a low-carbon supply chain. The ASE Environmental Sustainability Foundation also hosts the Low-Carbon Energy-Saving Sustainability Awards, strengthening shared commitment with supplier partners toward achieving net-zero emissions by 2050. For the first time, we have introduced a 10% sustainability performance metric into our supplier evaluation system, alongside traditional criteria such as quality and delivery. In addition, we launched a Low-Carbon Equipment Alliance through a partnership with 19 key equipment suppliers to co-develop energy-efficient machinery aimed at achieving a 20% energy reduction by 2030. The decarbonization journey involves multi-layers of complexity, and driving meaningful progress goes beyond the roles played by the corporate sustainability or procurement teams. The company is strengthening cross-functional collaboration, engaging suppliers from multiple perspectives and extending our climate actions across the broader ecosystem. We have also built a robust library of resources including sustainability courses and an online learning platform to support our partners in sustainability development. To date, nearly 2,000 partners have participated, contributing to a shared platform for sustainability knowledge and action.



Jason C.S. Chang
Chairman



Empowering our Youth and Protecting our Ecosystems

At ASEH, we are deeply focused on addressing environmental challenges and promoting social welfare. We combine the resources of our business operations together with the cultural, charity and environmental sustainability foundations and social enterprise unit to develop purpose-driven programs and initiatives. The Sustainability Innovation Competition was launched in 2022 and is in its third year running. The program supports promising startups and nurturing emerging sustainable technologies. The 2024 competition focused on Green Energy & Low Carbon and Circular Economy, attracting over 100 participating teams. Beyond providing financial support, we help to facilitate winning teams to commercialize their innovative solutions through partnerships within our company or local government agencies, accelerating industry transformation and amplifying sustainable impact.

We believe it is vital to engage young people early, empowering them to become active participants and innovators in sustainability. The 2024 ASEH Youth Sustainability Innovation Camp was organized to equip students with practical knowledge on sustainability concepts and problem-solving skills, helping them build resilience in a dynamic learning environment.

Our actions continue in the fostering of collaborative water stewardship and ecological conservation, combining afforestation, carbon sinks, and marine protection to enhance positive impacts on natural capital and biodiversity. As of 2024, we have achieved a cumulative afforestation area of 261.05 hectares, planting over 340,000 trees to strengthen soil and water conservation and restore habitats. We have also partnered with the International Climate Development Institute on a Low-accumulation Forest Carbon Enhancement Project to explore localized nature-based carbon sink mechanisms that support carbon neutrality planning. The official acknowledgement of the methodology by the Ministry of Environment in 2024 is a positive development for broader forest management initiatives across Taiwan. Beginning in 2025, we plan to launch forest management initiatives aimed at reducing several thousand tons of CO_2e over the next 30 years. Ultimately, our objective is to accelerate climate mitigation and nurture local ecosystems and biodiversity.

Richard H.P. Chang
Vice Chairman and President

Catapulting towards a Responsible and Resilient Future

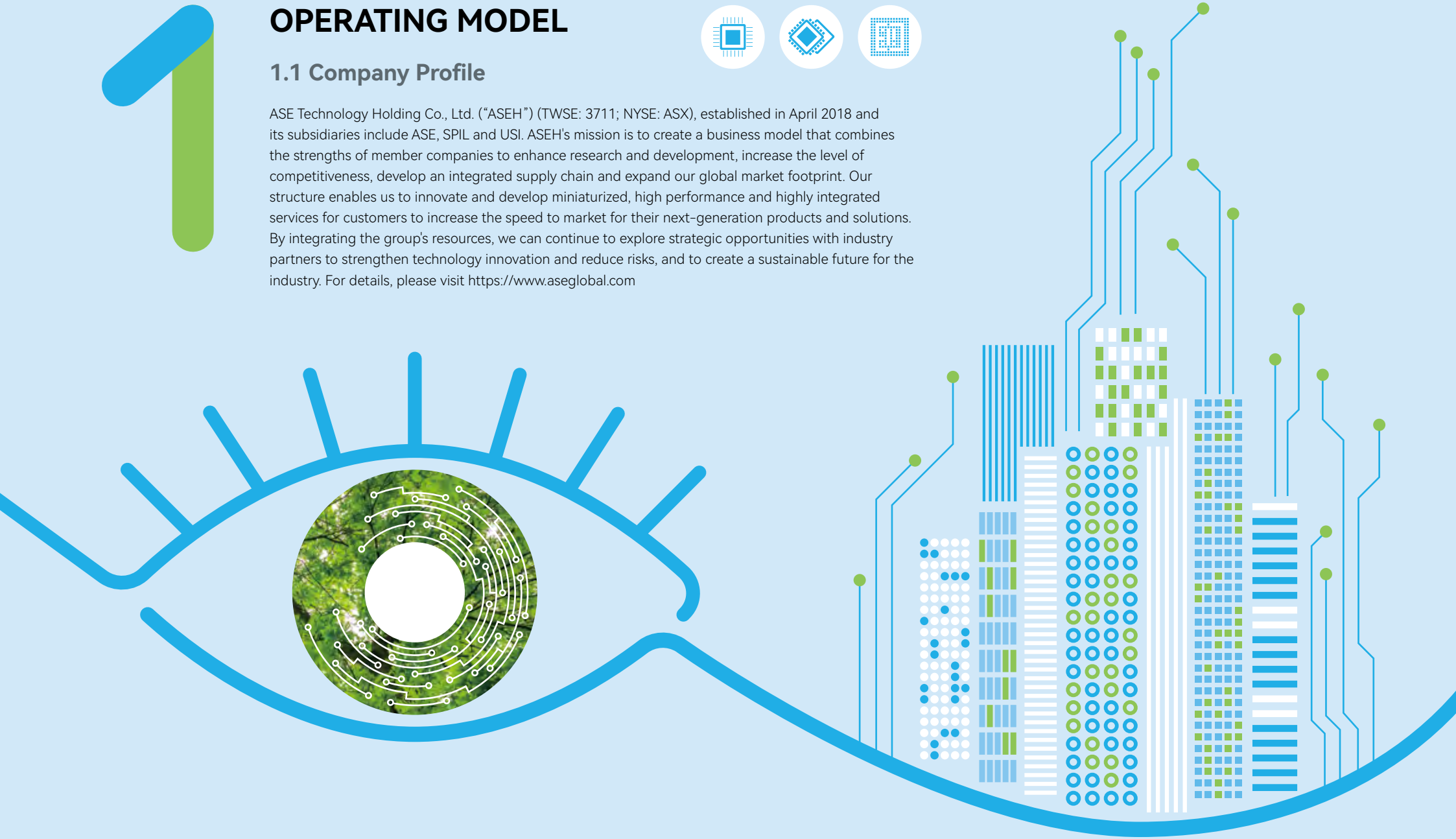
As we approach 2025, our journey of innovation and value creation continues unabated, embracing AI technologies and sustainability development in everything we do. Our teams will take concrete actions as well as expand impactful programs that reinforce ESG values both within the organization and across society. We aim to cultivate a responsible corporate culture that inspires positive change and helps shape a more resilient and sustainable future for all.



1 OPERATING MODEL

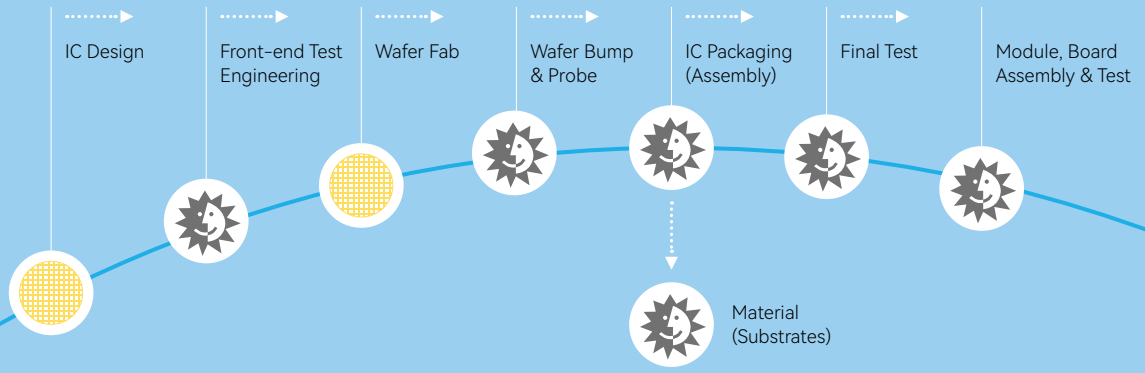
1.1 Company Profile

ASE Technology Holding Co., Ltd. (“ASEH”) (TWSE: 3711; NYSE: ASX), established in April 2018 and its subsidiaries include ASE, SPIL and USI. ASEH's mission is to create a business model that combines the strengths of member companies to enhance research and development, increase the level of competitiveness, develop an integrated supply chain and expand our global market footprint. Our structure enables us to innovate and develop miniaturized, high performance and highly integrated services for customers to increase the speed to market for their next-generation products and solutions. By integrating the group's resources, we can continue to explore strategic opportunities with industry partners to strengthen technology innovation and reduce risks, and to create a sustainable future for the industry. For details, please visit https://www.aseglobal.com



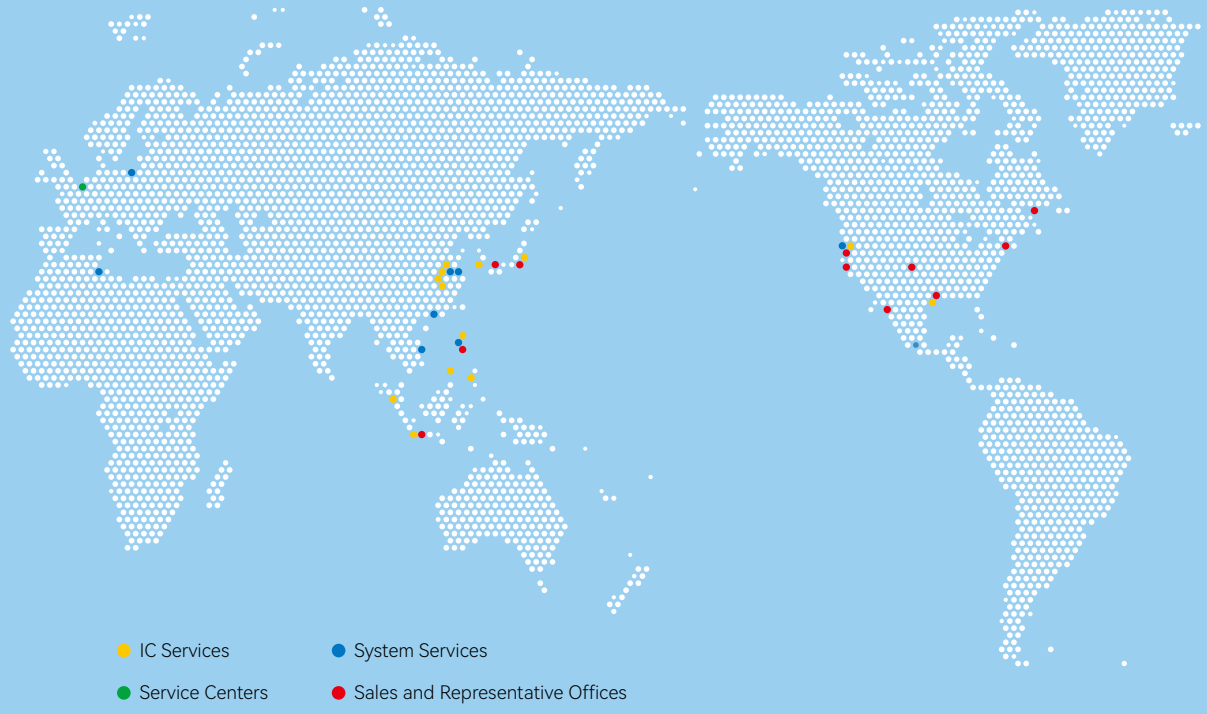
Service Scope

ASEH is the leading provider of semiconductor manufacturing services in assembly and test. The company offers complete turnkey solutions covering front-end engineering test, wafer probing and final test, IC packaging, materials and electronic manufacturing services and develops leading edge technologies to serve the semiconductor, electronics and digital technology market.



Global Operation

Headquartered in Taiwan, ASEH's sales and manufacturing facilities are strategically located globally in Taiwan, China/ Hong Kong, South Korea, Japan, Malaysia, Singapore, Philippines, Vietnam, Mexico, U.S.A., Tunisia and European countries. ASEH has a worldwide headcount of over 95,000 employees (as of December 2024).



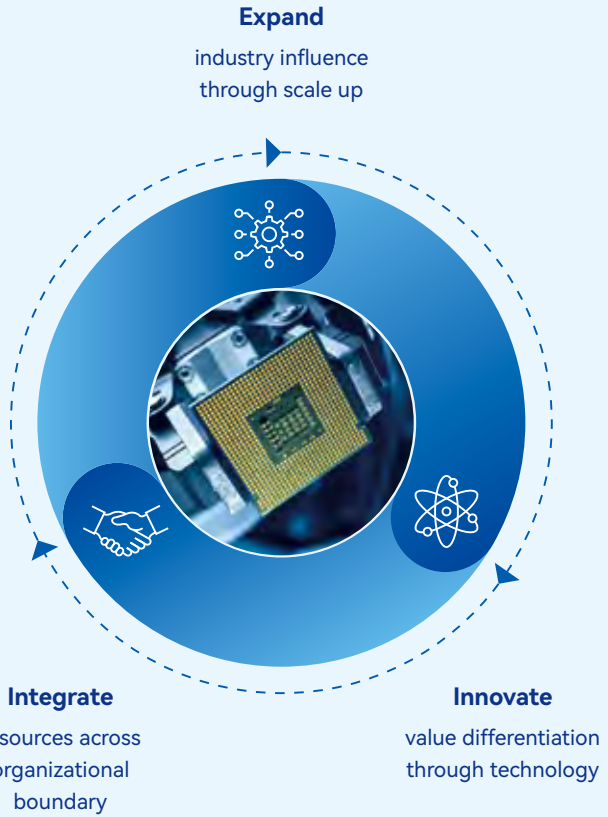
1.2 Mission and Vision

ASEH offers the best manufacturing services in semiconductor packaging/testing, substrates, and systems. We act as an extension of our customers' own operations, helping them achieve maximum success through efficient resource utilization and our extensive manufacturing chain. To stay ahead of the semiconductor technology curve, ASEH builds a highly experienced and skilled engineering team that continually innovates and develops the most advanced semiconductor technologies.

ASEH adheres to the highest corporate governance standards and transforms business philosophies into sustainable actions. As a major player of the global semiconductor chain, we carefully strategize according to industry development and trends, and seek talent and resources worldwide. We form strategic alliances with the government, industry, academia and business partners to keep innovating and create a mutually beneficial business environment. These alliances help support our sustainable development goals to achieve the betterment of mankind and ecological conservation.

ASEH Value Creation Model

In alignment with our mission and vision, and to maintain industry innovation and leadership, we incorporated future industry trends together with the feedback from our senior management and operating units on the indicators about corporate sustainability to establish the ASEH Value Creation Model. Our value creation model consists of three strategies – Integrate, Expand, Innovate. The model enables ASEH to respond to future challenges and more importantly, it forms the basis of ASEH's foundation in integrating sustainability into our business strategy.

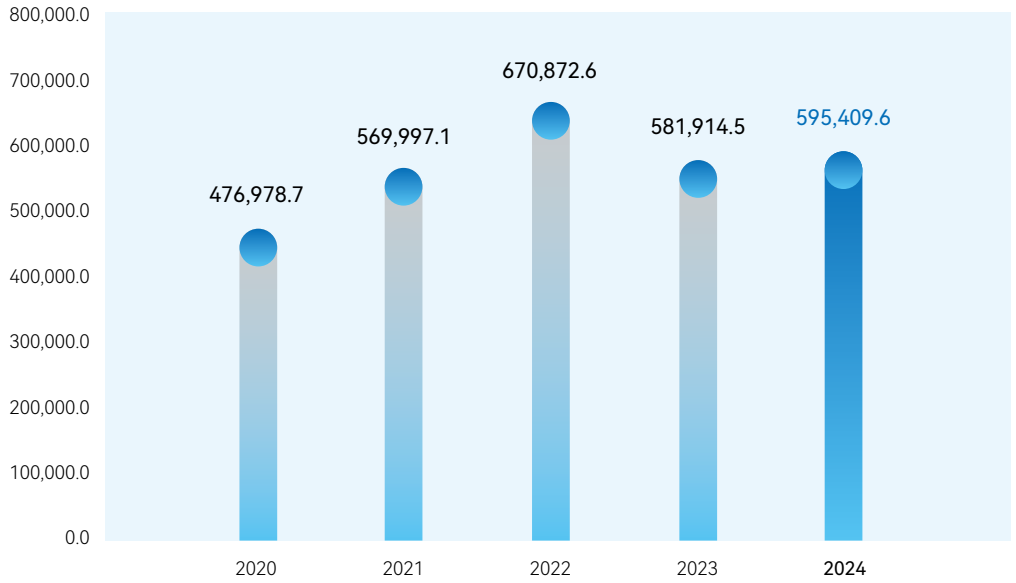


1.3 Financial Performance[1]

The Group's consolidated revenue in 2024 amounted to NT$595.4 billion (including NT$316.3 billion in semiconductor assembly and testing business, NT$271.3 billion in electronic manufacturing services, and NT$7.8 billion in others), an increase of approximately NT$13.5 billion over 2023, with an annual growth of 2.3%. In terms of the semiconductor assembly and testing business, the consolidated revenue in 2024 increased by NT$9.6 billion over 2023, with a year-over-year growth of 3.1% (excluding substrate materials and inter-segment revenue). In addition, for the electronic manufacturing services business, the consolidated revenue in 2024 increased by NT$3 billion over 2023, with a year-over-year growth of approximately 1.1%.

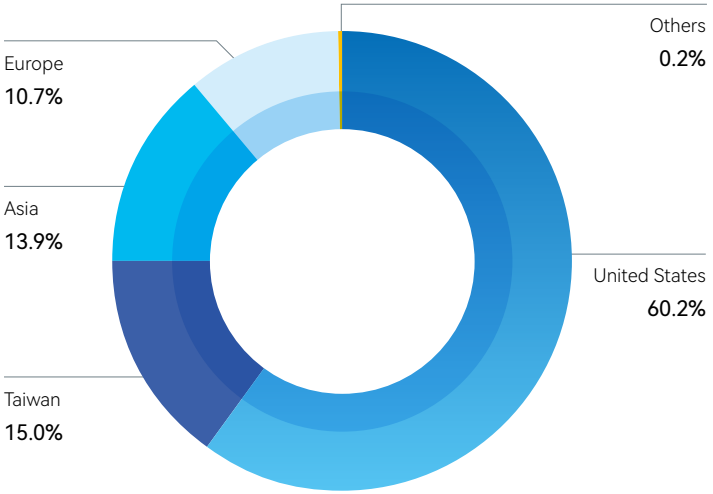
Overall, the financial data showed growth compared to the data in 2023.

Annual Operating Revenue



2024 Revenue

We categorize our operating revenues geographically based on the headquarters in which customers are located.



[1] For further details on financial performance, please refer to our consolidated financial report: https://ir.aseglobal.com/html/ir_financial.php

SUSTAINABLE GOVERNANCE

2.1 Organization and Structure

The Corporate Sustainability and Information Security Committee, (CSISC — formerly the Corporate Sustainability Committee, CSC) was formed by the company to serve as the highest level of authority in the planning and supervision of sustainability-related strategies, and facilitating the accomplishment of sustainability management policies and goals of the 3 member companies of ASEH. The CSISC comprises ASEH's directors and is headed by the chairman, who oversees the committee's performance and reports the progress to the board of directors. While the management continues to set the company on a growth trajectory, it remains equally focused on creating positive social and environmental impacts. At least once a year, the Corporate Sustainability and Information Security Committee reports to the Board of Directors on the following areas: (1) current policy guidelines and organizational structure; (2) status on the progress towards sustainable development; and (3) management policies, goals, and future plans on major sustainability issues. The Board of Directors oversees and reviews implementation outcomes.

The ASEH Sustainability Management Committee, composed of the Chief Sustainability Officer and the Chief Financial Officer, was established under the CSISC as a platform for information alignment and integration between ASEH and its 3 member companies. The committee is responsible for overseeing and tracking sustainability strategies and implementation actions of the 3 member companies. It is also required to report the progress and key outcomes of sustainability initiatives on a regular basis to the CSISC, ensuring the effective execution of sustainability management systems and objectives.

The Corporate CSR Division was established to serve as the executive secretariat of the CSISC. The Corporate CSR Division supports the resource integration and site expertise across all 3 member companies to formulate top-down and horizontal promotional strategies. At the same time, each member company - ASE, SPIL and USI, has a (Corporate) Sustainability Committee established at the group level with multiple taskforces. The committee, headed by a senior level executive, is tasked with identifying key issues for discussion, annual presentation of performance and results, and reviewing the progress of meeting various short, medium and long-term sustainability objectives.

In the 2024 CSISC annual meeting, the CSISC formulated short, medium and long-term goals that helps the company better respond to the evolving industry landscape and global developments in sustainability trends. For more information, please refer to the relevant chapters.

Board of Directors

- Identify corporate-wide sustainability mission or vision
- Declare policies, systems or relevant management guidelines

[Executive Secretariat] Corporate CSR Division

- Promote the execution of sustainability action plans
- Assess sustainability performance
- Disclose information on sustainability performance

ASEH Corporate Sustainability and Information Security Committee

- Develop and establish corporate-wide sustainability vision, policies, and targets
- Identify risks and opportunities related to sustainability issues and determine responsive strategies and investments
- Supervise the planning and implementation of sustainability strategies
- Oversee sustainability performance and information disclosure
- Promote and strengthen information security development policies, plans and strategies

Chairperson:
Jason C.S. Chang ASEH Chairman

Vice Chairperson:
Tien Wu ASEH Chief Operating Officer

Members:

Mei-Yueh Ho	ASEH	Independent Director
Shen-Fu Yu	ASEH	Independent Director
Wen-Chyi Ong	ASEH	Independent Director
Danielle Chang	ASEH	Director
Andrew Tang	ASE	Vice-Chairman & Group CPO
Jeffrey Chen	USI	Chairman

ASEH Sustainability Management Committee

- Oversee and track coordinate the progress of sustainability committees across the 3 member companies.
- Serve as a communication and resource integration platform for sustainability strategies and action plans between ASEH and 3 member companies.
- Regularly report the progress and key outcomes of sustainability initiatives to the CSISC.

Members:
Du-Tsuen Uang
ASEH CSO

Joseph Tung
ASEH CFO

ASE Corporate Sustainability Committee

Chairperson: Tien Wu General Manager and CEO

- Corporate Governance
- Environment & Green Innovation
- Supply Chain Management
- Employee Care & Development
- Social Involvement

SPIL Sustainability Committee

Chairperson: Chi-Wen Tsai Chairman and General Manager

- Risk Management 1
- Risk Management 2
- Environmental Innovation
- Employee & Social Involvement
- Corporate Governance

USI Sustainability Committee

Chairperson: C.Y. Wei President

- Corporate Governance
- Green Product & Innovation
- Value Chain Management
- Employee & Society Well-being Engagement
- Environmental Protection & Occupational Safety

Taskforces

- Develop and execute action plans
- Monitor implementation progress and performance of the action plans
- Provide expertise support and experience sharing

2024 Key Sustainability Projects

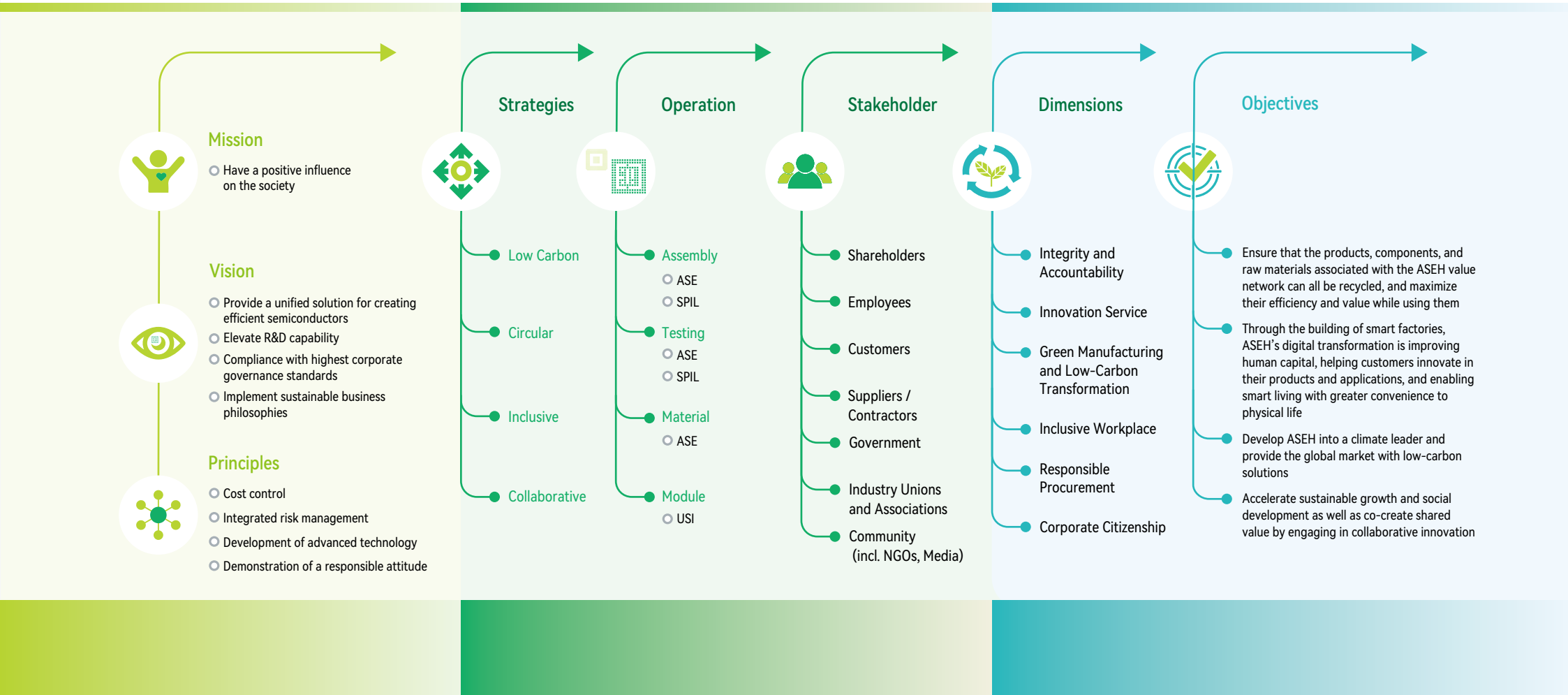
Dimensions	2024 Key Projects	Partners	Positive Changes
Environmental 	Net Zero Emission	• Government • External Consultants	• Structural transformation of energy and lower operational risks • Mitigation of extreme climate change
	Climate and Natural Environment Assessment	• External Consultants	• Strengthening global climate risk management • Responding to stakeholders' concerns
	Carbon Sink Forest Management	• Government • External Consultants	• Developing local methodologies to increase carbon sequestration
	Circular Economy within Our Value Chain	• Academic and Research Institutions • Suppliers	• Waste recycling and reusing • Increasing energy resource circularity and eco-efficiency
	Expanding the Scope of Implementation of Innovative Technologies	• External Consultants Customers • Customers • Academic and Research Institutions	• Improving the positive impact of value chain activities
Social 	ASEH Guardians of the Seas Project	• Government • External Professional Institutions • Non-profit Organizations	• Cleaning the coast and marine environment • Conservation of marine ecology and biodiversity
	2024 ASEH Sustainable Innovation Competition	• Government • External Consultants • Academic and Research Institutions	• Supporting social innovation and promoting the development of sustainable eco-industries • Implementing environmental protection and creating sustainable impact together
	Assistance Program for Disadvantaged Students	• Academic and Research Institutions	• Improving educational environment • Enhancing learning opportunities and motivating them disadvantaged students
	Employee Engagement Survey	• External consultants	• Strengthening talent attraction, retention, and cultivation • Enhancing employees' approval ratings and corporate goal alignment
	Systems for Key Talent Retention	NA	• Strengthen talent attraction and retention
Governance 	ASEH Supplier Sustainability Awards	• External Consultants • Auditing Organizations • Suppliers • External Experts and Scholars	• Promoting sustainable collaboration and cultivating sustainable suppliers
	Supplier Guidance on Carbon Inventory	• External Consultants • Auditing Organizations • Suppliers	• Developing supplier capabilities to conduct carbon inventory
	Conflict Minerals Management	• External Auditing Organizations • Competent Authorities	• Implementing responsible raw material procurement
	Corporate Governance Evaluation System	• Competent Authorities	• Enhancement of corporate governance mechanisms
	Performance Evaluations for the Board of Directors and Its Subordinate Functional Committees	• Competent Authorities • Independent Professional Institutions	• Enhancing the functions of the Board of Directors
	Information Security Management	• Independent Consultants and Institutions • Suppliers	• Improving information security capacity • Minimizing operating risks

Sustainable Management Framework

We have established our sustainable management framework in accordance with our Sustainable Development Best Practice Principles and Corporate Sustainability and Citizenship Policy. We have also identified sustainable development opportunities through risk identification and close collaboration with our partners and stakeholders. ASEH works with external parties to implement its goals and targets in sustainable development, strengthen the company's business decision-making process, and create a sustainable business model.

ASEH Sustainable Management Framework

Sustainable Development Best Practice Principles
Corporate Sustainability and Citizenship Policy



Enriching and Promoting Sustainable Culture

Sustainability is integral to corporate culture and drives broad transformation in companies. At ASEH, we continue to rigorously fulfil our corporate social responsibilities in tandem with maintaining our competitive edge. We have developed a diverse range of programs to ensure that sustainability is firmly ensconced at the core of ASEH's corporate DNA. To that end, we aim to extend the culture from our employees to external stakeholders, further demonstrating the company's intangible value. Our resolute focus on surpassing ourselves and giving back to society has allowed us to achieve corporate social responsibility and build an inclusive society. Together with the integration of resources from all disciplines, the company is on track to creating positive social impacts.

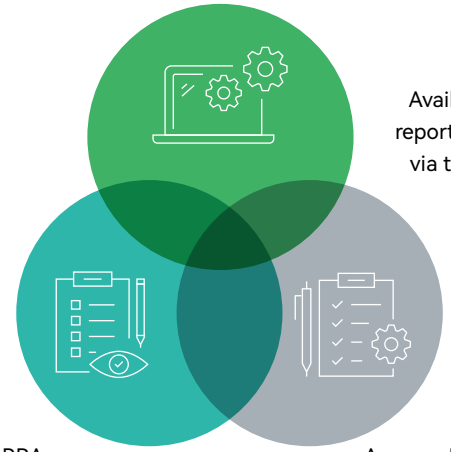
2024 Activities to Cultivate Sustainable Culture at ASEH

Dimension	Activities	Effects of building a sustainable culture
Environmental	ASEH has pledged to achieve net-zero emissions by 2050 by setting clear short, mid and long-term goals, guided by its five major principles. Concurrently, ASEH is actively involved in climate change initiatives across various sectors, including government, academia, and non-profit organizations. ASEH is a member of the SEMI Semiconductor Climate Consortium (SCC), Taiwan Net Zero Emissions Association, and the Taiwan Carbon Capture Storage and Utilization Association. We have also submitted our net-zero initiatives to the SBTi. We aim to leverage our influence on a global scale to foster a resilient, transformative and progressive semiconductor supply chain.	• Expand the influence of net zero initiatives • Promote low-carbon transformation in the supply chain • Drive low-carbon manufacturing innovatively
Social	ASEH and the CommonWealth Magazine have jointly organized the selection of outstanding "Smiling Taiwan Creative Lesson Plan" for nine consecutive years. This initiative aligns with the United Nations' sustainable development goals (SDGs) and encourages teachers from senior and vocational high schools, junior high schools, and elementary schools to leverage local resources and design unique learning curriculum. By encouraging students to work together as a team, students will gain more insights into local cultures and their environments. The program also aims to raise awareness of global sustainability trends through education and engagement. In 2024, students from the Taoyuan Municipal Xinwu Senior High School embarked on an innovative sustainability journey to explore the region's stone tidal weirs. This immersive program fosters greater awareness of marine sustainability and stronger local green culture amongst students through the promotion of local cultures and the studying of the construction of stone tidal weirs.	• Improve environmental literacy • Raise sustainability-related awareness • Promote social participation
Economic	Our supply chain plays a pivotal role in our journey towards net zero 2050. We are actively working with our supply partners to cut carbon emissions, guided by five key approaches comprising low-carbon supplier selection, comprehensive supply chain carbon data management, promoting low-carbon transformation of materials and equipment, adopting low-carbon transportation upstream, and establishing a low-carbon supply chain. In 2024, we teamed up with key equipment suppliers to drive and develop energy-efficient machine designs that will enable us to achieve the goal of 20% energy savings by 2030. We remain deeply committed to achieving supply chain decarbonization, and addressing the critical innovation and sustainability requirements across the global semiconductor supply chain.	• Incentivize suppliers to engage in sustainability-related endeavors • Promote low-carbon transformation of supply chain • Construct a circular economic industrial chain • Reduce the social costs of carbon emissions


ASE CSC Annual Meeting


SPIL Sustainability Committee Annual Forum


USI Sustainability Committee Annual Meeting and Forum



100%

Availability of audit reports to customers via the RBA-Online platform

93%[1]

Percentage of RBA VAP-certified facilities globally

75

Average RBA SAQ score

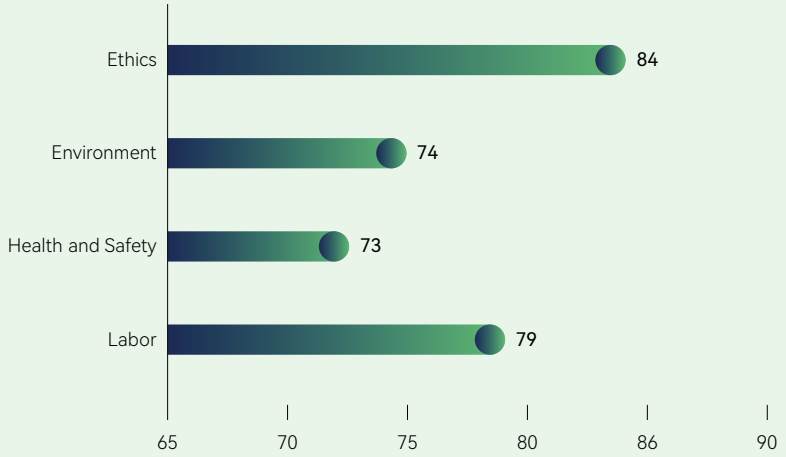
As a global leader in semiconductor packaging and testing, and system integration, ASEH is committed to environmental protection and compliance to the highest ethical standards. As a member of the RBA (Responsible Business Alliance), all our manufacturing facilities participate in the annual RBA Self-Assessment Questionnaire (SAQ) to evaluate specific inherent risk areas in labor, health and safety, environment, and ethics.

In 2017, The RBA VAP (Validated Assessment Process) was implemented across all our manufacturing facilities. Audits were conducted by independent third-party firms to identify risks and drive improvements and robust management systems for labor, ethics, health, safety, and environmental conditions in the supply chain.

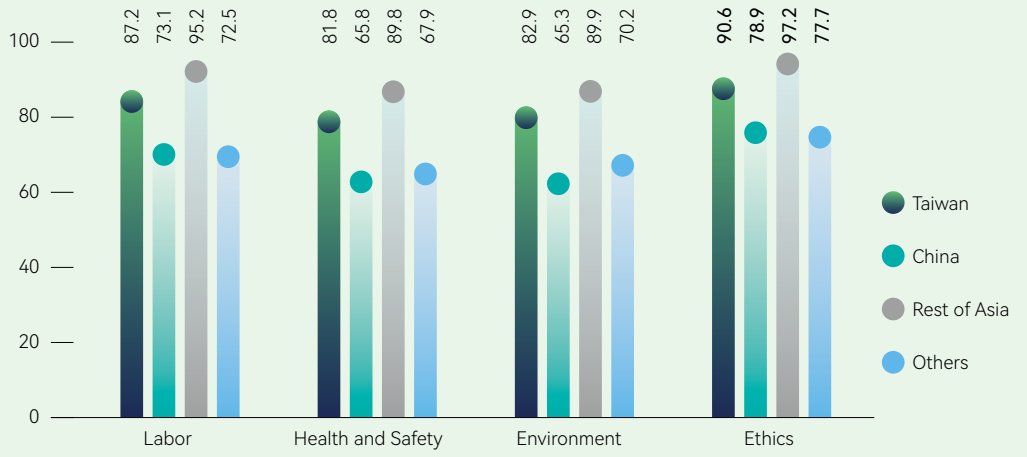
Our global locations include Taiwan, China, Japan, South Korea, Singapore, Malaysia, Vietnam, the United States and Mexico. As of 2024, 25 of our facilities have completed the RBA VAP. Customers can request the completed audit reports via the "RBA-Online" platform.

[1] ASE Shanghai (Material) and ISE Labs China do not complete RBA VAP

Average SAQ scores in 2024 (by category)

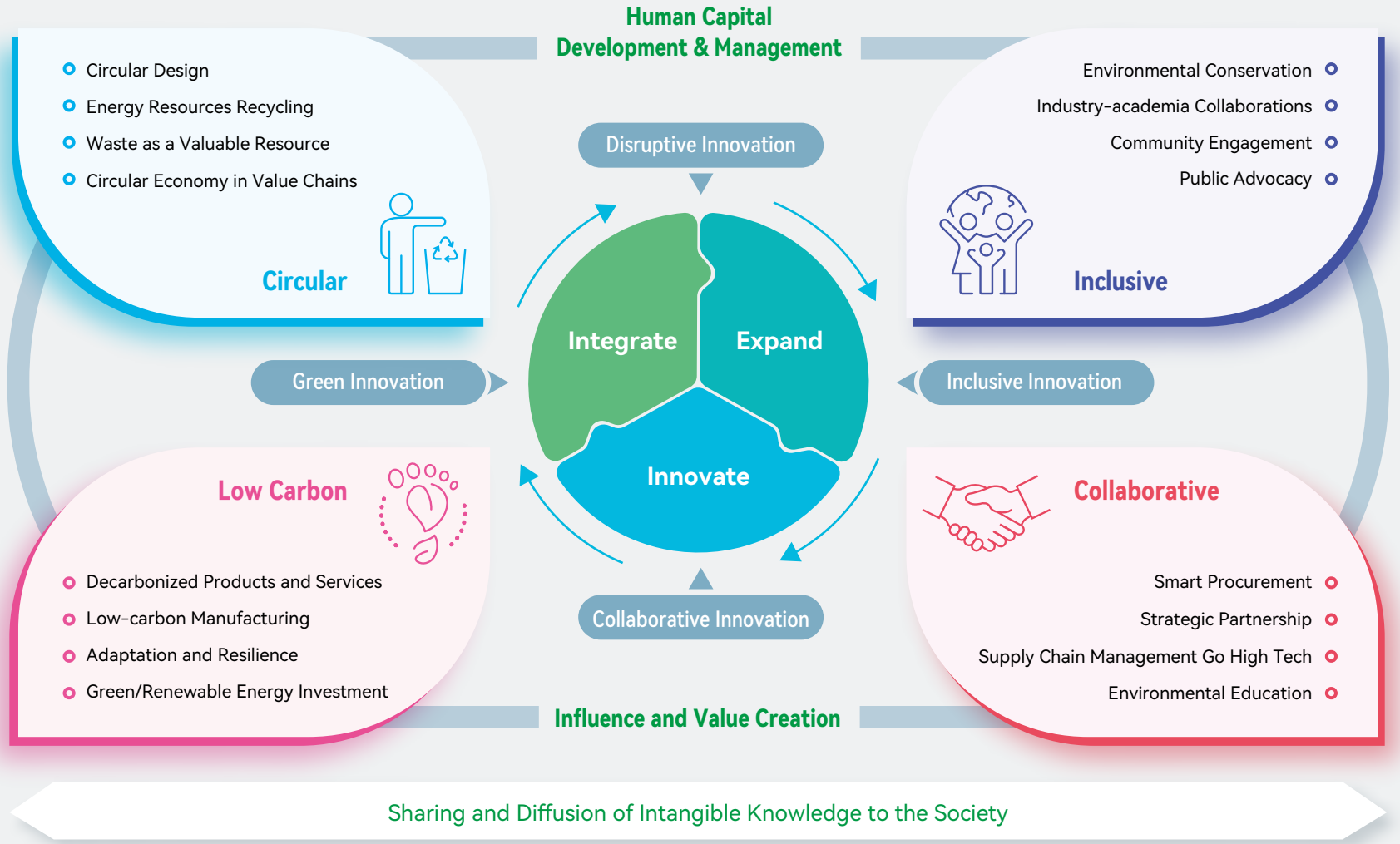


Average RBA SAQ scores in 2024 (by region)



2.2 Sustainability Strategies

Strategy-setting is the key to achieving long-term sustainability targets that tackle global climate challenges, uncertainties in the energy supply, and risks related to supply shortages of water, raw materials and other resources faced by businesses. To that end, ASEH has established four strategic sustainability pillars: Low Carbon, Circular, Inclusive and Collaborative, to help identify opportunities and growth drivers. We are committed to the creation of sustainable value and, to extending our strategic influence through external stakeholder communication and joint efforts with various interest groups to achieve a virtuous cycle of sustainability.



Sustainability Vision

In our annual CSISC Meeting, we review the achievement rates of our sustainability goals, and disclose the progress toward goals and the status of projects, providing visibility to employees, partners, customers and the general public. we established our long-term sustainability targets for 2030 based on major sustainability topics and their relative importance to our business operations. These targets serve to strengthen the correlation between the SDGs and our sustainability strategies, leading to the ultimate fulfillment of ASEH's commitment to corporate social responsibility.

Strategic Approaches and Targets

Dimensions	Key Issues	Business Impact on ASEH	Strategic Approach	2024 Progress/Status	2025 Target	2030 Target
Integrity and Accountability	Regulatory Compliance	Ensuring corporate compliance with all applicable laws is an important aspect of sustainability management. Operational and financial risks can be mitigated through a robust system of preventive measures.	**Implementing effective regulatory compliance system:** Strengthen the process for identification of regulatory requirements and reinforcing education to increase employee awareness of regulatory requirements.	Continuous strengthening of the management mechanisms for regulatory compliance to ensure that the company's operations comply with the latest regulatory requirements. Collaborating with third parties to conduct comprehensive audits on supply chain management, environmental protection, and labor rights to ensure compliance with the local regulations in the areas where the company operates.	Focusing on regulatory integration, monitoring compliance, and strengthening internal legal training to maintain high standards of regulatory adherence, proactive responses to market changes, and societal trust.	• Cases involving violations by ASEH: 0 • Major cases involving violations by ASEH subsidiaries: 0
	Business Ethics	Establishing norms of business conduct and ethics, and creating an honest and responsible culture are key to our long-term business success.	**Implement business conduct and ethics-related policies and regulations:** Continue to promote education and training, commit to comply with ethical standards in all ASEH business activities, and ensure the effectiveness of reporting systems by audit.	• Employee training coverage: 100%	• Employee training coverage: 100%	• Employee training coverage: 100%
	Information Security Management	Ensure the confidentiality, integrity and reliability of the company's information assets and compliance with relevant laws and regulations in order to further gain customers' trust, elevate the company's competitive advantage and maintain the stability of sustainable business operations.	**Enhance information security governance:** Identify internal and external information security management risks, prevent or mitigate the business impact of information security incidents, provide regular employee education and training, and raise employee awareness to improve the security of business operations.	• Major information security incidents: 0 • NIST CSF information security maturity assessment coverage rate: 100% • Percentage of employees receiving information security education and training: 100%	• Major information security incidents: 0 • NIST CSF information security maturity assessment coverage rate: 100% • Percentage of employees receiving information security education and training: 100%	• Major information security incidents: 0 • NIST CSF information security maturity assessment coverage rate: 100% • Percentage of employees receiving information security education and training: 100%

Dimensions	Key Issues	Business Impact on ASEH	Strategic Approach	2024 Progress/Status	2025 Target	2030 Target
Innovation Service	Innovation Management	Continuous innovation of technologies lower costs, improve efficiency, thereby reducing resource consumption and energy consumption. At the same time, business model innovation on the value chain can increase ASEH's core competitiveness and enable expansion capacity.	• Set up a patent reward program to encourage patent applications, that will strengthen the company's operations and IP portfolio • Establish patent applications as the Key Performance Indicator of the Annual Objective Deployment (AOD)	• 9,760 patents granted[1]	• 7,813 patents granted[1]	• 9,000 patents granted[1]
	Sustainable Manufacturing	Sustainable Manufacturing provide customers with sustainable products of higher value and gain customers' trust and boost its image and reputation while minimizing the impact to the environment and improving eco-efficiency.	We conducted environmental impact analysis of product life cycles. In addition, we have established databases and incorporated simulation algorithms for product research and development to increase product value while elevating ecological efficiency.	• Scope of product Life Cycle Assessment (LCA): 56.01%	• Scope of product Life Cycle Assessment (LCA) by more than 50%	• Scope of product Life Cycle Assessment (LCA) by more than 50%
	Customer Relationship Management	Good customer relationship management helps to improve our customers' satisfaction and loyalty, thereby increasing our profit and core competitiveness.	**Continuously enhance customer communication:** Providing diverse communications channels to enable instant interaction and communication with customers; enhance information security management to ensure the confidentiality and integrity of customer proprietary information.	• Customer satisfaction: 92%	• Customer satisfaction: 90%	• Customer satisfaction: 90%

[1] The number of approved patents includes the number of abandoned patents and expired patents



Dimensions	Key Issues	Business Impact on ASEH	Strategic Approach	2024 Progress/Status	2025 Target	2030 Target
Green Manufacturing and Low-carbon Transformation	Energy Management	Use of low carbon and diverse energy sources and smart energy management will increase energy efficiency, reduce GHG emissions, and lower operational risks.	• Increase the use of clean/renewable energy. • **Continue to improve energy management:** Establish standardized management systems through ISO 50001 to improve energy efficiency, and build smart energy management systems to facilitate precise control and lower standby mode energy consumption.	• Adopting an energy saving plan to decrease annual power consumption by more than 2% • Renewable energy to account for 19% of total energy consumption • ISO 50001 coverage in manufacturing facilities: 73%	• Adopting an energy saving plan to decrease annual power consumption by more than 2% • Renewable energy to account for 27% of total energy consumption • ISO 50001 coverage in manufacturing facilities: 100%	• Adopting an energy saving plan to decrease annual power consumption by more than 2% • Renewable energy to account for 42% of total energy consumption • ISO 50001 coverage in manufacturing facilities: 100%
	Climate Strategy	Climate change is a major global environmental issue. As ASEH continues to expand, the company becomes increasingly energy-dependent and faces growing pressure from customers, government and other stakeholders to increase its use of renewable energy.	**Reduce GHG emissions & provide green manufacturing services:** • Green facilities (efficient building designs) • Efficient use of energy resources • Purchase and use of clean/ renewable energy and RECs • Green product designs	• GHG emissions inventory coverage of the manufacturing facilities: 100% • GHG intensity (Scope1+2 emissions per revenue): 40% reduction compared with 2015 • Absolute GHG emissions reduction ➤ Scopes 1 and 2: 2.4% increase compared to 2016 ➤ Scope 3: 8%[1] reduction compared to 2020	• GHG emissions inventory coverage of the manufacturing facilities: 100% • GHG intensity (GHG emissions per revenue): achieve 10% reduction compared with 2015 • Absolute GHG emissions reduction target ➤ Reduce Scopes 1 and 2 emissions by 37.8% with 2016 as baseline ➤ Reduce Scope 3 emission by 12.5% with 2020 as baseline	• GHG emissions inventory coverage of the manufacturing facilities: 100% • GHG intensity (GHG emissions per revenue): achieve 15% reduction compared with 2015 • Absolute GHG emissions reduction target ➤ Reduce Scopes 1 and 2 emissions by 58.8% with 2016 as baseline ➤ Reduce Scope 3 emission by 25% with 2020 as baseline
	Water Resource Management	Efficient management and use of water resources to alleviate local water stress, increase corporate sustainable operation resilience and boost the company's competitive strength.	**Establish a Sustainable Water Efficiency Management System:** Establish a systematic management model based on ISO 46001, conduct water review and set management goals and indicators, use reduction, replacement or reuse methods to continuously optimize water efficiency, reduce operating costs and protect global water resources.	• Day(s) of production shutdown in Taiwan facilities due to phase 3 water rationing (30% volume reduction of water supply): 0 • Water use intensity (water use per revenue): achieve 43% reduction compared with 2015	• Day(s) of production shutdown in Taiwan facilities due to phase 3 water rationing (30% volume reduction of water supply): 0 • Water use intensity (water use per revenue): achieve 35% reduction compared with 2015	• Day(s) of production shutdown in Taiwan facilities due to phase 3 water rationing (30% volume reduction of water supply): 0 • Water use intensity (water use per revenue): achieve 52% reduction compared with 2015
	Waste and Circular	Improving material utilization rate to reduce waste production and lessen the environmental impact of the company's operations.	**Enhancing source reduction in waste management:** Identify recyclable raw materials and moving towards minimizing waste through a circular model.	• General waste recycling rate: > 97% • Hazardous-waste intensity (hazardous waste generated per revenue): achieve 53% reduction compared with 2015	• General waste recycling rate: > 90% • Hazardous-waste intensity (hazardous waste generated per revenue): achieve 41% reduction compared with 2015	• General waste recycling rate: > 90% • Hazardous-waste intensity (hazardous waste generated per revenue): achieve 61% reduction compared with 2015

[1] IC manufacturing and OSAT (outsourced semiconductor assembly and test) companies provide intermediate products and services that are not directly consumed by end-users. The use and disposal of the final products is also typically not related to our business operations. These are the factors highlighted by the SEMI SCC taskforce in their 'Scope 3 Category 11 GHG Assessment' report together with a recommendation that category 11 can be reasonably excluded for semiconductor manufacturing companies. In 2024, we recorded an 8% decrease in our Scope 3 emissions (excluding Categories 11 and 12). For information on the Scope 3 Category 11 GHG Assessment, please refer to the SEMI official website at https://discover.semi.org/scope-3-category-11-ghg-assessment-download-form.html

Dimensions	Key Issues	Business Impact on ASEH	Strategic Approach	2024 Progress/Status	2025 Target	2030 Target
Inclusive Workplace	Talent Attraction and Retention	Positive labor relations can promote organizational harmony, increase employee identification with the company, support the company's global competitiveness, and maintain its competitive advantages.	**Implement employee engagement survey and feedback mechanisms:** Besides encouraging employees to be proactive in company activities, we understand employees' opinions by using employee engagement surveys, and offer competitive compensation and benefit programs.	• Deployment of employee engagement survey in 2023-2024: ➤ Result of employee engagement survey: 77% ➤ Employee coverage: 95.1% • Overall turnover rate: 11.4%	• Deployment of employee engagement survey every 2 years: ➤ Result of employee engagement survey: >75% ➤ Employee coverage: >90% • Overall turnover rate: <15%	• Deployment of employee engagement survey every 2 years: ➤ Result of employee engagement survey: >85% ➤ Employee coverage: >95% • Overall turnover rate: <15%
	Talent Development	Good training and development programs help attract and retain talents, and create a pleasant working environment, thereby increasing corporate productivity and innovation, and supporting the company's requirements and capabilities for long-term business growth.	**Enhance talent development and training effectiveness:** Provide challenging and valuable career development opportunities for employees by offering better training plans and promotion opportunities within the company.	• Percentage of management vacancies filled through internal promotion: 85.5% • Rate of Open Positions Filled by Internal Candidates: 64.1%	• Percentage of management vacancies filled through internal promotion: >75% • Rate of Open Positions Filled by Internal Candidates: >50%	• Percentage of management vacancies filled through internal promotion: >75% • Rate of Open Positions Filled by Internal Candidates: >55%
	Diversity and Inclusion	Establishing a diversified, equal, inclusive, and friendly workplace that respects the differences and uniqueness of employees to generate positive impacts on the company's operations.	**Building a diversified and open workplace:** Promoting long-term plans for training and cultivating female managers and enhancing the technology competence of female employees as well as their knowledge in science, technology, engineering, and mathematics (STEM). Establishing a diversified, equal, inclusive, and friendly workplace that respects employees' uniqueness and differences.	• Female employee in top management positions: 16.5%	• Female employee in top management positions: >15% • Female Employee in STEM-related Positions:>17.5%	• Female employee in top management positions: >17.5% • Female Employee in STEM-related Positions: >20%
	Human Rights Management	Upholding fundamental rights of employees as well as creating an environment that protects human rights are essential for a sustainable business.	**Protection of human rights:** Prohibition of forced labor, child labor, discrimination and harassment; ensuring rights to freedom of association and privacy; ensuring reasonable working hours and appropriate compensation and benefits.	Complying with international standards and regulatory requirements within the areas of operation, enhancing our human rights policies and management systems to strengthen compliance.	Enhancing compliance and alignment with standards. Conducting regular audits and internal training to ensure the effective implementation of human rights protection measures by ASEH and its subsidiaries.	• Major regulatory violations: 0
	Occupational Health and Safety	Having an advanced and proactive health and safety management system is conducive to reducing absenteeism and improving productivity and quality.	**Continuously improve health and safety management system:** Make all reasonable efforts to prevent accidents and promote the physical and mental health of employees by shaping a corporate safety culture where the safety and health of all employees are safeguarded.	• Disabling Frequency Rate (F.R.): 0.53 • Disabling Severity Rate (S.R.): 16.06 • Major injury and occupational disease: 9 case • Employee absenteeism rate: 1.6%	• Disabling Frequency Rate (F.R.): <0.5 • Disabling Severity Rate (S.R.): <9 • Major injury and occupational disease: 0 case • Employee absenteeism rate: <2.3%	• Disabling Frequency Rate (F.R.): <0.5 • Disabling Severity Rate (S.R.): <9 • Major injury and occupational disease: 0 case • Employee absenteeism rate: <2.3%

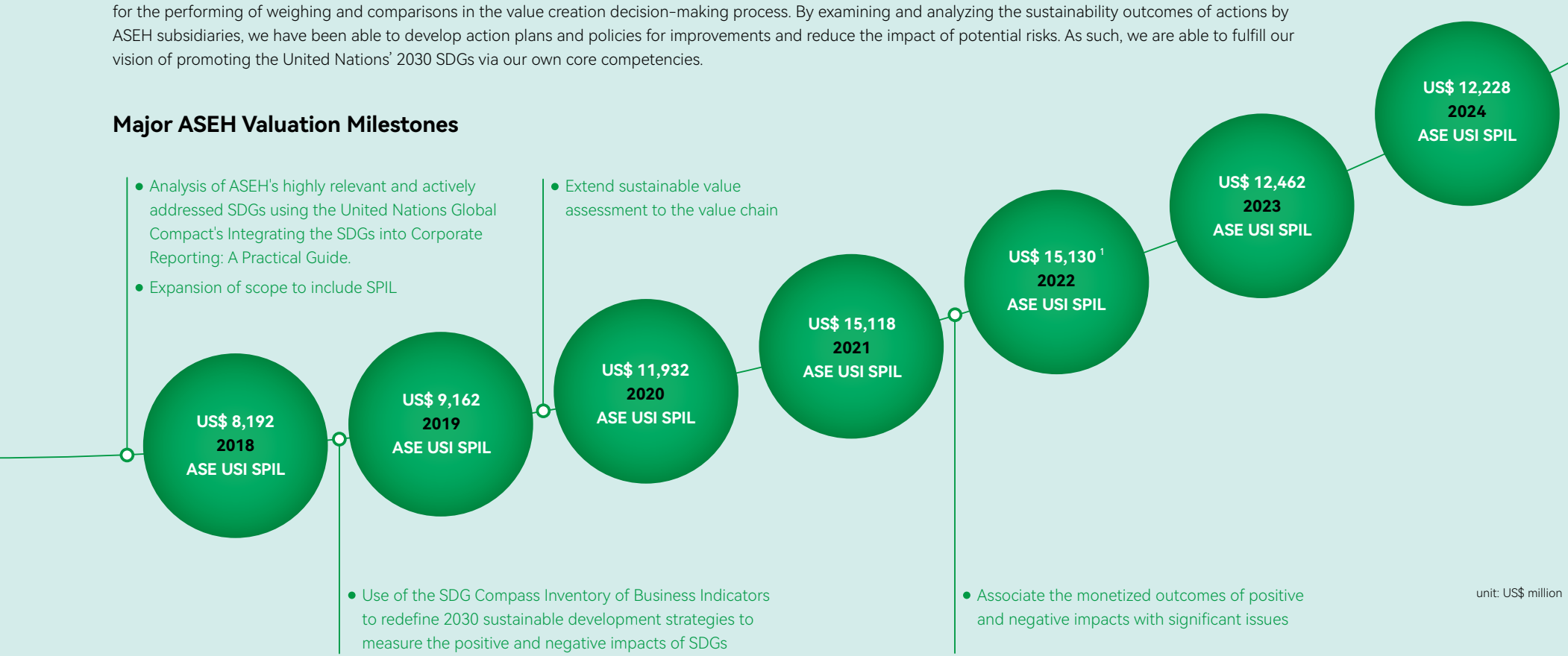
Dimensions	Key Issues	Business Impact on ASEH	Strategic Approach	2024 Progress/Status	2025 Target	2030 Target
Responsible Procurement	Sustainable Supply Chain	Establishing a sustainable supply chain is a win-win strategy that strengthens the protection of our suppliers' employees and assets and indirectly improves our competitiveness.	**Ensure supply chain's sustainable development:** Establish partnerships with our suppliers to ensure that they have their own sustainable development plans, which include providing a safe working environment, treating employees with respect and dignity, and maintaining ethical standards and environmental responsibility.	• Completion of sustainability risk survey: ➤ 81% for all Tier-1 suppliers ➤ 57.6% [1] for non Tier-1 suppliers • Completion of sustainability audits conducted: ➤ 229 Tier-1 suppliers	• Completion of sustainability risk survey: ➤ 100% for all Tier-1 suppliers ➤ Over 50% for non Tier-1 suppliers • Completion of sustainability audits conducted: ➤ 120 Tier-1 suppliers	• Completion of sustainability risk survey: ➤ 100% for all Tier-1 suppliers ➤ Over 50% for non Tier-1 suppliers • Completion of sustainability audits conducted: ➤ 120 Tier-1 suppliers
Corporate Citizenship	Social Involvement	Active community development through strategic charitable and educational programs, and social work helps to build positive and constructive relationships at the local level, strengthen our social license to operate and create a well-educated workforce for future recruitment.	**Social involvement strategies:** Environmental Conservation, Industry-academia Collaborations, Community Engagement and Public Advocacy.	• 8 industry-academia collaboration projects on environmental technology • LED light tubes installed at 14 schools • 16.84 hectares planted with trees • 615 students attending semiconductor courses • 485 disadvantaged students in the community attending after school program • 65 innovative industry-academia collaboration projects • 6 legal initiatives for issues related to the semiconductor industry and sustainability	• 10 industry-academia collaboration projects on environmental technology • LED light tubes installed at 10 schools • 10 hectares planted with trees • 100 students attending semiconductor courses • 100 disadvantaged students in the community attending after school program • 30 innovative industry-academia collaboration projects • 2 legal initiatives for issues related to the semiconductor industry and sustainability	• Over 150 industry-academia collaboration projects on environmental technology • LED light tubes installed at 170 schools • 250 hectares planted with trees • Organizing semiconductor courses for 2,000+ students • 2,000+ disadvantaged students in the community attending after school program • 450 innovative industry-academia collaboration projects • 25 legal initiatives for issues related to the semiconductor industry and sustainability

[1] by tier-1 procurement amount

2.3 UN Sustainable Development Goals and Sustainable Values Assessment

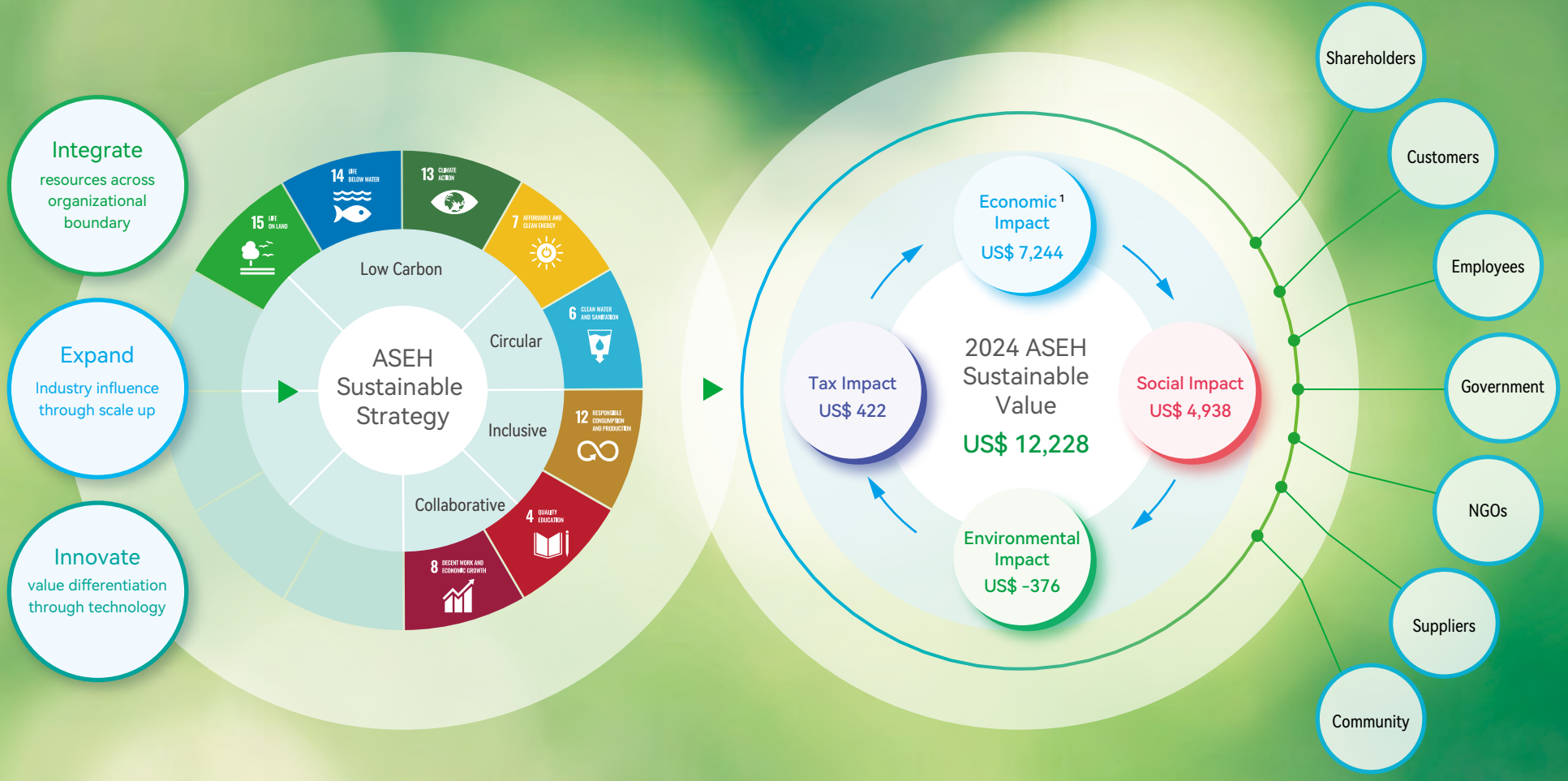
ASEH is building upon its technology leadership to steer the semiconductor industry towards greater sustainability. Since 2017, we have adopted the Total Impact Measurement and Management (TIMM) framework and Social Return on Investment (SROI) analysis to assess the social impacts and operational risks of the company's business activities using monetary valuation tools. In 2018, we began referencing the United Nation's "Integrating the SDGs into Corporate Reporting: A Practical Guide" to map out sustainable development goals (SDG) and sub-targets that need to be actively addressed. In 2019, we used the SDG Compass Inventory of Business Indicators to examine the positive and negative impacts of our four major SDGs and the outcomes of our actions. In 2020, we further applied sustainable value assessment used internally to the value chain so as to understand and analyze the impact of value chain activities on the environment and society. In 2022, we associate the monetized outcomes of positive and negative impacts with significant issues. This information will then be provided to the CSISC to serve as references for the performing of weighing and comparisons in the value creation decision-making process. By examining and analyzing the sustainability outcomes of actions by ASEH subsidiaries, we have been able to develop action plans and policies for improvements and reduce the impact of potential risks. As such, we are able to fulfill our vision of promoting the United Nations' 2030 SDGs via our own core competencies.

Major ASEH Valuation Milestones



[1] Due to changes in the assessment basis of environmental indicators, the impact value for the year 2022 had been recalculated to facilitate comparison between the two years

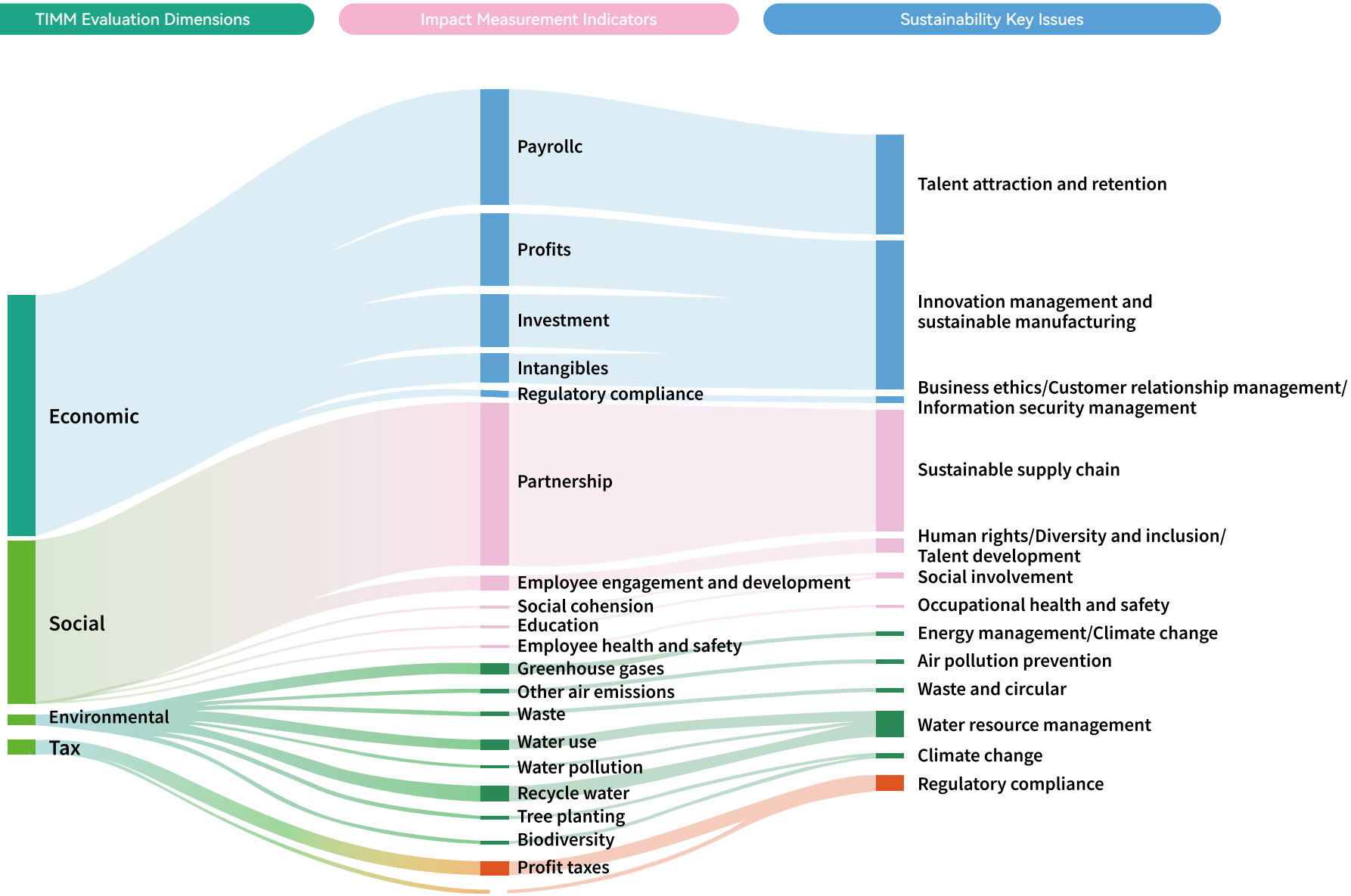
ASEH Valuation Model



[1] For further details on financial information, please refer to our 2024 Form 20-F

unit: USD million

The relationship diagram of ASEH value impact and significant issue



Contributions to Global SDGs

We adopted sustainability management measures for prioritized SDGs to generate more positive impacts and contributions. In 2024, our business activities help boost GDP and local economies while at the same time, our business returns are invested into employee benefits, social welfare, renewable energy and biodiversity to give back to society, therefore, can result in positive impact on the SDGs of Decent Work and Economic Growth, Quality Education, Responsible Consumption and Production, Life below Water and Life on Land in terms of sustainable management. Demands on environmental resources in our business operations can result in negative impacts on the SDGs of Affordable and Clean Energy, Climate Action, and Clean Water and Sanitation. We have therefore committed ourselves to mitigating these impacts by focusing on sustainability programs through our Low Carbon and Circular strategies. In 2024, we are refining our goals for 2030 based on our four major sustainability strategies, so as to fulfill our commitment toward realizing these SDGs.



unit: USD million



unit: USD million

[1] Includes corporate volunteer cost of US$95,165
[2] Please refer to our 2024 Form 20-F

Sustainability Value and Impact

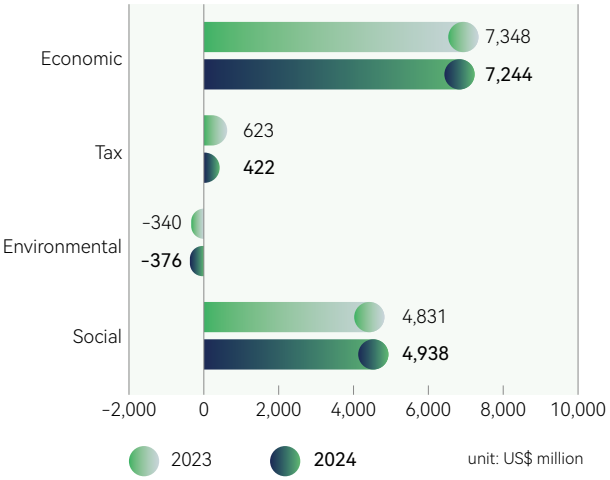
ASEH adopted the TIMM framework for sustainability valuation to quantify the sustainable value of the company's impacts in the economic, tax, environmental and social dimensions. In 2024, ASEH generated US$12,228 million worth of sustainable value for stakeholders.

Economic and tax dimensions[1]: In 2024, ASEH experienced a slight 1% decrease in overall economic value. The decline was primarily attributed to the reversal in 2023 of the estimated additional income tax on unappropriated earnings as a result of the company's substantial profits in 2022. This led to a significant year-over-year increase in income tax expenses for 2023. Despite the decline in economic value due to higher tax expenses, other indicators reflect the company's continued commitment to its workforce. The company prioritized employee compensation, resulting in a positive shift in the "wages and benefits" indicator. Additionally, to maintain its leadership in the industry and meet the growing demand for advanced packaging services, we continued to increase investments in R&D. This contributed to a 4% growth in the value generated from intangible assets. On the tax front, the overall value declined by nearly 32%, mainly due to the tax payments reported and settled in 2023 based on the substantial profits earned in 2022. Furthermore, the South Korean subsidiary paid taxes in 2023 on gains from the disposal of its subsidiaries, resulting in a reduction in actual tax payments in 2024 compared to the previous year.

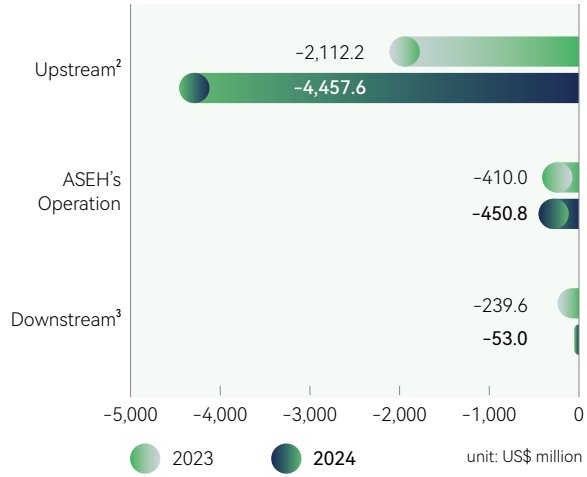
Environmental dimension: The two primary sources of environmental impact in our operations are water consumption during the production process and greenhouse gas emissions resulting from electricity usage. In 2024, renewable energy accounted for 19% of our total electricity consumption. ASEH adopted a strategic approach of reduction, reuse, and recycling water resources while continuing to invest in water recycling systems across our facilities to reduce the environmental impact of water withdrawal and enhance economic efficiency. Due to the inclusion of a new manufacturing site and increased operational activities in 2024, water consumption and wastewater pollution saw a slight increase of 5% compared to the previous year. Similarly, the overall environmental impact of our operations increased by 7% compared to 2023, driven by expanded reporting boundaries and business growth. To mitigate these impacts, we actively invested in environmental protection initiatives and fulfilled our green bond commitments by constructing green buildings for commercial use, establishing water recycling and wastewater treatment plants, and deploying real-time wastewater monitoring systems. ASEH also continued to promote material conservation and circularity to reduce environmental impact and improve human health. In parallel, the company has remained committed to ecological conservation efforts. As a result, the positive impact of our ecological initiatives increased by 15% compared to the previous year.

Social dimension: The development of robust supplier partnerships was a key outcome along with the increase of our overall social impact value by 2.2% in 2024 compared to 2023. This improvement is primarily driven by a gradually recovering macroeconomic environment, and improved optimism about future development trends. As a result, local procurement spending showed a modest increase of approximately 2%. Additionally, the positive growth in employee headcount contributed to improvements in two key impact indicators: "employee engagement and development" and "health and safety for employees and contractors." In addition, we significantly reduced workplace injuries through effective occupational injury management, achieving a 26% decrease in reported cases and enhancing the company's overall social value. The company continued to uphold its commitment to social responsibility by investing in social cohesion activities. In 2024, the company focused on enhancing the impact and quality of two high-return categories; support for vulnerable groups and cultural sponsorships. For example, USI's sponsorship of physical Go tournaments not only supported athletes but also expanded its influence within local communities. These efforts led to a 2% increase in the value of social cohesion activities compared to 2023, benefiting a broader range of stakeholders.

2023-2024 ASEH Sustainable Values



2023-2024 Greenhouse Gas Value Chain Outcomes



[1] For further details on financial information, please refer to our 2024 Form 20-F
[2] The significant changes in 2024 data compared to 2023 were primarily driven by increases in the procurement of goods and services, capital goods, and upstream transportation and distribution activities
[3] Starting in 2022, greenhouse gas emissions resulting from downstream investments in the value chain have also been included in our calculations



Environmental Impact

In 2024, ASEH's overall environmental impact of -US$376 million is mainly attributed to resource consumption and environmental emissions from its business activities. We are paying close attention to both energy and resource efficiencies across our facilities, implementing environmental programs to create positive impact and mitigate external environmental costs. The overall impact (negative and positive) has increased by 11% compared to -US$340 million in 2023. The main contributing factors are industry impacts on annual operations and the increase in Scope 2 greenhouse gas emissions. The increase in value chain impact is primarily attributed to upstream activities, including the procurement of goods, services, and capital goods. Moving forward, the company will continue to mitigate the impact of greenhouse gas emissions by adopting renewable energy, procuring low-carbon raw materials, and prioritizing suppliers with low-carbon operations. During 2024, we applied the SROI framework to quantify the impacts of our business operations and value chain activities on the environment based on SDG14 Life below Water and SDG15Life on Land. ASEH remains committed to our low carbon mission and sustainability development, and will continuously expand the scope of our environment impact management.

Assessment of environmental impacts in 2024[1]

Input

Driven by the growth of emerging semiconductor applications such as AI and electric vehicles, ASEH's 2024 revenue increased compared to 2023. We are increasing the rate of renewable energy use across our manufacturing operations in 9 regions: Taiwan, China, South Korea, Japan, Singapore, Malaysia, the United States, Mexico, and Vietnam. The energy resource demands for our manufacturing operations are as follows:

Resource Demand	2023	2024	
Water resource consumption (megaliters)	21,468	21,886	↗
Non-renewables (MWh)	3,536,828	3,636,293	↘
Renewable energy (MWh)	844,044	824,401	↘
Circular resource investments (US$ million)	36.8	37.3	↗

Notes: ↘ decrease ↗ increase

Output

ASEH is committed to sustainable manufacturing by continuously increasing investments in ecological and environmental protection, while also developing energy management mechanisms and pollution control strategies. The company aims to reduce its impact on the environment through maximizing energy efficiency and increasing product values. The environmental impact of our operations in 2024 is as follows:

Impact Items		2023	2024	
Greenhouse[2] gas emissions	Scope 1 emissions (tCO_2e)	75,274	72,269	↘
	Scope 2 emissions (tCO_2e)	1,649,347	1,733,310	↗
	Scope 3 emissions (tCO_2e)	9,891,845	18,067,529	↗
Air pollutant emissions	Volatile organic compound, sulfur oxide, nitrogen oxide and particulate matter emissions (tons)	327	205	↘
Waste disposal	Hazardous waste disposal (tons)	9,492	10,918	↗
	Non-hazardous waste disposal (tons)	9,645	9,624	↘
Wastewater[3] discharge	Wastewater discharge (megaliters)	15,386	15,871	↗

External Impact

ASEH's overall environmental impact in 2024 amounted to -US$376.4 million. Assessed external impacts include employee and public health, property damage, economic losses, biodiversity, ecosystem services, and natural capital gains and losses. The key SDGs affected by negative external impacts are SDG 6 Clean Water and Sanitation, SDG 7 Affordable and Clean Energy, SDG 12 Responsible Consumption and Production, SDG 13 Climate Action, SDG 14 Life Below Water, and SDG 15 Life on Land.

- The overall positive environmental impact totaled US$161.5 million, representing a 1% decrease compared to 2023. The most significant decline was a 63% reduction in net positive benefits from water pollution mitigation. This was primarily driven by a sharp decline in chromium levels detected in wastewater, as chromium has a higher monetized environmental impact per kilogram compared to other pollutants. Consequently, the environmental benefits associated with recycled water decreased.
- The value of negative environmental impact amounted to US$538 million, a 7% increase compared to 2023. This was mainly driven by an increase in greenhouse gas emissions from operational activities. We will continue to reduce greenhouse gas emissions, waste, and water pollution through green manufacturing processes, contributing positively to SDG 6, SDG 12, and SDG 13.
- We have been actively stepping up biodiversity-related activities this year, including marine and terrestrial conservation efforts such as the conservation and restoration of the Chinese box turtle, the Huangjian Creek ecological restoration project, and various afforestation programs. More than 332,000 trees have also been planted over the years. These habitat and species protection initiatives have generated a positive ecological impact valued at US$7.4 million.
- The monetized value of the indirect environmental impact from value chain greenhouse gas emissions totaled approximately US$-4,511.0 million, a 92% increase compared to 2023. This was primarily due to significant increases in the procurement of goods, services, and capital goods, alongside upstream transportation and distribution. Moving forward, ASEH will prioritize the procurement of low-carbon raw materials and equipment, the construction of low-carbon facilities, and the adoption of green transportation to mitigate the environmental impact of product and service procurement.

unit: US$ million

Environmental Impact			2023	2024	
Negative	Greenhouse gas emissions	ASEH operations	-410.0	-450.8	↗
		Products and services	-2,351.8	-4,511.0	↗
	Air pollution		-1.4	-1.2	↘
	Waste		-5.4	-5.9	↗
	Water resource consumption		-67.5	-70.4	↗
	Water pollution		-18.0	-9.7	↘
Positive	Water recycling	Water conservation	138.8	147.8	↗
		Water Pollution Reduction	17.2	6.3	↘
	Ecological conservation	Afforestation	2.0	2.6	↗
		Biodiversity	4.4	4.8	↗

[1] For more information on ASEH's sustainable values, please refer to ASEH's Total Impact Measurement and Management Report 2024 at https://www.aseglobal.com/download/
[2] The source for GHG assessment methodology in 2023 and 2024 is Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances, USEPA
[3] Waste water pollutants include phenols, oils (extracted with n-hexane), cadmium, lead, total chromium, hexavalent chromium, copper, zinc, nickel, arsenic, silver and orthophosphate

Social Impact

Social impact assessment allows ASEH to manage the sustainability values generated in areas including supplier partnerships, employee engagement and development, employee and contractor health and safety, and education and community cohesion. In 2024, ASEH's overall social impact totaled US$4,938 million, with US$4,915 million directly resulting from the company's operations[1]. The value is mainly attributable to supplier partnerships development and support.

Assessment of social impacts in 2024

Input	Output	External Impact
Direct operations: Inputs directly related to the operations of ASEH and its subsidiaries include: • We established a two-way communication mechanism with our suppliers, and we hold Annual Sustainability Forums, medium- and long-term sustainability capacity-building programs, sustainability workshops, and regular education and training for them in order to promote sustainable cooperation and strengthen their resilience and ability to respond to sustainability trends and risks. • Sustainability audits of 229 raw materials suppliers[2] • Procurement of 48.1% of raw materials from local suppliers[3] • Supplier Sustainability Awards • Comprehensive employee engagement survey • Regular risk assessment and continuous improvement of occupational health and safety • Investment of approximately US$3.1 million in employee health checkups • Investment of approximately US$5.6 million in industry-academia occupational training	Supplier partnerships: • Supplier audit results showed that 51.7% of nonconformities were related to occupational health and safety, 17.6% were related to labor, 14.6% were related to management systems, 14.1% were related to environment, and 2% were related to ethics. • A total of over 742 attendees participated in Annual Sustainability Forums and supplier educational training[4] • Invested a total of 0.3 million USD into the Supplier Sustainability Award Employee engagement and development: • Employee engagement surveys showed an engagement rate of 77% with an employee response rate of 95% Employee and contractor health and safety: • 97 occupational injuries and 9 occupational diseases to employees and contractors • 61,011 employees participated in health checkups Education: • Conducted a total of 85 industry-academia projects on innovative semiconductor research and development	Social impact resulting directly from operations totaled US$4,915 million. • **Supplier partnerships:** We applied the cost approach valuation and contingent valuation methods to estimate a total generated value of US$4,577.7 million. The overall factor increased by approximately 2% compared to 2023, mainly driven by a slight industry recovery that boosted procurement spending. As a result, local procurement, representing the highest share of social impact value, grew by 2% year-over-year. • **Employee engagement and development:** Survey results showed that investment in human capital builds sense of achievement, belonging in the workforce, psychological health, managerial ability, and cohesion of employees. Based on the degree of these outcomes, it was estimated that the social value generated was US$255 million. • **Employee and contractor health and safety:** We used the cost approach valuation to assess the positive and negative impacts of healthier work environments and occupational injury incidents. Positive impacts included the increased chance of disease recovery and reduced financial stress from medical costs due to employee health checkups and health insurance, which were assessed at a value of US$56 million. Negative impacts included harm to employees' and contractors physical, mental, and spiritual well-being to occupational injury incidents, which were assessed at a value US$-0.4 million. • **Education:** We used the value transfer method to assess the social value of industry academia occupational training related to business activities, which totaled US$26.5 million. The major outcome was that industry– academia cooperation will give talented graduates the opportunity to work at ASEH and also bring new talent into ASEH to improve the competitiveness of our talent pool.
Indirect operations: • To promote social cohesion, ASEH and its subsidiaries organized public welfare initiatives and invested approximately US$4.4 million in six categories: public development, community development and harmony, care for disadvantaged groups, healthcare sponsorships, arts and culture sponsorships, and sports sponsorships. • Investment of US$0.7 million in education, including environmental education. Investment of US$0.9 million in other education	• A total of 201 social cohesion activities were organized, including 5 in public development, 33 in community development and harmony, 112 in care for disadvantaged groups, 11 in healthcare sponsorships, 29 in arts and culture sponsorships, and 11 in sports sponsorships. • A total of 68 outputs in education, including 41 in environmental education and 27 in occupational education.	• We applied the value transfer method to assess a social value of US$16 million derived from public welfare activities promoting social cohesion (excluding corporate volunteer contributions). Among these activities, care for disadvantaged groups accounted for the largest share at 50%, followed by arts and culture sponsorships at 23%, and community development and harmony at 14%. The three major outcomes were: increased self-identity among disadvantaged children, improved resource utilization through community development and harmony, and enhanced public knowledge of the arts, contributing to the well-being of neighboring residents and the broader society. • We applied the value transfer method to assess the social value of environmental and other education, which was estimated to be US$6.8 million. The major outcome was improved environmental awareness in the general public and their ability to incorporate eco-friendly actions and behavior into everyday activities.

[1] The value of social impacts resulting directly from the company's operations is calculated by monetizing social impacts. The calculations therefore excluded public welfare activities and non-industry-academia educational projects
[2] Please refer to Chapter 7.5 of this report (Sustainable Supply Chain Performance)
[3] Please refer to Chapter 7.2 of this report (Supply Chain Overview)
[4] The Estimated average number of participants based on the number of participating entities and total participant count in 2019

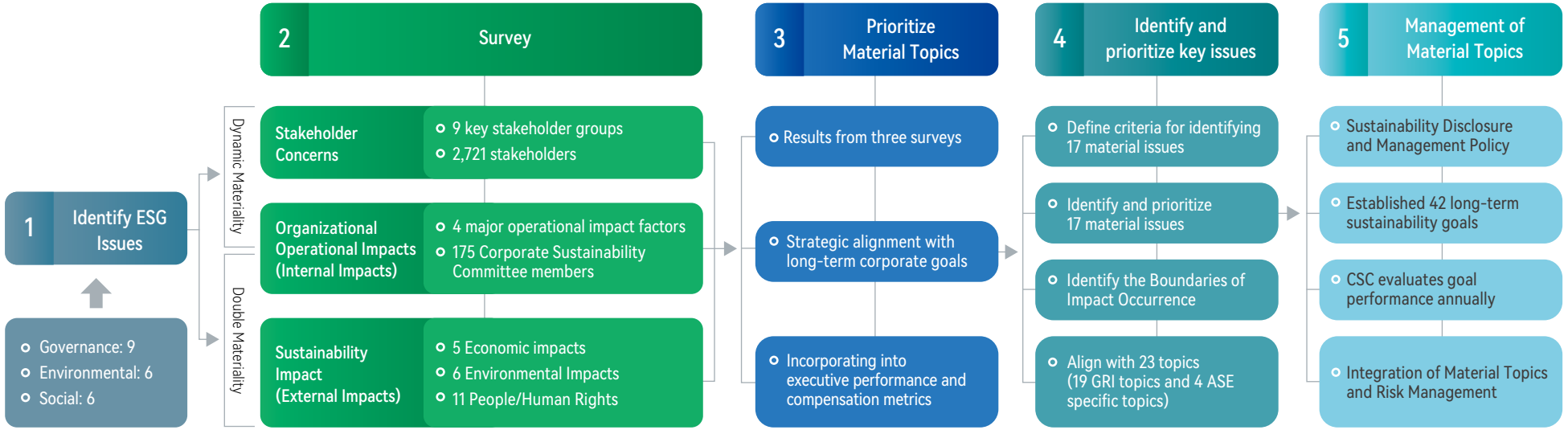
2.4 Materiality Assessments and Stakeholder Communication

ASEH conducts its annual materiality assessment in alignment with leading international standards and frameworks. These include the GRI Universal Standards 2021, AA1000 Stakeholder Engagement Standard (SES), Value Balancing Alliance (VBA), Harvard Business School's Impact-Weighted Accounts Initiative (IWAI), and the London Benchmarking Group (LBG) methodology. The company also integrates human rights due diligence through the Responsible Business Alliance (RBA) audit program and applies the Double Materiality concept, as outlined by the European Financial Reporting Advisory Group (EFRAG), to enhance the depth and relevance of its analyses.

Material topics are identified through a structured, five-step process, which incorporates an Enterprise Risk Management (ERM) perspective to align key risks with strategic priorities and strengthen organizational resilience.

The company regularly identifies and evaluates the impact of sustainability issues on its business operations. Based on last year's material sustainability issues, and the assessment of internal capabilities, we developed a set of long-term strategic plans and objectives to carry us through 2030. The company's senior management identified 17 material topics, and the findings and material topics were formally presented to the Board of Directors.

The materiality analysis process is outlined as follows:



Step 1: Identification of ESG Topics

In identifying topics relevant and significant to the organization, ASEH referenced international standards and regulations, sustainability investment ratings, global semiconductor industry peers, and stakeholder communications. Through this process, the company consolidated 21 ESG topics relevant to its operations.

Adjustments from the prior year include the following:

- "Innovation Management" and "Sustainable Manufacturing" replaces "Innovation Management and Sustainable Manufacturing"
- "Human Rights Management" replaces "Human Rights"

- **International standards and regulations:** GRI Standards, Sustainability Accounting Standards Board (SASB), SDGs, RBA, Task Force on Climate-related Financial Disclosures (TCFD), and Task Force on Nature-related Financial Disclosures (TNFD)
- **Global Recognition:** Dow Jones Best-in-Class index (DJBIC Index)/ formerly Dow Jones Sustainability Indices (DJSI), Climate Disclosure Project (CDP), MSCI ESG Index, and FTSE4Good Emerging Index
- **Global semiconductor industry:** Benchmarking sustainability policies and practices from semiconductor companies listed on the DJSI.
- **Stakeholder engagement:** Analyses of online media reports and regular/occasional stakeholder communication to evaluate stakeholders' perceptions of sustainability issues.

Economic	Environmental	Social
Regulatory Compliance	Water Resource Management	Occupational Health and Safety
Business Ethics	Climate Strategy	Talent Attraction and Retention
Customer Relationship Management	Energy Management	Talent Development
Risk and Crisis Management	Waste and Circular Reuse	Human Rights Management
Sustainable Supply Chain	Air Pollution Prevention	Diversity and Inclusion
Innovation Management	Biodiversity	Social Involvement
Sustainable Manufacturing		
Information Security Management		
Data and Privacy		

Results			
21 **ESG topics**	**9** Economic issues	**6** Environmental issues	**6** Social issues

Step 2: Conducting a Survey

ASEH has adopted a structured approach to ESG integration in accordance with GRI Standards. The company has identified 21 material ESG topics and systematically embedded them into three key analytical dimensions: stakeholder concern, operational impact, and external sustainability impact. Stakeholder feedback was gathered through a survey platform, ensuring broad and representative input. Concurrently, our management evaluated the operational implications of each ESG topic, while department heads and sustainability team members conducted impact assessments to determine the materiality and relevance of each issue.

- **Stakeholder Concern:** The degree of concern from stakeholders is a key factor in the process of determining the significance of our material issues, and the process is an important channel for us to communicate with our external stakeholders. This year, we designed a questionnaire on stakeholders' degree of concern about sustainability issues that drew a total of 2,721 stakeholder responses. The respondents included employees (1,449), suppliers/contractors (851), communities (139), customers (103), and members of the government (51), media (37), shareholders (32), NGOs (30), and industry unions/associations (29). To ensure a representative understanding of stakeholder expectations, ASE conducted an online survey engaging a diverse group of stakeholders. The five most critical ESG issues identified were: Occupational Health and Safety, Regulatory Compliance, Sustainable Manufacturing, Risk and Crisis Management, Human Rights Management. These findings reflect stakeholder priorities and serve as a strategic reference for shaping ASE's sustainability roadmap.
- **Organizational Operational Impact:** Sustainability is deeply embedded into ASEH's core operational strategy and serves as a foundational principle of its ESG framework. To evaluate the integration and business relevance of ESG topics, 175 executives and members of the Corporate Sustainability Committee participated in a structured assessment process. The group duly assessed the impact of each ESG topic across four critical operational factors: Revenue Generation, Risk Exposure, Customer Satisfaction, Employee Engagement. This evaluation enabled the organization to prioritize ESG issues based on their direct influence on business performance. The five ESG topics identified as having the most significant operational impact were: Regulatory Compliance, Customer Relationship Management, Risk and Crisis Management, Business Ethics, Data Privacy and Security. The data-driven approach ensures that ASEH's sustainability initiatives are closely aligned with its strategic business objectives. It also supports better resource allocation and the development of targeted ESG strategies that drive both operational efficiency and long-term value creation.
- **External Sustainability Impact:** ASEH applies internationally recognized methodologies to assess external sustainability impacts, drawing from frameworks developed by the Value Balancing Alliance (VBA), Harvard Business School's Impact-Weighted Accounts Initiative (IWAI), and the London Benchmarking Group (LBG). These methodologies encompass economic, environmental, and social dimensions, identifying a total of 22 relevant sustainability development impacts: 5 economic impacts, 6 environmental impacts, 11 social impacts. We have engaged 40 department heads and core sustainability team members to help identify 9 external impacts relevant to ASEH based on five key criteria: positive vs. negative, actual vs. potential impact, severity (scale), scope of impact, irremediability, and likelihood of future occurrence. In addition, participants were requested to leverage on their experiences to pinpoint which are the company's sustainability issues that are driving these external impacts. 5 sustainability issues, listed according to the degree of impact, were duly identified. These are Sustainable Manufacturing, Sustainable Supply Chain, Climate Strategy, Energy Management and Risks and Crisis Management. (See table on ASEH Impact Assessment: Non-Monetized Model)

Results			
Three types of surveys were distributed:	**2,721** stakeholders participated in the Stakeholder Concern Survey	**175** executives and members of the Corporate Sustainability Committee participated in the Organizational Operational Impact Survey	**40** department heads and sustainability team members participated in the External Sustainability Impact Survey

ESG Topics and External Sustainability Impacts

Issues	Impacts on Sustainable Development[1]		
	Economy	Environment	People/Human Rights
Regulatory Compliance	V		V
Business Ethics	V		
Customer Relationship Management	V	V	
Risk and Crisis Management	V	V	V
Sustainable Supply Chain	V	V	V
Innovation Management	V	V	
Sustainable Manufacturing	V	V	
Information Security Management	V		
Data and Privacy	V		
Water Resource Management		V	
Climate Strategy		V	
Energy Management		V	
Waste and Circular Reuse		V	
Air Pollution Prevention		V	
Biodiversity		V	
Occupational Health and Safety			V
Talent Attraction and Retention			V
Talent Development			V
Human Rights Management			V
Diversity and Inclusion			V
Social Involvement			V

[1] ASEH adopts internationally recognized impact assessment methodologies for economic, environmental, and social dimensions, including those developed by the Value Balancing Alliance (VBA), Harvard Business School's Impact-Weighted Accounts Initiative (IWAI), and the London Benchmarking Group (LBG). These frameworks are integrated with ASEH's internal sustainability context to map 21 ESG topics to their respective external impacts. Due to limitations in international impact accounting methodologies and the inherent nature of ESG topic definitions, some topics may not simultaneously correspond to both positive and negative impacts, or to all three dimensions—economic, environmental, and people/human rights

ASEH Impact Assessment – Non-Monetized Model

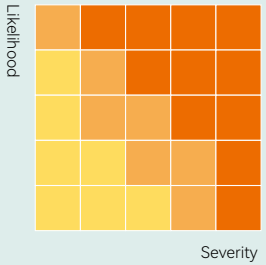
Define positive and negative impact → Major impact analysis → Sustainability issues with significant impact

22 Impacts

Impacts	Positive	Negative
Economic	4	1
Environmental	2	4
People/Human Rights	8	3

Impact Reference:

(1) VBA- Value Balancing Alliance
(2) Impact-Weighted Accounts of the Harvard Business School
(3) London Benchmarking Group (LBG)
(4) ASE Holdings

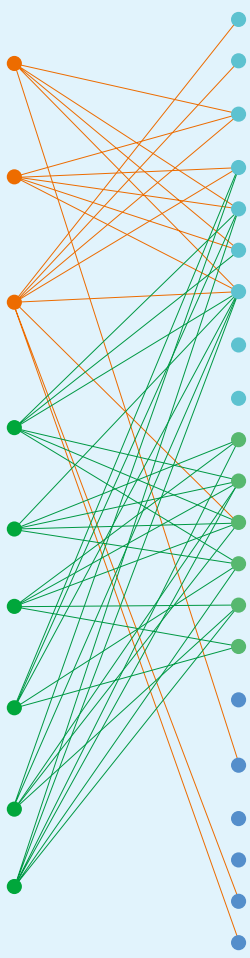


Severity = (1)+(2)+(3)

(1) Scale
(2) Scope
(3) Irremediability

9 significant impact

+ Economic	The company's products help drive industry advancement
+ Economic	Procurement generates upstream economic value
+ Economic	Tax payments support government social welfare programs
+ Environmental	Green products generate environmental benefits
+ Environmental	Use of renewable energy
- Environmental	Resource Consumption
- Environmental	Non-renewable materials lead to the depletion of natural resources
- Environmental	Greenhouse gas emissions
- Environmental	Procurement affects the environment



Corporate ESG Issues	Frequency
Regulatory Compliance	1
Business Ethics	1
Customer Relationship Management	3
Risk and Crisis Management	4
Sustainable Supply Chain	5
Innovation Management	3
Sustainable Manufacturing	8
Information Security Management	0
Data and Privacy	0
Water Resource Management	3
Climate Strategy	5
Energy Management	5
Waste and Circular Reuse	4
Air Pollution Prevention	3
Biodiversity	2
Occupational Health and Safety	0
Talent Attraction and Retention	1
Talent Development	0
Human Rights Management	0
Diversity and Inclusion	1
Social Involvement	1

Degree of impact	Sustainability issues
Primary Impact	Sustainable Manufacturing
	Sustainable Supply Chain
	Climate Strategy
	Energy Management
Secondary Impact	Risk and Crisis Management
	Waste and Circular Reuse
	Customer Relationship Management
	Innovation Management
	Water Resource Management
	Air Pollution Prevention
Significant	Biodiversity
	Regulatory Compliance
	Business Ethics
	Talent Attraction and Retention
	Diversity and Inclusion
	Social Involvement

ASE Impact Assessment- Monetary Valuation(TIMM)

Dimensions	Impacts	Impact Attributes	Impact Causes	Targets/Areas	Activities/Outputs	Values (US$ million)	Impacted Sustainability Issues
Tax	Profit Taxes	Positive	Operation	Society	Profit Taxes	312.4	Financial Performance
	Other Taxes	Positive	Operation	Society	Other Taxes	109.6	Financial Performance
Economic	Payroll	Positive	Operation	Internal Employees	Salary Benefits	3,206.8	Talent Attraction and Retention
	Profits	Positive	Operation	Internal Employees	Profit Distribution	1,031.3	Innovation Management/Sustainable Manufacturing
	Investment	Positive	Operation	Suppliers	Capital Expenditures	2,011.0	Innovation Management/Sustainable Manufacturing
	Intangibles	Positive	Operation	Supply Chain / Employees / Customers	R&D Activities and Intellectual Property Purchases	995.7	Innovation Management/Sustainable Manufacturing
	Regulatory Compliance	Negative	Operation	Supply Chain / Employees / Customers/ Society	Legal Case Litigation and Penalty Fees	-0.9	Business Ethics/Customer Relationship Management/Information Security Management
Environmental	Greenhouse Gases	Negative	Operation	Environment	Greenhouse Gas Emissions	-450.8	Energy Management/Climate Strategy
	Other Air Emissions	Negative	Operation	Environment	Air Pollutant Emissions	-1.2	Air Pollution Prevention
	Waste	Negative	Operation	Environment	Hazardous and Non-hazardous Waste	-5.9	Waste and Circular Reuse
	Water Use	Negative	Operation	Environment	Water Use	-70.4	Water Resource Management
	Water Pollution	Negative	Operation	Environment	Controlled Pollutants and Nutrient Salt (Phosphorus)	-9.7	Water Resource Management
	Recycle Water	Positive	Operation	Environment	Water Recycling	154.2	Water Resource Management
	Afforestation	Positive	Operation	Environment	Number of trees planted and land area	2.6	Biodiversity
	Biodiversity	Positive	Operation	Environment	Biodiversity Project Investments	4.8	Biodiversity
Social	Employee Engagement and Development	Positive	Operation	Internal Employees	Result of Employee Engagement Survey	255.5	Talent Development
	Education	Positive	Operation	Society	Amount Invested in Educational Activities	33.2	Social Involvement
	Social Cohesion	Positive	Operation	Employees / Community	Amount Invested in Public Welfare Activities	16.2	Social Involvement
	Employee Health and Safety	Positive	Operation	Internal and External Employees	Disability Benefit Amount / Cost of Health Screening and Insurance	55.7	Occupational Health and Safety
	Partnership	Positive	Supply Chain	Society / External Employees	Procurement Amount / Educational Training for Suppliers	4,577.7	Sustainable Supply Chain

Step 3 Prioritize Material Topic

The company establishes multiple layers of assessment frameworks to ensure the objectivity of the findings from the analysis of material sustainability issues. This approach integrates both quantitative and qualitative assessments, ensuring the alignment of material issues with the company's long-term strategic direction. The quantitative assessment is based on the outcomes of three targeted surveys, evaluating: Stakeholder concerns, Operational impacts on the business, External sustainability impacts.

The qualitative assessment incorporates internal strategic considerations, including:

- Alignment with ASE's long-term sustainability objectives
- Relevance to executive compensation structures

To ensure consistency and objectivity, ASE established three screening criteria for material topic selection:

- **Criteria 1:** Collecting insights from stakeholder, operational, and external impact assessments
- **Criteria 2:** Establishment of long-term corporate goals
- **Criteria 3:** Linking executive performance and compensation metrics

Topics meeting at least two out of the three criteria are prioritized as material issues. The 2024 materiality matrix was finalized after a thorough internal review of the findings by the company's management and recommendations from expert consultants. The matrix serves as the foundation of ASE's 2024 Sustainability Report, reflecting both stakeholder expectations and the company's strategic ESG commitments.

Results

Three main screening criteria

Step 4: Identify and prioritize key issues

Following a structured evaluation process and defined selection criteria, the company identified and prioritized 17 material sustainability issues in the following sequence:

1. Climate Strategy
2. Sustainable Supply Chain
3. Regulatory Compliance
4. Water Resource Management
5. Energy Management
6. Sustainable Manufacturing
7. Business Ethics
8. Customer Relationship Management
9. Talent Attraction and Retention
10. Occupational Health and Safety
11. Social Engagement
12. Innovation Management
13. Waste and Circular Reuse
14. Information Security Management
15. Human Rights Management
16. Diversity and Inclusion
17. Talent Development

These issues were formally presented to the Board of Directors and validated based on their relevance and impact across four key stages of the ESG value chain: upstream procurement, manufacturing facilities, downstream impact, and external value chain stages.

Each issue was subsequently mapped across 19 GRI Standards and 4 ASE-specific topics, with disclosures adhering to the principles of double materiality. The report outlines the impact scope, management approach, and associated risks for each material topic. Non-material issues were also disclosed in the sustainability report to ensure transparency in stakeholder communication.

Results

17 Key Issues	**4** Major Impact Stages
Corresponding to 23 Topics[1]	**19** GRI Topics **4** ASE Custom Topics

Step 5: Management of Material Topics

To enhance the company's sustainability impact, we have established clear commitments for each material topic and set 42 long-term sustainability goals for 2030. These goals are being progressively implemented through various projects and initiatives across our global sites. The ASE Holdings Corporate Sustainability and Information Security Committee (CSISC) conducts annual reviews to track milestones and oversee each business units' progress. In addition, the internal sustainability committees within each of our three major subsidiaries regularly convene to closely monitor the progress of these goals and track emerging sustainability trends.

Results

Established 42 long-term sustainability goals

4 dedicated sustainability committees

- ASE Holdings Corporate Sustainability and Information Security Committee(CSISC)
- ASE Group Sustainability Development Committee
- SPIL Group Sustainability Committee
- USI Group Sustainability Committee

[1] This section outlines the number of topic-specific standards under the GRI Standards that align with the 17 key material issues identified by ASE. Where no direct alignment with existing GRI topic-specific standards is found, the issue is categorized as an "ASE-defined custom topic"

ASE Holdings – Material Issues Prioritization

		Ranking Factor				
		Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
ESG material issues	Ranking[6]	Impact on company operations[1]	Degree of concern from stakeholders[2]	Impact on sustainable development[3]	Alignment with long-term sustainability objectives[4]	Executive compensation structures[5]
Climate Strategy	1		*	***	***	***
Sustainable Supply Chain	2	*	**	***	***	
Regulatory Compliance	3	***	**	*	**	
Water Resource Management	3		*	**	**	***
Enegery Management	5		**	***	***	
Sustainable Manufacturing	6	*	**	***	*	
Business Ethics	7	*	**	*	**	
Customer Relationship Management	7	**	*	**	*	
Talent Attraction and Retention	7	*	*	*	***	
Occupational Health and Safety	10	*	**		***	
Social Involvement	10		**	*	***	
Innovation Management	12	**		**	*	
Waste and Circular Reuse	12		*	**	**	
Information Security Management	14	**			***	
Human Rights Management	15	*	**		*	
Diversity and Inclusion	16	*		*	*	
Talent Development	17	*			**	

[1] The organizational impact factors include four key dimensions: Revenue, Customer Satisfaction, Risk, and Employee Engagement

[2] ASE Holdings has identified nine categories of stakeholders
A single asterisk (*) indicates that the topic impacts one of these factors
A double asterisk (**) indicates an impact on two factors
A triple asterisk (***) indicates an impact on three factors

[3] ASE Holdings has identified nine significant external sustainability impacts
A single asterisk (*) indicates that the topic ranks among the top five concerns for 1–2 stakeholder groups
A double asterisk (**) indicates that the topic ranks among the top five concerns for three or more stakeholder groups

[4] A single asterisk (*) indicates that the topic affects 1–2 of these impacts
A double asterisk (**) indicates an effect on 3–4 impacts
A triple asterisk (***) indicates an effect on five or more impacts

[5] ASE Holdings currently links executive compensation performance metrics to two ESG topics: Climate Strategy and Water Resource Management
A single asterisk (*) indicates that the company has set one quantitative long-term goal for the topic
A double asterisk (**) indicates two such goals
A triple asterisk (***) indicates three or more quantitative long-term goals

[6] Topics are ranked based on the total number of asterisks, with higher totals indicating higher priority. In cases where topics have the same total score, the one with a greater number of overlapping criteria is ranked higher. For example, both Talent Attraction and Retention and Occupational Health and Safety may score six asterisks, but if the former overlaps with four criteria and the latter with three, the former is ranked higher. If both the total score and number of overlapping criteria are identical, the topics are considered equally ranked—for instance, Business Ethics, Customer Relationship Management, and Talent Attraction and Retention

Double Materiality Assessment of Key Material Issues

Material Issues		Impact on operations (Financial Materiality)				Impact on the economy, environment, and people/human rights(Impact Materiality)								
						Positive	Positive	Positive	Positive	Positive	Negative	Negative	Negative	Negative
		Revenue	Risks	Customer Satisfaction	Employees' organizational identification	Company's products support industry developments	Procurement drives upstream economic value	Tax contribution supports government social welfare	Green products generate environmental benefits	Use of renewable energy	Resource consumption	Non-renewable materials lead to the depletion of natural resources	GHG emissions	Creates procurement-induced environmental impact
Economic	Regulatory Compliance	O	O	O				O						
	Business Ethics		O					O						
	Customer Relationship Management	O		O		O	O	O						
	Sustainable Supply Chain			O		O	O		O			O		O
	Innovation Management	O		O		O	O		O					
	Sustainable Manufacturing	O				O	O	O	O	O		O	O	O
	Information Security Management		O	O										
Environmental	Water Resource Management									O	O			O
	Climate Strategy								O	O	O		O	O
	Energy Management							O	O	O	O		O	
	Waste and Circular Reuse								O	O		O		O
Social	Occupational Health and Safety				O									
	Talent Attraction and Retention				O	O								
	Talent Development				O									
	Human Rights Management				O									
	Diversity and Inclusion				O			O						
	Social Involvement							O						

Material Issues, Corresponding GRI Topics, and Degree of Involvement with the Impact

Material issues		GRI topics	Where the impact occurs				Our involvement with the impact		
			Procurement	Manufacturing facilities	Customer	Communities	Direct	Indirect	Business
Economic	Regulatory Compliance	Compliance with laws and regulations(2-27)	V	V			O		
	Business Ethics	Anti-corruption (205) and Anti-competitive Behavior (206)	V	V			O		
	Customer Relationship Management	Customer Privacy (418)		V	V				O
	Sustainable Supply Chain	Procurement Practices (204), Supplier Environmental Assessment (308) and Supplier Social Assessment (414)	V						O
	Innovation Management	Topics formulated by ASE Holdings itself		V			O		
	Sustainable Manufacturing	Topics formulated by ASE Holdings itself		V	V		O		
	Information Security Management	Topics formulated by ASE Holdings itself		V	V		O		
Environmental	Water Resource Management	Water and Effluents (303)		V		V	O		
	Climate Strategies	Economic Performance (201) and Energy (302)		V		V	O		
	Energy Management	Energy (302)		V			O		
	Waste and Circular Reuse	Waste (306) and Materials (301)		V			O		
Social	Occupational Health and Safety	Occupational Health and Safety (403)		V			O		
	Talent Attraction and Retention	Employment (401) and Labor/Management Relations (402)		V			O		
	Talent Development	(404)Training and Education		V			O		
	Human Rights Management	General Disclosures(GRI2), Forced or Compulsory Labor (409) and Supplier Social Assessment (414)	V	V			O		O
	Diversity and Inclusion	Diversity and Equal Opportunity (405)		V			O		
	Social Involvement	Topics formulated by ASE Holdings itself				V		O	

Material Issues and Risk Management

Risk Description	Risk Impact	Risk Level[1]	Frequency[2]	Risk Mitigation and Response Measures	Corresponding to Sustainability Issues
Lack of ongoing oversight of ethics and compliance matters, and inadequate allocation of resources for monitoring and audit activities.	1. Incidents of fraud, resulting in financial losses for the company 2. Damage to the company's reputation and corporate image	Medium	3	1. Conduct department meeting at VP, director, and department managerial level 2. Direct employees to participate in anti-fraud/anti-corruption online courses and maintain records of attendance	• Regulatory Compliance • Business Ethics
The current new product R&D strategy does not align with the medium - to long-term technological and product development expectations of key customers.	1. Loss of customers 2. Missed market opportunities 3. Profitability impact 4. Loss of competitive advantage 5. Decline in market share 6. Increased costs, deterioration in product or service quality, and a decline in productivity	Medium	3	1. Conduct quarterly strategic meetings with key market leaders 2. Develop roadmap alignment with key customers 3. Develop customer-focused roadmaps 4. Conduct monthly application workshops with central engineering (CE) and corporate business planning (BP) teams to understand market trends and identify key business opportunities 5. The BOM and Equipment Committee work together to formulate supplier strategies and annual supplier roadmaps 6. Conduct quarterly meetings with suppliers to keep abreast of their latest technological advancements 7. The CDE (central design engineering) team takes the lead in addressing future customer needs, ensuring alignment with long-term innovation goals 8. CPE (central package engineering) defines and quantifies key technical metrics	• Innovation Management • Customer Relationship Management
The company relies heavily on a single or limited number of suppliers for critical materials, with insufficient alternative sourcing options. When faced with material shortages, the lack of proactive planning and timely procurement resulted in the company's inability to react promptly to customer demand changes and increased risks to operational continuity and customer satisfaction.	1. Material shortages/supply disruptions 2. Impact on delivery schedules and product quality 3. Reduced order volumes	Medium	3	1. Weekly review of the customer complaint log 2. Weekly review of procurement reports 3. Weekly adjustment of main production schedules based on customer requirements 4. Conduct weekly review on excess material with the supply chain management team 5. Negotiate with customers on the disposition of excess materials specific to their production order	• Sustainable Supply Chain • Customer Relationship Management
The company may face internal information security risks, including inadequate access control management and vulnerabilities in the systems that could be exploited by malicious attacks.	1. Inability to effectively protect information assets 2. Sensitive data may be stolen or lost due to inadequate controls 3. Loss of productivity and competitiveness 4. Cyberattacks and malware infections 5. Physical damage, intentional disruption or theft of valuable assets	Medium	3	1. A formal Access Control Policy governs user permissions, with regular audits ensuring access rights align with job roles and prevent unauthorized access 2. Procedures for the procurement, use, and maintenance of hardware and system software include regular vulnerability scanning and patching	• Regulatory Compliance • Information Security Management
The company has not yet deployed a formal technology roadmap, nor has it reached alignment with on-site engineering and operations teams. As a result, the absence of critical technologies has led to missed business opportunities. Additionally, the company lags in Industrial 4.0 capabilities, particularly in achieving machine-to-machine connectivity and system integration.	1. Missed Market Opportunities 2.Decline in product or service competitiveness 3. Reduced productivity 4. Waste of resources	Medium	3	1. Develop and execute a technology roadmap for the Mexico site to be reviewed regularly with the GRM (global resource management) team 2. Deploy a systematic plan for managing the upgrade of aging equipment, systems, and machinery	• Innovation Management • Sustainable Manufacturing

[1] Risk Level Definitions:
High: Significant impact on the company's financials, business continuity, or reputation, with a high likelihood of occurrence
Medium: Moderate impact on the company's financials, business continuity, or reputation, with a possible likelihood of occurrence
Low: Minor impact on the company's financials, business continuity, or reputation, with a low likelihood of occurrence

[2] Frequency Scale:
1 – Rare: Occurs once every 15 to 20 years (inclusive)
2 – Unlikely: Occurs once every 10 to 15 years (inclusive)
3 – Possible: Occurs once every 5 to 10 years (inclusive)
4 – Likely: Occurs once every 1 to 5 years (inclusive)
5 – Almost Certain: Occurs once a year

Risk Description	Risk Impact	Risk Level[1]	Frequency[2]	Risk Mitigation and Response Measures	Corresponding to Sustainability Issues
The risks associated with generative AI include potential leakage of confidential information due to unintentional use, misinformation, and infringement.	1. Increase in response costs due to failure to take early action 2. Impact on company operations and competitiveness	Medium	3	The Legal Department shall establish and publish rules and guidelines on generative AI usage to help employees use AI responsibly and safely.	• Innovation Management • Information Security Management
Insufficient control over the protection of information assets, including areas such as information security management systems, network segmentation and access control, identity management, endpoint and mobile security, network and email protection, data protection, incident response, and third-party security management — has led to a vulnerable IT environment, increasing the likelihood of cyberattacks, virus outbreaks, data loss, and data breaches.	1. Financial, business or asset losses 2. Reputational damage 3. Operational disruptions 4. Fines, penalties, and litigation	High	4	1. The company is committed to establishing a robust Information Security Management System (ISMS) and promoting it across all subsidiaries and operational sites 2. Implement centralized Security Information and Event Management (SIEM) and establish a Security Operations Center (SOC) 3. Enhance the knowledge and capabilities of key stakeholders and users in responding to cybersecurity incidents	• Information Security Management
Changes to water treatment measures are handled manually. Regulatory non-compliance may occur if incorrect parameters or data are captured into the system.	1. Financial or business losses 2. Reputational damage 3. Fines, penalties, and litigation 4. Client Loss	Medium	2	1. Provide adequate training for personnel in charge of water treatment measures. These personnel must adhere to the appropriate regulations and specifications, and diligently verify the accuracy of the information 2. Conduct internal audits to verify information, involving the Environmental Engineering Department and the QS (Quality and Safety) audit team	• Water Resource Management • Regulatory Compliance
A malfunction in the influent facilities of the biological treatment system resulted in COD exceeding the regulatory limit.	1. Damage to the company's reputation 2. Forced shutdown of operations (production interruption) 3. Penalties and Fines 4. Financial or business losses 5. Customer losses	Medium	2	Install new influent equipment and reinforce the existing equipment with enhanced anti-vibration fixtures.	• Water Resource Management • Regulatory Compliance
The low proportion of water reuse may fail to meet ISO 46001 standards or corporate social responsibility expectations.	1. Damage to the company's reputation 2. Forced shutdown of operations (production interruption) 3. Penalties and Fines	Medium	3	Install an acidic water or grinding water recycling system to increase the proportion of water reuse.	• Water Resource Management • Regulatory Compliance
The company is unable to keep up with evolving environmental issues, regulatory requirements and timelines, resulting in regulatory non-compliance.	1. Brand Reputation 2. Production interruption 3. Penalties and Fines	Medium	3	1. The Corporate Administration Office monitors the timelines for regulatory development and implementation 2. The Corporate Sustainability Department ensures the completeness and accuracy of greenhouse gas inventory disclosures	• Regulatory Compliance • Climate Strategy
In response to climate change, net-zero emission goals, and emerging domestic regulations, there is an urgent need to implement comprehensive sustainability strategies across the supply chain, including carbon reduction, water conservation, and operational resilience. However, the current capabilities of suppliers is relatively inadequate, which may hinder the fulfillment of customer expectations and the achievement of net-zero goals.	1. Delayed response results in increased follow-up cost for mitigation 2. Impacts the company's operations and competitiveness	Medium	3	Conduct annual sustainability assessments for suppliers to evaluate their overall sustainability capabilities, and perform on-site audits or online guidance based on different risk levels.	• Regulatory Compliance • Sustainable Supply Chain • Climate Strategy • Customer Relationship Management

Risk Description	Risk Impact	Risk Level[1]	Frequency[2]	Risk Mitigation and Response Measures	Corresponding to Sustainability Issues
There are external risks to facility operations due to regional power and water restrictions or outages. These include power interruptions or voltage drops from Taiwan Power Company (Taipower), water supply suspensions or restrictions from the water utility, and disruptions in nitrogen gas supply.	1. Damage to the company's reputation 2. Forced shutdown of operations, production interruption 3. Penalties and Fines	Medium	3	Improve power resilience.	• Sustainable Supply Chain • Energy Management
The company has failed to implement appropriate energy-saving measures, resulting in low energy efficiency and non-compliance with government carbon reduction regulations.	1. Increase in operational costs 2. Damage to brand reputation 3. Low energy efficient	Medium	3	1. Regularly review and implement effective energy management procedures 2. Implement annual energy-saving projects with well-defined energy reduction targets	• Regulatory Compliance • Climate Strategy • Energy Management
The Ministry of Environment plans to impose carbon fees starting in 2025 on companies with annual carbon emissions exceeding 25,000 metric tons.	1. Delayed response results in increased follow-up cost for mitigation 2. Impacts the company's operations and competitiveness	Medium	2	1. Complete the carbon inventory within the regulatory due date 2. Implement in-plant energy-saving and carbon reduction initiatives	• Regulatory Compliance • Climate Strategy
The company is facing unstable power supply and momentary voltage drops, which disrupt operations and production. Additionally, the rising costs of carbon fees and renewable energy are impacting P&L.	1. Production interruption 2. Financial or business losses 3. Undermines investor confidence	High	4	1. Separation of industrial power grid from residential supply 2. Grid-parallel generator system planning and implementation 3. Energy storage system evaluation 4. Development of a renewable energy management platform 5. Phase II renewable energy procurement for the company	• Climate Strategy • Energy Management • Sustainable Manufacturing
Decommissioning of the energy management identification system, resulting in reliance on manual processes. This increases the time required for data consolidation and raises the risk of human error.	1. Financial or business losses 2. Impacts production costs	Medium	4	Transition to a systematic energy management platform to replace manual operations.	• Energy Management
Voltage sags cause power interruptions to equipment, leading to risks of machine shutdowns, component damage, and material scrap.	1. Damage to production equipment, resulting in direct financial loss 2. Production interruptions 3. Threats to employee safety 4. Reduced company competitiveness and profitability 5. Impact on production space and production costs 6. Inability to upgrade equipment capacity, failing to meet process requirements	Medium	3	Regular maintenance and inspection of electrical equipment.	• Energy Management • Sustainable Manufacturing
Safety and health violations during new plant construction may result in citations or work stoppages issued by regulatory authorities.	1. Damage to the company's reputation 2. Forced shutdown of operations, production interruption 3. Penalties and Fines	Medium	4	1. Conduct regular safety reviews with the construction department to promote contractor safety in new projects 2. Regularly review and enhance contractor safety policies 3. Enhance site inspections and immediate rectification of non-compliance issues 4. Strengthen safety assessments for automated machinery 5. Conduct regular compliance reviews and enhance fire safety inspections	• Regulatory Compliance • Occupational Health and Safety

Risk Description	Risk Impact	Risk Level[1]	Frequency[2]	Risk Mitigation and Response Measures	Corresponding to Sustainability Issues
Unsafe workplace conditions or unsafe employee behaviors may lead to occupational accidents.	1. Financial liability for medical expenses and compensation 2. Impact on employee morale 3. Damage to company reputation 4. Inability to attract and retain talent 5. Labor unrest or strikes	Medium	4	1. Conduct frequent floor leader inspections and on-site supervisor visits 2. Perform daily facility patrols 3. Conduct regular safety education and awareness campaigns 4. Implement physical bypass prevention designs for safety devices 5. Source control for automated transport equipment	• Regulatory Compliance • Occupational Health and Safety
The acidic environment within the plant leads to corrosion of machinery and production tools, and prolonged exposure may also pose risks to employee health.	1. Production interruptions 2. Damage to the company's reputation 3. Threats to employee safety 4. Loss of company assets (financial and equipment)	Medium	3	Implement an environmental gas monitoring system to identify the sources of gas leakage and support equipment improvement.	• Occupational Health and Safety • Human Rights Management
The company fails to develop and implement an effective succession plan for management and key talent.	1. Loss or gap in key talent management 2. Impact on business continuity 3. Reduced organizational competitiveness 4.Leakage of confidential company information to competitors	Medium	5	1. Strategic Capability Enhancement Plan 2. Talent Development Plan 3. Digital Engineering Course	• Talent Attraction and Retention
The company has not been able to provide employees with training resources related to artificial intelligence and has struggled to attract talent in the AI field.	1. Shortage of AI Talent 2. Impact on business continuity 3. Reduced organizational competitiveness	Medium	3	1. Establish an internal AI Academy to develop AI talent within the company 2. Encourage the development of AI projects through meaningful incentives and prioritize the promotion of AI professionals, enabling key talent to receive timely salary adjustments and improve retention rates 3. Promote the adoption of Robotic Process Automation (RPA) to reduce the workload of engineers 4. Implement company-wide salary adjustments 5. Continue offering large-scale external IT training programs to enhance employees' knowledge of emerging technologies, thereby increasing personal value and work efficiency	• Talent Attraction and Retention • Talent Development
The company plans to establish a manufacturing facility in Malaysia. The compensation team will assist in designing job specifications and policies related to salaries and benefits. However, if local cultural norms, religious beliefs, ethnic diversity, national policies, and tax regulations are not properly considered, the resulting policies may not be well-suited for the Malaysian context.	Failure to respond promptly to regional political developments that impact the company, or its partners may result in significant operational disruptions or direct financial losses.	Medium	3	1. The Employee Handbook shall be reviewed and verified carefully with the local administrative teams to identify potential risks and provide relevant suggestions 2. The Employee Handbook should be updated in accordance to the consensus made at management meetings 3. Conduct a survey of the local market to understand the minimum wage and prevailing salary ranges, ensuring compliance with local regulations and maintaining competitiveness in hiring 4. Review local laws, regulations, ethnic and cultural norms, and religious practices to develop appropriate compensation, tax, and benefits policies	• Regulatory Compliance • Talent Attraction and Retention • Diversity and Inclusion
Variations in technical expertise within academia pose challenges to effective collaboration on new technology development. Domestically, a generational gap among professors hinders alignment, while international partnerships often require time to coordinate and adapt.	1. Loss of Competitiveness 2. Decline in Market Share 3. Wasted Costs and Resources 4. Negative Impact on Company Revenue 5. Customer Losses	Medium	3	Conduct research and development of new products and technologies through industry-academia collaboration.	• Social Involvement • Innovation Management

Stakeholder Communication Table

Stakeholder	Communication Mechanisms	Communication Frequency	Designated Units	2024 Issues of Concern[1]	2024 ASEH Response and Communication Outcomes[2]
Customers	• Customer quarterly business review meetings • Customer audits • Customer service platforms • Technical forums • Ad-hoc meeting requests from customers	As needed	• COO Office • Sales Offices	• Customer Relationship Management • Human Rights Management • Information Security Management • Risk and Crisis Management • Sustainable Supply Chain • Data and Privacy • Climate Strategy	• We achieved a customer satisfaction rating of 92% in 2024, which met our target of 90% • We ensure that relevant information on customers' periodic enquiries into issues such as migrant worker rights, supply chain disruptions, net zero status and renewable energy use, are provided in a timely manner
Employees	• GM/plant manager's mailbox • Intranet websites/bulletin boards/ display walls • Seminars/employee forums • Employee engagement surveys • Service/complaint hotlines	As needed	• CAO Office • HR Departments	• Occupational Health and Safety • Human Rights Management • Talent Attraction and Retention • Talent Development • Diversity and Inclusion	• In 2024, more than 1,800 seminars/employee forums were held, including 184 sessions for new employees, 616 sessions for foreign workers, 118 instances of regular labor-management negotiations and 1,005 sessions for regular employees • The number of internal employee complaints totaled 803, all of which were closed satisfactorily
Shareholders	• Annual and quarterly financial reports • Quarterly earnings conferences • Annual shareholders' meetings • Quarterly institutional investors' conferences	Annually/quarterly	• Company spokesperson • Investor Relations Department, CFO Office	• Risk and Crisis Management • Talent Attraction and Retention • Energy Management	• In 2024, we held 1 annual shareholders meeting and 4 quarterly earnings conferences, and attended 13 institutional investor conferences to communicate the company's economic, environmental, and social performance to our shareholders • In 2024, our consolidated operating revenue was NT$595.4 billion- an increase of approximately NT$13.5 billion or 2.3% compared with 2023
Suppliers / Contractors	• Supplier questionnaire surveys • Supplier on-site audits • Annual supplier forums/supplier sustainability awards • Supplier capacity-building activities • Supplier information security evaluation	Annually/as needed	• Corporate CSR Division, CAO Office • ASE Global Integrated Solutions Co., Ltd. • Procurement Departments • IT Departments	• Occupational Health and Safety • Sustainable Supply Chain • Climate Strategy • Human Rights Management • Sustainable Manufacturing	• More than 700 suppliers sustainability assessment questionnaire response, while 229 suppliers underwent onsite/remote audits or RBA VAP • More than 13,000 suppliers participated in sustainability forums/training workshops • For the second year Supplier Sustainability Awards, we selected one supplier for the Low Carbon category and one for the Circular category and completed first year annual on-site audits

[1] Issues of concerns were selected from the results of our survey and other forms of communication
[2] For more information, please see relevant chapters and sections of this report

Stakeholder	Communication Mechanisms	Communication Frequency	Designated Units	2024 Issues of Concern[1]	2024 ASEH Response and Communication Outcomes[2]
Government	• Communication meetings/forums/ seminars or conferences held by government authorities • Proactive dialogue with government authorities • Reporting through government portals	As needed	• Public Affairs Division, CFO Office • CAO Office	• Occupational Health and Safety • Regulatory Compliance • Social Involvement • Energy Management • Water Resource Management • Air Pollution Prevention	• The Environmental Safety and Health (ESH) Committee – Assembly and Test Working Group is a platform formed by our company together with industry peers to help address industrial safety and environmental issues across Taiwan's semiconductor industry. The group analyzes trends and developments in international law and provides references for government agencies to formulate policy and regulatory amendments related to the semiconductor assembly and testing industry. It also plays a critical role in supporting the relevant authorities to formulate regulatory proposals that align with current and future industry developments.
Community (incl. NGOs and media)	• Community perception surveys and needs assessments • Communication meetings/forums/ seminars held by NGOs • Volunteer activity cooperation with NGOs • Press releases • Spokesperson interviews • Company website	As needed	• Public Affairs Division, CFO Office • CAO Office • HR Department	• Social Involvement • Human Rights Management • Water Resource Management • Climate Strategy • Occupational Health and Safety • Waste and Circular Reuse • Biodiversity • Energy Management	• We held press events for the media and non-profit foundations, and organized forums and facility visits for concerned stakeholders to learn about the technologies behind semiconductor manufacturing and our achievements in environmental protection • We collaborated with over 50 NGOs to support environmental conservation ,cultural and educational programs, and organize charitable activities
Industry Unions/ Associations	• Organizational member conference • Technology forums held by industry unions/associations	As needed	• Corporate CSR Division, CAO Office • Subsidiaries	• Climate Strategy • Energy Management • Sustainable Manufacturing • Regulatory Compliance • Occupational Health and Safety • Water Resource Management • Air Pollution Prevention	• We engaged over 130 industry unions, associations and organizations, and international industry alliances, and contributed approximately US$0.61 million to public policy and industrial development • Our executive serves as the chair of the SEMI Global Board of Directors, and the company is a founding member of SEMI [the Semiconductor Climate Consortium (SCC)].In 2024, the SCC's International Energy Cooperation Program (Energy Collaborative) (SCC-EC) released a white paper entitled "Challenges and Solutions for Taiwan's Low-Carbon Energy Procurement", which explores Taiwan's existing energy policies, deeply analyzes the challenges facing Taiwan's renewable energy development and procurement, and further proposes four major action guidelines



3

INTEGRITY AND ACCOUNTABILITY

ASEH commits to constructing sound corporate governance, conducting business ethically and complying with all laws and applicable regulations where we operate.

ASEH strives to establish an organizational culture of integrity and accountability, maintain high standards of ethics, effective corporate governance and accountability mechanisms in every aspect of its business, as well as conduct business based on the principle of social responsibility and business ethics to serve both the company's and shareholders' long-term interests.





2024 Key Performance



Continued listing on the TWSE Corporate Governance 100 Index (TWSE CG100 Index)



Performance Assessment of the Board and the Functional Committees



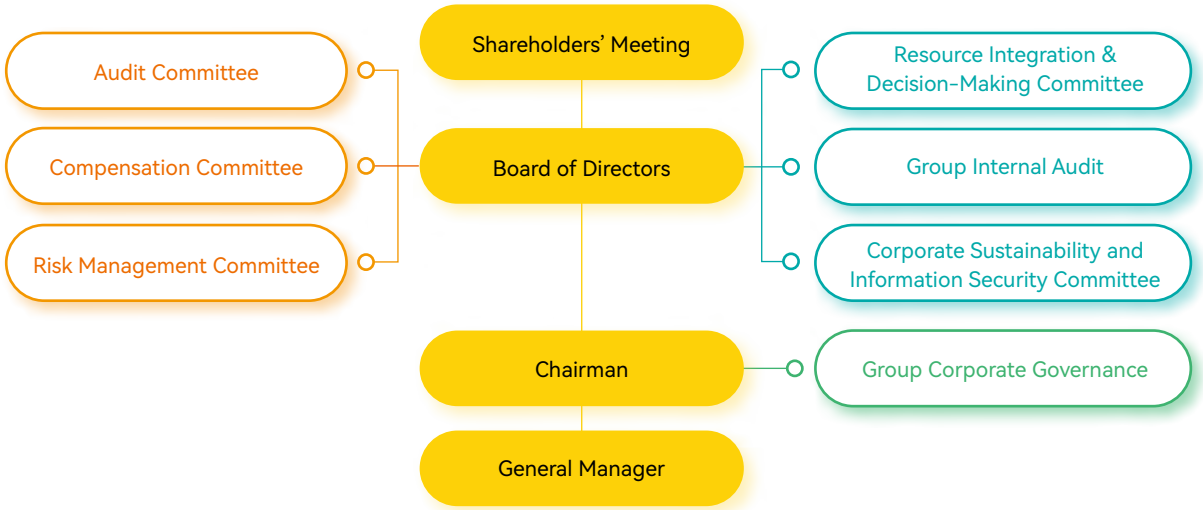
Continuous education for the Board members: 87 hours [1]

The company proactively reviews its corporate governance practices and effectiveness in implementation using the Corporate Governance Evaluation System launched by the Financial Supervisory Commission ("FSC"). A self-assessment process increases top management executives' awareness in strengthening corporate governance policies, and will help raise the standards of the company's corporate governance. In 2024, the company was among the top 20% best performing listed companies with better ratings in the categories of "Enhancing Board Composition and Operation" and "Promoting Sustainable Development". In 2024, the company was again selected to be a constituent stock of the "TWSE Corporate Governance 100 Index (TWSE CG100 Index)" based on the 2023 assessment of our corporate governance, liquidity tests and financial indicators. To achieve good corporate governance, we will continue to focus on increasing information transparency, protecting the rights and ensuring fair treatment of shareholders, and incorporating sustainable practices into corporate governance.

[1] Total training hours = course duration x number of people

3.1 Board of Directors

The board of directors of the company (the "Board") established the "Audit Committee", "Compensation Committee", "Risk Management Committee" and "Corporate Sustainability and Information Security Committee"[1], to convene meetings and perform duties as prescribed in the charters and/or within applicable laws and regulations. The committees also submit proposals for Board resolution, and report the status of matters relating to their respective functions to the Board. In parallel, the Group Internal Audit Department conducts periodical audits and presents audit results to the Audit Committee and the Board. Group Chief Administration Officer (Du-Tsuen Uang) was appointed as the Corporate Governance Officer to facilitate the operation of the Board[2]. In addition, the Resource Integration and Decision-Making Committee was established to strengthen resource integration and decision-making efficiency across all subsidiaries, with the goal of maximizing shareholder and stakeholder value.



[1] For further details on the composition and responsibilities of the Audit Committee, Compensation Committee, Risk Management Committee and, Corporate Sustainability and Information Security Committee, please refer to our 2024 Annual Report and Form 20-F "Item 6 Directors, Senior Management and Employees – Directors and Senior Management" at https://ir.aseglobal.com/html/ir_reports.php or the company's website at https://ir.aseglobal.com/html/ir_committees.php

[2] For more details on the corporate governance affairs and training status of the Corporate Governance Officer, please refer to the company's website at https://ir.aseglobal.com/html/ir_corpor.php

[3] For further details on succession planning, please refer to the company's website at https://www.aseglobal.com/csr/integrity-and-accountability/succession-planning/

[4] The re-election of the company's board of directors was completed at the Annual Shareholders' Meeting in June 2024. A new director was elected to fill a vacancy by the 2025 Annual Shareholders' Meeting

[5] Independent directors are as defined in Rule 10A-3 under the U.S.A. Securities Exchange Act of 1934 as well as defined by the Regulations Governing Appointment of Independent Directors and Compliance Matters for Public Companies by Taiwan FSC

[6] For further details on directors' attendance of meetings and information regarding conflict of interest, please refer to our 2024 Annual Report

Structure and Responsibilities of the Board of Directors

The Board is the highest governing body of the company. Jason Chang is the Chairman of Advanced Semiconductor Engineering Inc. ("ASE") since the company's listing on the Taiwan Stock Exchange in 1989. He is also the Chairman of the company since its founding in April 2018 and the Chair of the Resource Integration and Decision-Making Committee since 2021. As a strategic leader, the Chairman has led the company through consolidating core businesses, tackling challenges, and creating new business opportunities, to achieve market leadership in the semiconductor assembly and test industry. ASEH has developed a management succession plan and regularly evaluates the succession planning progress to ensure the company's sustainability[3].

The fourth Board consists of nine members, each serving a three-year term[4]. Three of the members are independent directors[5]. In addition to the scope of authorities and duties granted by or in accordance with the Taiwan's Company Act, the company's Articles of Incorporation and Shareholders' Resolutions, the Board is actively engaged in the supervision of the overall operations of the company, business strategy formulation and development, risk identification in operation, finance, taxation, and overseeing, planning and implementation of ASEH's corporate sustainability.

In 2024, a total of twelve Board meetings were convened and attended by three independent directors in their supervisory capacity. The average Board meeting attendance rate was 92.97%. To manage and avoid conflicts of interest, directors or the corporates they represent involving conflicts of interest which may jeopardize the interest of the company, are not allowed to participate in the discussions, exercise their votes, nor vote on behalf of other directors[6].

Diversity of the Board of Directors

The company's Corporate Governance Best Practice Principles lists the guidelines, management objectives and goals for selecting the Board[1] and takes into account diverse and complementary factors such as: gender, age, nationality, culture, professional background and industry experience[2]. Members of the Board come from different professional backgrounds with global market perspectives and possess the abilities to conduct risk oversight.

Continuous Education for Board Members

To expand the knowledge and competencies of our board members to effectively respond to evolving global and domestic corporate governance and sustainability challenges, a robust board education program was put in place. Based on industry requirements, educational and experience background of board members as well as the results from the performance evaluation of the Board, we facilitate the board members with the course planning and activities. In alignment with prevailing global trends as well as internal risk assessments, the company organized training for the Board on topics including climate-change risk management and the strategic analysis of global trade and the economy in 2024. Board members are also encouraged to attend external professional courses in accordance with their development needs. For example, some board members have attended workshops in sustainable governance trend, corporate supervisory and oversight responsibilities, management of cybersecurity risks, and emerging technologies and applications. Our board members have continued to participate in continuous education on corporate governance and sustainability during their tenure, with each director fulfilling the required annual training hours in accordance with applicable regulations[3].

Board Participation in Sustainability Governance

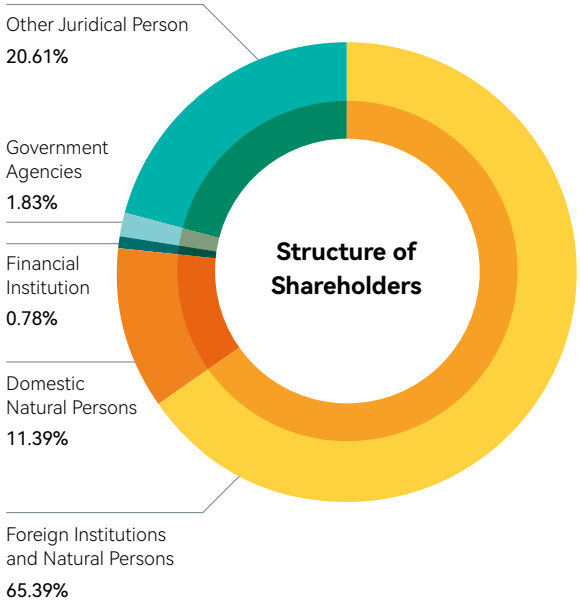
The Board has direct oversight and management of the company's ESG performance, and the authority to make decisions. In 2024, the Board passed the following resolutions – a) donating NT$100 million to environmental causes in Taiwan[4], and b) approved amendments to multiple policy documents pertaining to corporate governance, information security management, business conduct and ethics, supplier management, sustainable raw materials, water resource management, and climate change responses . The Corporate Governance Officer is responsible for consolidating and reporting to the Board on company-wide developments covering - GHG inventory, social enterprise, sustainable development, stakeholder engagement, regulatory compliance, ethics, risk management, information security, and intellectual property management. In November 2024, the Board resolved to designate the company's "Corporate Sustainability Committee" as a functional committee. Subsequently, in July 2025, the Board resolved to elevate the status of the company's "Information Security Task Force" to a functional committee, and to rename the "Corporate Sustainability Committee" as the "Corporate Sustainability and Information Security Committee." The Board also approved the organizational charter of the Corporate Sustainability and Information Security Committee. The entire committee is composed of board members and is chaired by the Chairman of the Board. This structure is intended to enhance the board's oversight of the company's ESG performance and information security matters, including the annual implementation results, associated risks and opportunities, and future strategic planning.

Board Performance and Remuneration

We have formulated remuneration policies for our Board member and top management to support strategy of sustainable business. The Compensation Committee evaluate the remuneration of directors and management on a regular basis according to the corporate governance trend report and the overall remuneration market competitiveness report. In addition to individual performance of current year, the remuneration of top management is also determined based on the achievement of the company's financial and relative financial[5] performance targets. The company has engaged third-party consultants to provide professional expertise backed by data from global research to help the Compensation Committee formulate and manage the Company's remuneration structure.

In August 2021, the shareholders' meeting resolved to issue restricted stock awards as part of the top management's variable compensation package based on the integration of ESG metrics in greenhouse gas emission and water withdrawal intensity with the company's financial performance (consolidated operating revenue, consolidated gross profit and gross profit margin, consolidated operating profit and operating profit margin). Adopting an incentive plan that links ESG to financial results demonstrates ASEH's commitment to sustainable actions and results, while pursuing strategic business goals. The regular shareholders' meeting has approved the issuance of new restricted stock awards in June 2024.

[1] For further details on the status of directors' diversity and management objectives and goals achieved, please refer to the company's website at https://cms.ase.todayir.com.tw/html/client_tw/ase/attachment/20250811111257230041883_en.pdf
[2] For further details on the composition of the Board, and professional backgrounds and industry experiences of Board members, please refer to 2024 Annual Report "Ch. 2. Corporate Governance Report" or 2024 Form 20-F "Item 6. Directors Senior Management and Employees — Directors and Senior Management"
[3] For more detail on continuous education for board members, please refer to 2024 Annual Report "Ch. 2.3 Corporate Governance"
[4] Since 2014, ASE has donated NT$100 million annually and the program continue after the establishment of the company
[5] Relative financial performance targets such as revenue growth rate, etc.



To enhance overall efficiency of the Board and to measure the performance of the Board on a yearly basis, individual members, and the functional committees with respect to leading and supervising the company's performance, we established a board of directors evaluation system that incorporates non-financial indicators as well as sustainability-related elements. In accordance with the Rules of Performance Evaluation of the Board of Directors, we have completed internal performance evaluations as well as conducted external evaluations for the Board as a whole, and for individual directors and functional committees in 2024. Every three years, we commissioned an external professional independent institution to evaluate the Board as a whole by using questionnaires and on-site interviews, and specific recommendations were provided. Such performance evaluation not only helps to enhance the Board's oversight functions and operational efficiency, but may also serve as a reference for directors' remuneration standards. The evaluation results were publicly disclosed on the company's website[1].

Remuneration for top management includes cash, stock options and restricted stock awards. The characteristics of the industry and the nature of the company's business are taken into consideration when determining the ratio of bonus payout based on the short-term performance of top management and the time for payment of the variable part of remuneration. Furthermore, we believe that the ownership of company shares by the directors who hold senior management positions help align their interests and actions with the interests of shareholders; therefore, we formulated "Stock Ownership Guidelines" and updated minimum value of stock ownership in 2023. To enhance corporate governance and ensure the accountability of financial results, we also updated "Compensation Recoupment Policy" in 2023 by expanding the scope of the policy to reserve the right to cancel and require reimbursement of any variable compensation received by the top management to the extent permitted by applicable laws. These two important documents were publicly disclosed in our website[2].

Shareholder Rights and Interests

To ensure shareholders' rights of being fully informed of, participating in and making decisions over important matters of the company, we have actively responded to TWSE's promotion of corporate governance related measures. These measures include a candidate nomination system for Board member elections, an electronic voting system, case-by-case voting at shareholder meetings, and the disclosure of voting results on a case-by-case basis. The shareholders' meetings are held in an effective, legal and convenient way for shareholders to exercise their shareholders' rights, encouraging shareholders participation in corporate governance and thereby leading to improved attendance at shareholders' meetings.

Information Transparency

We place great emphasis on the stakeholders' right to know, and faithfully comply with applicable regulations regarding information disclosure in order to provide them with regular and timely information on company financial conditions and business operations, major internal documents, and corporate governance status, etc. through diversified channels. These channels include the company website, Market Observation Post System (MOPS), annual report, SEC Filing Form 20-F, ESG Report, quarterly earnings release, press conference and annual shareholders' meeting. To treat stakeholders equally, we concurrently disclose the information of the preceding matters in both Chinese and English. This not only establishes a smooth and effective communication channel, but also grasps the pulse of the market, economy, society and environment through feedback from stakeholders.

[1] For further details on 2024 Board Performance Evaluation Results, please refer to the company's website at https://ir.aseglobal.com/html/ir_board.php
[2] For more important documents related to the company, please refer to the company's website at https://ir.aseglobal.com/html/ir_doc.php

3.2 Economic Performance and Tax Governance

ASEH Tax Policy

ASEH believes that being an honest and responsible taxpayer will help foster economic growth, contribute to business sustainability, reinforce our business value and positively affect our business partners.

ASEH is committed to:

1. Complying not only with tax laws and regulations, but also the spirit of the law, including the relevant international standards as well as duly completing accurate tax filings and complying with all tax payments in all the countries in which we operate.
2. Accounting for short-term and long-term tax influences in business decisions-making process.
3. Being transparent and disclosing tax information in accordance with applicable regulations and reporting requirements.
4. Complying with relevant tax payment on all profits earned from business activities conducted in the relevant jurisdictions and ensuring intra-group transactions are conducted at arm's length.
5. Not relying on tax havens or exploiting tax structures as a method of tax avoidance and aggressive tax planning.
6. Constructing an appropriate mechanism to assess tax-related risks and potential impacts connected to our global operations and constantly enhancing our tax governance activities.
7. Developing mutually trustful and respectful relationships with tax authorities and having open and honest channels of communication.

Our tax policy was reviewed and approved by our chief financial officer. The company's accounting department is responsible for income tax filing, and obtains approvals of the appropriate level of authorization before filing.

Consistent with our core values, ASEH is committed to fully meeting tax obligations while also being financially responsible for the potential effects that tax payments might have on our business activities and being supportive of corporate innovation, research and development, reinvestment and sustainable investment initiatives in accordance to government policy. As a multinational corporation, ASEH's tax contribution is international in scope and covers a wide range of public tax systems around the world.

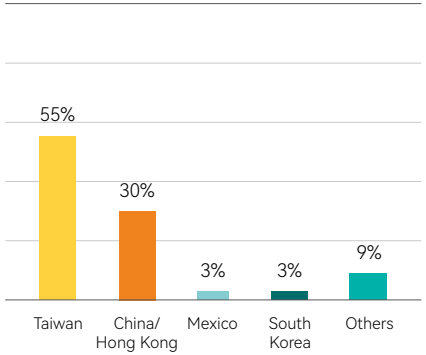
In view of the sophisticated nature of tax matters and the global scale that ASEH operates on, we continuously monitor and assess changes in relevant tax laws and regulations and implement internal training to ensure that employees have the necessary level of skill and awareness for tax issues. In addition to the internal training and guidance, we also have external tax advisors dedicated to advising us on material transactions and providing us with the foresight to mitigate the potential tax-associated risks. In addition to income tax, ASEH also contributes numerous other taxes including property tax, environmental tax and employment tax.

ASEH's global footprint spans across Asia, Americas, Europe, and Africa, covering more than 20 tax jurisdictions, with the principal offices and facilities located in Taiwan and China. Therefore, Taiwan and China contributed most of our operating revenues, profit before tax, income tax accrued for current year, and income tax paid. However, due to the variances in operating results and tax regulations among different tax jurisdictions, the proportions of net profit before tax, income tax accrued for current year and income tax paid may not be equivalent to the proportion of operating revenues. As for other individual countries where we operate, their proportions of the operating revenues, profit before tax and income tax accrued for current year, as well as income tax paid were relatively minor.

The bar charts below show the operating revenues, profit before tax, income tax accrued for current year, and income tax paid by country in 2024.

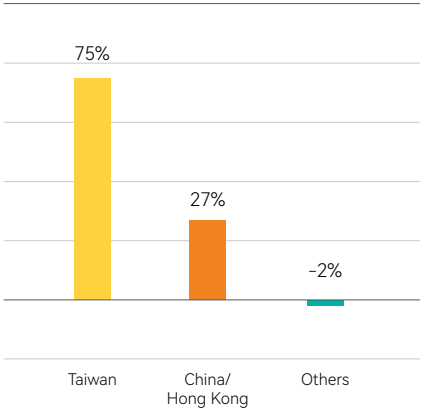
Operating Revenues

US$ 18 Billion
(NT$ 595 Billion)



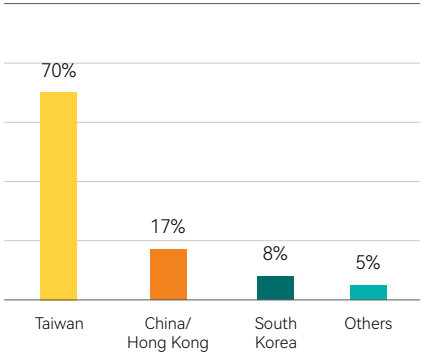
Profit (Loss) Before Tax

US$ 1,273 Million
(NT$ 42 Billion)



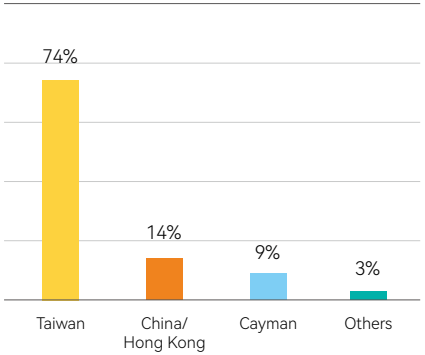
Income Tax Accrued

US$ 299 Million
(NT$ 10 Billion)



Income Tax Paid

US$ 312 Million
(NT$ 10 Billion)





In 2024, our effective income tax rate of 18.97% was higher than the industry average tax rate of 13.96% from SAM CSA Companion in "Semiconductors and Semiconductor Equipment" industry group in 2024 and our effective tax rate of 12.45% in 2023. In Taiwan, the statutory income tax rate is 20.00% and the additional income tax rate on the unappropriated retained earnings ("URE") is 5.00%. Under IFRS, the URE tax should be recognized when profits earned; then in the following year, the company would do a tax reversal if earnings distributed. The increase of 6.52%, as compared with 2023, was primarily due to the 2023 significant tax reversal from the record-high amount of 2022 earnings, which distributed in 2023.

Once the tax amount confirmed in 2024, one of our Cayman Islands subsidiaries paid the income tax for a gain from the disposal of our China subsidiaries previously. Our effective cash tax rate of 24.54% in 2024 was higher than the industry average cash tax rate of 13.82% in 2024. The effective cash tax rate decreased 11.78% from 2023, mainly because there were record-high profits and corporate income taxes for 2022, but the major part of 2022 taxes actually been paid while filing income tax returns in 2023. And, the other cause making the rate to be higher was our Korean subsidiary paid the income tax for a gain from the disposal of a subsidiary in 2023. Therefore, our effective cash tax rate of 2023 was relatively higher.

[1] "Others" includes Singapore, Malaysia, Japan, the Philippines, U.S.A, Tunisia and European countries, etc.

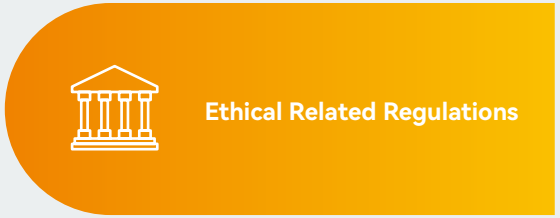
3.3 Business Ethics

Policies and Specifications

The Board has successively approved and published ethical corporate management related regulations which clearly specify the policies and specification, behavior guidelines, operational procedures and grievance systems to prevent unethical behaviors. These policies aim to shape ASEH's culture of honesty and responsibility and to realize its commitment of compliance to the highest ethical standards in ASEH's overall business activities.

Organization and Authority

As the highest governance body of ASEH's business conduct and ethics, the CSISC coordinates and supervises the establishment and implementation of the ethical corporate management policies and specifications. The CSISC periodically reviews the promotion of business conduct and ethics and the compliance of policies and specifications, and reports to the Board on a yearly basis. The Corporate Governance Taskforce under the CSISC of the three major subgroups is established to promote ethical policies and specifications to our global manufacturing sites and assists in managing and adopting appropriate policies and specifications to ensure ethical management in compliance with the requirements of local laws and regulations. Global manufacturing sites are responsible for planning the internal organization, structure, and allocation of responsibilities, formulating standard operating procedures and conduct guidelines in accordance with corporate policies and specifications, and promoting awareness and educational activities with respect to ethics policy in internal management and in daily operation. The Group Internal Audit is in charge of supervision to ensure the operating effectiveness of reporting system, and reports to the Audit Committee regularly every year.



Education and Promotion

To guide ASEH Members[1] and the company's stakeholders to better understand ASEH's business ethics standards, we set up "Code of Business Conduct and Ethics" area of the company website and disseminate our ethical related policies, guidelines, practices, and implementation status of the Board and management levels within the company. We also communicate ASEH's concept of business ethics and company's specific practices through education, promotion and online training and various methods, strengthening the culture of integrity in operation and ensuring the effective implementation of the system.

We require all suppliers to abide by the company's Code of Business Conduct and Ethics and Supplier Code of Conduct. In addition to the "ASEH Supplier Code of Conduct Commitment Letter" signed by new suppliers, relevant guidelines and regulations are specified clearly in our procurement documents and published on E-Hub, an electronic information exchange platform for suppliers. These steps are taken to ensure that all suppliers are cognizant of their obligations when conducting business with ASEH. Compliance with these codes is a prerequisite to qualify as an approved ASEH supplier. Over the years, we have organized annual supplier conferences and periodic workshops, forums, training sessions and monthly/quarterly/yearly appraisals to communicate with suppliers on our Supplier Code of Conduct, to ensure proper alignment in values and ethics.

2024 Programs and Implementation

Education and training, advocacy and communication:

1. The Administrative and Practice Procedures to Prevent Insider Trading of the company stipulate clearly the restrictions with regard to trading of shares by board members. Email reminders on the policy and regulatory compliance were sent out by the corporate governance officer to the board members prior to the blackout period when the Company released its quarterly and annual financial reports in 2024.
2. The company's Corporate Governance Officer has duly reported to the board on the company's current ethical management and work plans on May 10, 2024. The Board passed a partial amendment to the company's Code of Business Conduct and Ethics , and Supplier Code of Conduct to enhance the protection of human rights, environment, and business ethics among ASEH entities and our global supply chain partners.
3. The company has promoted its business code of conduct and ethical compliance reporting mechanism on the Group Audit Management System platform, which is accessible to our global business locations. This is intended to help employees understand when and where they can file a report or complaint. We also conduct in-person information sessions with the management and employees at our global business locations to share selected case studies and procedures for handling reports of unethical conduct. We are continuously calibrating the reporting system to ensure ease of use and encourage proactive reporting on unethical behavior. We are committed to investigating and handling every report in a fair and equitable manner, in accordance with the company's whistleblowing policy.
4. ASEH's business locations around the globe have conducted business practices and ethics related training to all employees through In person, online and e-mail communication, as well as announcement and dynamic advocacy to conduct, with the topics covered including ethical management, anti-corruption, trade secrets, fair competition, respect for intellectual property, prevention of insider trading, information security, privacy and protection of personal information, RBA Code of Conduct, and employee code of conduct at all business locations (164,303participants clocked a total of 105,264 hours on the course). In total, 58,442 employees attended the courses related to the company's Administrative and Practice Procedures to Prevent Insider Trading and on applicable laws and regulations, completing 27,117 hours.

Risk assessment:

1. All of our sites around the world have conducted business ethics risk assessment and developed corresponding action plan based on the identified risks. No major risks of violating business ethics have been identified.

[1] "ASEH Members" includes all employees, officers, supervisors and directors of the company, its subsidiaries and joint ventures

Consultation and Report

We have established channel of consultation for ASEH Members and various internal and external reporting channels[1]. ASEH Members or any third party may report to the internal or external channels, either using their own identity or anonymously. Investigation and improvements were made according to related reported issues, emphasizing on the importance of business ethics and integrity by providing educational training (such as e-mail advocacy and online quizzes). We are committed to keeping the whistleblower's identity and reporting contents confidential, and protecting him/ her from any unfair treatment or retaliation as a result of the violation reporting.

ASEH received a total of 68 complaints in 2024, of which 21 lack sufficient information to conduct further investigation or were employee-related complaints that have been forwarded to the HR department to follow up. There were a total of 47 complaints related to unethical business behavior. Of which, 17 cases pertaining to unethical business behavior were substantiated after thorough investigations were conducted, with 1 conflict of interest case, and 16 discrimination or harassment cases. All necessary improvement measures have been taken, including taking disciplinary actions against violating employee, enhancing ASE members' awareness through trainings, conducting post-cases reviews to ensure the improvement measures taken to effectively prevent the recurrence of similar cases[2].

For the purpose to reinforce the whistle-blowing mechanism, the company has appointed an independent third party to assist in handling any reporting regarding insiders' misconducts in the course of investigation if necessary and provide legal services in the subsequent investigation since 2018.

[1] For further details on internal and external report channels, please refer to the company's website https://www.aseglobal.com/csr/integrity-and-accountability/business-conduct-ethics/
[2] For more detail on improvement measures related to harassment and discrimination, please refer to 6.1 Talent Attraction and Retention
[3] Number of cases lack sufficient information to conduct further investigation
[4] Number of cases involved employees' personal complaints and were forwarded to the HR department to handle
[5] Number of breaches confirmed related to ethics matters after investigation

Number of code of business conduct and ethics violation reports filed in 2024

Number of cases received: 68

Not accepted[3]	Not related to ethics matters[4]	Related to ethics matters
10	11	47

Item	Not Breach	Breach[5]
Corruption or Bribery	0	0
Conflict of Interest	5	1
Insider Trading	0	0
Money Laundering	0	0
Fair Competition and Antitrust	0	0
Secret Divulgence	0	0
Privacy and Personal Data Protection	0	0
Discrimination or Harassment	25	16
Total	30	17

Processing Procedures for Violation Reporting



1 Filing
Violation is reported.

2 Acceptance
Group Internal Audit accepts the report and conducts preliminary analysis.

3 Investigation
Audit Committee appoints chairperson of the investigation team, and an investigation team will be formed by the chairperson to select qualified personnel to conduct the investigation.

4 Disciplinary and Corrective action
Based on the investigation results, corresponding actions will be taken, including disciplinary actions, legal actions, corrective actions, and education and training.

5 Reporting to Audit Committee
Investigation team will forward an investigation report to Audit Committee via Group Internal Audit.

3.4 Risk Management

As a global company, managing risk is integral to ensuring business resilience and continuity. At ASEH, we have established a comprehensive risk management architecture in accordance with the Enterprise Risk Management (ERM) approach. In addition, we have incorporated the ISO 31000 Risk Management - Principles and Guidelines to manage risks in the day-to-day operations, together with systematic general risk control measures to form a comprehensive and effective risk management framework that also allows us to explore potential opportunities that may arise.

Risk Management Policies

The ASEH's Risk Management Policies and Procedures adopted by the board of directors in 2020, was designated as the highest level of foundation for the company's risk management. It explicitly mandates that risk management must be incorporated into both the company's business strategy and organizational culture, and that it is crucial to establish a comprehensive set of risk management procedures that undergo continuous review to ensure the effective control of risks.



Risk Governance Framework

The Governance level of Authority in Risk Management and Control – ASEH Board of Directors/ Risk Management Committee

As the highest decision-making authority of risk management and control, the board of directors of ASEH's. The members of the board have an extensive understanding of the industry landscape and experience in risk mitigation, to formulate risk management strategies that take into account both the company's business strategy and the overall environment. The Risk Management Committee, which consists of three independent directors, is a functional committee established directly under the board. The committee is responsible for overseeing comprehensive risk management, implementing risk management policies and decisions of the board, coordinating and promoting inter-departmental risk management plans, supervising and managing the company and its subsidiaries' risk management and control mechanisms, and reviewing and compiling risk management reports and submitting them to the board of directors on a regular basis.

The Third Line of Defense – Group Internal Audits

The Group Internal Audit (GIA) office was established under the board of directors to perform annual audits (at least once a year) of business operations and management processes related to risk management in order to evaluate the completeness of risk identification, the accuracy of risk assessment, and the implementation status of response measures in all departments. The goal is to ensure that all risks are effectively controlled within acceptable limits. The scope of the audit includes both the company and its subsidiaries, and the audit findings are presented to the board of directors to ensure objective oversight and management of various risks, as well as reasonable belief that the company's goals have been met.

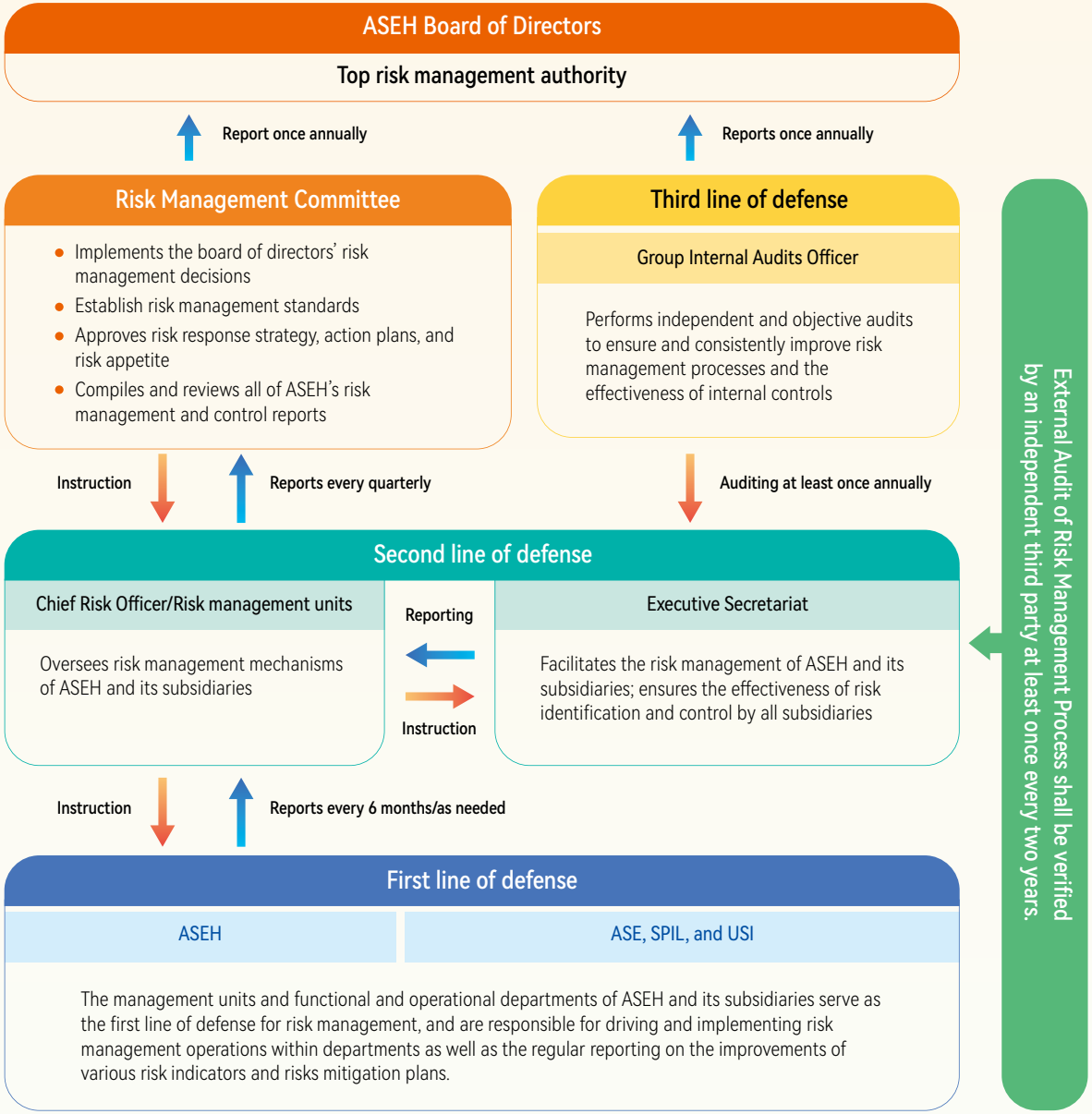
The Second Line of Defense - Chief Risk Officer

The board of directors has designated Du-Tsuen Uang, our Corporate Governance Officer, as the Chief Risk Officer. Uang's responsibilities include providing guidance and oversight for the risk management efforts of the company and its subsidiaries, and submitting annual reports to the Risk Management Committee. The Risk Management Executive Secretariat facilitates the implementation of risk management measures, while different functional units and subsidiaries undertake risk management tasks in accordance with their respective business needs and responsibilities.

The First Line of Defense – Responsibility of all functional units of ASEH and its Subsidiaries

The successful implementation of risk management is contingent upon the integration of risk management principles into the day-to-day activities of all employees across the company. The company outlines the roles and responsibilities of the functional units and each unit is accountable for the risks arising from the day-to-day operations. We will continuously promote a corporate culture of risk awareness across the company to enable our employees to better understand, identify and manage associated risks. Furthermore, in order to effectively manage and control overall company risks, our subsidiaries are required to establish risk management committees that report to the Chief Risk Officer and Risk Management Committee.

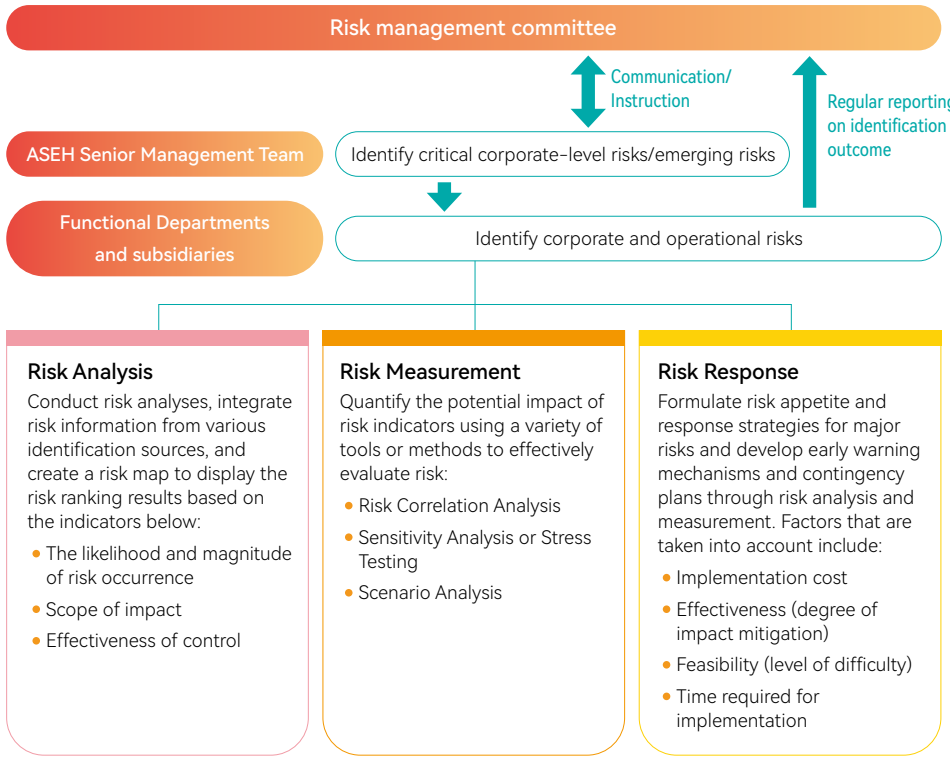
Risk Governance Framework



Risk Identification Process

ASEH implements a top-down ERM approach to identify effectively critical operational and strategic risks. Each year, the senior management team meets to identify potential risks, while a bottom-up risk inventory mechanism is employed to identify corporate-level and operational-level risks in all subsidiaries. The risks identified by the senior management team and the risk management of each functional unit are integrated to form a comprehensive risk identification process. The identified risks are documented in the Risk Register and subject to evaluation to identify the key risks according to risk level and control effectiveness, and subsequently, to develop a risk response strategy or risk management plan accordingly. To clarify potential correlations between various risk factors, we employ the Correlation Analysis method to analyze them, formulate risk mitigation plans in the event that relevant impacts are found, and regularly monitor the implementation status and effectiveness to reduce t residual risks.

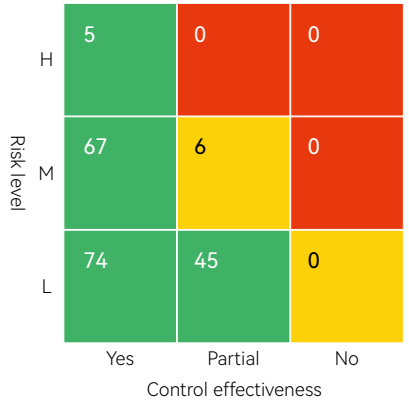
Risk Identification Process



Risk Analysis

The functional risk management units identify potential risks encountered in their day-to-day operations and rank them using indicators such as the probability of occurrence, level of impacts, and control effectiveness. In 2024, the company identified a total of 197 risks from its annual risk identification and analysis. The distribution of the associated risk levels is indicated as follows:

ASEH Risk Matrix



Risk Measurement

Based on the results of the risk analysis, we perform annual risk measurement on major risk factors. Depending on the attributes of the risk factors, we then employ a variety of methods and tools, including Risk Correlation Analysis, Sensitivity Analysis or Stress Testing, and Scenario Analysis, to assess the impact of risks on the company or correlations between risks. This evaluation also determines whether it is necessary to adjust the level of risk appetite or tolerance.

Risk Category	Measurement Methods/Tools
Risks associated with reciprocal tariffs in the United States	Scenario Analysis, Sensitivity Analysis, Stress Testing Sensitivity Analysis
Risks associated with electric power price hikes by TAIPOWER	Scenario Analysis、Sensitivity Analysis
Interest rate and exchange rate risks	Sensitivity Analysis、Stress Testing
Supply chain risks	Sensitivity Analysis、Stress Testing

Decision-making Process for Risk Tolerance and Response Strategies

After the risk factors have been identified and measured, the Chief Risk Officer, who serves as the second line of defense in the organization's risk management, is responsible for collating the proposed risk tolerance and response strategies before reporting the summary to the Risk Management Committee. The Risk Management Committee will then review and decide on the proposed risk tolerance and response strategies, and submit to the board of directors for their reference and subsequent execution. This entire process provides a firm basis for the implementation of risk control and response measures.

Three Lines of Defense for Risk Management

	ASEH and functional units of subsidiaries	Chief Risk Officer	Risk Management Committee
Decision-making process for risk tolerance and response strategies	Identify potential risk impacts	Verify risk tolerance and formulate response strategies	Determine risk tolerance and response strategies
Management process for risk tolerance and response strategies	Regular review of various risks and their control points	Verify the risks that are subject to routine monitoring	Continuously monitor the effectiveness of risk management



Risk Response Measures

Geopolitics, Energy management and renewable energy risks, as well as Cyber Security risks, are among the primary risks for ASEH in 2024. The company's risk tolerance and mitigation measures were planned in accordance with the findings of the comprehensive risk assessment.

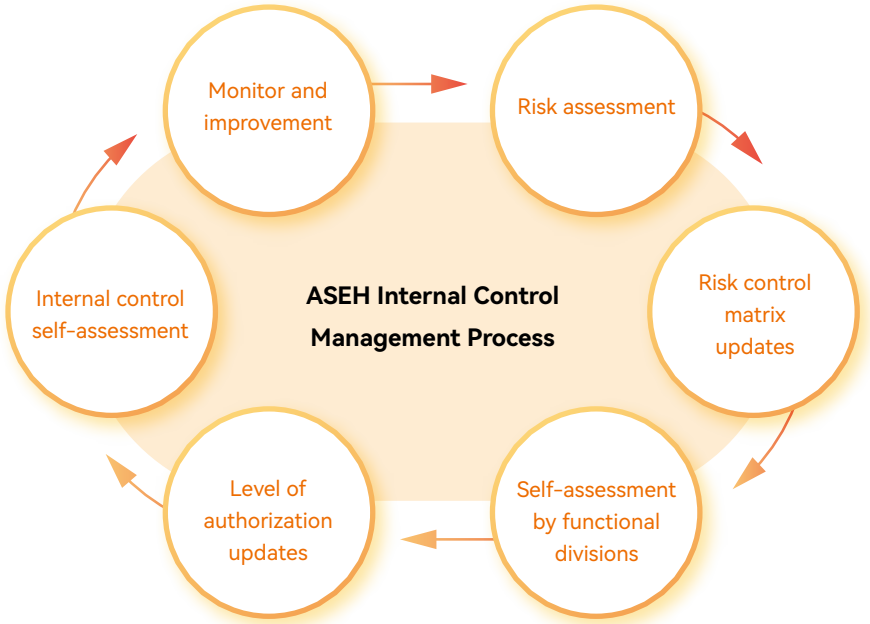
Risk Category	Mitigation Measures
geopolitics	1. Taking the US-China trade restrictions as an example, the company should have its legal department identify the impact of regulatory changes, senior management decide on countermeasures, procurement and sales departments assess the scope of restrictions, IT update system settings to manage risk, and continuously monitor regulatory changes to minimize losses. 2. Strengthen global layout 3. Actively cultivate local suppliers to achieve short-chain supply 4. The original production site dispatches experts to go overseas to train local personnel
Energy management and renewable energy risks	1. Launch of Carbon Cost Reduction Project 2. The factory set up a working group to conduct supply chain coordination, supplier carbon inventory and propose carbon reduction plans 3. Power supply: formulate strategies for power restrictions, power outages, rotational outages, and voltage drops without warning to strengthen the resilience of the power system 4. Purchase sufficient green electricity in accordance with regulations and customer needs
Cyber Security Management	1. Continuous cybersecurity education and training and irregular phishing drills 2. Implement two-factor authentication 3. Perform system vulnerability scans regularly 4. Purchase information security insurance

Verifying the Effectiveness of Risk Management

Internal Control

ASEH's Internal Control Policy complies with the Regulations Governing Establishment of Internal Control Systems by Public Companies established by Taiwan's Financial Supervisory Commission (FSC) and the pertinent regulations of the U.S. Securities and Exchange Commission. The policy, developed by senior management and approved by the board of directors, encompasses control operations at the corporate and operational levels. The objective is to establish a scope and standards that are applicable to the internal control systems of all of the company's business units and subsidiaries, thereby achieving effective design and implementation of internal controls, promoting the sound operation of the company, and to reasonably ensure accomplishment of the following objectives:

- Operational efficiency and effectiveness
- Transparency, reliability, timeliness, and legal compliance in reporting
- Compliance with the relevant laws and regulations



Risk-based Internal Audits

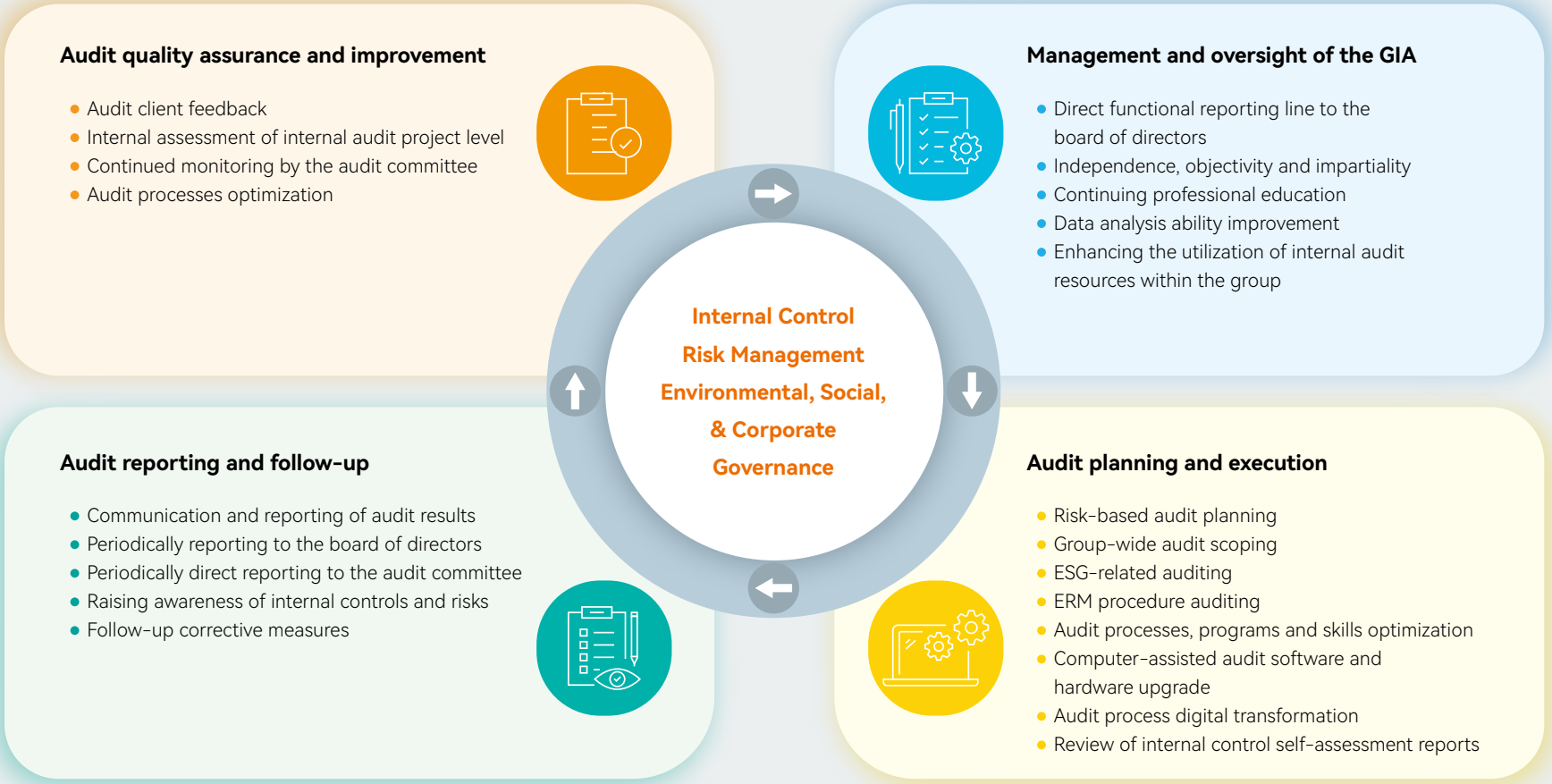
The Group Internal Audit (GIA) office was established under the board of directors to assist the board and management in reviewing and evaluating the effectiveness of the internal control system, measuring the effectiveness and efficiency of the company's operations, and assessing the reliability, timeliness, transparency, and legal compliance of relevant reports. In addition, the GIA office makes timely recommendations for improvements to reasonably ensure the continuous operating effectiveness of the internal control system, and to provide a basis for reviewing and revising the internal control system.

The GIA Division comprises an internal audit officer and an appropriate number of qualified, dedicated internal auditors as indicated by business scale, operating conditions, management needs, and the provisions of applicable laws and regulations, to perform independent, objective audits. Besides possessing competent qualifications, internal auditors are required to enhance their audit expertise by undergoing continuous skills training on an annual basis. The GIA team is fully dedicated to enhancing the company's audit programs, procedures, and techniques, and developing audit tools to improve internal audit efficiency and effectiveness.

The GIA office utilizes a risk-based internal audit mechanism and performs internal audit activities in accordance with the annual audit plan approved by the board of directors. The scope of the internal audit includes the internal control systems of the company and its subsidiaries. By integrating audits with our corporate risk management strategies and practices, and conducting audits on risk management related business content and management processes at least once a year, the GIA office seeks to verify whether risk identification is complete, risk evaluations are accurate, and risk responses are implemented thoroughly. This ensures that all risks are contained within acceptable limits and provides reasonable assurance that the company's objectives will be achieved.

The internal control self-assessment reports, prepared by the company and its subsidiaries and reviewed by the GIA office on an annual basis, along with audit reports on findings of internal control system deficiencies and abnormalities identified by the GIA office serve as the primary basis for the board of directors and general manager to assess the overall effectiveness of the internal control system and to produce internal control system statements.

Internal Audit Management Process

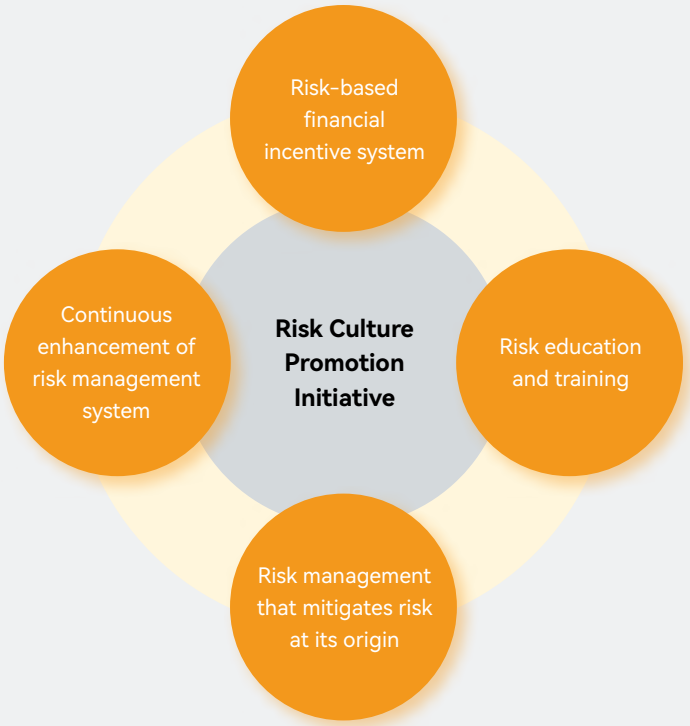


External Third-party Audit Verification

ASEH maintains major operating bases throughout the globe to ensure that its customers receive the most comprehensive and timely service possible. In light of the evolving business landscape, we have introduced annual external risk management process audits by third-party organizations in addition to establishing rigorous internal audits and internal control systems. In addition to ensuring the effective implementation of the company's risk management processes, we also annually review the operation of relevant systems by referencing feedback from internal and external audit results. This continuous review aims to deepen and enhance the effectiveness of our risk management. In 2023, BSI Taiwan was appointed to verify the ASEH risk management system in accordance with the ISO 31000 Risk Management – Principles and Guidelines, ensuring that the company's risk management is in compliance with international standards, and demonstrating conformity.

Promoting a Risk Culture

Successful risk management requires a comprehensive and robust risk management structure, and a deep-rooted sense of risk awareness among all employees. To that end, ASEH has formulated a plan to promote corporate risk culture and implement initiatives across all levels of the company. Our objective is to gradually cultivate a shared understanding of risk management with employees, enabling them to identify potential risks and respond effectively to mitigate the company's overall risk.



Risk-based Financial Incentive System

ASEH believes that risk management requires active involvement from all levels of the company, especially from our employees. The ASEH Corporate Sustainability and Information Security Committee (CSISC) plays an active role in strengthening employee focus on risk management. The CSC is composed of members from the board of directors and the senior management, and is chaired by the Board Chairman. The CSC is responsible for overseeing various projects and reporting their implementation status to the Board, with the goal of balancing business growth with generating positive social and environmental impacts. The CSISC presents the Board with a report at least once a year that addresses the following topics: (1) the status of sustainability development; (2) current policies, regulations, and organization; and (3) management policies, objectives, and future plans for material sustainability issues. The Board also supervises the implementation of the policies and evaluates the progress made.

The ASEH Corporate Sustainability Division functions as the executive secretariat of the CSISC, assisting in the coordination and consolidation of resources and functional teams from our three main subsidiaries to drive sustainability through a comprehensive and interconnected strategy. At each subsidiary level – ASE, SPIL and USI have formed their respective corporate sustainability committee with multiple task forces. These task forces are led by the senior management team who meet regularly to discuss pertinent issues, highlight annual accomplishments and outcomes, and evaluate the advancement of short, intermediate, and long-term sustainability objectives. We have designed a compensation program (via the allocation of restricted stock options) that links the achievement of specific risk objectives and the Annual Objective Deployment (AOD) to individual performance evaluation. At USI, the management employs the Golden Circle concept whereby risk factors that may have a significant impact on operations and production are analyzed and monitored. The company then rewards business units that have demonstrated effective risk control. On the other hand, ASE Kaohsiung has initiated team competitions centered on the management of risks associated with energy conservation and carbon reduction with financial rewards given to best performing teams.

Risk Education and Training

ASEH adopts a dual-prong top-down and bottom-up approach to risk management. The company continues to enhance the management's awareness of risk management and places great emphasis on demonstrating exemplary leadership from the corporate governance levels in risk management to drive risk awareness, and inculcate a strong risk culture across all levels in the organization.

Risk Education and Training for Board Members

On an annual basis, board members undergo a series of industry-curated training programs that are structured according to their academic and professional background. In 2024, with reference to international trend developments and the Company's risk assessment results, the Directors will be arranged to attend courses on risk management topics such as " Trends and Risk Management of Generative AI", " Information Security and Risk Management", and " Climate Change, Industrial Policies, and Risk Management", as well as regular corporate risk management-related courses such as " Enterprise Risk Management and Major Risk Development Trends".

Risk Education and Training for All Employees

We also provide internal training courses that are crucial to risk management. In addition to conducting ERM and BCM work forums to increase the risk awareness of senior managers, we have also organized a variety of courses that have achieved 100% participation rate, for all employees. In 2024, a total of 32 courses were conducted across the entire company, classified into 5 major categories, the courses have attracted 220,556 participants, and all employees have completed relevant risk training.

2024 Risk-related Education and Training

Course Title	Targeted Trainees	Number of Participants	Completion Rate	Training Hours
Product Safety	Technical positions	43,140	100%	2
Legal Compliance	Managerial, technical, and administrative positions	41,038	100%	1
Enterprise Risk Management	Managerial, technical, and administrative positions	84,178	100%	1
Information Security Awareness	All employees	84,178	100%	1.5
Environment, Health, and Safety	All employees	84,178	100%	2.5

Risk Prevention from the Source

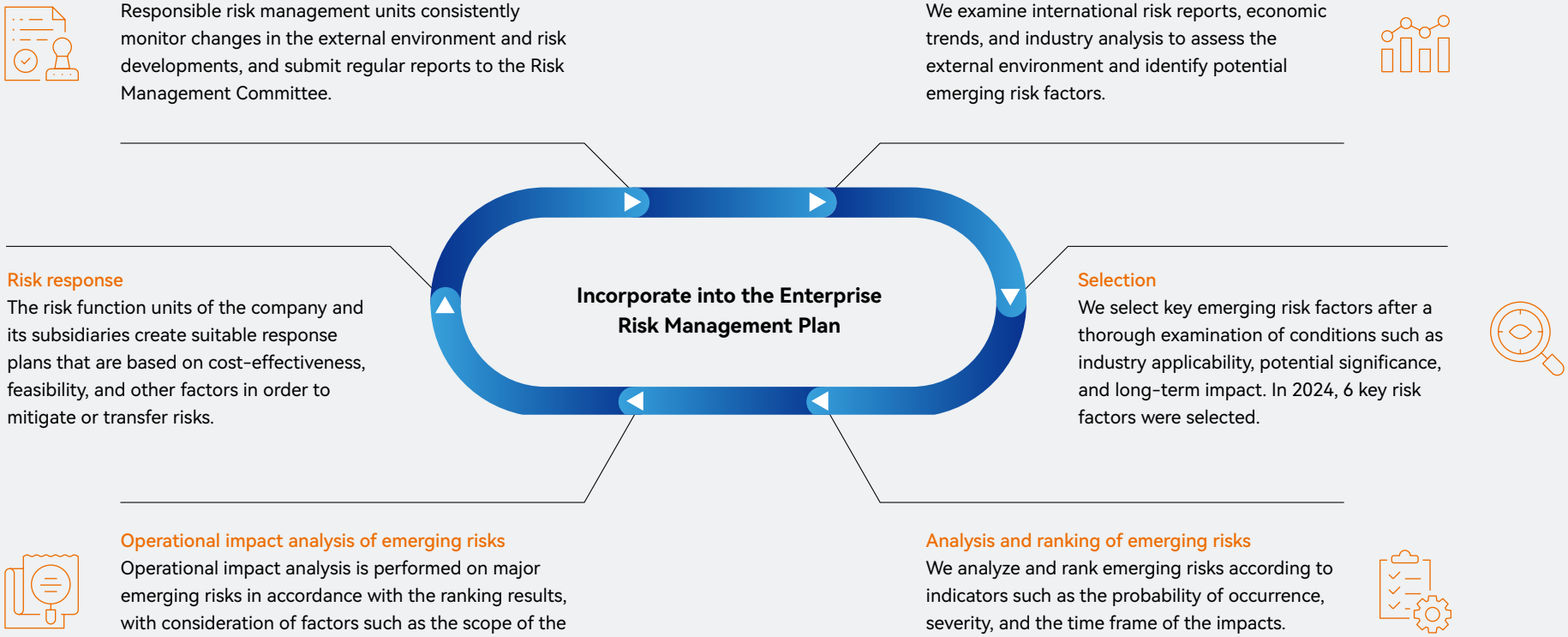
As the saying goes 'prevention is better than the cure', we believe that measures and actions taken in advance help eliminate the threat of risks. We have incorporated risk criteria into the initial development stage and throughout the approval processes of our products and services. For instance, we implemented a product quality assurance system that accounts for risks related to the market, intellectual property, finance, technical feasibility, and other factors in the planning phase. In the subsequent manufacturing process, we select lower-risk raw materials, improve quality and reliability, and facilitate the continuous improvement of overall production yield standards through a sound and comprehensive planning system.

Continuous Improvements of the risk management system

To reinforce our risk management practices, we have adopted measures that enable individual employees to proactively identify and report potential risks, as well as encourage employee participation through a structured feedback process. ASEH's subsidiaries have all successfully completed ISO 9001, ISO 14001, and ISO 45001 and other relevant certifications. Continuous improvements to the risk management process is further enhanced by applying the techniques in the Plan, Do, Check, and Act (PCDA) cycle that effectively triggers a wide range of potential risks for immediate attention. All risks are assessed and managed within the institutionalized settings, while risk responses are incorporated into standard management procedures through the internal management communication system. The company's primary operating bases have all obtained ISO 22301-Business Continuity Management certification.

Long Emerging Risks

From the rapidly evolving business environment, to ongoing technological breakthroughs and escalating deglobalization, a multitude of global developments have elevated uncertainties that directly affect ASEH's operations. It is therefore crucial for the company to fully understand the potential impacts of external emerging risks on ASEH's key businesses. The company identifies key emerging risk topics through a risk identification and analysis framework, and reviews potential risk mitigation and response measures rigorously to strengthen its capacity to adapt to external change. At this point, it is challenging to quantify emerging risks due to their forward-looking nature, and it is probable that they will develop into substantial risks in the future. Therefore, we have established a systematic emerging risk identification and assessment process to prepare for emerging risks in the future, and to assist the board of directors and senior management in making decisions that align with our business strategies and long-term value.



Based on the aforementioned process, ASEH has identified the following key emerging risks and the corresponding monitoring and control mechanisms:

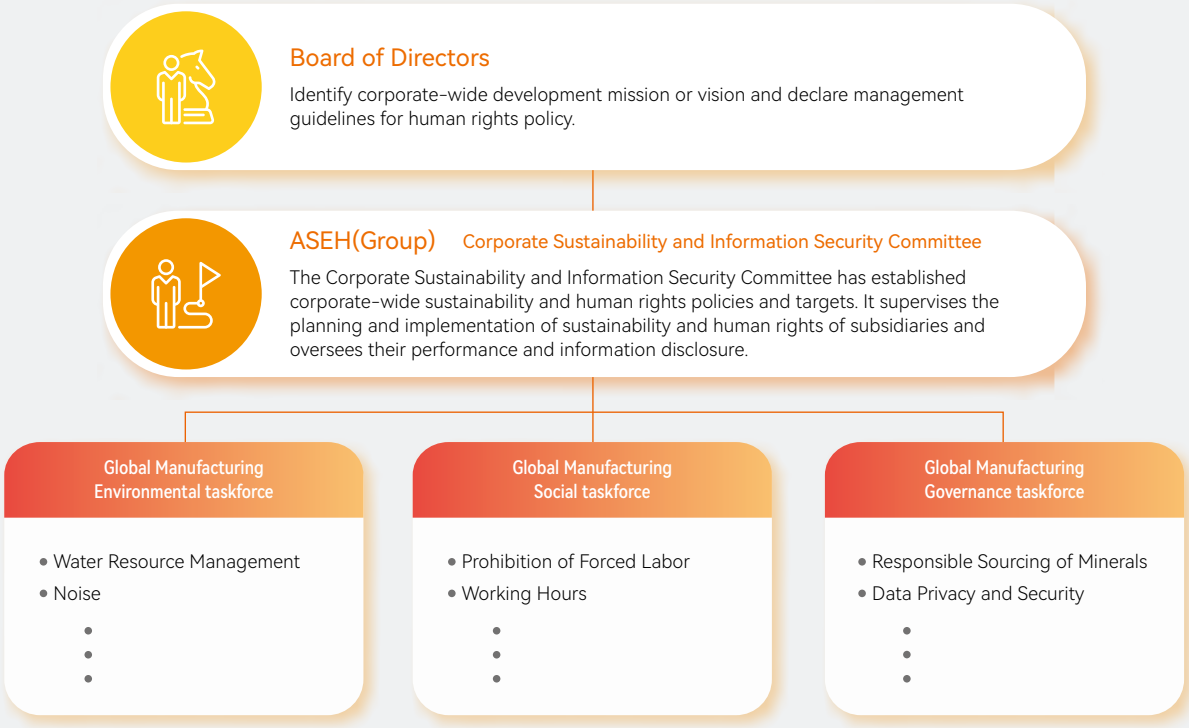
Type of Risk	Description	Potential Impacts	Response Measures
The Growing Trend of Tariff Protectionism	In order to solve the structural trade imbalance problem encountered by the U.S. economy, the United States decided to use tariff reciprocity policy as a means to increase tariffs on various countries and rebuild the industrial supply chain.	In the context of globalization, the global economy has witnessed a shift from the principles of free trade, tariff reductions, and market liberalization towards protectionist measures, as individual nations seek to safeguard their domestic economies. This trend towards tariff protectionism has led to increased manufacturing costs and heightened volatility in foreign exchange markets, resulting in the following implications for the Company: 1. A significant portion of the Company's raw materials and equipment is sourced through imports. Should various countries continue to impose higher tariffs due to ongoing trade competition, the Company anticipates an increase in production costs. 2. Given the disparate rates of tariff increases among countries, the Company may be compelled to identify new suppliers and adjust its supply chain structure to achieve optimal cost efficiency. 3. Escalating production costs may necessitate adjustments to product pricing, which could adversely impact the Company's price competitiveness in international markets and result in reduced export volumes, thereby negatively affecting revenue streams. 4. Trade barriers are also likely to exert indirect pressure on foreign exchange rates. Significant currency fluctuations and substantial appreciation of the local currency may be detrimental to export activities, potentially leading to a decline in the Company's revenue.	"The Company will continue to monitor the impact of various countries' tariff policies on its operations and proactively analyze the potential effects of such policies on costs and profitability in order to formulate appropriate response strategies. Simultaneously, the Company intends to expand its investment footprint and strengthen partnerships within its supply chain to enhance overall resilience and adaptability.
Potential risks arising from the use of artificial intelligence	The use of generative AI helps enterprises handle tasks more efficiently; however, it also brings risks such as the leakage of confidential information, the generation of incorrect information, and the potential for fraud against enterprises through the use of deepfake technology.	The extensive deployment of generative AI technologies in business operations may give rise to the following risks: AI-generated content or outputs may contain inaccuracies or biases. The Company must ensure that its use of AI is compliant with applicable laws and regulations and that the information produced is accurate; failure to do so may result in erroneous business decisions and potential legal liabilities. An excessive reliance on AI for operational functions may, over time, erode human judgment capabilities and increase exposure to operational risks in the event of system failures or disruptions. The use of deepfake technology, which enables the creation of highly realistic synthetic images and audio, poses a risk of internal operational errors and could result in financial losses or reputational harm to the Company.	1. Develop AI tools internally within the company to prevent data breaches. 2. The compliance department shall educate all departments on the lawful use of AI. 3. The benefits of adopting AI and the risks it may generate should be balanced to avoid excessive reliance that could lead to significant risks.
The risk of a lack of digital talent	ASE uses modern digital technology to improve its business model. This process includes optimizing existing business processes, reshaping corporate culture, and providing better quality products. The digitalization process requires sufficient talent to assist. Currently, there is a shortage of digital talent.	If we lack sufficient digital professionals, it will affect the development of advanced manufacturing processes, the implementation of smart manufacturing, and the ability to respond to customized demands, thereby weakening innovation capability and market competitiveness.	1. Establish a digital academy to train existing employees to transform into digital talents. 2. Use generative AI technology to establish Robotic Process Automation, so that repetitive and regular processes can be performed by robots (programs). 3. Establish industry-university cooperation with schools to let students understand the needs of the industry in advance and avoid the situation where there is a gap between the technology taught in schools and the technology required by the industry.
The risk of technology regulations lagging behind the development of the AI industry	The development of AI is accelerating and its applications are becoming more and more extensive. There is a risk of compensation for losses due to the lack of regulations.	AI intellectual property rights are not protected by laws and regulations, which can easily lead to the theft of company assets and reduce the company's competitiveness.	1. Establish a closed knowledge graph and prohibit the use of external AI websites within the company to protect the company's business secrets. 2. Establish internal AI tools. If the use of AI tools causes decision failure, simulate the failure situation in advance and establish a disposal mechanism.

3.5 Human Rights Management

Human Rights Policy

ASEH is committed to safeguarding the human rights of employees and value chain partners (including customers, suppliers/contractors, agents, joint ventures and consortia partners and local communities) and promoting the sustainable development of the environment, society and economy. ASEH complies with the legal and regulatory requirements of all operational locations and the approach is designed in support of the United Nations Universal Declaration of Human Rights (“UDHR”), the UN Global Compact (“UNGC”), the UN Guiding Principles on Business and Human Rights (“UNPBHR”), ILO Declaration on Fundamental Principles and Rights at Work(“ILO”), OECD Due Diligence Guidance for Responsible Business Conduct(“RBC”), Responsible Business Alliance Code of Conduct(“RBA”) and Corporate Sustainability Due Diligence Directive (“CSDDD”). ASEH is also committed to upholding local laws and regulations in the countries where ASEH operates, and reviewing the implementation of its human rights policies on a regular basis through membership on the Responsible Business Alliance.

Human Rights Management



Commitment

- Protection and Respect: ASEH is committed to protecting and respecting human rights and creating an environment conducive to human rights protection. ASEH strives to prevent any business activities that might result in human rights violations or adverse impacts.
- Appeal and Remedy Process: To protect the human rights of ASEH employees and value chain partners from violations or negative impacts, ASEH ensures that they have the right to raise concerns, report issues, or file complaints regarding suspected human rights infringements. ASEH also provides remedial actions and implements safeguards to prevent retaliation or unfair treatment against those who file complaints.
- Management and Investigation: ASEH seeks to continuously improve human rights governance with education and training and human rights due diligence and feedback mechanism. These efforts aim to integrate human rights management and policies throughout ASEH’s operations and partnerships across the value chain.

Management Organization

In order to adequately manage human rights issues that arise from operating a global business, ASEH implements risk management at all facilities, collates and reports the information to the ASEH Corporate Sustainability and Information Security Committee and top management at regular meetings.

Guidelines of Management

ASEH has adopted human rights management practices that follow PDCA procedures and include risk identification, assessment, monitoring, control, and disclosure. In a reflection of the different roles played by ASEH, we focused our human rights management efforts on our employees, suppliers/contractors, local communities, and customers, performing due diligence with each group and providing whistle-blowing channels to prevent any human rights violations.

Target	Impacted Parties	Human Rights Issues	Policy	Responsible	Due Diligence	Grievance Mechanisms and Communication Channels
Employee	Employees, Female Employees, Foreign Employees, Young Workers	Prohibition of Forced Labor, Working Hours, Wages and Benefits, Non-Discrimination/ Non-Harassment/Humane Treatment, Occupational Health, Safety and Hygiene, Emergency Preparedness, Young Workers, Data Privacy and Security	Human Rights Policy Statement Policy on the Protection of Privacy and Personal Data	Subsidiaries' "Employee Care and Development Taskforce"	• RBA SAQ and RBA VAP • Internal audits	1. **Internal whistle-blowing channels:** the internal whistle blowing channels of subsidiary companies 2. **External reporting channel:** Code of Conduct Compliance Reporting System https://coms.aseglobal.com/antifraud/ch.asp 3. **Personal Data Protection Inquiry and Communication Channels:** Hotline: +886-73617131 #83830 (Chief Administration Officer Office) Email: privacy@aseglobal.com
Joint ventures	Employees, Female Employees, Foreign Employees, Young Workers	Prohibition of Forced Labor, Working Hours, Wages and Benefits, Non-Discrimination/ Non-Harassment/Humane Treatment, Occupational Health, Safety and Hygiene, Emergency Preparedness, Young Workers			• Questionnaire Survey	1. **Internal whistle-blowing channels:** the internal whistle blowing channels of supply chain partners 2. **External reporting channel:** Code of Conduct Compliance Reporting System https://coms.aseglobal.com/antifraud/ch.asp
Suppliers/ Contractors	Suppliers, Contractors, Young Workers	Prohibition of Forced Labor, Young Workers, Working Hours, Wages and Benefits, Occupational Health, Safety and Hygiene, Emergency Preparedness, Responsible Sourcing of Minerals, Anti-Corruption and Avoidance of Conflicts of Interest	Supplier Code of Conduct	Subsidiaries' "Supply Chain Management Taskforce"	• Supplier Sustainability Questionnaire • RBA SAQ • On-site Audit and RBA VAP	1. **Internal whistle-blowing channels:** the internal whistle blowing channels of subsidiary companies 2. **External reporting channel:** Code of Conduct Compliance Reporting System https://coms.aseglobal.com/antifraud/ch.asp
Community	Community and Environment	Water Management, Noise, Air Pollution, Biodiversity, Climate Change Impact and Transition	Sustainable Development Best Practice Principles	Each facility	• Monitoring of Noise, Effluent, and Emission Sources at Facilities • TNFD Biodiversity and Nature Impact Assessment • TCFD Climate Risk and Opportunity Assessment	
Customers	Customers, Suppliers, Contractors	Data Privacy and Security, Hazardous Substance Management	Policy on the Protection of Privacy and Personal Data Cybersecurity Policy Sustainable Raw Materials Policy Environmental Responsibility Policy	Each facility	• Annual Risk Assessment • Internal Audit • Independent Third-Party Audit	

Human rights management standards and regulations:
1. Corporation Human Rights Policy Statement, please refer to https://www.aseglobal.com/en/pdf/human-rights-policy-en.pdf
2. Corporation Anti-Discrimination and Anti-Harassment Policy, please refer to https://www.aseglobal.com/en/pdf/anti-discrimination-and-anti-harassment-policy-en.pdf
3. Sustainable Development Best Practice Principles, please refer to https://media-aseholdco.todayir.com/20220324171126159296091_en.pdf
4. Code of Business Conduct and Ethics, please refer to https://media-aseholdco.todayir.com/20180622151727139618980_en.pdf
5. Supplier Code of Conduct, please refer to https://www.aseglobal.com/en/pdf/aseh-supplier-coc-en.pdf
6. Purchasing and Supply Chain Development Policy, please refer to https://www.aseglobal.com/en/pdf/2019_aseth_purchasingandsupplychaindevelopmentpolicy.pdf
7. Environmental Responsibility Policy, please refer to https://www.aseglobal.com/en/pdf/environmental-responsibility-policy-en.pdf
8. Policy on the Protection of Privacy and Personal Data, please refer to https://www.aseglobal.com/en/pdf/privacy-policy-en-2022.pdf
9. Sustainable Raw Materials Policy, please refer to https://www.aseglobal.com/en/pdf/sustainable-raw-materials-policy-en.pdf

Risk Management Process

Plan
Identify vulnerable human rights risks targets and topics, implement human rights risk assessment through corresponding due diligence methods, and provide a grievance mechanism to safeguard the rights of each stakeholder.

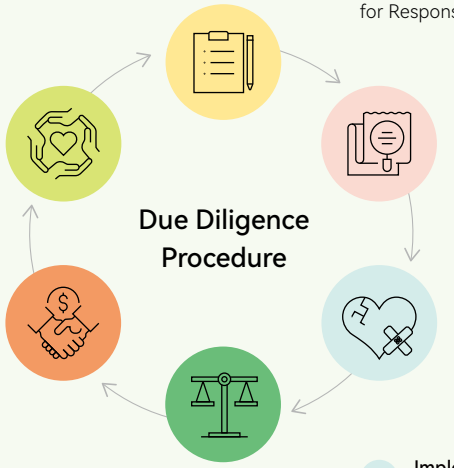
Do
Implement human rights risk management in the daily operation process, starting with the policies, measures, education and documenting, to avoid possible human rights risk events and damages.

Check
Conduct risk assessment methods based on different subjects, conduct annual human rights risk surveys, identify risk issues and targets, and report them to ASEH CSC.

Action
Develop mitigation measures and compensation measures for human rights risks and targets that are vulnerable, plan future human rights risk management objectives, and implement continuous improvement mechanisms.

Due Diligence

To fulfill ASEH's responsibility to respect human rights, ASEH has established a human rights policy and human rights management framework, implementing its commitment to respect, protect, and uphold human rights. In doing so, it references the EU Corporate Sustainability Due Diligence Directive (CSDDD) and the OECD Due Diligence Guidance for Responsible Business Conduct to create a due diligence process. Through the PDCA approach, ASEH regularly conducts human rights due diligence to assess and identify adverse impacts on human rights and the environment ("human rights risks"). For significant identified risks or incidents of human rights violations, it proactively implements appropriate mitigation or remedial measures. By overseeing and tracking the implementation of these measures, ASEH reviews and confirms the effectiveness of its human rights governance practices. It standardizes the outcomes of due diligence, the cases of human rights violations, and the effectiveness of improvements. Moreover, it establishes clear communication channels with stakeholders and publicly discloses relevant human rights management information. This ensures the continuous enhancement of its human rights management mechanisms, including, but not limited to, reviewing and adjusting policies, regulations, procedures, as well as preventive and remedial actions in order to ensure the more effective execution of human rights protection efforts.



1 **Establish human rights policies and due diligence mechanisms**

Establish human rights policies and due diligence processes in accordance with the United Nations human rights frameworks, the EU Corporate Sustainability Due Diligence Directive (CSDDD), and the OECD Guidelines for Responsible Business Conduct.

2 **Identify and assess adverse impacts on human rights and the environment**

Identify and evaluate significant human rights risks across company's business activities and value chain partnerships through questionnaires, data monitoring, or audits (e.g., RBA SAQ and RBA VAP).

3 **Implement mitigation and remediation measures**

Develop action plans based on salient human rights risk issues to prevent, cease, or minimize actual and potential adverse impacts on human rights and the environment, and implement appropriate mitigation and remediation measures.

4 **Monitor and evaluate the effectiveness of measures**

Conduct ongoing audits to monitor and evaluate the effectiveness of mitigation and corrective measures, and standardize the results of improvement initiatives.

5 **Communicate with stakeholders**

Ensure public disclosure of the company's human rights policies, standards, and related management information through official website.

6 **Provide grievance mechanisms and establish remediation procedures**

Establish effective grievance mechanisms and communication channels for complaints and feedback, while ensuring non-retaliation and fair treatment of complainants.

Implementation and Outcome

Internal

The human rights risks of our manufacturing and business activities are mainly related to employee and local community interest groups. ASEH used the RBA Self-Assessment Questionnaire (SAQ) and Validated Audit Process (VAP) to perform risk management at our facilities worldwide. By examining the results of our human rights risk assessments of the past three years, ASEH was able to identify issues and interest groups that were vulnerable to human rights risks and prepare corresponding mitigation and compensation measures. According to the assessment results in 2024, potential human rights risk issues include working hours, non-discrimination/ non-harassment/humane treatment/prohibition of forced labor, emergency preparedness, and occupational health, safety and hygiene. Each year, ASEH has drawn up mitigation measures, which include raising human rights awareness via human rights training, ensuring sufficient manpower, management of working hours, improving occupational safety, and preventing occupational hazards. For more information, please refer to Chapter 6.1 Talent Attraction and Retention and 6.3: Occupational Health and Safety of this report.

External

ASEH assessed human rights risks associated with the company's suppliers using supplier sustainability risk assessment questionnaires and the RBA SAQ. ASEH performed sustainability risk assessments on all tier-1 suppliers and conducted risk identification through the RBA VAP. Based on the assessment results in 2024, ASEH identified working hours, prohibition of forced labor, responsible mineral sourcing, occupational health, safety and hygiene, and emergency preparedness as major human rights risks. ASEH then identified potential high-risk suppliers and adopted measures to verify and lower any risks. For more information, please refer to Chapter 7: Responsible Procurement of this report.

Human Rights Assessment

ASEH regularly evaluates potential human rights issues, including the following metrics: the proportion of issues assessed, the percentage of risks identified, and the rate of risk mitigation actions undertaken.

Target	A. % of total assessed in last three years	B. % of total assessed (column A) where risks have been identified	C. % of risk (column B) with mitigation actions taken
Own Operations and value chain partners	100	26.9	100
Suppliers/ Contractors	100	10	100
Joint Ventures	100	0	100

ASEH Human Rights Risk Matrix



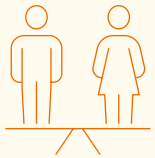
Mitigation and Remediation Measures

The mitigation and remediation measures for the human rights risks identified with high frequency and high impact on companies in 2024 are as follows[1] :

Target	Risk Issues		Mitigation Measures	Remediation Measures	
Employees	Labor	• Prohibition of Forced Labor • Working Hours • Non-Discrimination/ Non-Harassment/ Humane Treatment	【Systems】 • ASEH complies with the legal and regulatory requirements of all operational locations and the approach is designed in support of the United Nations Universal Declaration of Human Rights (“UDHR”), the UN Global Compact (“UNGC”), the UN Guiding Principles on Business and Human Rights (“UNPBHR”), ILO Declaration on Fundamental Principles and Rights at Work(“ILO”), OECD Due Diligence Guidance for Responsible Business Conduct(“RBC”), Responsible Business Alliance Code of Conduct(“RBA”) and Corporate Sustainability Due Diligence Directive (“CSDDD”). ASEH is also committed to upholding local laws and regulations in the countries where ASEH operates, and reviewing the implementation of its human rights policies on a regular basis through membership on the RBA. • Non-Discrimination/Non-Harassment/Humane Treatment: ASEH has formulated the Anti-Discrimination and Anti-Harassment Policy to protect all ASEH employees from workplace discrimination and harassment. 【Education and Training】 • ASEH continuously conducts human rights education and training to strengthen the internal awareness of human rights and implement the human rights protection activities wholeheartedly. • Non-Discrimination/Non-Harassment/Humane Treatment: ASEH periodically conducts human rights and Anti-Discrimination and Anti-Harassment education and training.	【Practices】 ASEH has established the human rights policy to ensure all work should be voluntary and employees have the freedom to resign or terminate the employment relationship. • Working Hours: (a) Employment of sufficient manpower to meet manufacturing capacity and prevent manpower shortages and overtime. (b) Establishment of overtime management and tracking mechanism to prevent employees from working for seven or more consecutive days. (c) Develop an in-house working hours management and control system to help supervisors manage their subordinates’ working hours, send SMS or email alerts to employees working longer hours. • Non-Discrimination/Non-Harassment/Humane Treatment: Each case shall be reviewed to determine its cause, and offenders shall be tracked, reviewed and monitored to ensure the effectiveness of the disciplinary or counseling measures, and to prevent similar incidents or retaliation from occurring. The results of such processes will then be used as a reference for making adjustments to workplace environment and regulations.	【Remediation】 • Wages and Benefits: Disbursement of unpaid wages to terminated employees set forth in local laws and regulations. • Non-Discrimination/Non-Harassment/Humane Treatment: Each case shall be reviewed to determine its cause, and offenders shall be tracked, reviewed and monitored to ensure the effectiveness of the disciplinary or counseling measures. The results of such processes will then be used as a reference for making adjustments to workplace environment and regulations. • When ASEH confronts other human rights issues, ASEH will negotiate and adopt measures based on internal procedures. 【Punishment】 • Non-Discrimination/Non-Harassment/Humane Treatment: For cases that constitute sexual harassment, the internal sexual harassment complaint processing committee shall issue a warning, disciplinary order, or another form of punishment to the offenders and require that they make an apology to the victims. Serious offenses may be grounds for dismissal. • When ASEH confronts other human rights issues, ASEH will negotiate and adopt measures based on internal procedures.







[1] The mitigation and remediation measures for other issues, please refer to the ASE Corporation Human Right Management Framework at https://www.aseglobal.com/en/pdf/human-rights-management-framework-en.pdf

Target	Risk Issues		Mitigation Measures	Remediation Measures	
Employees	Health and Safety	• Occupational Health, Safety and Hygiene • Emergency Preparedness	【Systems】 • All ASEH facilities worldwide have established OHS management organizations, and formulated methods and procedures that follow ISO 45001/OHSAS 18001 standards, the RBA Code of Conduct and local regulations. In addition to setting up a system for regular reviews, the OHS management system contributes effectively to preventing accidents. • Emergency Preparedness: ASEH public fire safety measures in accordance with the recommendations of the National Fire Protection Association (NFPA) and ISO 45001/OHSAS 18001 standards. 【Education and Training】 • Occupational Health, Safety and Hygiene and Emergency Preparedness: (a) Public fire safety measures in accordance with the recommendations of the National Fire Protection Association; enhanced training in disaster preparedness and safety education. (b) Regular emergency evacuation drills for fire, earthquake, and composite disasters; review and improvement of warning and prevention measures. (c) In addition to the regular education and training, Injury incidents and improvement of preventive measures are reviewed by ASEH each quarter.	【Practices】 • Occupational Health, Safety and Hygiene: ASEH facilities have established occupational accident and incident reporting and investigation procedures and management procedures. When an occupational injury incident occurs, the standard handling procedure is carried out and the incident is reported to the competent local authority according to management regulations and local laws and regulations. The injury incidents and improvement of preventive measures are reviewed simultaneously. ASEH facilities have established occupational accident and incident reporting and investigation procedures and management procedures. When an occupational injury incident occurs, the standard handling procedure is carried out and the incident is reported to the competent local authority according to management regulations and local laws and regulations. • Emergency Preparedness: All of our manufacturing facilities develop disaster response and recovery plan and conduct full-scale emergency drills annually in cooperation with the local authorities. Various scenarios are simulated at these drills 100 to improve our disaster response plans.	【Remediation】 • Occupational Health, Safety and Hygiene: (a) ASEH identifies higher-risk operating environments within ASEH facilities such as locations that could expose employees to ionizing radiation, noise, dangerous chemicals and dust, and provide such employees with high quality protective equipment. (b) Health assessments performed by professional physicians in medical consultation to help employees with self-health management. • Assistance with medical insurance claims. • When ASEH confronts other human rights issues, ASEH will negotiate and adopt measures based on internal procedures. 【Punishment】 • ASEH will negotiate and adopt measures based on internal procedures.
Value chain partners (Joint Venture, Mergers)	Labor	• Prohibition of Forced Labor • Working Hours	【Systems】 • ASEH requests value chain partners to conduct annual audits or RBA VAP in order to mitigate risks. 【Education and Training】 • ASEH requests value chain partners to internally and externally promote the importance and implementation measures of human rights through regular education and training for reducing the human rights risks in advance.	【Practices】 • ASEH requests value chain partners to establish an internal sustainability audit system to carry out routine and ad hoc audits in order to continuously raise their sustainability. 【Remediation】 • ASEH requests value chain partners to adopt corrective measures for human rights risks and conduct follow-up on implementation.	• ASEH requests value chain partners to provide guidance or financial compensation, or to implement policy changes or other compensatory measures for employees whose human rights have been violated. 【Punishment】 • ASEH requests value chain partners to terminate the relationship with their suppliers and request punitive liquidated damages when they are involved in serious human rights violation.
	Health and Safety	• Occupational Health, Safety and Hygiene • Emergency Preparedness			
Suppliers/ Contractors	Labor	• Prohibition of Forced Labor • Working Hours	【Systems】 • Annual audits or RBA VAP to assess suppliers' human rights risks through company subsidiaries in order to mitigate risks. 【Education and Training】 • Through regular education and training, ASEH promotes the importance and implementation measures of human rights to suppliers for reducing the human rights risks in advance.	【Practices】 • ASEH has established a supplier sustainability audit system to carry out routine and ad hoc audits in order to continuously raise supplier chain's sustainability. 【Remediation】 • ASEH requests suppliers to adopt corrective measures for human rights risks and conduct follow-up on implementation.	• ASEH requests suppliers to provide guidance or financial compensation, or to implement policy changes or other compensatory measures for employees whose human rights have been violated. 【Punishment】 • ASEH shall terminate the relationship with suppliers and request punitive liquidated damages when suppliers are involved in serious human rights violation.
	Health and Safety	• Occupational Health, Safety and Hygiene • Emergency Preparedness			
	Ethics	• Responsible Sourcing of Minerals			

Protection of Privacy and Personal Data

Policies and Goals

ASEH values and cares about the importance of privacy and personal data protection. Accordingly, we have adopted a corporate policy on the protection of privacy and personal data and established relevant internal management measures; and requested our subsidiaries and their respective suppliers to collect, process, use, retain and disclose the personal data in compliance with the Personal Data Protection Act of Taiwan, EU General Data Protection Regulation (GDPR) and applicable laws and regulations on the protection of privacy and personal data in other countries or areas where they operate, ensuring the compliant operations and cooperating to protect the privacy and personal data and secure the rights and interests of data subject. Our corporate policy[1] sets forth clear guidelines and compliance requirement on the use and protection of personal data. We, our subsidiaries and their respective suppliers shall commit to collect, process, and use personal data to the extent not exceeding the necessary and minimal scope of specific purposes, and take appropriate and secure protection measures.

Advocacy and Implementation

To continue to enhance our employees' awareness of personal data protection compliance and ensure the compliance management and implementation, we regularly provide internal training course and important updates on relevant laws and regulations on the protection of personal data and compliance guidance. We also review the status of personal data security, assess any potential non-compliance risk our daily operations may be subject to and establish relevant management plans and measures in accordance with the results of assessment. Also, we complete RBA validated audit on bi-annual basis and the external RBA certified auditors carried out on-site audit of privacy aspects, among other management items, by reviewing our detailed internal management process related to (i) protect of personal data, (ii) safeguards to prevent unauthorized disclosure of personal data, (iii) monitoring procedures related to the protection of personal data, (iv) documentation and records with appropriate retention on-site/off-site and appropriate levels of access to ensure privacy conforming to regulatory record retention requirements. The latest RBA validated audit findings we receive rate "Conformance" for the foregoing privacy related aspects. In addition, we retained Ernst & Young, an independent third party accounting firm, to verify our compliance with Privacy Policy with respects to the matters on policy making, roles and responsibility, risk management, disciplinary actions, internal audit, public information, etc. The statement of above engagement provided by Ernst & Young is made available on our company website[2].

Use of Personal Data and Compliant

We have designated a department responsible for matters on the compliance with privacy and personal data protection and a hotline mechanism is also provided for our employees and external personnel to make inquiry or request about personal data based on his/her legal rights. We continue to monitor our use of personal data and throughout year 2024, we did not use collected personal data for any secondary purposes other than the specific purposes for which the personal data was first collected.

Our employees and external personnel may file complaint or report on the personal data matters via our reporting channels. Throughout year 2024, we did not receive any compliant or penalty related to personal data.

Type \ Source	Government Agency	Individuals or Other Type Parties
Compliant	none	none
Penalty	none	

Complaint Mechanism and Procedure

APPLY	Code of Conduct Compliance Reporting System Receive complaint case	1
	Accept for processing the complaint case	2
	Collect information	3
	Investigate the complaint case	4
	Review the result and improve the mechanism	5
	Disclose regular updates on the number, content and progress of cases related to complaints without risking the privacy of any individuals.	6

[1] Please refer to Policy on the Protection of Privacy and Personal Data at https://ase.aseglobal.com/privacy-policy/
[2] Please refer to the statement at https://www.aseglobal.com/en/pdf/coc-agree-upon-procedures-report-2025-en.pdf

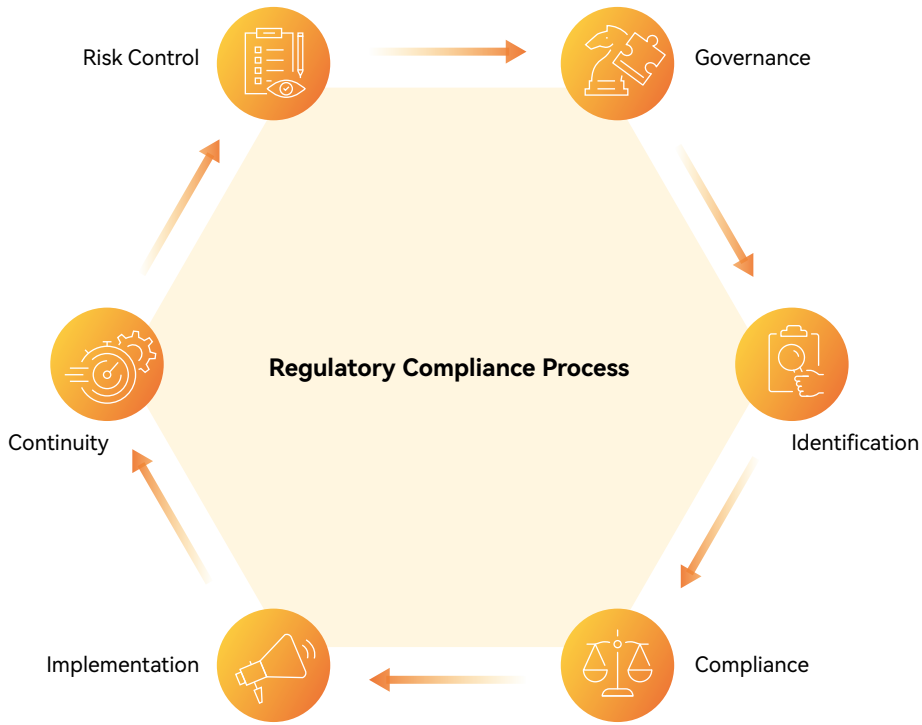
3.6 Regulatory Compliance

ASEH conducts all business activities in strict compliance with applicable laws and regulations. To ensure legal compliance, we maintain regular updates on domestic and foreign laws and policies that affect our operations, and prioritizes regulatory compliance at all of our business locations. All of our subsidiaries are required to comply with all applicable laws and regulations in the location where they operate.

The company's Corporate Governance Officer and Regulatory Compliance Department support board directors and management on regulatory compliance matters, and supervise activities at our subsidiaries to ensure compliance with relevant laws and regulations. The company's regulatory compliance framework is implemented through four core processes: managing regulatory inventories, staying updated with current laws and regulations, identifying changes, and reviewing legal compliance on a regular basis. These four pillars ensure the continuity and effectiveness of regulatory compliance. We have also introduced risk control mechanisms and management systems to assess and promptly mitigate any legal compliance risks across all our operations. Accordingly, our subsidiaries are required to promptly report, via management systems, all incidences subject to corrective actions mandated by regulatory authorities or any penalties imposed. The responsible subsidiary shall also conduct a root cause analysis and implement corresponding improvement plans. Both the regulatory compliance department and audit department will verify and ensure the implementation of corrective actions, reporting the status to the board of directors annually.

Throughout 2024, the company continued to enhance regulatory compliance audits across all subsidiaries and strengthen management in the fields of environment, health and safety. The United States' Export Administration Regulations (EAR), Clean Competition Act (CCA) and the European Union's Carbon Border Adjustment Mechanism (CBAM), are of particular significance to the technology sector, and are thus classified as our company's key compliance focus areas. The company also closely monitors the development of EU sustainability legislation, including the Corporate Sustainability Reporting Directive (CSRD), the European Sustainability Reporting Standards (ESRS) and the Corporate Sustainability Due Diligence Directive (CSDDD). In Taiwan, we focus primarily on the Taiwan Securities and Exchange Act, Labor Standards Act, Occupational Safety and Health Act, Fire Services Act, Climate Change Response Act, Energy Administration Act, Renewable Energy Development Act, Gender Equity in Employment Act, Sexual Harassment Prevention Act and National Security Act, and other relevant regulations. As part of our regulatory compliance practices, we diligently adapt and modify our internal framework, conduct trainings, and disseminate information to update, educate and communicate with our board of directors, management and all employees.

ASEH remains in resolute compliance with all major laws and regulations governing public listed companies in Taiwan, including the Company Act, Fair Trade Act, Securities and Exchange Act. In 2024, ASEH recorded fourteen (14) cases that incurred financial penalties amounting to approximately US$46,431 imposed by authorities in the respective regions we operate. However, there were no individual major cases involving penalties exceeding US$10,000. In January 2025, we provided the board of directors with a status report for 2024, that included an overview of the corrective actions taken by the subsidiaries involved and an update on their regulatory compliance.

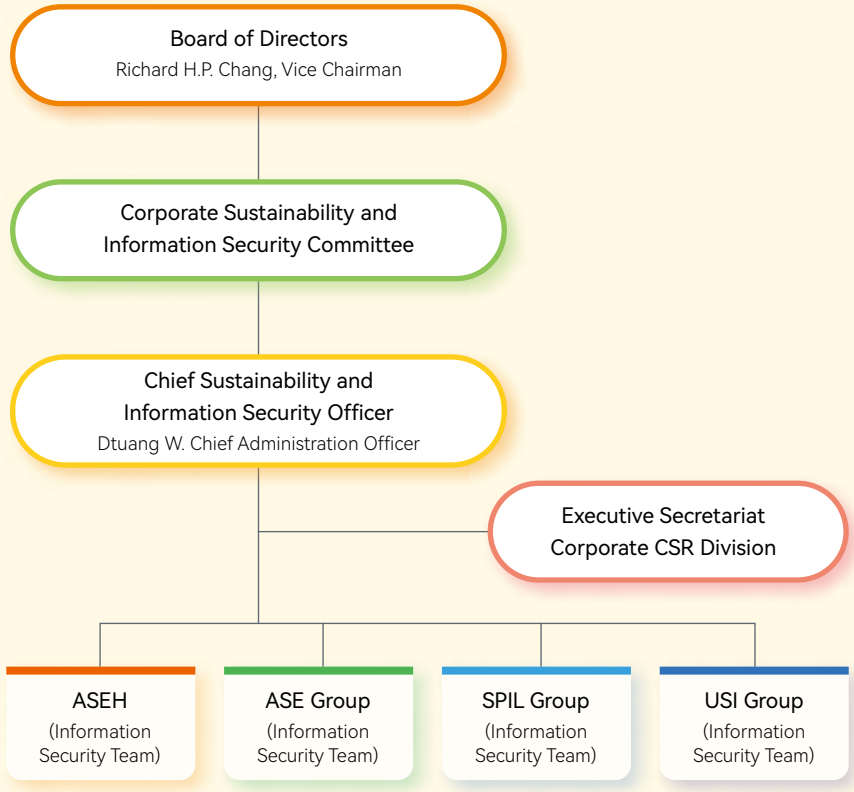


3.7 Information Security Management

Information Security Policy, Organization and Targets

To strengthen the company's resilience in information security (infosec) and respective management mechanisms, we have integrated an approach from the corporate governance perspective by putting in place a comprehensive set of infosec policy, conducting regular cybersecurity drills, and organizing employee education and training to enhance overall infosec awareness. The ASEH Information Security Policy[1] provides the highest level of management guidance to protect the confidentiality, integrity and availability of critical information assets, and to ensure compliance with relevant laws and regulations. With a robust infosec policy in place, ASEH is well positioned to boost customer trust, strengthen industry competitiveness, and maintain business continuity. We assess information security risks in accordance with regulatory requirements and business goals, and provide a status report to the senior management and the Board. The report offers a succinct overview of the infosec challenges and the current status, and forms the basis for the management and the Board to formulate additional guidelines, strategies and targets.

The Corporate Sustainability and Information Security Management Committee, comprised of board members, is chaired by Richard H.P. Chang, the current Vice Chairman of ASEH. The committee is responsible for overseeing the development of ASEH's overall information security strategy and maturity benchmarking, planning and supervision of enterprise-wide cybersecurity risk management, monitoring the implementation of information security operations across subsidiaries, and coordinating the integration of internal and external technical resources and threat intelligence. These efforts aim to strengthen ASEH's cybersecurity capabilities and reduce potential threats and risks. ASEH's Chief Information Security Officer (CISO), a position created by the Corporate Sustainability and Information Security Committee is concurrently held by the Chief Administrative Officer and Head of Corporate Governance, assumes responsibility for the establishment of the information security management framework that includes regular reviews with all subsidiaries of ASEH and implementing incident response plans. The committee provides a status report to the Board of Directors in the last quarter of each fiscal year. In addition, the Executive Secretariat of the Company's Corporate CSR Division is responsible for promoting and executing information security-related work, and each subsidiary appoints its information security team as members of the committee to be responsible for implementing information security operations as resolved by the Information Security Management Committee. We regularly hold quarterly meetings of the Information Security Management Committee of ASEH to report and discuss the progress of our information security work, and invite external experts to share information security trends and significant issues.



[1] For more details on ASEH Information Security Policy, please refer to the link below: https://www.aseglobal.com/en/pdf/2025_aseth_ismp_en.pdf

As our business continues to grow, the amount of information generated have also increased exponentially. Safeguarding the confidentiality, integrity and availability of information forms the cornerstone of ASEH's information security management. Besides identifying internal and external information security risks and formulating countermeasures, we regularly implemented the NIST CSF maturity assessment in all facilities every year. Our cybersecurity policies are formulated to ensure the highest level of network and system protection and mitigation of impacts from any disruption. At the same time, education and training are actively conducted to enhance employee awareness on the importance of information security and prevent major data breaches. Building resilience through a robust information security management system is key to corporate sustainability and will greatly boost stakeholder satisfaction.

Information Security Management Targets for 2030

1
Major Information Security Incidents :

0 cases

2
NIST CSF Maturity Assessment Coverage :

100%

3
Employee Information Security Education and Training Coverage :

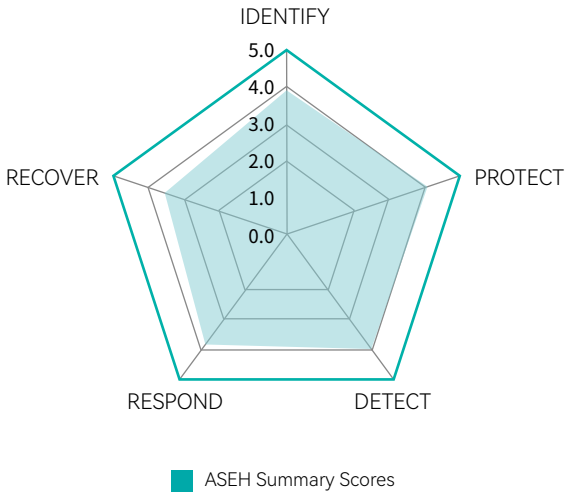
100%

Information Security Implementation and Safeguards

Cybersecurity Maturity

To effectively manage the adjustments and enhancements made to the cybersecurity strategy and cybersecurity defense system of each subsidiary, ASEH began implementing the NIST CSF maturity assessment mechanism in partnership with third-party consultants in 2019. The overall maturity level in cybersecurity was assessed based on five key indicators: Identify, Protect, Detect, Respond, and Recover. We have been gradually shifting our focus to refining and deepening our cybersecurity requirements. Each factory site can undertake individualized cybersecurity enhancements based on their own maturity assessment results and recommendations for improvement. We benchmark ourselves against the semiconductor industry and vow to understand our own cyber environment better. We assess the risks that impact each subsidiary in different cybersecurity areas, countries, or operations and consolidate resources to provide better guidance and support. Our goal is to implement and continuously improve the foundational cybersecurity management across businesses. In 2024, we engaged PwC Taiwan to continue the maturity assessment process. Using consistent vertical quantitative metrics, the assessment covered areas such as policy maturity, control maturity, management maturity, audit maturity, and supply chain maturity. The results provided concrete insights to progressively strengthen the cybersecurity defense capabilities of the company's critical operational systems.

Cyber Security Resiliency



Cyber Resilience Collaborating Mechanism

Identify
- Cybersecurity policy formulation
- Cybersecurity organization estavlished
- Cybersecurity risk identication
- Classication and classication of cybersecurity incidents

Protect
- Cybersecurity training
- Social engineering rehearsal
- Cybersecurity information sharing
- Cybersecurity incident response rehearsal
- Supply chain cybersecurity management

Detect
- Cybersecurity assessment
- Cybersecurity maturity assessment
- Penetration testing
- Vulnerability scanning

Respond
- Cybersecurity incident investigation and analysis
- ASEH resource assistance
- Information disclosure and control
- Cybersecurity incident notication & response process
- Cybersecurity management system

Recover
- Cybersecurity incident review and improvement
- Stakeholder Communication
- Goodwill maintenance



Cybersecurity risk identification and management

We engage third-party audit firms annually to conduct information security audits, system vulnerability scans, and penetration testing to ensure that its information systems and network environments comply with security implementation standards. These efforts help enforce information security policies and customer privacy protection measures, effectively preventing the leakage of trade secrets and customer data. Tools used include Nessus for vulnerability scanning, BitSight for security ratings, the SecurityScorecard platform for analysis, and Red Team Assessments to evaluate system defense capabilities and incident response maturity. Additionally, the company provides monthly BitSight security rating reports to all sites for reference and continuous risk management improvement.

As we enter the era of digital transformation, we are not only continuing to strengthen cybersecurity measures, but also extending our expertise to the Operational Technology (OT) domain. Since 2022, we launched an OT cybersecurity assessment program, engaging external experts to identify and test potential risks in OT systems. In 2024, a total of seven sites completed the OT assessments, progressively building a cross-domain integrated cybersecurity defense framework.

In addition to external audits, ASEH also conducts regular internal self-assessments of its Information Security Management System (ISMS) based on the NIST Cybersecurity Framework (CSF) and ISO 27001. These assessments evaluate the effectiveness of risk management, control measures, and incident response processes, and the results are reported to senior management and the Board of Directors. In the event of an unexpected cyberattack, the Information Security Management Task Force promptly convenes technical response meetings to analyze and review defense strategies, building a synchronized and comprehensive security network to respond to threats in real time.

In addition to managing operational risks from the perspective of corporate governance, we try to increase employees' cybersecurity awareness and enhance organizational operational capabilities as part of our focuses in cybersecurity management. All employees at ASEH must receive PIP cybersecurity educational training, including cybersecurity policy, cybersecurity management framework, cybersecurity control measures, etc. In 2024, a total of 147,289 individuals completed 89,371 hours of training courses. Additionally, occasional social engineering email drills were conducted to enhance employees' awareness of social engineering attacks through emails. Additionally, we will gradually introduce systematic management mechanisms to incorporate participation in cybersecurity meeting, educational training, incident management, confidential file labeling, antivirus/software security, and other cybersecurity-related projects in a systematic manner. Moreover, KPI monitoring and audits are conducted, extending the scope of management, and reaching every employee and every endpoint device. This will be integrated with employees' performance to reduce penalties and legal liabilities resulted from violations against cybersecurity regulations, as well as the impacts on business operations.

Increase cyber resilience

In 2024, no major information security incidents[1] occurred at the company. To strengthen our cybersecurity response and protection capabilities, the company established a well-defined set of "IT Security Incident Reporting and Emergency Response Procedures". The procedure serves as a unified employee guideline that outlines detailed specifications, including incident classification, response team structure, severity level determination, reporting and handling procedures, incident monitoring and closure, follow-up investigations, corrective actions, and evidence collection. Cybersecurity incident drills are also conducted regularly to enhance employees' awareness and improve response efficiency.

The ASEH Information Security Management System further integrates cyber threat intelligence sharing and incident reporting, two core functions that enable real-time monitoring of internal and external threats, ensure timely reporting and resolution of incidents, and significantly enhance overall risk visibility and collaborative defense capabilities. With the increase in cybersecurity threats and the risks they pose to business operations, we have adopted a risk-based approach by securing cyber insurance coverage for the company. This added layer of protection allows us to respond swiftly to incidences and contain the impact of any cyberattacks, minimizing potential losses to the company operations, customers, supply chain partners and facilitating rapid business recovery.

To ensure the sustainable operations of important businesses and prevent interruption of critical information systems as a result of material cybersecurity incidents, we conduct an incident recovery drill every six months which lays out the organizational structure diagram, scope, duration, critical information systems, participating units, participating personnel and their assigned tasks, backup personnel for the drill, implementation steps and processes of the drill, required resources, data recovery from backup, risk management during the drill, post-drill review and improvement processes, among others. The purpose is to ensure the company can leverage disaster response capabilities and disaster recovery mechanisms to quickly restore operations to a normal or acceptable level for the business, achieving the goal of uninterrupted operations of critical information systems. The drill will continue to be implemented to provide maintenance, management, and training to ensure the effectiveness of the backup systems.

[1] We define a major information security incident as any loss exceeding US$10 million.



Information Security Information Exchange

ASEH works closely with government agencies, local and international information security organizations including FIRST((Forum of Incident Response and Security Teams), Taiwan Computer Emergency Response Team/Coordination Center (TWCERT/CC), and High-tech Information Security Alliance. As a member of the SEMI Semiconductor Cybersecurity Committee, we are actively driving the industry's adoption of SEMI E187 – Specification for Cybersecurity of Fab Equipment, a Taiwan-initiated security standard. Adopting the relevant infosec regulations, standards and industry intelligence allow us to integrate our internal management systems and expertise, to develop a comprehensive set of capabilities that will further strengthen our resilience.

At the same time, we are committed to meeting the expectations from our upstream and downstream supply chains and stakeholders on matters related to information security. ASEH's strong and robust security defense leads to a tightly-secured smart manufacturing environment and increases the company's competitive advantage as a sustainable enterprise.

Supply chain cybersecurity management

As a result of the digitization of the supply chain and the exchange of large volumes of data, the supply chain is faced with unprecedented cybersecurity risks. To effectively improve cybersecurity resilience across the supply chain, starting from 2022, ASEH has established the Supplier Cybersecurity Assessment and Execution System, which primarily focuses on critical suppliers. A total of 96 supplier cybersecurity assessments were conducted in 2024 , following a four-step process consisting of current situation assessment, guidance for improvement, results confirmation, and cyclic survey. The scope of assessments will be gradually expanded and a cyclic regular survey conducted every three years to construct a comprehensive cybersecurity management mechanism, ensure stable business operations, increase cybersecurity resilience, and further improve the overall cybersecurity environment and level in the semiconductor industry.

Procedures for supply chain cybersecurity assessment



Information Security Certification and Information Security Measures Promote Results

Information security certification

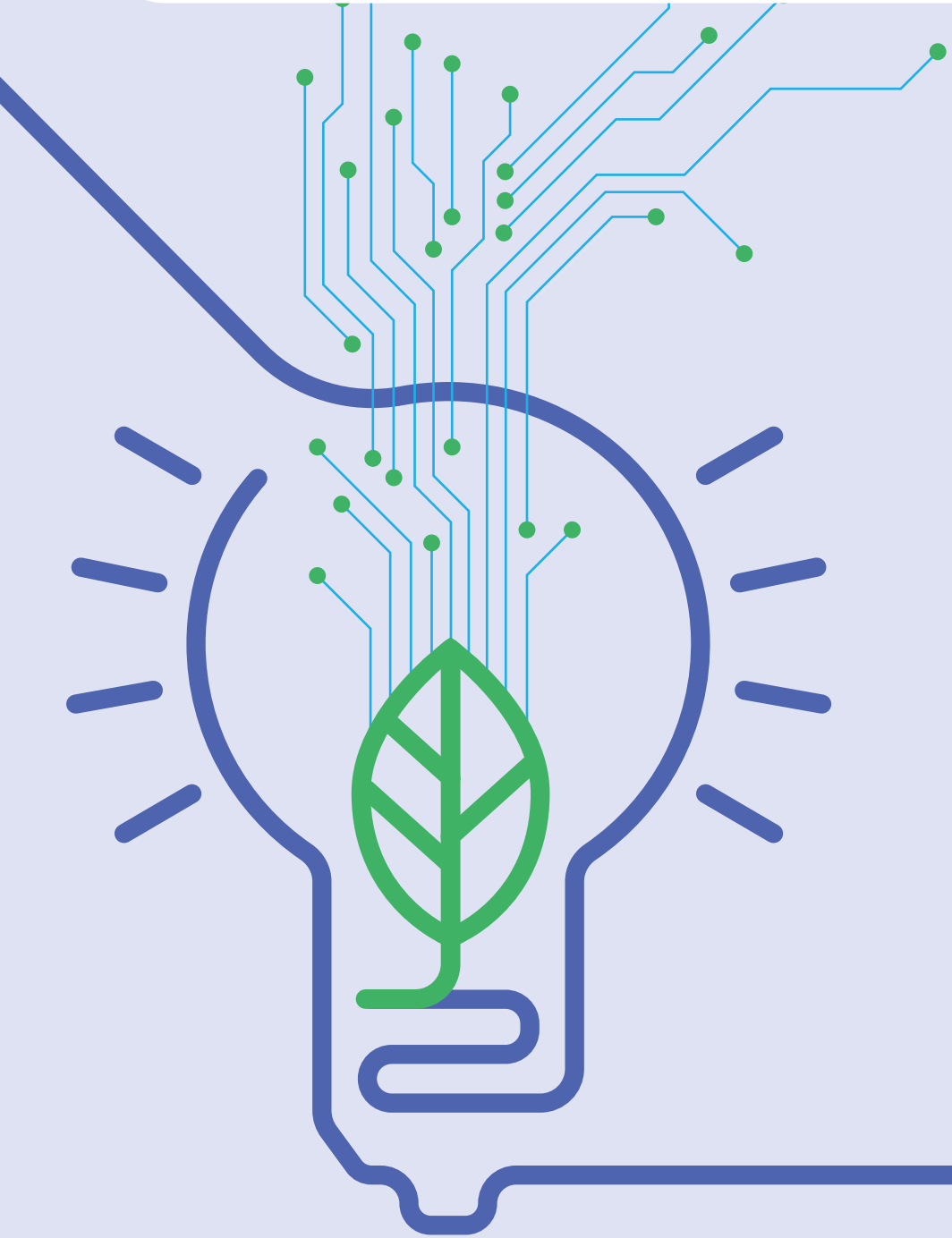
ASEH prioritizes cybersecurity issues, identifying internal and external risks, and developing and promoting various key response strategies. It has earned recognition with international cybersecurity certifications, including ISO 27001, ISO 22301, ISO 15408, ISO 21434, IEC 62443, GSMA, and others. Through continuous management of corporate operations and adherence to international information security standards, ASEH rigorously reviews and optimizes cybersecurity workflows and management measures, enhancing operational resilience. This comprehensive approach safeguards smart manufacturing security and sustains competitive advantages for the company.

International information security certification	
ISO 27001	To build a stable and robust foundation for the IT environment, ASE Kaohsiung, ASE Chungli, ASE Shanghai (Material), ASE Korea, SPIL, and USI Nantou continue to improve and implement cybersecurity risk management targeting critical information systems that are essential to the operation of crucial facilities.
ISO 22301	ASE Kaohsiung, SPIL and USI Nantou have successively obtained the BCMS (business continuity management system) ISO22301 certification to strengthen crisis management and disaster response.
ISO 15408	ASE Kaohsiung , ASE Chungli and ASE Singapore have been certified to EAL6, the highest level of security certification, creating a manufacturing environment and management system that comply with international standards for safe products and enhancing the safety management mechanisms for product transportation. We provide cybersecurity guarantees for manufacturing processes such as packaging and testing to offer better customer service.
ISO 21434	ASE Kaohsiung is the first semiconductor assembly and testing facility in the world to receive the ISO/SAE 21434 international automotive network security standard certification with 100% compliance by being certified by TUV NORD of Germany.
IEC 62443-2-1	ASE Kaohsiung passed the German TUV NORD's professional evaluation and obtained the IEC 62443-2-1 certification, becoming the very first company to receive the certification in the semiconductor industry in Taiwan.
GSMA	ASE Kaohsiung has passed the mobile communication security certification standard and obtained the GSMA certification. As a manufacturer, it completed a comprehensive audit of the production sites and processes to comply with the UICC production safety standard (GSMA SAS-UP)

Information Security Investment and Results

ASEH approaches internal initiatives from a corporate governance perspective, establishing information security policies, conducting regular cybersecurity drills, providing cybersecurity education and awareness training for employees to enhance overall security awareness. It invites representatives from industry, government, and academia to share international cybersecurity developments regularly, increasing crisis responsiveness. Externally, ASEH actively participates in international cybersecurity organizations such as FIRST, TWCERT/CC Taiwan Cyber Security Alliance, and High-Tech Cyber Security Alliance. Through these communication channels, it shares the latest trends and action plans with industry peers and supply chain partners, elevating cybersecurity protection levels. Simultaneously, by aligning certification efforts with international standards, ASEH strives to mitigate cybersecurity threats, ensuring secure operations and fostering long-term, solid partnerships with customers and supply chain partners to provide more comprehensive and refined services.

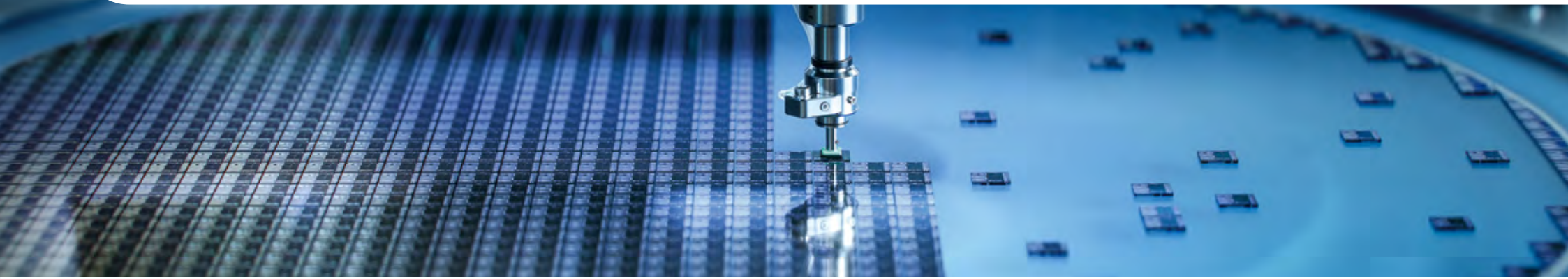
Information Security Investment and Results in 2024	
Cybersecurity policies, organizations, and goals	• Established the Corporate Sustainability and Information Security Committee • Zero material cybersecurity incidents • Formulated three cybersecurity goals for 2030 • Convened four ASEH cybersecurity team meetings
Information Security Implementation and Safeguards	• Implementation of one ASEH Information Security Management System • NIST CSF maturity assessment for 25 sites • Conducted red team assessment at 5 sites • Provided monthly BitSight security rating reports • OT cybersecurity assessment at 7 sites • Conducted internal audits based on NIST CSF and ISO 27001 frameworks • Two cybersecurity incident drills • Providing cybersecurity educational training to 147,289 individuals • Accumulating 89,371 hours of cybersecurity educational training • Ongoing cybersecurity insurance coverage • Conducting cybersecurity assessments for 96 suppliers
Cybersecurity certification	• ISO 27001 certified (ISMS): ASE Kaohsiung, ASE Chungli, ASE Shanghai (Material), ASE Korea, SPIL, and USI Nantou • ISO 22301 certified (BCMS): ASE Kaohsiung, SPIL and USI Nantou • ASE Kaohsiung certified with IEC 62443-2-1 • ISO 15408 EAL6 highest-level certification: ASE Kaohsiung, ASE Chungli, and ASE Singapore



INNOVATION SERVICE

Innovation is the key to sustainable human development. Through innovation, ASEH improves product value, makes human lives easier in a smart era and elevates social well-being. We take into careful consideration regarding Smart Manufacturing – integrating environmental protection and social innovation at a product's design stage. As a result, ASEH has produced more efficient products and helped customers lower their power consumption when using our products, contributing to a reduction in greenhouse gas emissions. The effects of product usage on human health were also considered and efforts have been made to manufacture products with non-hazardous materials, and Improve recyclability, with Enhance product durability.

ASEH is committed to improving and protecting the environment by enhancing raw material usage efficiency, recycling resources, reducing wastewater discharge and greenhouse gas emissions, and reducing waste generation and chemical use. We strive to develop and promote comprehensive, environmentally friendly services and manufacturing processes that consider the environmental impact at various stages of the product lifecycle including raw material procurement, design & development, manufacturing, product use, and product disposal. This has enabled ASEH to provide the most environmentally friendly, green manufacturing services.



4.1 R&D and Innovation

Technology and innovation are the lifeline of our company. We have continued to invest heavily in advanced semiconductor packaging technology research and development and developing a strong engineering team, to produce high performance and cost-effective products that meet customers' needs. We have systematically mapped out a 10-year strategic blueprint that identifies key areas of technology focus by projecting industry and technology trends for the future. This will enable us to optimize our R&D resources and technology capabilities to seize important business opportunities and strengthen patent portfolios that further enhance our sustainability efforts. Our R&D expense increased 12.9% to NT$28,830.3 million in 2024, compared to NT$25,499.4 million in 2023, accounting for 4.4% and 4.8% of operating revenues in 2023 and 2024. As of December 31, 2024, our research and development team comprise 12,715 employees, an increase of 4.9% compared with 12,125 in 2023.

Driven by strong demand for applications such as high-performance computing, AI, IoT, autonomous driving, and smart manufacturing, breakthroughs in advanced processes and advanced packaging technologies are the main forces driving the continuous development of the semiconductor market. The rapid evolution of key technologies such as 2.5D/3D IC, CoWoS, FOPLP, and CPO not only accelerates chip integration and performance improvement but also meets the diverse market demands for thin, lightweight, multifunctional, and low-power end products.

In 2024, the Company successfully developed key products and technologies categorized as follows: (1) Flip Chip Packaging (FCP): Memory stacking technology for HBM3 (the third generation of high-bandwidth memory) (2) Wire-Bond Packaging: Intelligent wire-bonding defect inspection powered by deep learning and computer vision (3) Wafer Level Packaging: Development of WLP with optical waveguide (4) Advanced Packaging and Modularization: Advanced packaging technology for 3D voltage regulation modules (5) Panel Level Packaging: Development of FOSoP (Fan-Out System on Package) (6) SiP Packaging: SiP with 3D irregular selective staged molding integration wire bonding (7) OEP (Optoelectronic packaging): Development of ultra-large scale silicon photonics packaging system with fan-out optical waveguide, and optical assembly for optical components.

Our R&D teams work closely with our supply chain partners including material and equipment suppliers, as well as with key customers on new product and process innovations, to maximize scale and efficiency in technology development. In addition, we collaborate with academic and industry organizations such as the National Sun Yat-Sen University, National Cheng Kung University, National Taiwan University, Tsing Hua University, and ITRI on advanced packaging and testing technology development.

Technology Platforms

R&D is costly and time-consuming, and selecting the right products/technologies in the early stages reduces the risk level. To address this, ASEH has established a market analysis taskforce consisting of an internal team of R&D staff, research institutions, suppliers, equipment manufacturers and customers. Through the taskforce, the Company is able to regularly exchange views on the latest market developments with players in the industry, focus on new product/technology development to meet emerging market demand, set short, medium and long-term R&D targets, and concentrate its resources on priority projects.

ASEH has formed a Technology Board consisting of experts from a wide range of professional disciplines to achieve horizontal integration and effective technology development through the integration of technology and knowledge sharing, and the creation of a platform for in depth analysis and discussions. Furthermore, we have set up a Knowledge Management (KM) platform that can be accessed globally to encourage employees to share innovative engineering technologies regularly. ASEH will continue to improve the KM platform functions and strengthen the development of its core technology to increase the company's competitiveness and growth potential.

Smart Factories

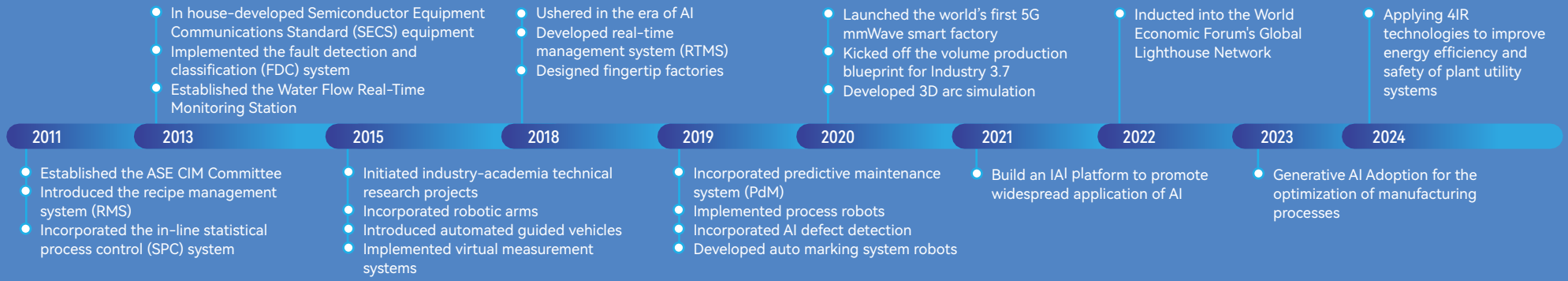
Aiming to drive greater efficiency and improvements in our manufacturing process that will in turn deliver higher customer satisfaction in quality and delivery, ASEH began to invest in automated, lights-out factories in 2015. At ASEH, we are accelerating digital transformation in smart manufacturing through automation, heterogeneous integration in machine and production systems, and heterogeneous integration in systems-in-package (SiP). In 2011, ASE established the ASE CIM Committee, a strategic task force that is comprised of teams from various business units (lead frame packaging, ball-grid array packaging, flip chip packaging, wafer-level packaging, SiP packaging and test services) and the Information Technology Center. By 2024, the company has established 56 lights-out factories, trained more than 700 automation engineers, and developed over 68 industry-academia research projects. ASEH achieved another major milestone when its bumping facility in Kaohsiung was inducted into the World Economic Forum's Global Lighthouse Network, a community of production sites and value chains that are world leaders in the adoption and integration of the cutting-edge technologies of the Fourth Industrial Revolution (4IR).

Smart factories and automation transform our labor needs by allowing us to redeploy workers and train them for higher skilled jobs. The upgrade in our workforce will greatly improve productivity, increase employee engagement and create more sustainable value.

Smart Factory Transformation through Innovative and Breakthrough Approaches

Challenge	Problems encountered	Solution
Inadequate equipment connectivity	• To meet the needs of smart factories, production equipment information must be collected and stored in a central database so that real-time analyses and management can be conducted. • In the early days, due to the dearth of OSAT industry production equipment that met Semiconductor Equipment Communication Standards (SECS), equipment connectivity was the top challenge to be overcome.	• **Step 1:** Collaborate with procurement units to conduct negotiations with equipment suppliers and request that new production equipment meet SECS standards. • **Step 2:** Perform research on existing production equipment to find ways to achieve automatic connection and convert into compatible SECS formats. After years of development, ASEH's production equipment now meets SECS standards.
High complexity of product tracking	• Automotive customers require strict records of the production history of all automotive chips to facilitate tracking when problems occur. • In semiconductor chip manufacturing, product tracking begins at the wafer fabrication stage. The wafers will then proceed to the next process stage. Once the wafer is cut into individual dies for packaging, the dies do not have any markings for identification and tracking.	• Use 2D codes and RFID technology to accurately record the individual wafer and the location on the wafer that each die originated from, the location on the substrate and the locations on the die carrier and substrates. • All the location information is stored in the map system database that can be accessed any time. Customers are able to check production history, while our engineering teams can use the data to perform quality and yield analyses.
Lack of local automated equipment supply chains	• In the early stages, most automated equipment suppliers were large foreign suppliers that commanded high prices, were inflexible and provided long lead times. As a result, we faced delays in project completion and unsatisfactory outcomes.	• Actively look for local suppliers of automated equipment including automated guided vehicles, automatic storage and robotic arms, etc. In recent years, we have established business relationships with approximately 38 automation suppliers, strengthening the local automation industry chain in Taiwan.
Lack of qualified personnel	• When the ASE CIM Committee was initially established, there were only 30 engineers with expertise in automation.	• More than 700 smart factory automation engineers have been trained through the establishment of in-house automation and AI training modules as well as industry-academia research programs. • **AI training modules:** We launched the modules in 2018 to promote AI technology. Integrating the AI platforms into the production, engineering, and administrative departments help to popularize the IAI platform, and also ensure readiness for the upcoming No-code AI age. As of 2024, more than 15,000 individuals have been trained. • **Intelligent Engineering training modules:** Since the launch in 2022, our PE/EEs have received training in statistical analysis and equipment monitoring. The engineers also learnt how to optimize digital tools and ideas for project applications. As of 2024, more than 4,000 individuals have been trained. • **Digital Application training modules:** Starting in 2018, we created courses on digital tools such as RPA, Qlick View, Doc.Bee, and Co-know to train administrative and support staff to utilize digital tools effectively. As of 2024, more than 11,000 individuals have been trained.

1st light-out factory ▶▶ 56th light-out factory



Smart Factory Milestones

2011	Introduced the recipe management system (RMS)	As a control measure before mass production, the EAP transfers data to equipment through SECS/GEM, ensuring data validity and improving overall equipment efficiency (OEE).
2013	In house-developed Semiconductor Equipment Communications Standard (SECS) equipment automation program (EAP)	To overcome challenges in equipment connection program development, we designed a development platform for standardized equipment connection programs, solving process design problems, lowering program development complexity, and increasing human-machine ratios and operation time.
	Implemented the fault detection and classification (FDC) system	By collecting equipment production parameters in real-time, systems are able to report equipment status immediately and check formal functions automatically so that warning signals are issued when malfunctions occur, thereby preventing the repeated manufacturing of defective products and ensuring that reporting mechanisms are in place to detect malfunctions in real time.
2015	Introduced robotic arms and automated guided vehicles (AGVs)	AGVs and robotic arms were integrated to introduce the autonomous mobile robot (AMR) that can support transport operations, thus reducing manpower on the floor and maximizing packaging capacity.
2018	Ushering in the era of AI	Applying AI powered detection technology to identify and intercept any malfunctioning equipment that may compromise information security and prevent any information security incidents. The in house-developed technology helps mitigate information security risks and reduce investment costs.
2019	Incorporated the predictive maintenance system (PdM)	A predictive maintenance system helps determine equipment that is likely to require maintenance and predicts equipment component failures and malfunctions in advance. The system allows early notification of maintenance personnel to service the equipment, thereby lowering equipment failure time.
2020	Launched the world's first 5G mmWave smart factory	The 5G mmWave smart factory was a collaborative effort between ASE, Chunghwa Telecom and Qualcomm, showcasing the future of automation and smart factories. 3 use cases were developed to demonstrate the use of 5G mmWave in smart factories - automated production line inspection using AI+AGV, remote AR maintenance and the AR experience at the ASE green technology center.
2021	Build an IAI platform to promote the universal application of AI	ASEH ushered in the era of AI. In addition to actively cultivating AI technology talent, we began to build the IAI platform to create an AI no code environment and promote widespread application of AI throughout the company.
2022	Inducted into the World Economic Forum's Global Lighthouse Network	ASE's Bumping Factory in Kaohsiung adopts 4IR (Fourth Industrial Revolution) technologies across its manufacturing operations. In particular, the facility applies AI technology in the management of equipment and processes to improve yield and accuracies in production schedules. As a result of the remarkable integration of 4IR, the facility was inducted into the World Economic Forum's Global Lighthouse Network (GLN).
2023	Generative AI Adoption for the optimization of manufacturing processes	ASE Kaohsiung's smart manufacturing is continuously evolving and the team is actively harnassing AI to optimize production processes. Our manufacturing processes for a diverse range of products are complex, and AI adoption is helping to improve worker productivity that minimizes work-in-progress costs and maximizes yield. Applying AI enables better optimization of machine and shipment scheduling to meet delivery deadlines, ensuring the most efficient production schedules in the shortest possible time. The extensive data mining and analysis, combined with the factory's 24/7 operations have resulted in widespread AI applications at ASE Kaohsiung.
2024	Applying 4IR technologies to improve energy efficiency and safety of plant utility systems	Leveraging 4IR technologies to enhance the energy efficiency and safety of plant utility systems. AI-driven universal monitoring ensures compliance and safety in high-risk operations during new plant construction. The chilled water supply is automatically controlled by AI to operate at optimal energy-saving levels, with intelligent variable-frequency regulation.

Intellectual Property Management

Intellectual property (IP) rights are important achievements in research and development, and a key aspect of innovation management. Effective IP management helps to maintain ASEH's leading position in corporate innovation.

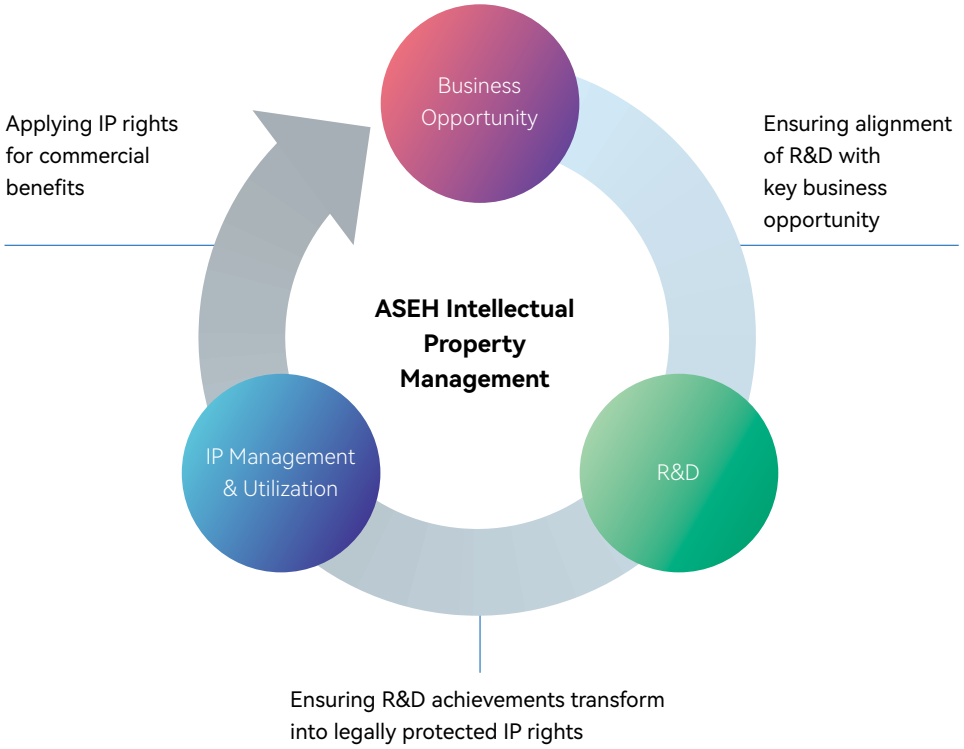
ASEH has established an IP policy that serves to protect the company's technological innovations and its global leading position. In addition to continuously striving towards R&D innovation and developing IP management strategies that conform with the company's development trends, ASEH's IP management also helps to generate commercial benefits for the company.

ASEH's IP management is tightly embedded into the company's business operation blueprint, forming a continuous innovation cycle that encompasses business opportunities and R&D, to IP management and utilization that includes the following three phases:

Step 1: To maintain ASEH's technology leadership and to better respond to future market needs, the company invests aggressively in research and development, aligns R&D with key future business opportunities and invests heavily in talent development and R&D resources.

Step 2: Our robust IP application system and tools ensure that R&D achievements are transformed accurately, thoroughly and effectively into legally protected intellectual property rights. To ensure comprehensive protection for key technologies and strengthen patent quality, ASEH adopts a 3-pronged approach: developing a comprehensive portfolio, re-assessing patents to identify those of value and, revitalization to increase the value. Patents must also provide business value in order to maximize R&D investment returns. ASEH puts in place a system of measures to protect the company's trade secrets and maintain its unique competitive advantage, including information security systems, employee awareness training and education and systematic management and award mechanism. Where appropriate, the company will enforce applicable laws and regulations to prevent improper use, leakage or misappropriation of the company's intangible assets by others to ensure that ASE's investments, rights and interests are duly protected.

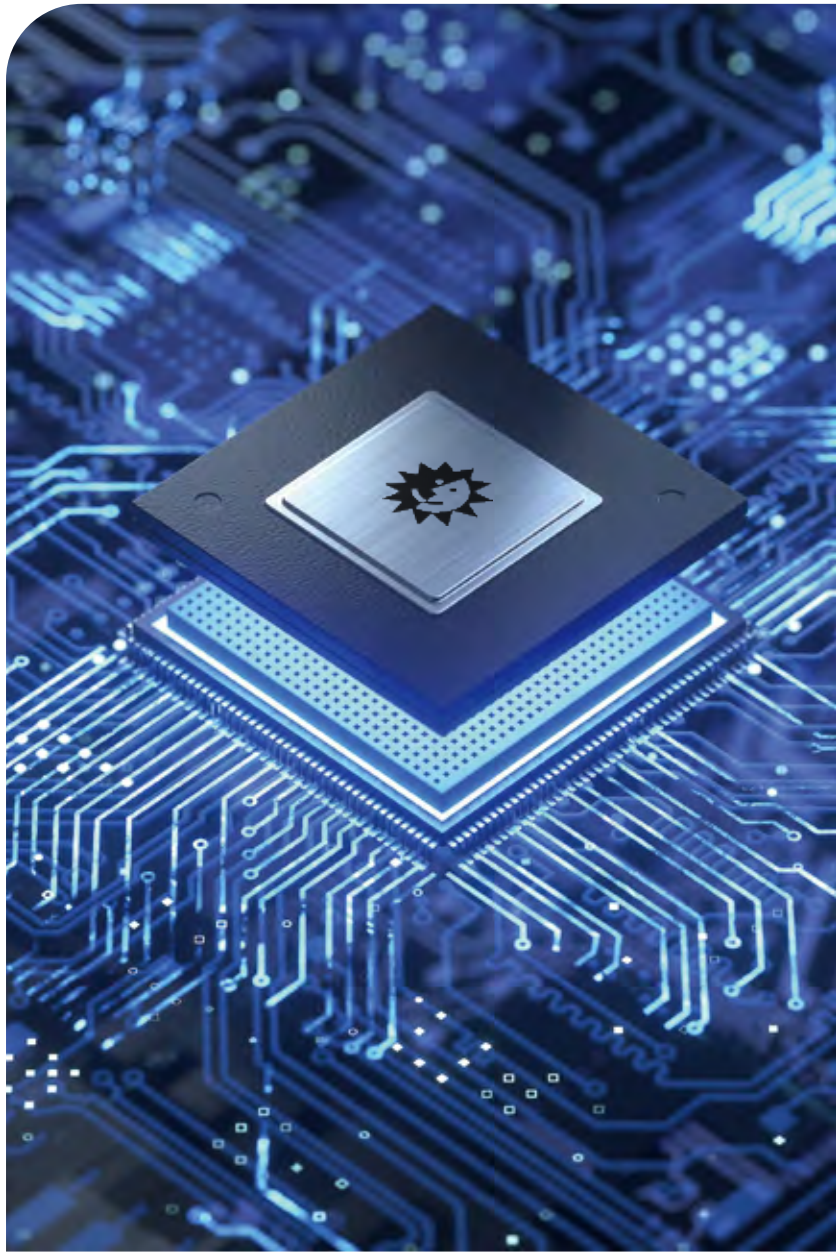
Step 3: High-value IP helps to facilitate business success, obtain customer orders and develop more business opportunities, thereby creating a positive sustainable cycle. Our robust IP management prevents unauthorized use of ASEH's technologies by others and helps to defend against any threats from competitors.



Advanced Semiconductor Engineering, Inc., a subsidiary of the company, filed an application for the renewal of Taiwan Intellectual Property Management System (TIPS) (AA Class) certification in 2024. The renewal of TIPS certification (AA Class) was valid for another 2-year-term until December 31, 2026. Additionally, Siliconware Precision Industries Co., Ltd. and Universal Scientific Industrial Co., Ltd. also obtained the Taiwan Intellectual Property Management System (TIPS) (A level) certification, with their certificates valid until December 31, 2025.

Based upon the foundation of long-term practices on intellectual property management, ASEH further enhanced the scheme of its intellectual property management, strengthened employees' intellectual property value awareness, intensify all aspects of protections of R&D achievements, and promoted the trust of its shareholders and customers in company by introducing TIPS framework and obtaining external certification.
As of January 31, 2025, ASEH owned 6,433 patents, primarily in various assembly and testing technologies as well as electronic manufacturing services technologies, including 2,077 patents in Taiwan, 2,030 patents in the U.S., 2,189 patents in the People's Republic of China, 87 patents in Europe and 50 patents in other countries.
To learn about the benefits of intellectual property rights to ASEH sustainable development, please refer to ASEH website-ESG | Sustainability Governance | Intellectual Property Management.

The link is https://www.aseglobal.com/csr/sustainability-governance/ip-management/



Trade secret

- Create a registration management system to protect trade secrets.
- We continuously enhance best practices through information security protocols, awareness promotion, comprehensive training, and systematic management.
- Where appropriate, we apply applicable laws to deter unauthorized access to company information and assets, protecting our investments and safeguarding our interests.

Patent

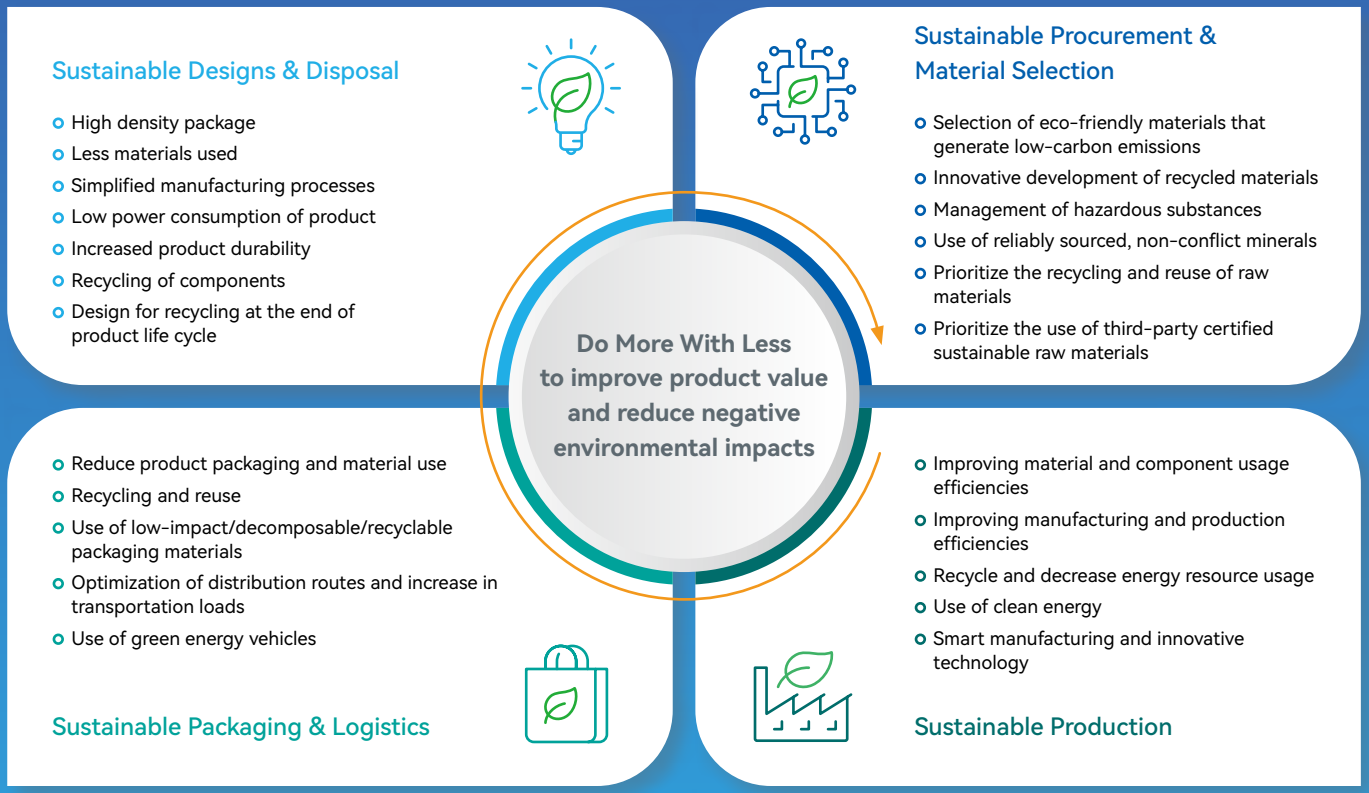
- Place equal emphasis on patent quantity, quality, and value. Focus on three major approaches on patent management: comprehensive planning, curating patents of value, and value enhancements.
  - ➤ Develop a comprehensive patent plan for critical technologies at an early stage.
  - ➤ Regularly evaluate patents, identifying those of value, and dropping those of low or no value from renewal.
- Revitalize patents to enhance their value and scope of application.
- Foster strategic partnerships with key customers, and academic research institutions, to collaborate on R&D, develop plans for patent applications, and acquire critical patents.

Intellectual Property Management and Utilization

4.2 Sustainable Manufacturing

Sustainable Manufacturing Concepts and Principles

As a manufacturing service provider, ASEH embraces the concept of "doing more with less". The company is firmly committed to four key manufacturing principles; sustainable designs, sustainable procurement and material selection, sustainable production and sustainable packaging and logistics. In the initial product/process design stage, sustainable manufacturing practices (as shown in the diagram below) are incorporated into the entire product life cycle; from raw materials, manufacturing, distribution, usage, to disposal, as well as at subsequent stages of product manufacturing and distribution. Our approach allows us to provide customers with sustainable products of higher value while minimizing the impact to the environment and improving eco-efficiency.



We are committed to:

- complying with all applicable laws and regulations
- managing hazardous substances in components and raw materials used in manufacturing
- creating solutions for the design of lightweight, thin, small and energy-efficient products
- reducing the environmental impact from manufacturing, packaging, and transportation

Sustainable Raw Materials

ASEH recognizes that the semiconductor and electronics manufacturing industry consumes a substantial amount of raw materials. The ASEH Board of Directors have approved the following Sustainable Raw Materials Policy based on the company's sustainable manufacturing principles.

	Raw Materials	Raw Material Suppliers
Tracing and Collecting Data	• **Material Tracking and Origin Tracing:** Regularly tracking the volume of raw materials consumed from ASE's conflict mineral, cobalt, mica and other key raw material suppliers. In 2023, we conducted extensive source tracing of 18 additional metals, including copper, iron, nickel, aluminum, silicon, and silver.	• **Proactive investigation:** We conduct preliminary assessments on our suppliers based on key factors like level of business relationship and procurement value. At the same time, we review the risks of potential negative impacts on the environmental, social, and governance dimensions with respect to the supplier's category type (including raw material suppliers etc.).
Risk Assessment	• **Non-toxicity:** Enhancing product compliance with regulations and customers' sustainability requirements by establishing a hazardous substance process management system to ensure that the raw materials used for production do not contain substances harmful to humans or the environment. • **Recyclability:** Our environmental laboratory conducts green material assessments, develops non-toxic (or low-toxicity) raw materials, as well as analyzes material and waste recycling, reduction, and reuse technologies. • **Eco-friendliness:** Using Life Cycle Assessment (LCA) techniques to analyze the environmental impact of products and raw materials, and identifying improvement opportunities through hotspot analyses to enhance the eco-friendly content of products and raw materials. • **Conflict Materials:** Aligning with the due diligence process established by the Organization for Economic Cooperation and Development (OECD) to regularly examine the country of origin of raw materials (including conflict minerals) to avoid using materials from conflict zones.	• **Sustainability risk:** A Sustainability Risk Assessment Questionnaire (SAQ) was developed based on the RBA Code of Conduct and international standards such as the UN Universal Declaration of Human Rights. Sustainability risk assessments for all first-tier raw material suppliers are conducted regularly. • **Climate Risk:** Utilize the World Resources Institute (WRI) database to assess supplier water stress, and integrate data on extreme rainfall conditions to identify suppliers at risk of experiencing flooding and landslides. • **Biodiversity:** Determine if raw material suppliers' production locations are biodiversity-sensitive by using data from the International Union for Conservation of Nature's (IUCN) World Database on Protected Areas (WDPA)
Coordinated Action	• **Eco-Design Guidelines:** Eco-design guidelines have to be incorporated throughout all advanced technology development and new product development stages, especially in the selection of sustainable raw materials (choosing materials with lower negative sustainability impacts, avoiding materials from key biodiversity areas, and prioritizing the use of recycled metals, minerals and materials with third-party certifications).	• **Supplier Guidance:** Conducted programs to guide raw material suppliers in managing carbon inventory, renewable energy development, carbon reduction and water conservation. Supported a total of 158 suppliers in 2024.
Targeted Action	USI has set a target of 13.2% by 2030, for the use of recycled plastic in its products.	Number of on-site sustainability audits for raw material suppliers: 120 (by 2030)

	2022	2023	2024
the proportion of recycled plastic used in products	NA	16.72%	8.02%

	2022	2023	2024
the number of on-site sustainability audits for raw material suppliers	187	201	229

We conduct training for employees involved in managing the sustainability aspect of raw materials, educating them on green products (hazardous substance control), environmental protection, business ethics, supplier sustainability management, and conflict minerals. In 2024, 46,154 people participated in these training courses resulting in the increase of environmental awareness, and understanding the significance of utilizing appropriate raw materials for sustainability.

Management of Hazardous Substances and Chemicals

To achieve sustainable manufacturing, effective management of hazardous substances is crucial. We implement control measures using the QC080000 Hazardous Substance Process Management System. As an example, at ASE Kaohsiung, the team diligently identifies and manages hazardous substances that are subject to controls in accordance with regulatory and customer requirements. Next, in supply chain management, green and non-green raw materials with or without hazardous substances are classified accordingly. Using the Green Product Management System (GPMS), a raw materials database is established to comply with the EU RoHS Directive, REACH Regulation, US Toxic Substances Control Act (TSCA), as well as other national laws and customer standards. This proactive approach allows us to set robust requirements for hazardous substance management and standards that exceed regulatory and emerging trends.

Hazardous Substance Identification
- Regulatory requirements management
- Customer requirements management

Supply Chain Management
- Suppliers must sign Green Assurance Declarations
- Review of third-party test reports and material safety data sheets (MSDS)

Incoming Control
- Upon material receipt, sampling and X-ray fluorescence (XRF) analysis are conducted to ensure absence of hazardous substances

Process Control
- Labeling and segregation of green/non-green materials to prevent contamination of green products by hazardous substances

Outgoing Control
- Before product shipment, sampling and X-ray fluorescence (XRF) analysis are performed to ensure the products are free from hazardous substances

We have expanded our control measures for chemicals that cause health hazards and increase environmental risks, including bioaccumulation, persistent pollutants, and toxic substances that are carcinogenic, mutagenic or affects fertility. In addition, any newly introduced chemicals in the manufacturing process that are prohibited by customers or the EU REACH Restricted Substances List, will be replaced with another qualified substance. As an example, ASE Kaohsiung identifies and develops a list of restricted and prohibited substances based on relevant Taiwanese and EU REACH regulations, along with established customer requirements. The site has also developed an integrated chemical management system for material lifecycle management. Prior to material procurement, our EHS specialists carefully review and approve new materials or any new changes in chemical composition to ensure that they do not contain high-risk substances and conduct hazard identification and risk assessment indicating an acceptable level of risk. This risk assessment takes into account factors such as chemical toxicity including incidence of employee injury or illness, frequency and duration of use, and the effectiveness of control measures. Chemical hazard classification must be clearly labelled for materials in storage and throughout the usage. Personnel handling the material must take the necessary protective measures in accordance with the hazard classification. At ASEH, we are fully committed to prioritizing employee health and safety by providing environmentally friendly manufacturing services.

High-Risk Restricted Substance Identification
- Regulatory requirements management
- Customer requirements management

Procurement Management
- Suppliers must sign a declaration of non-use ofprohibiting the use of restricted and hazardous substances
- Suppliers must provide complete Material Safety Data Sheets (MSDS) to facilitate hazard classification and management
- For new material introductions or changes in chemical composition, risk assessment and approval by designated EHS specialist is required prior to procurement

Inventory Management
- Upon warehousing, Cchemical materials must be clearly labelleds must clearly indicateaccording to hazard classifications during storage
- Real-time inventory tracking to prevent excessavoid exceeding the storage limit forof high-risk chemicals

Usage Management
- Users must ensure chemical containers are intact and properly labeled with hazard classifications
- Repackaged chemicals in new containers must be labeled according to the hazard classification of the new container
- Users must wear appropriate protective equipment gear in accordance with operating procedures



ASEKH, ASECL, and SPIL and USI have selected Mineral oil aromatic hydrocarbons (MOAH) consisting of 1 to 7 aromatic rings and Mineral oil saturated hydrocarbons (MOSH) consisting of 16 to 35 carbon atoms as Hazardous Substances and had been controlled by below targets in 2024:

- MOAH consisting of 1 to 7 aromatic rings < 1000ppm by 2025/1/1
- MOAH consisting of 3 to 7 aromatic rings < 1ppm by 2025/1/1
- MOSH consisting of 16 to 35 carbon atoms < 1000ppm by 2025/1/1

ASEKH, ASECL and SPIL have selected PFAS as Hazardous Substances and controlled by below targets by 2027/1/1, 2030/12/31 and 2027/1/1:

- ≦ 25 ppb any PFAS (polymeric PFAS excluded)
- ≦ 250 ppb (sum of PFASs) (polymeric PFAS excluded)
- ≦ 50 ppm (polymeric PFAS included).

Chemical Laboratory

The ASE chemical laboratory conducts R&D and indepth analysis of green materials right from the source. The lab is part of ASE's initiative to strengthen the company's green solutions by actively developing green manufacturing processes and using environmentally friendly packaging materials.

- **Evaluation and development of green materials:** Non-toxic/mildly toxic raw materials and chemical products
- **Development of environmental testing technology:** Establish monitoring technology, mechanisms and standards in compliance with global environmental regulations
- **Developments in green manufacturing:** Evaluate the technologies in recycling, reduction, and reuse of materials and waste
- **Development of environmental-friendly packaging:** Develop bio-composite material packaging

Product Lifecycle Assessments

We have incorporated the ISO 14067 product carbon footprint and ISO 14045 eco-efficiency assessments into our operations and have completed the inventory and evaluation of our five major packaging product series (i.e., BGA, Lead Frame, CSP, Flip Chip, Bumping). We have also extended the analyses of key "substrates" and conducted environmental impact analysis of product life cycles. In addition, we have established databases and incorporated simulation algorithms for product research and development to increase product value while elevating ecological efficiency. We provide our customers a complete suite of manufacturing services as well as the development of energy-saving products such as wireless communication modules, POS machines, ATX power supplies that connect to multiple desktop outputs, motherboards, smart handheld devices, NAS systems, SSDs, server systems and mobile computer, power module and line array system speaker.

In response to the growing challenges posed by global climate change and carbon emissions, we are committed to providing low-carbon products and services. We have developed detailed implementation plans to progressively improve carbon emission monitoring and control technologies at each manufacturing site. By 2030, we aim to achieve full integration of product carbon footprint management systems at all key facilities. Through precise data analysis and ongoing optimization, we strive to improve carbon efficiency throughout the product lifecycle, thereby advancing our commitment to low-carbon and sustainable operations.

Building on our collaboration with expert teams in conducting product life cycle assessments, we use assessment tools such as SimaPro and the ReCiPe 2016 Midpoint (H) methodology that measures the impacts from 18 different environmental aspects[1]. This rigorous approach ensures the scientific integrity and thoroughness of our carbon footprint management efforts.

● Done ▲ Ongoing ★ New ◆ Update

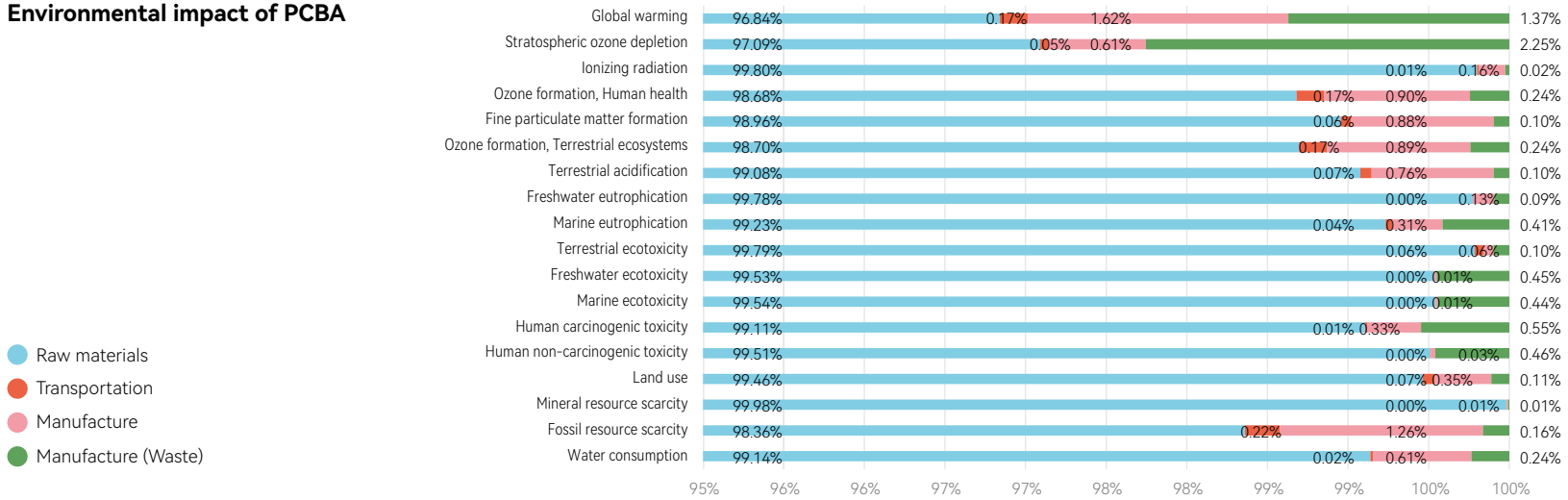
Category	Product Series	Carbon Footprint	Eco-efficiency Assessment/ Environmental Footprint	Improvement Strategies and Actions
Assembly	BGA	●	●	**Design** • Consider factors such as product lifecycle, circulation and eco-efficiency during the design stage • Develop a new generation of energy efficient products • Upgrade technology, strengthen product functions, and reduce material inputs Example: Develop high density QFP to replace traditional QFP led to a decrease in material usage by 60% **Procurement and materials** • Select environmentally compatible materials that generate low-carbon emissions Examples: Copper wires are used to replace gold wires, lowering product carbon emissions • Utilize environmentally friendly alternative materials Examples: Use of boron-free developers, non-reproductive toxic photoresist stripping solutions, halogen-free materials • Research and develop recycled materials or extend product service life **Production** • Introduce smart system controls to improve efficiency in energy utilization • Enhance manufacturing process equipment or components to increase product lifecycles • Value chain cooperation and material recycling Examples: Organic compound cyclopentanone, acetone recycling, plastic carbonization application • Adopt innovative technologies to reduce the impact on ecology Examples: O_2 gas replaces CF_4 gas to reduce carbon emissions in the process **Packaging and logistics** • Material recycling Examples: Recycling of buffer materials, pallets and logistics boxes • Avoid the use of foams with a substantially negative impact on the environment • Promote low-carbon transportation Examples: Switch from air freight to sea freight, use green energy vehicles
	Lead Frame	●	●	
	CSP	●	●	
	Flip Chip	◆	◆	
	Bumping	●	●	
	SiP Technology	●	●	
Substrate		●	●	
Test		●	●	
Electronic Manufacturing Services,EMS	4G dual frequency communication module	●	●	
	XnBay smart storage server	●	●	
	Printer head	●	●	
	LCD Drive Board Series	●	●	
	Industrial tablet	●	●	
	Clickshare button	●	●	
	Wiper controller	★	★	
	PCBA	★	★	
	Charger for hearing aids	●	●	
	Motherboard for Automated Teller Machine	●	●	
	Mobile Computer	▲	▲	
	Power Module	▲	▲	
	Line Array System Speaker	▲	▲	

[1] Environmental impact categories：Global warming, Stratospheric ozone depletion, Ionizing radiation, Ozone formation(Human health), Fine particulate matter formation, Ozone formation(Terrestrial ecosystems), Terrestrial acidic cation, Freshwater eutrophication, Marine eutrophication, Terrestrial ecotoxicity, Freshwater ecotoxicity, Marine ecotoxicity, Human carcinogenic toxicity, Human non-carcinogenic toxicity, Land use, Mineral resource scarcity, Fossil resource scarcity, Water consumption

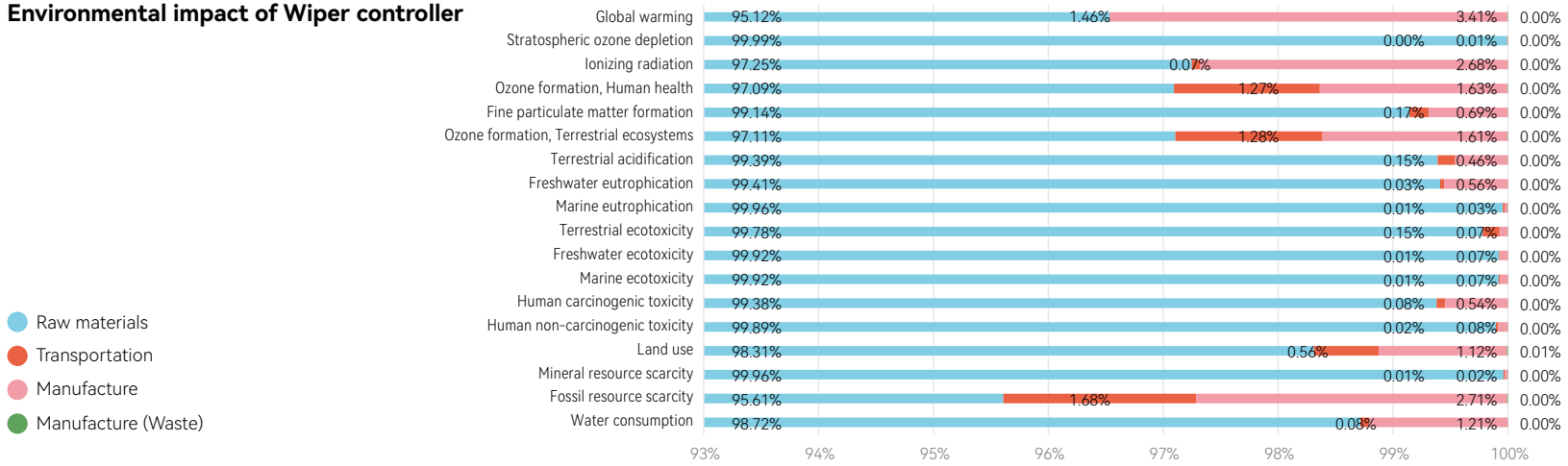
Life Cycle Assessment Results

According to the analysis results, Human non-carcinogenic toxicity, particulate matter formation, and climate change impacts on human health are the main environmental impact categories along the life cycle of PCBA and Wiper controller.

Environmental impact of PCBA



Environmental impact of Wiper controller



4.3 Products and Service

ASEH provides the design, manufacturing and enabling of many electronic end products, including smartphones, PCs, tablets, game consoles, security chip cards, automotive sensors, entertainment systems and many more. We offer a broad range of advanced and legacy semiconductor packaging and testing services as well as electronic manufacturing services. The semiconductors we package are used in a wide range of end-use applications, including communications, computing, and consumer electronics, industrial, automotive and other applications. Our testing services include front-end engineering testing, wafer probe, final testing and other related semiconductor testing services.

Our electronics manufacturing services are used for various applications, including computers, peripherals, communications, industrial applications, automotive electronics, and storage and server applications.

Customer Relations

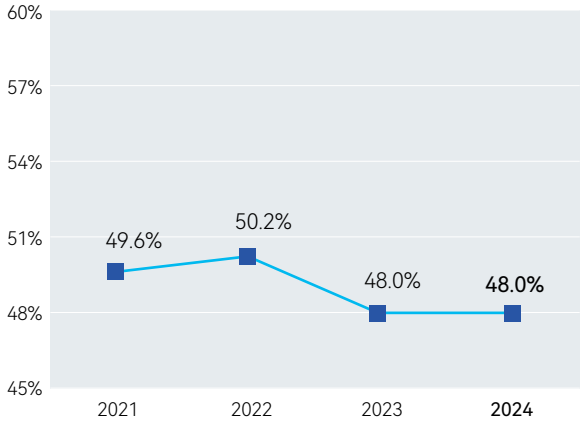
Our key customers typically operate in the semiconductor and electronics industries. In 2024, our five largest customers together accounted for approximately 48% of our operating revenues. To ensure that customer suggestions are properly processed, we have a dedicated team in place for reporting feedback and managing customer communication. We have designed multiple communication channels with customers which include technical forums, and regular email updates on significant events, milestones and business highlights. In addition, we actively participate in various technology forums to promote our advanced manufacturing processes and innovative technologies.

In order to provide the best customer service, we reach out to our customers through various means and at different intervals, including monthly/quarterly customer surveys for evaluating quality, cost, delivery, technology, and service/sustainability, customer surveys, annual/quarterly/monthly meetings and the supplier award program. We have also set our annual customer satisfaction target at 90% (i.e. at least 90 of our top 100 customers remain satisfied.) We continue to focus deeply on improving customer satisfaction to establish trust and value for our customers.

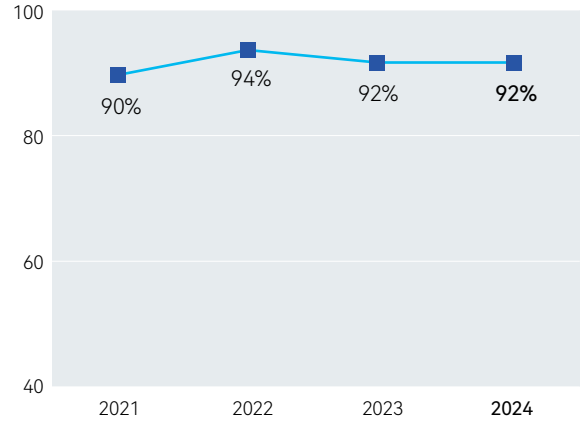
Quality Management

ASEH is deeply committed to becoming a world-class semiconductor service provider. Our quality policy – "Delivering premium quality beyond customer expectations", aims to ensure total customer satisfaction. We uphold rigorous internal standards across our global operations, and drive continuous improvement through an ongoing cycle of planning, execution, review, and enhancement. The company's facilities worldwide are certified to international quality standards, including ISO 9001, IATF 16949, and QC-080000. Our quality management system enforces stringent process controls, including online statistical monitoring, supplier management, data auditing and oversight, quality assurance, and corrective actions. In 2024, ASEH reported zero product recalls resulting from issues that posed risks to human health or safety.

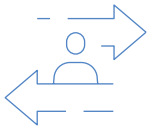
Top 5 Five Largest Customers Together Operating Revenues Accounted (%)



Key Customers[1] Satisfaction Trend



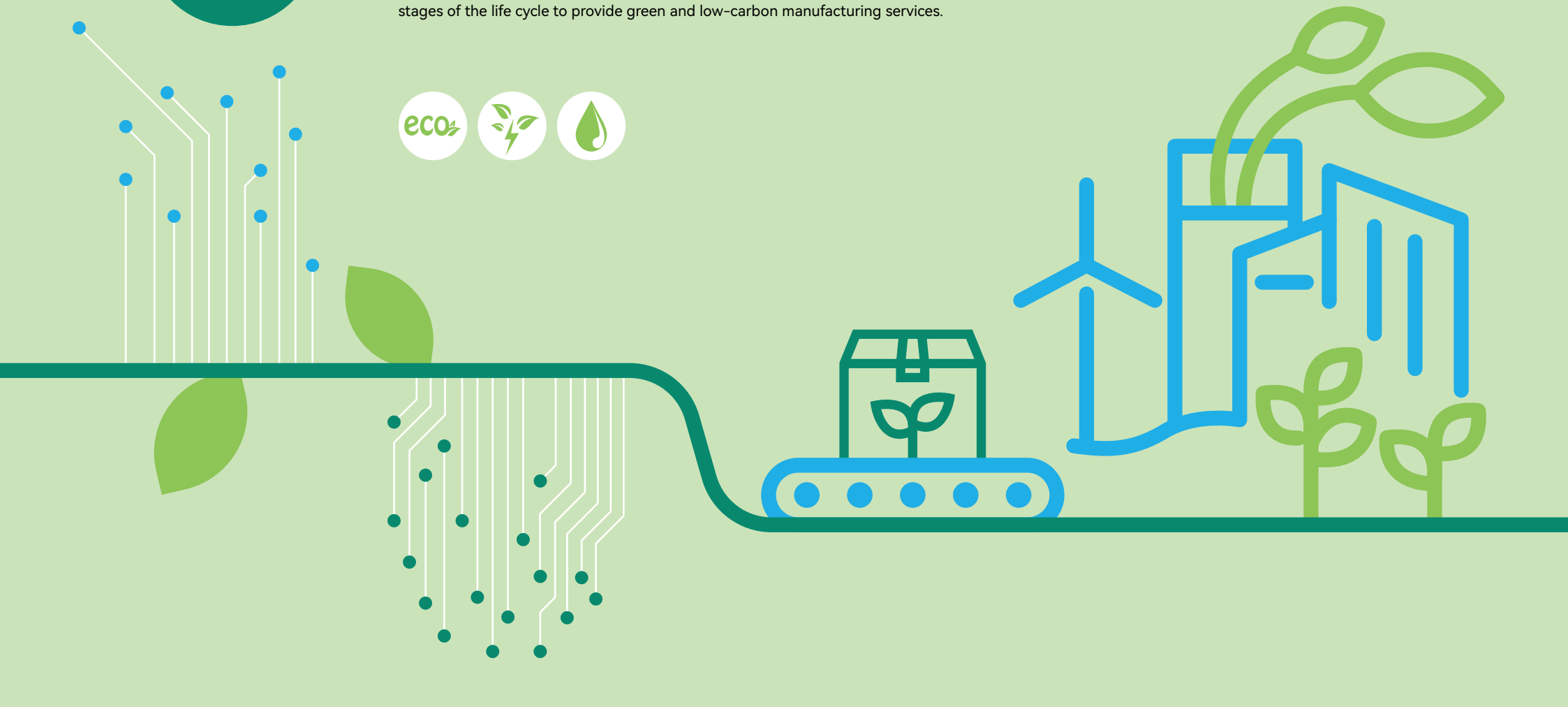
[1] Key customer: ASEH's top 100 customers, which contributed about 89% of the company's operating revenues in 2024

Quality Standards 	Quality policies and standard operating procedures are established in accordance with international standards such as ISO 9001, IATF 16949, and QC-080000.
Quality Education and Training 	To strengthen employees' awareness of quality management, ASEH provides a wide range of quality-related training courses, including onboarding programs, in-service training, and external training. These initiatives aim to foster a quality mindset across the workforce, equip employees with essential job skills, and maintain high quality standards. In 2024, quality-related training at our major sites exceeded a total of 177,000 hours, with more than 1.9 million training participations. • Onboarding training: Courses on quality culture to build awareness among new employees. • In-service training: Tailored quality training based on job roles and operational needs, such as 8D problem solving, Out-of-Control Action Plans (OCAP), and Six Sigma.
Product Recall and Prevention 	To ensure that shipped products meet customer requirements, corresponding process control plans are established at all manufacturing sites. These plans outline the methods, procedures, and processes for maintaining quality from production to delivery. We have also instituted a system of rules and procedures to prevent the delivery of non-conforming products to customers. Stringent quality checks based on the control plans are set up at various stages including incoming material inspections, product acceptance verification based on applicable standards, and final inspections before shipment. Non-conforming or suspect materials or products are immediately isolated and put on hold to prevent further processing. Next, our engineering teams will trace all potentially affected batches and halt the operation of any impacted equipment for investigation. Containment measures are also implemented to ensure that products meet the required specifications and control standards.
Customer Complaint Mechanism 	We have established systematic procedures at all sites for handling customer complaints. Customers can submit complaints via phone, email, written reports, or through regular and ad hoc meetings. Upon receiving a complaint related to product defects or failure analysis, a cross-functional team is formed, and designated personnel from relevant departments are assigned to investigate the issue. Corrective actions are developed and communicated back to the customer. Regular review meetings are held to monitor the effectiveness of these actions and ensure continuous improvement.
Internal Review and Audit 	The internal audit process at ASEH covers the entire quality management system, including audits of the quality management system, production processes, and products. Cross-functional teams are convened to conduct regular internal audits—either annually or monthly—to ensure that production processes comply with quality management systems and meet customer requirements. The internal audit process includes the following steps to ensure the effectiveness of the quality management system implementation: • **Planning:** Schedule audits, select auditors, and prepare checklists. • **Execution:** Conduct internal reviews and audits according to quality management system requirements. • **Corrective Actions:** Propose corrective measures and verify improvement actions. • **Management Review:** Evaluate audit findings and the effectiveness of corrective actions.

5

GREEN MANUFACTURING AND LOW-CARBON TRANSFORMATION

ASEH is committed to improving our eco-efficiency and protecting the environment by continuously enhancing resources recycling, and reducing greenhouse gas emissions, waste generation, wastewater effluent, and chemical usage. ASEH strives to develop and promote an environmentally friendly manufacturing and service concept in all facets of its enterprise. From material procurement, design, manufacturing, product use, and disposal, we conscientiously incorporate environmental impact factors at all stages of the life cycle to provide green and low-carbon manufacturing services.



2024 Key Performance

CDP

Climate Change Leadership

On the CDP Climate Change Leadership List for 9 consecutive years

CDP

Water Security A List

Awarded CDP Water Security A List for 5 consecutive years

CDP

SER Leaderboard

On the CDP Supplier Engagement Rating leader board for 6 consecutive years

100%

Identification and assessment of climate and natural risks

100%

Implementing Carbon Pricing

28

Green certifications

Net-Zero emissions target by 2050

Net Zero

19%

Total electricity consumption achieved through renewable energy or REC

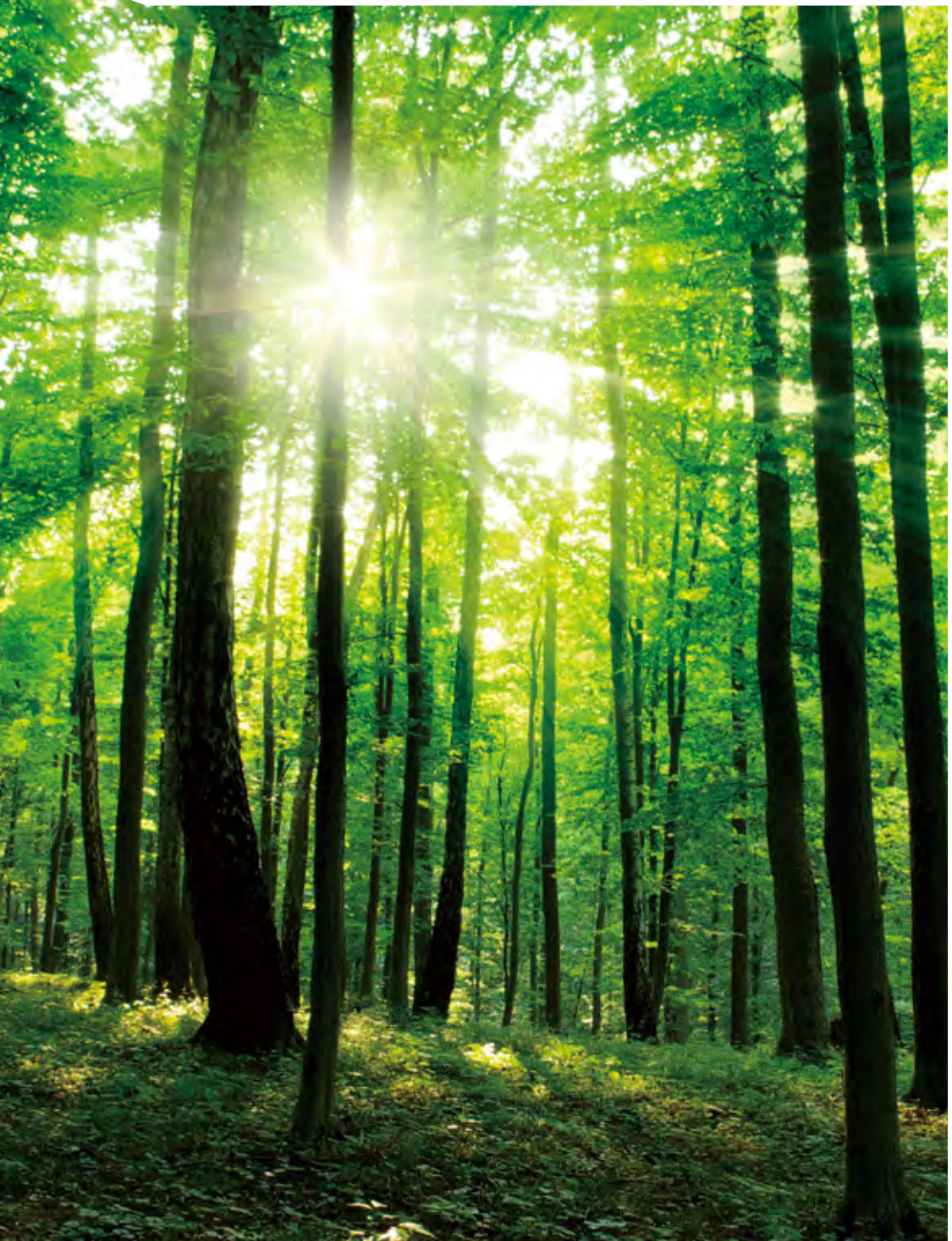
Identification of climate and natural risks affecting more than 90% of Tier 1 suppliers

Development of carbon sink methodology and carbon credits application

SDGs	Business Actions and	2024 Key Aspects	KPI	2024 Target	Status	2024 Performance	2025 Target	2030 Target
	• Develop and implement holistic water strategies within the scope of our business and supply chain operations that are socially equitable, environmentally sustainable and economically beneficial • Protect and/or restore water-based ecosystems across our operation and supply chain	Water Resource Management	Water withdrawal intensity (water withdrawn/revenue)	31% reduction compared to 2015	Achieved	43% reduction compared to 2015	35% eduction compared to 2015	52%[1] eduction compared to 2015
			Days of production shutdown caused by phase 3 water rationing in Taiwan (water supply reduced by 30%)	0 day	Achieved	0 day	0 day	0 day
	• Significantly increase energy efficiency, obtain remaining energy needs from renewable sources, and leverage support from suppliers to promote the similar actions across our supply chain	Energy Management	Energy saving rate achieved through energy saving and carbon reduction projects	Equivalent to 2% of the electricity demand in 2024	Achieved	Equivalent to 5% of the electricity demand in 2024	Equivalent to 2% of the electricity demand in 2025	Equivalent to 2% of the electricity demand in 2030
	• Develop and implement business models that deliver sustainable energy and energy efficiency technologies to new markets and communities		Renewable energy ratio	Renewable energy consumption accounts for 24% of total electricity consumption	Not Achieved	Renewable energy consumption accounts for 19% of total electricity consumption	Renewable energy consumption accounts for 27% of tota electricity consumption	Renewable energy consumption accounts for 42% of total electricity consumption
	• Design and adopt a responsible, circular business model • Shift to a portfolio of goods and services that requires less resources and produces less	Waste and Recycling	Non-hazardous waste recycling rate	90%	Achieved	97%	90%	90%
			Hazardous-waste intensity (hazardous waste output/ revenue)	37% reduction compared to 2015	Achieved	53% reduction compared to 2015	41% reduction compared to 2015	61% reduction compared to 2015
	• Align with science based climate targets to substantially reduce emissions associated with our business and supply chain operations	Climate Change[1]	GHGs intensity (scope 1 & 2 emission/revenue)	9% reduction compared to 2015	Achieved	40% reduction compared to 2015	10% reduction compared to 2015	15% reduction compared to 2015
			Absolute GHGs reduction (Scope 1 and 2)	33.6% reduction compared to 2016	Not Achieved	2.4% increase compared to 2016	37.8% reduction compared to 2016	58.8% reduction compared to 2016
			Absolute GHGs reduction (Scope 3)	10% reduction compared to 2016	Not Achieved	8%[2] reduction compared to 2020	12.5% reduction compared to 2020	25% reduction compared to 2020

[1] In 2024, ASEH passed the SBTi Net-Zero target validation, setting a 1.5° C-aligned reduction target for Scope 1 and 2 GHG emissions and a Well-Below 2° C (WB2° C)-aligned reduction target for Scope 3 emissions

[2] Under the current SBTi framework, companies are required to report Scope 3 emissions for both categories 11 and 12. However, in a recently published report on "Scope 3 Category 11 GHG Emissions: A Sectoral Assessment for the Semiconductor Industry" by SEMI, a global industry organization representing the semiconductor sector, it was ascertained that these categories are not applicable to the OSAT (Outsourced Semiconductor Assembly and Test) industry and should therefore be excluded. If Scope 3 emissions for categories 11 and 12 are estimated indirectly, the increase would be 0.38% compared with 2020



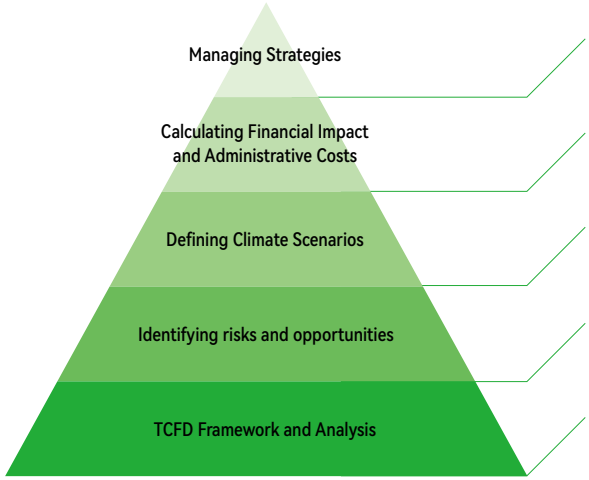
5.1 Climate Leadership

In response to the risks and challenges posed by climate change, ASEH remains committed to sustainable development, actively aligning with the global net-zero transition and stakeholders' expectations. We are steadily implementing low-carbon transformation strategies to enhance climate resilience and fulfil our corporate sustainability responsibilities through concrete actions. ASEH has established clear strategic pillars for low-carbon development and integrated international management frameworks to strengthen internal systems. Through responsible improvements to our production models and close collaboration with value chain partners to co-create green value, ASEH aims to continuously improve resilience in the face of climate change by routinely tracking and evaluating performance.

To encourage climate action throughout the organization, ASEH included greenhouse gas intensity targets (measured as GHG emissions per unit of revenue) and water withdrawal intensity targets (measured as water withdrawal per unit of revenue)[1] in the KPIs for designated employees and senior executives[2]—from 2021 to 2024. Each year, a third-party agency verifies performance against these targets. Employees who meet the targets are awarded restricted stock units (RSUs) as performance incentives[3].

Climate change presents ASEH with a wide array of complex challenges and opportunities, signaling both the physical impacts and transitional pressures that businesses must face. Multiple drivers—including government policy, emerging technologies, market shifts, customer expectations, and extreme weather events—are accelerating our transition toward decarbonization. Over the years, ASEH has consistently turned crises into opportunities and transformed risks into drivers of innovation. We are proactively expanding our portfolio of low-carbon solutions for global deployment, thereby strengthening our influence in low-carbon development and enhancing the resilience of our value chain. In addition, we are aligning with the Task Force on Climate-related Financial Disclosures (TCFD) and Taskforce on Nature-related Financial Disclosures (TNFD) frameworks to systematically disclose our environmental dependencies, impacts, risks, and opportunities. At the same time, we report on our interim targets and annual performance under the net-zero roadmap, further demonstrating our role as a guardian of the planet to a broader range of stakeholders.

[1] A continuous reduction of 1% in intensity per year with 2015 as the baseline year
[2] Key employees that are involved in long-term business strategy and future developments, influence business operations, and core technical talents
[3] New shares will be issued to employees at no cost, with a total issuance amount of NTD 150 million

<table>
<tr><th>4 Strategic Approaches</th><th colspan="3">Principal Methodology</th></tr>
<tr><td>1
Formulating Net-Zero Strategies</td><td colspan="3">• Low-Carbon Products: Continuously expanding our product carbon footprint inventory and reduction efforts, while collaborating across the value chain to deliver viable low-carbon solutions to the global market.
• Renewable Energy: Create a diverse low-carbon emission energy framework.
• Low-Carbon Transportation: Use low-carbon vehicles to reduce our carbon footprint.
• Supply Chain Engagement: Collaborate closely with suppliers to improve their carbon inventory capabilities and implement carbon reduction programs.
• Investment in Carbon Credits: Invest in carbon sink and capture technologies to reduce environmental and social costs.</td></tr>
<tr><td>2
Comprehensive management framework</td><td colspan="3">ASEH's Enterprise Risk Management (ERM) takes guidance from the TCFD framework to integrate the management of climate change and environmental risks and opportunities. Our comprehensive management framework enables us to undertake annual risk tracking that include scenario analysis and simulation to ascertain possible risks, and control such risks within acceptable ranges, maximizing and protecting the company's interests.</td></tr>
<tr><td>3
Socially responsible actions</td><td colspan="3"> 

For risks that have significant impacts to the company's strategy and financial position, the company's top management is responsible for evaluating those risks and identifying opportunities, and providing appropriate response plans and financial strategies.

Appropriate data estimation methods were selected according to parameters defined through scenario analysis, and used to calculate the actual scale of risks, opportunities and financial impacts. This will further identify the key factors influencing the possible impacts.

Employing a climate change scenario analysis methodology to determine the probability of operational and financial impacts by simulating the changes in various parameters from future timelines and different geographic locations.

Identifying potential climate risks and opportunities based on international trends and industry characteristics. Incorporating the perspectives of internal and external stakeholders to identify key risks and opportunities that could affect the company's operations and finances.

Analyzing the TCFD framework and recommendations to develop corresponding short, medium, and long-term strategies.</td></tr>
<tr><td>4
Performance-oriented results</td><td>Adaptation:
✓100% oversight of the risk analysis and adaptation planning of facilities worldwide.
✓100% of global facilities have implemented internal carbon pricing, promoting improved energy and resource efficiency and supporting low-carbon transition.
✓Deploying a Business Continuity Management (BCM) plan to strengthen the analysis of potential risks and emergency response mechanisms
✓Building intelligent energy management systems to mitigate losses from supply disruption.
✓Conducting risk assessments, green procurement and material recycling through sustainable supply chain engagement.</td><td>Mitigation:
✓Building green factories and adopting renewable energy.
✓Committing to Science Based Targets and net-zero emission targets.
✓Increasing energy efficiency, promoting circular economy and expanding water reuse.
✓Coordinating the support and promotion of supplier carbon inventory management (ISO14064 and ISO14067).</td><td>Strategic and Financial Planning:
✓Evaluate the impacts of climate risks and opportunities, publicly disclose results annually, and participate in S&P CSA and CDP surveys.
✓Committing to Net Zero targets through low-carbon products, renewable energy, low-carbon transportation, supply chain engagements and carbon credits.
✓Launching sustainability-linked loans with proceeds used on green projects.
✓Developing a long-term value chain partnership blueprint.</td></tr>
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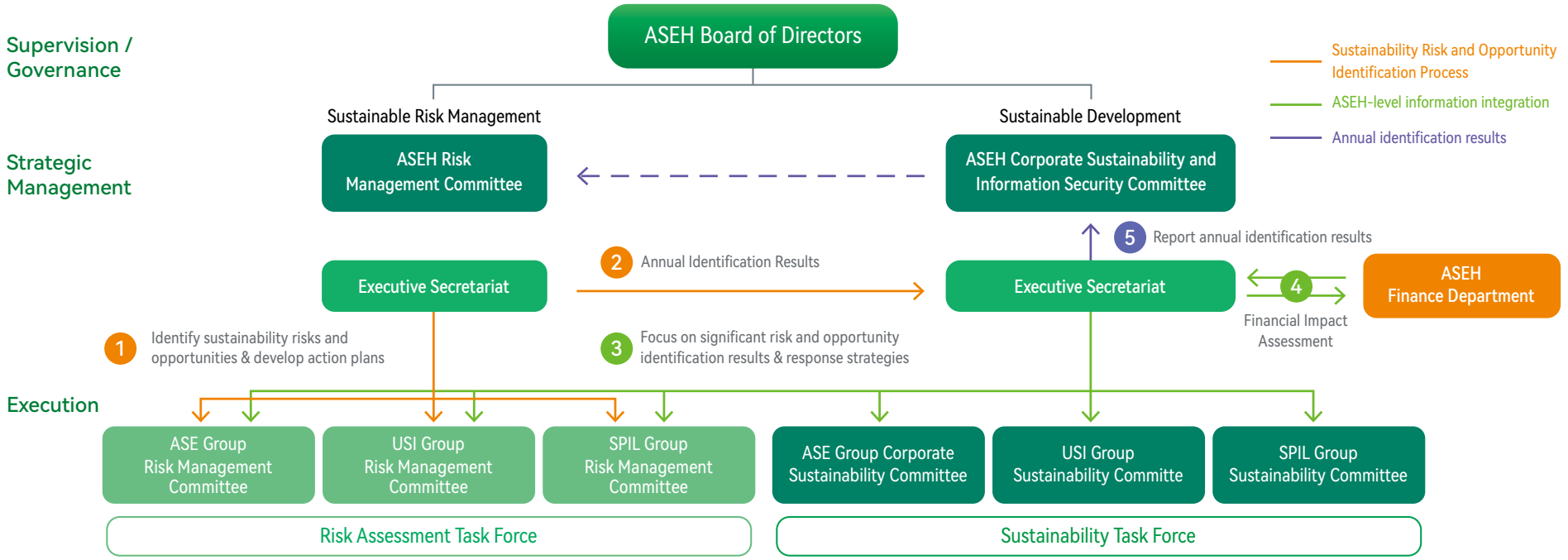
Global Climate Risk Management

Governance and Oversight

The Chief Sustainability Officer was appointed by the Corporate Sustainability and Information Security Committee (CSISC) to drive the company's climate objectives and initiatives. The CSO has the responsibility of overseeing and addressing the impact of climate- and nature-related issues on the company's operations. Each year, a report on the progress of target implementation is presented to the board of directors, allowing strategic decisions to be formulated. Related risks and opportunities are duly integrated into the company's management, operations, and business decision-making processes. The Executive Secretariat manages the general administrative affairs which include facilitating communication between committee members and organizing the sustainability resources and technology adoption across all subsidiaries. The combined approaches enable us to bridge vertical and horizontal alignment strategies for advancing climate- and nature-related sustainability.

Integrated Risk Management

We are focused on integrating sustainability risk management into our business strategy and organizational culture. We conduct identification of climate-related risks and opportunities diligently, consolidating them based on financial materiality from the perspectives of all subsidiaries, and at the corporate and holding company levels. Each operational unit is responsible for managing and responding to these risks, with findings reported to senior management at all levels. This process enhances understanding of how climate change and nature-related issues affect business operations, while reinforcing the connection between executive leadership and functional units. Through this framework, the company is able to effectively identify, assess, monitor, and control various risks, ensuring that risks arising from business activities remain within acceptable thresholds.



On the topic of climate change and the impacts to water resources, we explored both physical and transition risks. These include the assessment of acute and chronic physical risks, policy, legal, as well as technology, market, and reputational factors. We also analyze the climate risks and opportunities based on factors including resource efficiency, energy sources, products and services, market and operational resilience. Each risk is then classified according to its scope of impact, risk type, intensity, occurrence and probability. These findings are further evaluated based on their material impact and prioritized primarily by the severity of impact[1] and likelihood of occurrence[2] on a ranking chart[3]. These processes enable us to identify the most significant climate-related risks and opportunities.

In regard to physical risks, dependencies, and impacts related to climate and nature, assessment of the geographic locations of our global subsidiaries are conducted using data from government and international sources. These include Taiwan's Water Resources Agency flood risk data, the Aqueduct Water Risk Atlas developed by the World Resources Institute (WRI), the World Database on Protected Areas (WDPA) developed by the International Union for Conservation of Nature (IUCN), and Taiwan's biodiversity mapping resources[4]. These tools help identify potential physical risks under various scenarios such as water stress, flooding, landslides, and debris flows. They also assist in identifying whether facilities are located near biodiversity-sensitive areas, providing essential information for subsequent risk and opportunity analyses and strategy development.

Risks		Opportunities				
Physical Risks	Transition Risks	Resource Efficiency	Energy source	Products and Service	Markets	Resilience
• Acute Risks • Chronic Risks	• Policy risks • Legal risks • Technology Risks • Market risks • Reputational risks	• Transportation modes • Recycled materials • Water resource utilization • Production processes • Energy-efficient buildings	• Low-carbon energy • Adoption of new technologies • Regional microgrids • Policy Incentives • Participation in the carbon market	• Low-carbon Products • Research and development innovation • Adaptation and solutions • Customer behavior transformation • Diversification of operations	• Finding new business opportunities • Obtaining government cooperation • Participation in building public infrastructure • Expansion of funding sources	• Participation in renewable energy projects • Energy efficiency improvements • Alternative or diversifying resources • Supply Chain Resilience

Climate Risks and Opportunities: Identification, Impact and Action

At ASEH, climate-related risks and opportunities are identified across our entire value chain, encompassing upstream suppliers, internal operations, and downstream customers. This year, the scope of analysis was expanded to cover 110 global consolidated subsidiaries, enabling a comprehensive understanding of overall climate risks and opportunities. Based on a time-frame[5] analysis of potential impacts, the most significant risks identified are the failure to meet renewable energy procurement targets and the lack of continuous improvement in energy efficiency. On the other hand, the most promising climate-related opportunities include participation in renewable energy projects, adoption of energy-saving measures, and corporate carbon reduction goals. In response to these findings, we will continue to formulate more forward-looking and effective strategies to enhance climate resilience and seize potential opportunities for driving sustainable and transformative growth.

[1] The impact severity rating is determined by evaluating three dimensions: financial impact, business continuity impact (BCM), and reputational impact. Each dimension is scored on a scale from 1 to 5, and the highest score among the three is taken as the final impact severity rating
[2] The likelihood of occurrence is categorized into five levels: Extremely Unlikely – Once every 15 to 20 years; Unlikely – Once every 10 to 15 years; Possible – Once every 5 to 10 years; Highly Likely – Once every 1 to 5 years; Almost Certain – Once every year
[3] Scores are assigned on a scale of 1 to 5 for both severity and likelihood, with 1 representing the lowest level and 5 the highest. The significance of each risk or opportunity is ranked by multiplying the impact score by the likelihood score. The top three items with the highest combined scores are prioritized accordingly
[4] Taiwan's biodiversity mapping includes areas designated under various legal frameworks: nature reserves under the Cultural Heritage Preservation Act, national parks under the National Park Law, nature protection areas under the Forestry Act, important wetlands under the Wetland Conservation Act, wildlife protection areas under the Act on Wildlife Conservation, coastal protection areas under the Coastal Zone Management Act, and non-regulated designated conservation corridors under Taiwan's National Ecological Network
[5] Categorized into short-term (within 3 years), mid-term (3 to 5 years), and long-term (over 5 years)

Climate Change			Timeframe of Impact	Scenario Description	Impact Explanation	Location in the value chain	Potential Financial Impact	Financial Impact Assessment (Million USD)	Management Approach	Management Cost (Million USD)
Risk	1	Failure to meet renewable energy procurement targets	Short-term Mid-term	Failure to meet customers' low-carbon transition requirements	Market competitiveness	• Directly operated by the company • Upstream or supply chain • Downstream or end-user	• Increase direct costs • Loss of existing customers • Decline market demand	751.85 | 1,452.66	1. A renewable energy procurement platform has been established, with the Taiwan site fulfilling its obligations as a major electricity user. 2. Renewable energy usage across subsidiaries is monitored quarterly, with ongoing efforts to increase adoption and improve sustainability performance.	1.66
	2	Failure to continuously improve energy efficiency	Short-term Mid-term Long-Term	Ineffective management of energy efficiency	Increase in operational expenses	• Directly operated by the company • Downstream or end-user	• Increase direct costs	27.66 | 29.90	1. Production processes are being optimized to enhance energy efficiency and reduce operational impact. 2. Subsidiaries are required to adopt the ISO 50001 Energy Management System, with ongoing efforts to improve energy performance and reduce reliance on conventional energy sources.	13.14
Opportunity	1	Participate in renewable energy projects and adopt energy-saving measures	Short-term Mid-term Long-Term	• Low-carbon energy transition helps mitigate the risk of energy price fluctuation. • Energy efficiency management enhances operational resilience.	• Acquire low-cost resources or generate investment returns • Reduce energy consumption and operating costs • Enhance corporate sustainability image	• Directly operated by the company • Upstream or supply chain • Downstream or end-user	• Reduced operating costs through climate change adaptation measures • Energy diversification • Enhancing competitive capability	28.78 | 32.38	1. Renewable energy procurement is being gradually implemented across multiple sources—including solar, wind, and hydro—to diversify energy inputs and support sustainability goals. 2. The ISO 50001 Energy Management System is being implemented to enhance energy efficiency and reduce reliance on conventional energy sources. 3. Supply chain transformation is actively driven by engaging suppliers to improve manufacturing processes, adopt energy-saving technologies, and participate in performance tracking and evaluation programs.	24.36
	2	Corporate Emissions Reduction Goals	Short-term Mid-term Long-Term	Set carbon reduction targets and actively promote emission reductions	• Achieving carbon reduction goals can lower financial risks • Enhance corporate reputation	• Directly operated by the company • Upstream or supply chain • Downstream or end-user	• Reduced carbon pricing costs • Improved competitiveness	74.41 | 297.63[1]	1. The company has committed to Science Based Targets initiative (SBTi) net-zero goals, with action plans developed around five strategic pillars to ensure progressive realization of its net-zero pledge. 2. Efforts are underway to expand product carbon footprint assessments and drive emissions reductions, enabling the delivery of low-carbon products and services to customers.	24.64

[1] Among ASEH's current operational sites, the countries subject to carbon fee regulations include Taiwan and Singapore. However, the direct emissions from the Singapore site are significantly below the local carbon fee threshold. Therefore, the Singapore site's financial impact is not included in the scope of this assessment

Scenario Simulation and Adaptive Management

	Scenario	Time	Parameters Used	Analysis Results		
				Upstream (Supply Chain)	Operational Sites	Downstream (Customer)
Physical	SSP1-RCP2.6	2021-2100	• Overlay Analysis - Flooding caused by extreme rainfall of 650 mm over 24 hours - Landslide and geological hazard-prone areas - Potential debris flow stream locations	The increasing frequency and intensity of extreme rainfall events have raised the risk of disaster-related losses, while the proportion of suppliers unable to deliver on time due to flooding has also increased.	All self-owned operational sites are located outside landslide and debris flow potential zones. However, some sites are exposed to flood risks, potentially leading to operational disruptions and losses.	Flooding may lead to operational disruptions and transportation delays, thereby increasing the risk of delayed deliveries to customers.
	SSP2-RCP4.5	2021-2100				
	SSP3-RCP7.0	2021-2100				
	SSP5-RCP8.5	2021-2100				
Transition	SBT-NZ	2024-2050	• Carbon Tax/Fee - Taiwan's carbon fee is set at 10 USD/ tCO_2e - Carbon tax/fee parameters for China and other overseas regions are based on the SSP1-1.9 carbon price scenario, which is approximately 651 USD/ tCO_2e by 2050 • Market Risks - It is assumed that approximately 50% of customers have made climate-related commitments, and among them, have imposed low-carbon requirements on their suppliers. Failure to meet these requirements may result in risks such as loss of orders or termination of partnerships. • Renewable Energy Costs - **Solar PV:** 0.048–0.168 USD/kWh - **Offshore Wind:** 0.075–0.153 USD/kWh - **Onshore Wind:** 0.033–0.137 USD/kWh • The average cost of carbon removal is 235 USD/tCO_2e	As carbon reduction regulations become increasingly stringent worldwide, suppliers may face higher carbon management costs. Some of these costs could be passed on to customers, thereby increasing pressure across the supply chain.	Under the SBT-NZ target scenario, the company is projected to experience peak carbon tax and market risks in 2037 due to non-compliance. However, these risks are expected to decline steadily as the company advances its transition strategy, approaching near zero by 2047. Overall, the cost of implementing the transition strategy is significantly lower than the potential carbon fees and market losses that could result from a 'business-as-usual' scenario.	As stakeholder concern over climate change intensifies and more countries implement carbon tax systems, an increasing number of customers are demanding low-carbon transitions for products and services. Failure to meet these requirements could negatively impact revenue.
	IEA-NZE	2024-2050			Under the IEA-NZE target scenario, compliance is achieved in the early stages of the transition. However, as emission reduction requirements become more stringent over time, potential carbon tax/fee and market risks are expected to emerge starting in 2037.	
	IEA-APS	2024-2050			Under the IEA-APS target scenario, the company's current transition strategy already meets the required targets and is not expected to face carbon tax or market risks.	
	IEA-STEPS	2024-2050			Under the IEA-STEPS target scenario, the company's current transition strategy already meets the required targets and is not expected to face carbon tax or market risks.	

Physical Risks

Climate change is intensifying extreme rainfall which has the potential to trigger flooding, landslides and debris flows that disrupt operations. As such, we apply the IPCC framework of Hazard × Vulnerability × Exposure to conduct a physical risk assessment. In the analysis, hazard refers to extreme rainfall under climate change scenarios; vulnerability[1] includes the resulting flooding, landslides, and debris flows; exposure[2] is defined by the geographical location of each operational site. A quantitative physical risk analysis is conducted for each site under climate change conditions. The assessment references multiple Shared Socioeconomic Pathways (SSPs) and Representative Concentration Pathways (RCPs), specifically: SSP1-RCP2.6; SSP2-RCP4.5; SSP3-RCP7.0; SSP5-RCP8.5[3]. These scenarios are simulated across different time scales[4], and the resulting risks are categorized into three levels[5] for management purposes.

Risk levels for ASEH (Taiwan region) under various climate change scenarios and timeframes

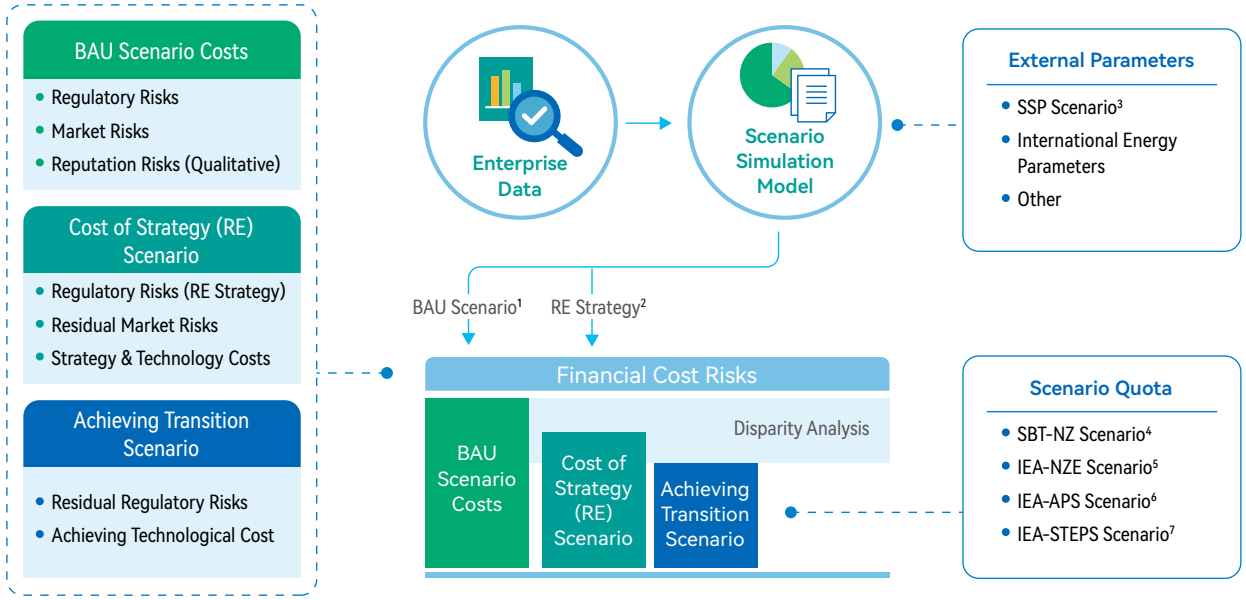
Risk Levels	SSP1-RCP2.6				SSP2-RCP4.5				SSP3-RCP7.0				SSP5-RCP8.5			
	Short	Medium	Medium-to-Long	Long	Short	Medium	Medium-to-Long	Long	Short	Medium	Medium-to-Long	Long	Short	Medium	Medium-to-Long	Long
Medium Risk	1	1	1	1	1	1	2	1	1	1	1	2	1	1	1	2
High Risk	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Simulation Results	All 16 sites in the Taiwan region are situated outside areas identified as sensitive to landslides or debris flows, while 1 to 2 sites located in the central region are considered to have potential flood risks.															
Mitigation / Adaptation	Adaptation plans implemented in Improved in the past 5 years • Flood risks based on a 200-year return period were proactively addressed at the design phase of our plant constructions. Mitigation measures included elevating the foundation, enhancing drainage systems, as well as installing permeable pavements and waterproof gates. These physical adaptations are supported by ongoing operational management plans and scenario-based emergency drills, ensuring climate resilience and minimizing potential impacts. • Emergency Response Management: When natural disasters such as typhoons, earthquakes, heavy rainfall, or flooding meet predefined activation criteria, an emergency command center is promptly established. Each unit is required to report the extent of damage, response progress, and recovery status at regular intervals based on the severity of the impact. In the event of a disaster-related incident, a post-event investigation is conducted after response and recovery efforts to identify root causes and recommend corrective actions, preventing recurrence and enhancing overall resilience.															

[1] Vulnerability is assessed by referencing disaster maps published by the Taiwanese government, analyzing both the extent and severity of potential hazards
[2] Exposure is analyzed based on the geographical location of each facility
[3] RCP stands for Representative Concentration Pathway which, when paired with SSPs (Shared Socioeconomic Pathways), integrates socioeconomic factors into greenhouse gas emission scenarios. SSP1-RCP2.6 represents a low-emission mitigation scenario; SSP2-RCP4.5 represents a moderate-emission scenario; SSP3-RCP7.0 represents a high-emission scenario; SSP5-RCP8.5 represents an extremely high-emission scenario
[4] Short-term: 2021–2040; Mid-term: 2041–2060; Mid-to-long-term: 2061–2080; Long-term: 2081–2100
[5] Risk levels are classified according to a scoring matrix as follows: No Risk: 0; Low Risk: 1–4; Medium Risk: 5–10; High Risk: 11–25

Risk levels of suppliers in the Taiwan Region under various climate change scenarios and time periods

Risk Levels	SSP1-RCP2.6				SSP2-RCP4.5				SSP3-RCP7.0				SSP5-RCP8.5			
	Short	Medium	Medium-to-Long	Long	Short	Medium	Medium-to-Long	Long	Short	Medium	Medium-to-Long	Long	Short	Medium	Medium-to-Long	Long
Medium Risk	20	22	15	13	29	18	17	18	18	20	24	27	19	22	18	25
High Risk	5	8	8	6	7	5	6	7	7	7	8	8	8	6	6	8
Simulation Results	A climate risk simulation analysis was conducted for 290 suppliers in Taiwan under various climate change scenarios across short-, medium-, and long-term timeframes: • None of the 290 suppliers are located in areas identified as sensitive to landslides or debris flows. • We identify at-risk suppliers by integrating extreme rainfall scenario with flood and landslide potential. The simulation results show that high-risk suppliers account for approximately 1.7% to 2.8%, while medium-risk suppliers represent around 4.5% to 10.0%.															
Mitigation / Adaptation	• A climate risk map for suppliers has been established to identify and monitor those with potential exposure, enabling enhanced oversight and risk management. • Regular sustainability forums are held to facilitate the sharing of management practices and technologies, fostering collective efforts to strengthen climate resilience across the supply chain.															

Transition Risk and Financial Impact Analysis



1 Under the Business As Usual (BAU) scenario, no greenhouse gas reduction measures are implemented. For facilities in Taiwan, the carbon emission factor for electricity is based on the 2050 net-zero pathway. For facilities in China and other overseas locations, the emission factor is based on the SSP2-RCP4.5 pathway

2 Under the Renewable Energy (RE) strategy, ASEH plans to purchase renewable energy with the goal of achieving RE100 by 2050. Taiwan sites: RE25 by 2025, RE42 by 2030, RE72 by 2040, and RE100 by 2050. China sites: Already achieved RE100 and will maintain it through 2050. Overseas sites: RE66 by 2025, RE71 by 2030, RE89 by 2040, and RE100 by 2050

3 The Shared Socioeconomic Pathways (SSPs) are models based on different socioeconomic assumptions

4 SBT-NZ Scenario: Corresponds to the 1.5°C low-carbon transition pathway, the most stringent carbon tax requirements, and the long-term net-zero target approved by the Science Based Targets initiative (SBTi) for ASEH

5 IEA-NZE Scenario: Defined by the International Energy Agency (IEA) as the pathway to achieving net-zero emissions by 2050. This scenario assumes that governments worldwide implement more ambitious climate policies, significantly improve energy efficiency, and rely solely on energy system transformation—excluding additional carbon reduction measures such as carbon capture and offsets—to achieve net-zero targets

6 IEA-APS Scenario: Defined as the scenario in which governments and industries fully implement their stated climate pledges and targets. In this scenario, the pathway to net-zero emissions includes not only energy system transformation but also additional carbon reduction measures such as carbon capture and carbon removal. It is used to assess the gap between current national commitments and the global goal of limiting temperature rise to 1.5° C

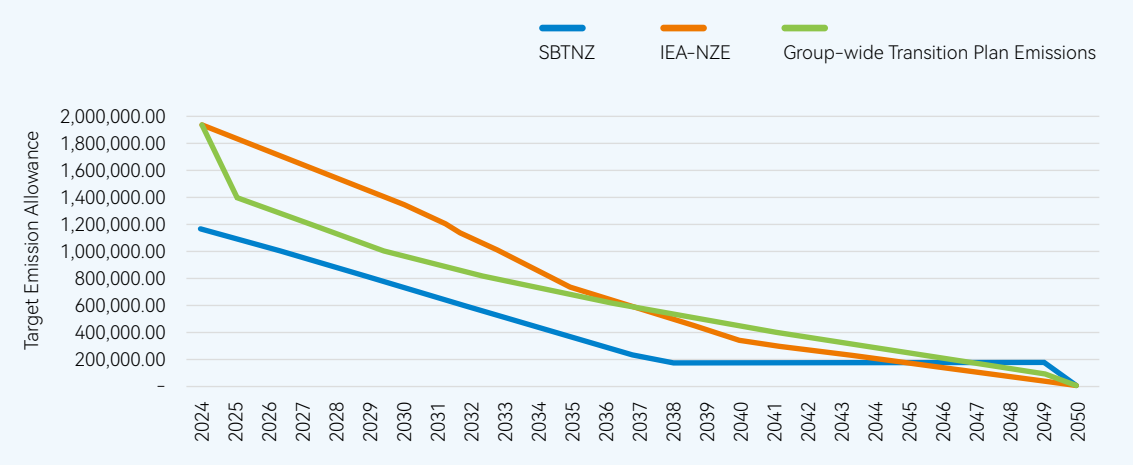
7 IEA-STEPS Scenario: Defined by the International Energy Agency (IEA) as a scenario that considers only announced policies and the extent of their implementation. It accounts for real-world constraints such as insufficient policy enforcement and infrastructure barriers, making it the scenario most closely aligned with current development trends

Assessment Framework for the Climate-Related Transition Risks of ASE Holdings

Transition Scenario	Financial Calculation	
	Financial Impact Prior to Taking Action	Management Cost After Taking Action
BAU RE100	• Regulations (Carbon tax/fee) • Market risks	• Additional costs of green energy[1] • Cost of beyond value chain mitigation (BVCM)[2]

Regulatory Risks	Financial Factors	Cost Category
Carbon tax/fee	• Carbon fee: 10 US$/$tCO_2e$ • China and overseas sites_SSP1-1.9 carbon price: Approximately 651 US$/$tCO_2e$ by 2050.	Regulatory cost
Cost of procuring renewable energy	• Solar photovoltaics: 0.048-0.168 US$/kWh • Offshore wind power: 0.075-0.153 US$/kWh • Onshore wind power: 0.033-0.137 US$/kWh	Operating costs
Carbon removal cost	Conservative use of direct air capture technology: 85-345 US$/$tCO_2e$ • Technical immaturity: 340 US$/$tCO_2e$ • Average price: 235 US$/$tCO_2e$ • Technical maturity: 130 US$/$tCO_2e$	-

ASEH's Emission Pathways under Different Transition Targets



We began by classifying the boundaries of our operations into Taiwan, China and overseas sites. Climate transition risks including regulatory, market, technological, and reputational factors are assessed according to the International Financial Reporting Standards (IFRS) S2 transition scenario guidelines. Based on the assumption of continuous business growth[3], we determined that the financial impacts of different transition scenarios are aligned with temperature pathways below 2° C and even 1.5° C. This includes comparing the financial implications of a Business as Usual (BAU) approach versus the RE100 strategy, as well as the management costs required to meet external pressures. We also estimate the potential financial outcomes[4] of strategies already implemented or planned and compare them to the projected costs of achieving net-zero targets, identifying any gaps between the two.

[1] Subtract the cost of gray energy from the cost of green energy
[2] Companies can mitigate carbon emissions by reducing the costs of actions outside the value chain, which include supporting carbon reduction and removal technologies within the value chain, as well as purchasing carbon offsets
[3] Electricity Consumption Growth Simulation for ASEH Facilities: For facilities in Taiwan, the simulation assumes a continuous annual electricity consumption growth rate of 1.41%, based on the average growth over the past four years. For facilities in China, the growth rate is estimated using the SSP1-1.9 scenario's electricity consumption growth ratio for the Asia region. For overseas facilities, the growth rate is estimated using the SSP5-8.5 scenario's electricity consumption growth ratio applied on the Asia region
[4] Reference Parameters Include: IPCC AR6 (Intergovernmental Panel on Climate Change Sixth Assessment Report) SSP scenarios; Internationally recognized reports such as those from IRENA, IEA, and publicly available climate policies from national governments; Domestic sources including energy parameters from the Taiwan Bureau of Energy and Taiwan Power Company; Custom-defined parameters, including baseline emission factors and both current and long-term mitigation and transition strategies

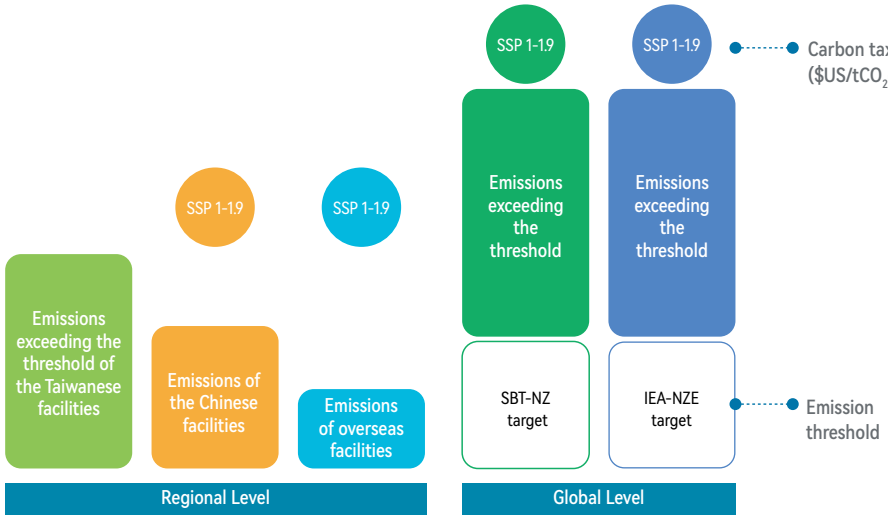
The development of a corporate-wide RE100 strategy allows the company to fully meet the transition targets outlined in both the IEA Announced Pledges Scenario (APS) and the IEA Stated Policies Scenario (STEPS). Our SBT reduction pathway plans are aimed at an annual emissions reduction of 4.2%, with residual emissions projected to reach 10% by around 2038. As the proportion of low-carbon energy procurement increases year by year, we estimate that our SBTi Net-Zero targets (SBT-NZ) would likely be achieved by 2047. Additionally, while the company is initially able to comply with the IEA Net Zero Emissions by 2050 Scenario (IEA-NZ), starting in 2037, increasingly stringent emissions requirements will make it difficult to rely solely on renewable energy. Therefore, additional carbon reduction measures will be necessary to meet the targets.

(1) Estimation of Potential Financial Risks under the Transition Strategy

Carbon tax risk assessments are conducted from both regional and global perspectives. At the regional level, the analysis draws on local government policies to assess the resilience of transition strategies in each area:

- Based on Taiwan's carbon fee regulations, we applied a carbon price of 10 USD/tCO_2e, with a threshold of 25,000 tons of annual emissions for estimation. (A total of 9 facilities in Taiwan are regulated under the carbon fee scheme, which could help avoid carbon fees for approximately 225,000 tCO_2e.)
- Most of our facilities in China and overseas lack clearly defined carbon fee/tax regulations. Therefore, the strictest carbon pricing system is used for estimation. For China, the carbon price threshold is set based on its 2060 net-zero target pathway. For other overseas sites, which span multiple countries, the SSP2-4.5 emissions scenario is used to estimate carbon pricing.

At the global level, the assessment focuses on the gap between ASEH's overall transition strategy and the company's net-zero targets. The SBTi Net-Zero Target (SBT-NZ) and the IEA Net-Zero Emissions Scenario (IEA-NZE) are used as benchmark thresholds. The analysis also assumes potential carbon tax risks if targets are not met, applying the strictest carbon price conditions for estimation.



Regional Level: The results show that under the no-action scenario, the financial impact of carbon pricing in Taiwan is relatively low – at less than 0.1% of revenue, due to the lower carbon fee rate (10 USD/tCO_2e) compared to the SSP1-1.9 scenario. In contrast, we face a higher carbon tax impact in China due to a larger number of facilities and the use of a stricter carbon pricing scenario. Under the transition strategy, the adoption of low-carbon energy significantly reduces Scope 1 & 2 emissions, thereby lowering the carbon tax risk substantially.

Global Level: As the share of low-carbon energy use increases, carbon fee costs are incurred only from the remaining Scope 1 emissions. Since there are no emission threshold exemptions set for overseas facilities, and the carbon tax parameters are based on the most stringent scenario, the carbon tax/fee risk is estimated to remain below 1% of total revenue. This projection is also based on the consideration of our RE100 target achievement by 2050. Overall, the carbon fee expenditure under the transition strategy is significantly lower than the potential costs under the no-action scenario.

In the SBT-NZ target scenario, carbon fee costs are concentrated in the initial years, peaking in 2037, and gradually declining until they disappear after 2047 as emissions meet the target and carbon tax risks are eliminated. SBT-NZ requires an annual emission reduction of 4.2%, with only residual emissions remaining by 2037 and net-zero by 2050. Because the SBT target is not fully achieved by 2037, carbon fee costs in that year are relatively high. Under the IEA-NZE target, potential carbon tax/fee risks may begin to emerge starting in 2037 due to increasingly stringent emission requirements. However, even under this scenario, the carbon fee expenditure remains significantly lower than in the no-action case, thanks to the existing transition strategy.

Degree of Financial Impact / Strategic Scenario			BAU Strategy	Low-Carbon Energy Transition Strategy
Regional (Local Government Regulations)	Taiwan[1]	2030	<0.1%	<0.1%
		2040	<0.1%	<0.1%
		2050	<0.1%	<0.1%
	China	2030	0.1–1%	<0.1%
		2040	1–5%	<0.1%
		2050	1–5%	<0.1%
	Overseas	2030	0.1–1%	0.1–1%
		2040	0.1–1%	0.1–1%
		2050	1–5%	<0.1%
Global (Net-Zero Scenario)	ASEH (SBT-NZ)	2030	1–5%	0.1–1%
		2040	1–5%	0.1–1%
		2050	5–10	<0.1%
	ASEH (IEA-NZE)	2030	1–5%	<0.1%
		2040	1–5%	0.1–1%
		2050	5–10%	<0.1%

[1] In Taiwan, carbon fees are levied based on regulatory registration numbers. Each regulated entity is granted an exemption quota of 25,000 tCO_2e. Due to the complexity of actual fee calculations, A total of 9 facilities in Taiwan are subject to carbon fee regulations, with an assumed total exemption amount of approximately 225,000 tCO_2e

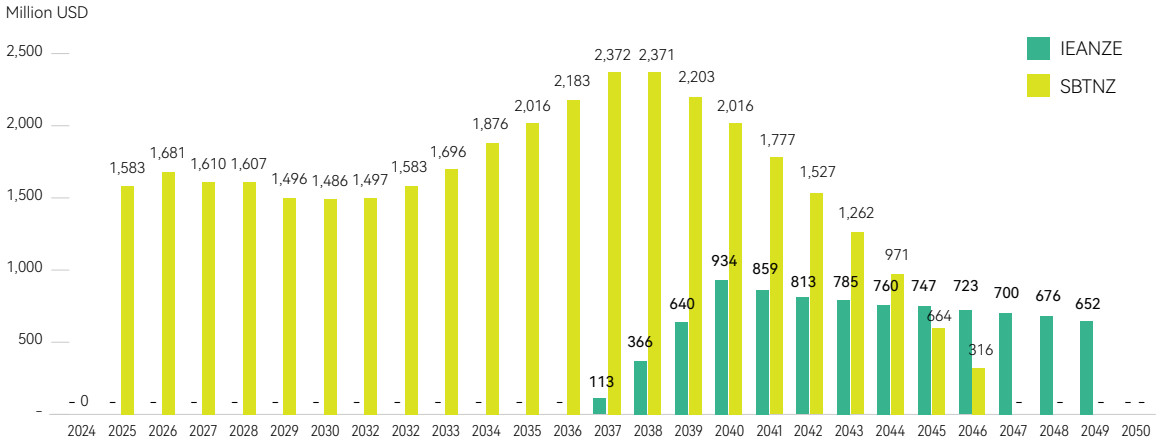
[2] Assumed that approximately 50% of customers have made climate-related commitments, and among them, have imposed low-carbon requirements on their suppliers. Failure to meet these requirements may result in risks such as loss of orders or termination of partnerships

(2) Market Risk Analysis of the Global Net-Zero Transition

Failure to meet our customers' low-carbon requirements may result in revenue loss[2]. The market risk assessment is conducted under the most stringent scenario, taking into account the net-zero target achievement rate, production value, potential revenue loss due to decarbonization requirements, and the proportion of affected customers. The affected production value refers to products or customers with decarbonization requirements; failure to meet these requirements could result in the loss of a significant portion of revenue and market share.

Under the current low-carbon energy transition strategy, there remains a certain level of market risk between 2025 and 2046, as the SBT-NZ target has yet to be achieved. However, as the transition progresses and emissions align more closely with global net-zero targets, overall risk begins to decline from 2038, and by 2050, market risk will be eliminated. Although the transition strategy initially meets IEA-NZ requirements, the standards become increasingly stringent over time, making it difficult to maintain compliance beyond 2037. Nevertheless, due to our persistent efforts in low-carbon energy transition, the overall market risk remains significantly lower than under a no-action scenario.

Degree of Financial Impact / Strategic Scenario		SBT	IEA-NZE
ASEH	2030	5–10%	<0.1%
	2040	>10%	>10%
	2050	<0.1%	<0.1%

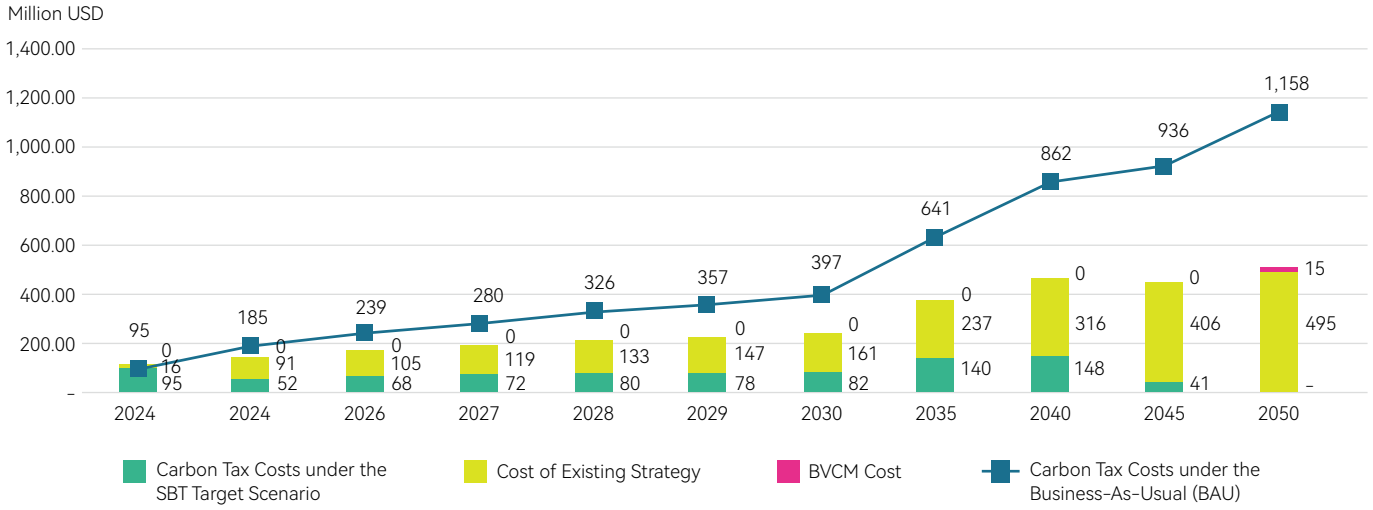


(3) Management Costs of the Global Net-Zero Transition

Under the net-zero transition scenario, our primary management costs stem from carbon taxes/fees. After 2040, the main cost will shift towards renewable energy procurement as the use of renewable energy increases. According to SBT-NZ standards, companies that reduce emissions by 90% or more by 2050 are allowed to use carbon removal or storage technologies to offset residual emissions that cannot be eliminated. Since Scope 2 emissions can be reduced through the transition to low-carbon energy, carbon removal technologies are expected to be prioritized for offsetting Scope 1 emissions. Beginning in 2040, overall emissions are expected to align with the SBT-NZ pathway and thus Beyond Value Chain Mitigation (BVCM) is not required before 2050. BVCM costs are estimated based on an average carbon removal price of USD235/tCO_2e, resulting in an expected expenditure of approximately USD15 million by 2050.

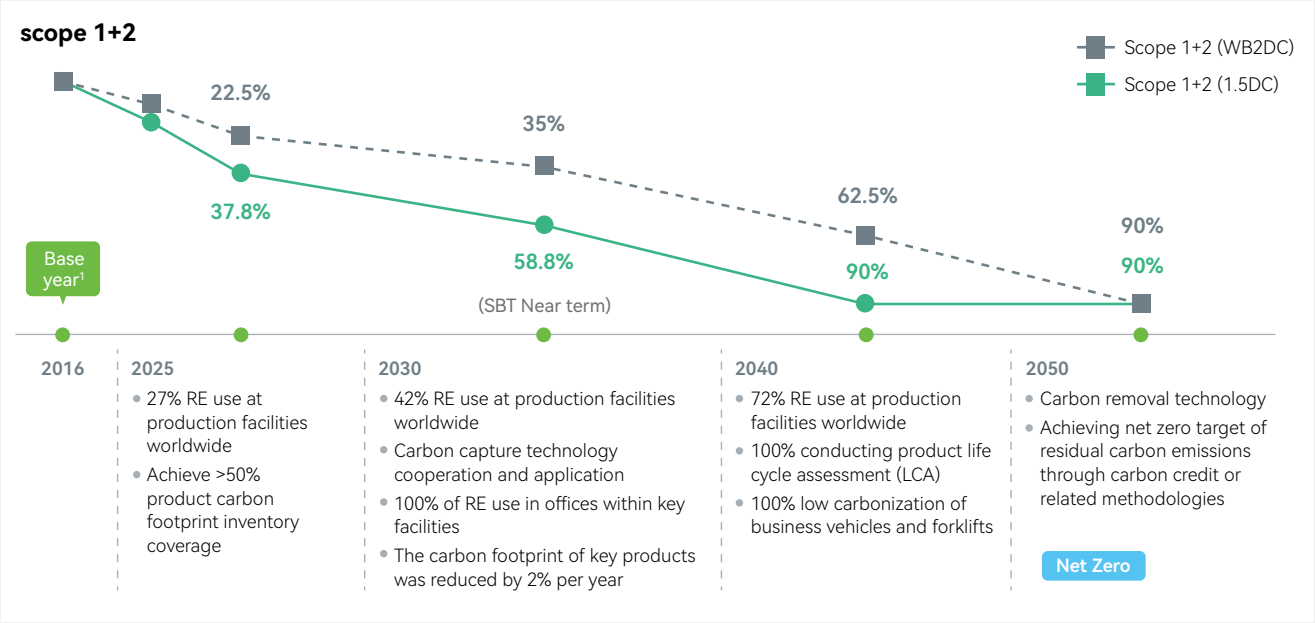
Based on the outcomes of the above 2 scenarios, a low-carbon energy transition strategy results in significantly lower financial impact compared to a no action scenario. At ASEH, we have defined distinct short-, medium-, and long-term renewable energy targets. Using 2016 as the baseline, our goal is to increase the renewable energy share by 3% annually, reaching RE25 by 2025, RE72 by 2040, and RE100 by 2050. For our facilities in China and overseas, the medium-term goal is RE100. We will exercise some degree of flexibility on the RE targets for facilities in Taiwan, adjusting them in phases and implementing renewable energy procurement plans based on market supply conditions accordingly.

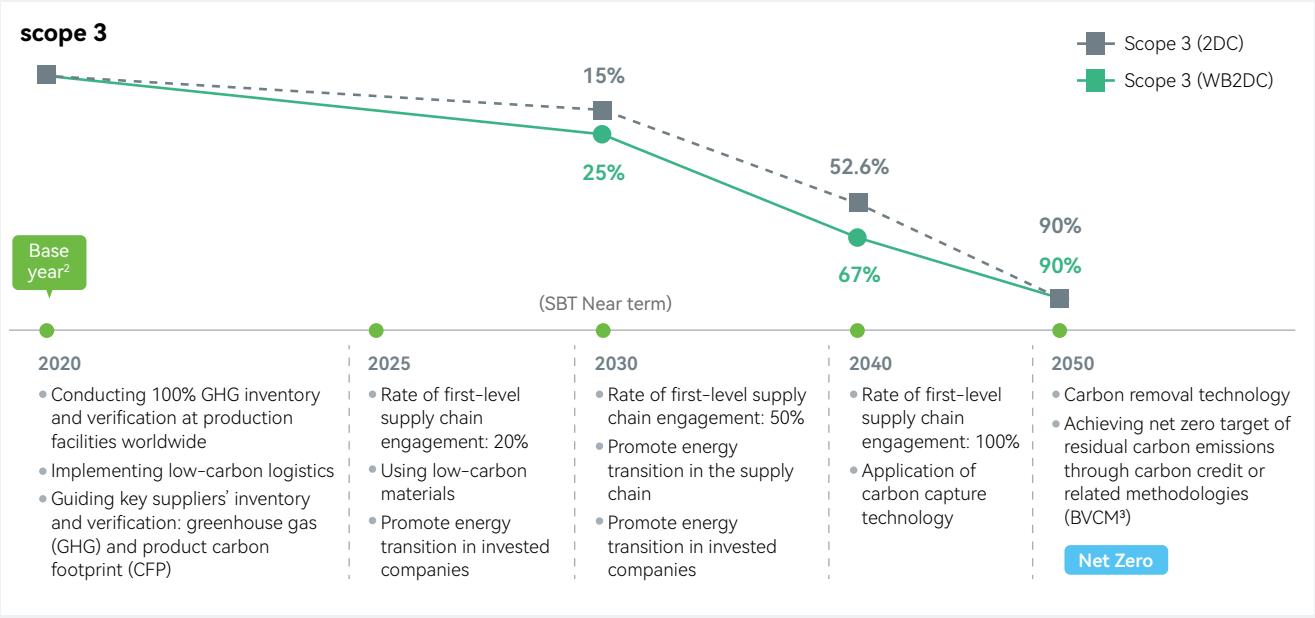
		Degree of Financial Impact
ASEH	2030	0.1-1%
	2040	1-5%
	2050	1-5%



Metrics and Targets

ASEH received approval from the Science Based Targets initiative (SBTi) in 2021 for its near-term emissions reduction targets. In 2022, we further committed to net-zero emissions, and in 2024, our long-term net-zero target was also validated by SBTi. To support this commitment, ASEH has established clear short-, medium-, and long-term carbon reduction targets (100% coverage). Emissions thresholds have been established for each subsidiary, and internal carbon pricing is being gradually introduced based on the operational characteristics of each entity. By quantifying and assigning value to greenhouse gas emissions, this system not only strengthens internal motivation for decarbonization but also enhances our ability to manage external policy risks. To further drive internal accountability and reductions, GHG emissions intensity and water efficiency have been incorporated into the incentive structure for senior management. From top leadership to employees at each facility, we are working together to advance net-zero transformation.





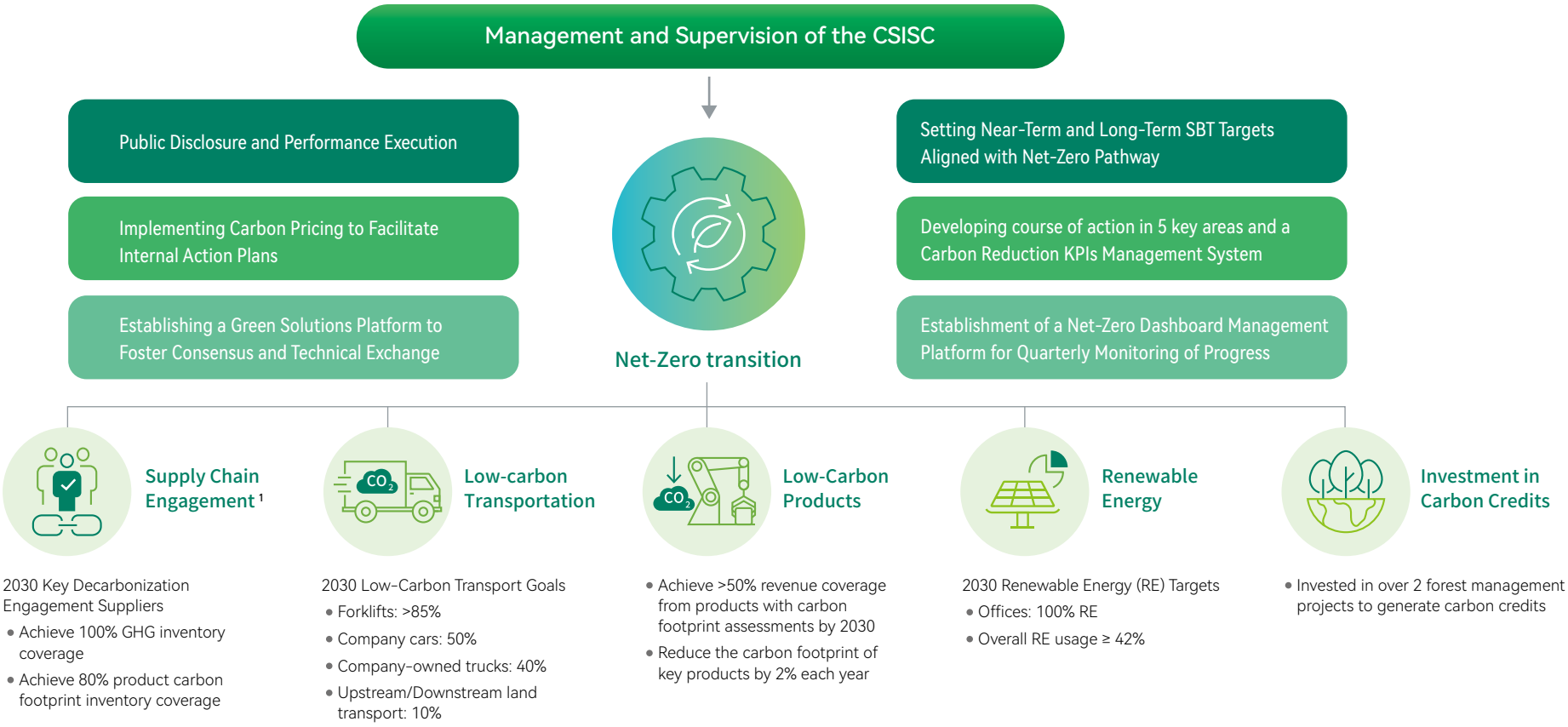
[1] Scope 1 and 2 base year emissions: 1,763,221 tCO_2e

[2] Scope 3 base year emissions: 19,636,385 tCO_2e. In a recently published report on "Scope 3 Category 11 GHG Emissions: A Sectoral Assessment for the Semiconductor Industry" by SEMI, a global industry organization representing the semiconductor sector, it was ascertained that these categories are not applicable to the OSAT (Outsourced Semiconductor Assembly and Test) industry and should therefore be excluded from Category 11&12. (https://discover.semi.org/scope-3-category-11-ghg-assessment-download-form.html)

[3] Beyond Value Chain Mitigation (BVCM), these actions include support for the value chain to decrease carbon emissions, carbon removal technology, purchasing carbon credits, etc.

Net-Zero Actions

To actively implement the science-based emissions reduction targets approved by the Science Based Targets initiative (SBTi), ASEH has clearly defined both near-term and long-term decarbonization goals. We monitor progress through a digital management platform and hold quarterly technical exchange meetings to support five strategic actions, with a core focus on low-carbon product development. These include the use of renewable energy in manufacturing, requiring suppliers to provide low-carbon materials and high-efficiency equipment, promoting decarbonization across land, sea, and air transportation, and investing in carbon credits — all contributing to a phased achievement of transition goals. By fully integrating an internal carbon pricing mechanism across all manufacturing facilities, ASEH internalizes the cost of greenhouse gas emissions to drive internal transformation and deliver increasingly low-carbon products and services to future generations.



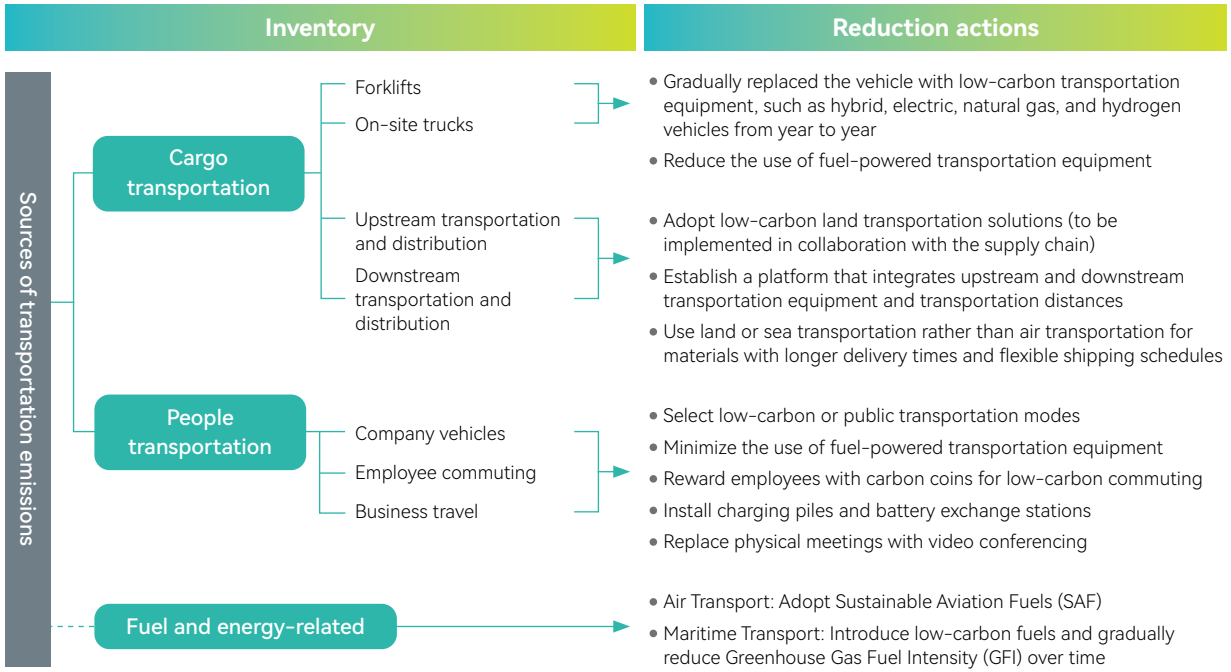
[1] Please refer to Chapter 7, "Responsible Procurement."

Internal Carbon Pricing

To strengthen climate risk management and identify sustainability transition opportunities, ASEH began introducing internal carbon pricing in 2021 to promote low-carbon investments and boost energy efficiency. Currently, carbon pricing is implemented across 100% of our facilities, aligning fully with our climate-related strategies and objectives.

Internal carbon pricing allows us to identify and capture emerging low-carbon opportunities with high business potential to enhance our corporate competitiveness. At the same time, it enhances our effectiveness in complying with applicable regulations including the conduct of a comprehensive cost-benefit analysis on our carbon reduction efforts. Our internal carbon pricing system is integrated into select carbon reduction projects and financial planning to strengthen our climate risk adaptability, and support the further implementation of company-wide climate policies and goals, demonstrating our commitment to sustainable development and responsible investment.

- In line with the concept of "implicit price," each ASEH facility sets its own internal carbon prices (expressed in 43 USD/tCO_2e).
- Based on actual emissions and annual reduction targets, each manufacturing facility prepares an annual budget that reflects its internal carbon price. The budget would then be used in carbon reduction initiatives and low-carbon investments to reduce Scope 1 and Scope 2 greenhouse gas emissions, which would in turn help the facility reach its carbon reduction targets.



Low-Carbon Transportation

The use of low-carbon transportation is a key link in our journey towards net-zero emissions. We have categorized the field of transportation into cargo transportation, people transportation, and fuel and energy-related activities when inventorying land, sea, and air transportation. In 2024, we have already achieved 49% low-carbonization across all transportation modes. We have plans to fully low-carbonize the transport modes within the factories as well as upstream and downstream land transportation by 2045.

- **Low-carbonization of company vehicles, forklifts and trucks:** The goal is to achieve 100% by 2040 and 2045.
- **Logistics Providers Engagement:** Initiate the phased replacement of fossil fuel-powered vehicles, supporting the overall supply chain in reducing transportation-related emissions.

Low-Carbon Transportation Plan

	Upstream and downstream land transportation	On-site trucks	Company vehicles	Forklifts
2024	-	24%	14%	85%
2030	10%	40%	50%	>85%
2035	30%	60%	75%	>90%
2040	60%	80%	100%	100%
2045	100%	100%		

Low-Carbon Products

The first step in our low-carbon product action plan is to establish a carbon inventory of products as a baseline for performance measurement. ASEH has directed our three key subsidiaries to take concrete actions in reducing the product carbon footprint and accelerating our goal of carbon neutrality. To that end, our subsidiaries have conducted ISO 14067 carbon footprint and ISO 14045 eco-efficiency assessment of their respective products, identifying raw materials in greenhouse gas emission hotspots throughout the manufacturing process, engaged with suppliers to facilitate the development of low-carbon materials and switch to low-carbon materials, and increased the use of renewable energy in the manufacturing process. These actions closely resonate with ASEH's philosophy of "producing more with less" and the principle of sustainable manufacturing by integrating key sustainability considerations throughout the product life cycle from the design stage, through manufacturing and distribution. Low-carbon products ultimately help to reduce greenhouse gas emissions and minimize their impact on the environment.

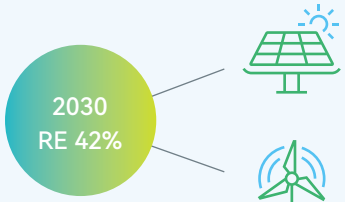
- **2030**：Achieve the scope of product Life Cycle Assessment (LCA) > 50%
- **2040**：Achieve 100% coverage of product carbon inventory
- Reduce the carbon footprint of key products 2% per year

Product life cycle	Key Sustainability Considerations
Product life cycle	• Select materials with low carbon emissions • Use recycled materials • Adopt high-density packaging design to reduce the amount of materials required
Manufacturing	• Enhance production efficiency in manufacturing processes • Minimize the use of energy resources • Promote the recycling of energy resources • Use renewable energy
Distribution	• Minimize the use of product packaging materials • Use recyclable packaging materials • Optimize distribution routes • Use green energy vehicles
Usage	• Reduce power consumption of products • Prolong the durability of products
Waste	• Adopt an end-of-life recyclable component design

Expanding the use of renewable energy

In 2021, ASEH established the "Renewable Energy Platform" in response to global energy transition. We plan to continuously increase the proportion of renewable energy use through various means including the consumption of self-generated electricity, corporate power purchase agreements (CPPA), and purchase of unbundled energy attribute certificates (EACs). In addition, we are also integrating the approaches of different regions' energy markets into our action plans to help the company reach its 2030 goal whereby 42% of total electricity consumption is from renewable energy sources.

2022	2023	2030
• Completed the first phase of CPPA	• Initiated the second	• Achieve the target of renewable energy consumption accounting for 42% of total electricity through the use of self-generated and procured renewable electricity



75% Solar photovoltaics
(self-generated and purchased)

25% Wind power
(onshore and offshore)

Investing in Carbon Credits

The use of carbon credits forms the last mile in ASEH's journey to net-zero emissions. In compliance with the SBTi's framework, we anticipate to utilize carbon credits to offset our remaining carbon emissions beyond 2040 with priority placed on carbon removal credits. ASEH participated in the first batch of carbon credit trading at the launch of the Taiwan Carbon Solution Exchange in 2023, which also represented our first carbon credit trading from the Voluntary Carbon Market (VCM). The carbon credits are associated with a Chilean landfill gas (LFG) capture project. This project aligns closely with our commitment to six of the United Nations Sustainable Development Goals (SDGs)[1], that allows us to drive environmental sustainability and the sustainable development of the local community and economy.

ASEH is committed to acquiring carbon credits of the highest quality in the voluntary carbon market, and at this stage, we are focusing on forest carbon sinks. While Afforestation and Reforestation (AR) are the only ways to acquire forest carbon credits in Taiwan at present, there are other carbon credit types available for consideration at the international level, such as the Improved Forest Management (IFM) and Avoid Deforestation (AD). In an effort to develop more diverse types of forest carbon credit projects that are in line with international standards, ASEH has partnered with the ASE Environmental Protection and Sustainability Foundation and joined forces with the International Climate Development Institute to develop an innovative carbon offset project involving forests in Taiwan. The 'Project of Increasing carbon sink from the low stock forests' has been submitted to the Ministry of Environment for review and approval. The project adopts the Verified Carbon Standard (VCS) as its primary reference, but also applies methodologies from international organizations like the Climate Action Reserve (CAR), the America Carbon Registry (ACR), and the J-Credit Scheme. The aim of the project is to formulate a comprehensive and localized carbon offset program for forest management that meets international standards of measurement, reporting, and verification (MRV). After the "Project of Increasing Carbon Sink from Low Stock Forests" passed the Ministry of Environment's review and was officially announced in 2024, in 2025 we will apply this methodology to collaborate with Taiwanese forest farmers and assist them in obtaining carbon credits, thereby promoting sustainable forest management. Upon approval from the ministry, we will expand the application of this methodology and help local forest farmers undertake activities for the sustainable management of forest land, and consequently be eligible for forest carbon credits.



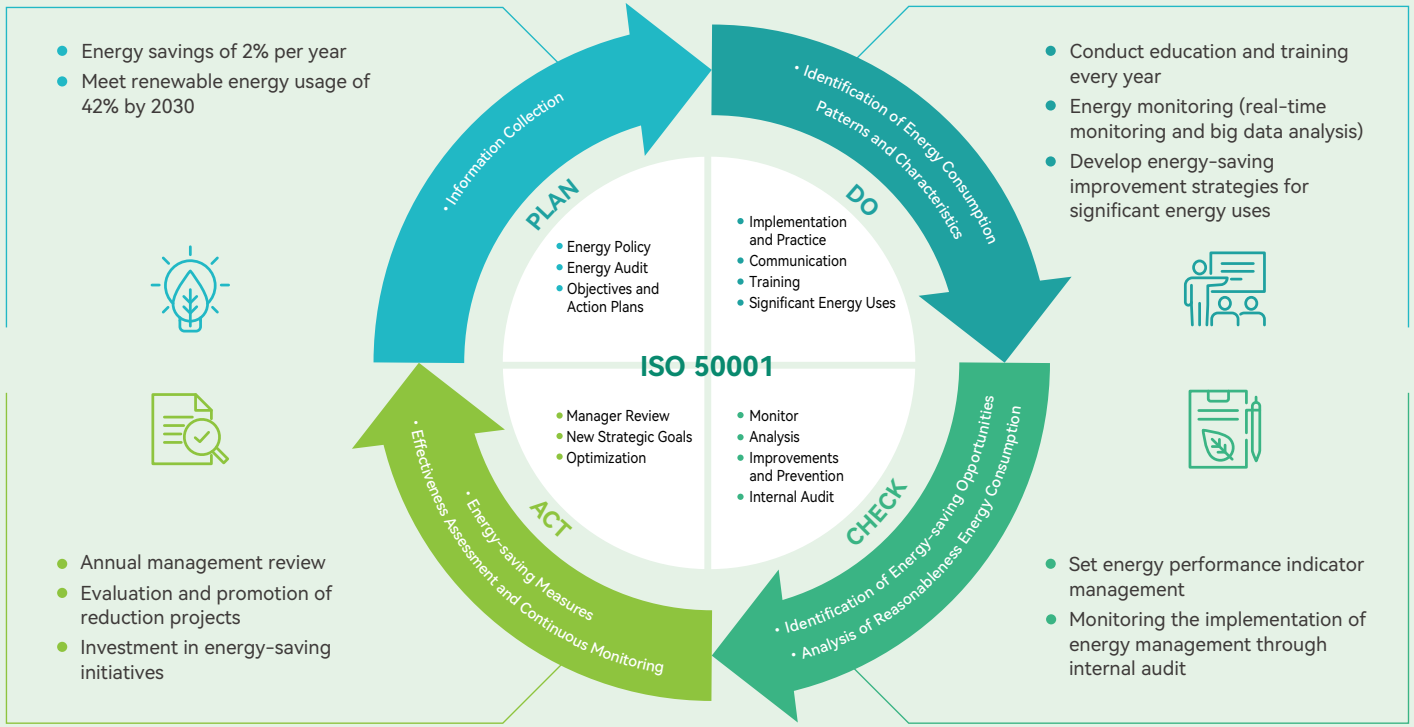
[1] These SDGs include SDG 4 Quality Education, SDG 7 Affordable and Clean Energy, SDG 8 Decent Work and Economic Growth, SDG 11 Sustainable Cities and Communities, SDG 13 Climate Action, and SDG 17 Partnerships for the Goals



5.2 Energy and Carbon Management

Energy Management[1]

To effectively manage internal energy usage and increase energy efficiency, ASEH is progressively implementing the ISO 50001 Energy Management System to meet its planned goal of achieving 100% certification by 2025. The PDCA (Plan-Do-Check-Act) management model is used to control energy costs and reduce unnecessary energy consumption. We have taken a proactive approach to inculcating an energy saving culture amongst our employees by conducting essential education annually, and holding events or competitions to sow the seeds of sustainable development to support our business growth.

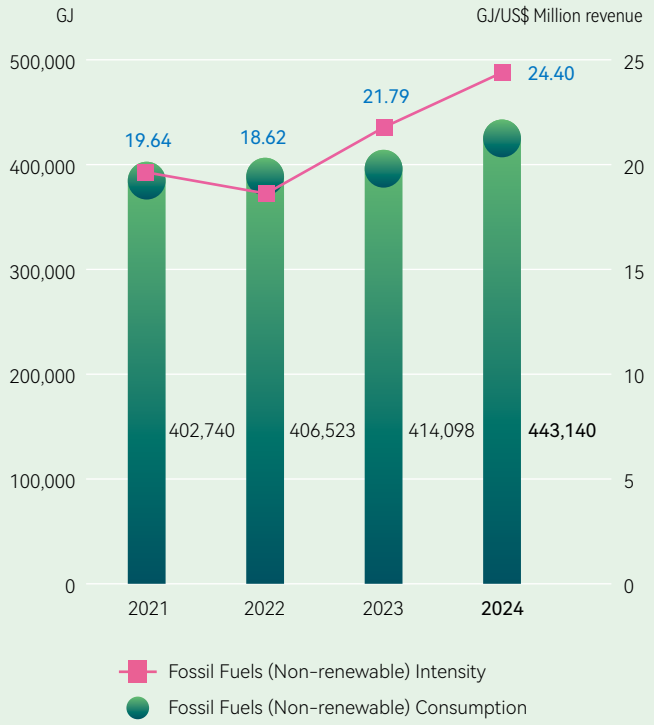


[1] Total energy consumption within the organization = (non-renewable fuel/electricity consumption) + (renewable fuel (electricity) consumption)+(purchased electricity, heating, cooling and steam)

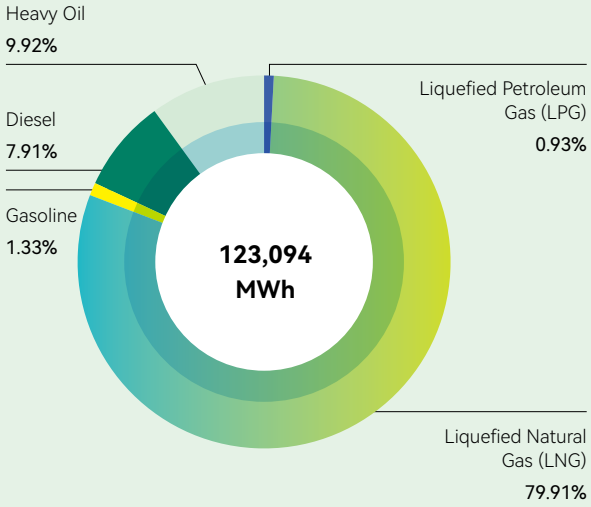
Fossil Fuels (Non-renewable)

Petroleum gas, natural liquefied gas(LNG), gasoline, diesel, and heavy oil are the main fossil fuels used[1] at ASEH, accounting for a total consumption of 443,140 GJ[2] in 2024. Of which, LNG used in stackers and emergency power generators accounted for the highest proportion at 79.91%, followed by heavy oil for generating steam. In recent years, our dependency on fossil fuels have been reduced through the gradual introduction of transportation modes and the use of substitute fuels and clean energies.

Fossil Fuels (Non-renewable) Consumption and Intensity

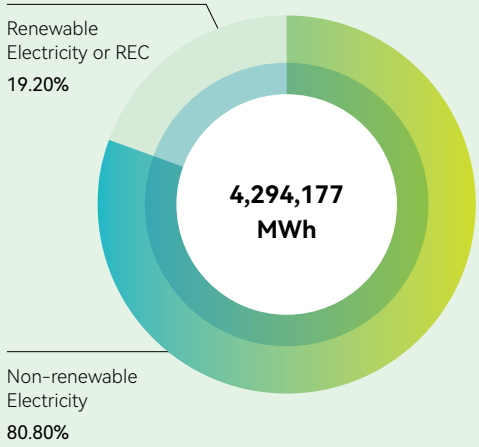


Fossil Fuels



Fossil Fuels (Non-renewable fuels)	GJ	MWh
Liquefied Petroleum Gas (LPG)	4,123	1,145
Liquefied Natural Gas (LNG)	354,105	98,362
Gasoline	5,912	1,643
Diesel	35,058	9,738
Heavy Oil	43,942	12,206
Total	**443,140**	**123,094**

Electricity



Electricity	MWh
Non-renewable Electricity	3,469,776
Renewable Electricity or REC	824,401
Total	**4,294,177**

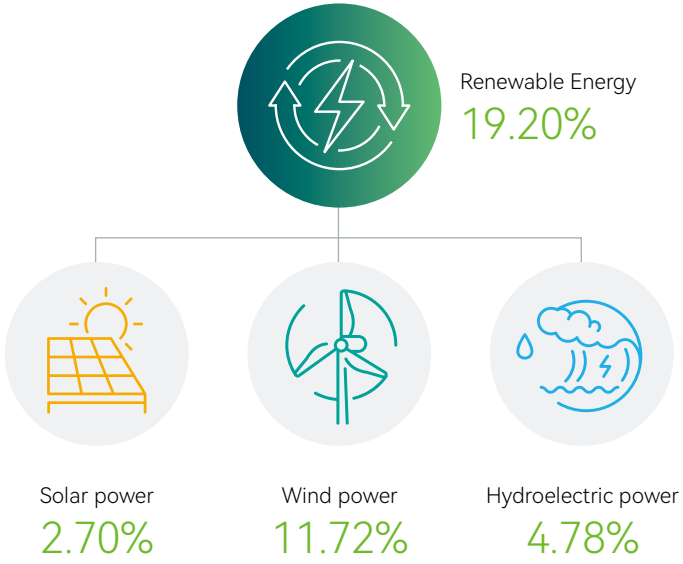
[1] Fossil Fuels (Non-renewable fuels) are used in: (a) Facilities: Emergency power generators, boilers, (b) Transport: Stackers, company vehicles, (c) Air pollution preventive equipment
[2] The calorific value of fuel refers to the unit calorific value table of energy products

Electricity and Renewable Energy Consumption

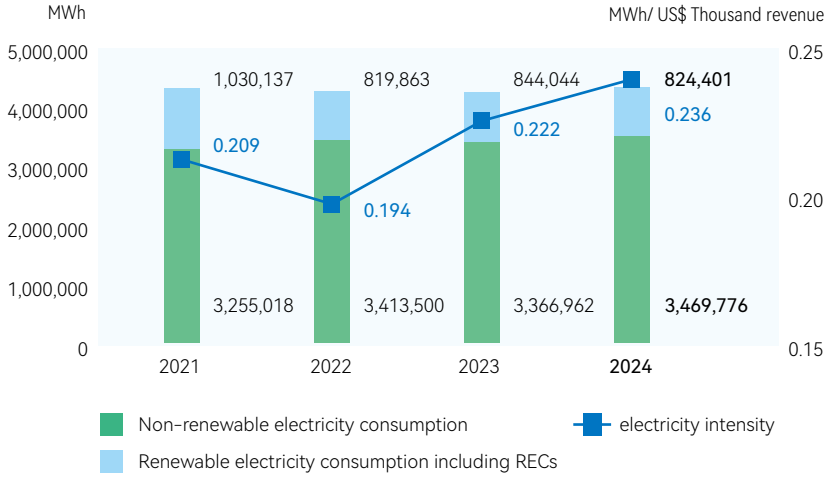
ASEH is increasing the use of renewable energy and developing a diversified power supply portfolio to strengthen its climate resilience.We established the "Renewable Energy Platform" to consolidate the energy procurement of all our three subsidiaries. In addition, we managed to work with the value chain on the collective procurement of renewable energy, which not only increased the proportion of renewable energy used by our partners but also indirectly reduced greenhouse gas emissions overall.

In 2024, our total electricity consumption totaled 4,294,177 MWh, while electricity consumption increase by 1.98% compared with 2023. The electricity intensity per unit of revenue recorded a increase of approximately 6.73%.

In line with ASEH's commitment to the SBTi net-zero by 2050, we are progressively increasing the use of renewable energy through solar power (installed at our facilities), external procurement of renewable energy, and acquisition of RECs. 88% of our global facilities used electricity from renewable sources including RECs. Our renewable electricity usage totaled 824,401 MWh and accounted for 19.20% of total energy consumption. 10 of our global facilities[1] obtained 100% of their electricity from renewable energy sources including RECs.

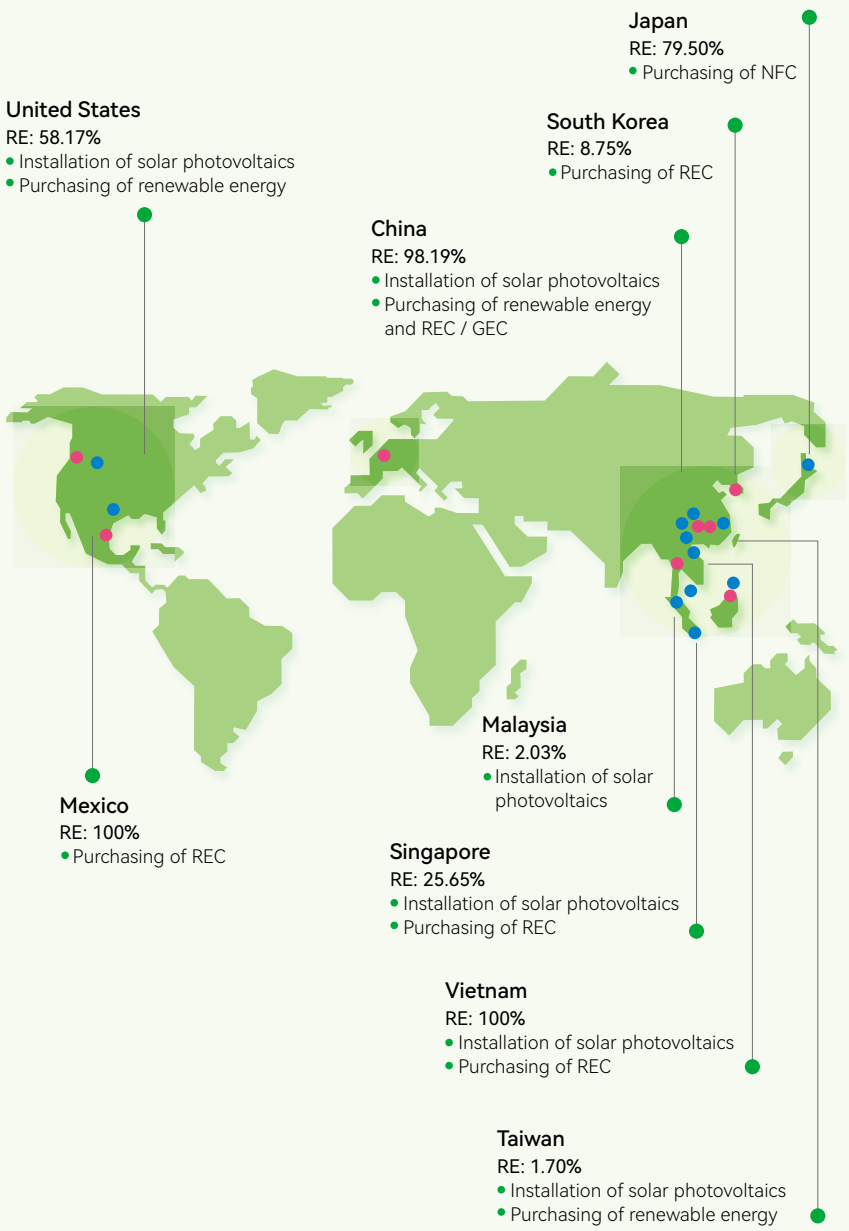


Electricity Consumption and Intensity



Renewable Energy (MWh)	Self-generated	Purchasing	RECs
Solar power	7,107	49,404	59,205
Wind Power	-	17,653	485,572
Hydroelectric Power	-	-	205,460
Total	**7,107**	**67,057**	**750,237**

[1] 100% of electricity from renewable energy sources including RECs: (1)ASE:SH(M), WX (2)USI: ZJ, KS, JQ, HZ, MX, HPH, AFG SUZ (3) SPIL: SZ



Smart Energy Monitoring and Management

To better manage our energy efficiency, we have established a minimum threshold of a 2% electricity savings relative to the annual power demand at our manufacturing facilities. We are also closely monitoring the energy intensity from non-renewable energy sources and high-energy consuming equipment at our facilities, with the goal of reducing energy usage.

In recent years, ASEH has been advancing AI-driven green manufacturing to optimize overall process efficiency through the company's internally-designed Industrial AI (IAI) Platform that integrates AI models, real-time data analytics and image recognition. In addition, the implementation of robust AI management has also effectively reduced carbon emissions and resource consumption. Our IAI platform is modular and scalable, and has been progressively deployed across our manufacturing facilities, laying the groundwork for a replicable and sustainable manufacturing framework. This aligns with the company's broader goal of building smart green factories, offering a scalable, innovative, and environmentally impactful model for transformation within the global manufacturing sector. Going forward, we continue to expand our collaboration across the industrial value chain, working with suppliers to develop low-carbon materials and energy-efficient equipment. These efforts have been well received by customers and have contributed to product carbon footprint reduction, generating synergistic decarbonization outcomes.

- SPIL

In 2024, ASEH implemented AI-powered energy-saving measures that are projected to reduce electricity consumption by approximately 2 million kWh per year. These measures are concurrently rolled out across all our locations to boost energy efficiency and carbon reduction efforts at each site.

1. AI-Control for Chilled Water Systems: Using big data analytics, over 100,000 operational combinations were analyzed to build optimal energy models. AI helps to identify the most energy-efficient operating mode for the chilled water system, leading to a significant reduction in energy consumption.
2. AI-Control for Air Compression Systems and Fan Filter Units (FFU): Machine learning algorithms identify the most optimal energy efficiency control strategies that reduce energy consumption of these systems without affecting operational performance.

- ASE Kaohsiung

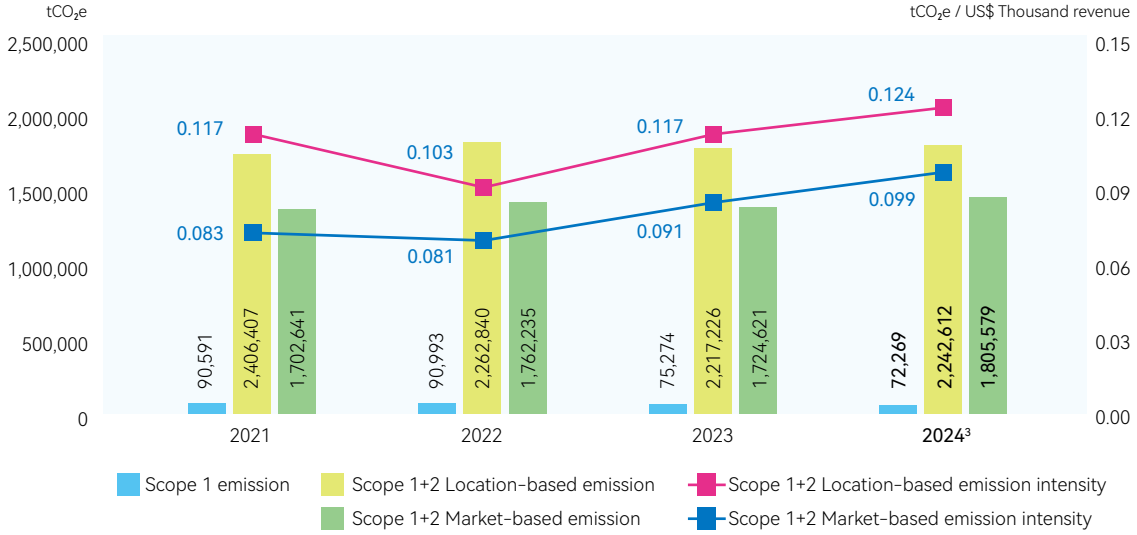
1. AI-Control for Chilled Water Systems: Using AI to analyze cleanroom air-conditioning needs enables the chilled water system to automatically adjust chilled water pump flow rates, optimizing cooling performance and reducing electricity consumption by approximate 2%.
2. Smart Management Platform for Air Compression Systems: A smart management platform was established for air compression systems, with baseline energy consumption benchmarks defined by experts at each facility. The system integrates real-time alerts for energy usage deviations and supports optimization strategies to ensure air compressors consistently operate under energy-efficient conditions. Since implementation, the platform has achieved overall energy efficiency improvements ranging from 2% to 6%.

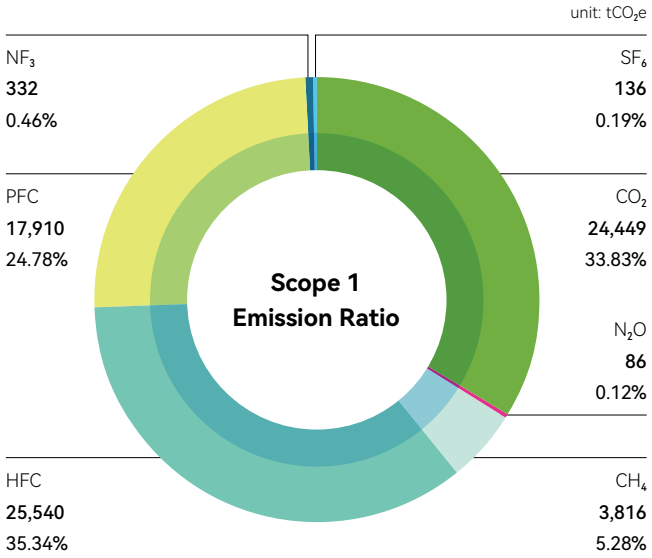
Greenhouse Gas Emissions Management

ASEH has achieved 100% control over greenhouse gas emissions in all of its global sites, following ISO 14064-1 standards. In 2024, the Scope 1 and Scope 2 emissions[1], calculated based on market-based approaches, amounted to approximately 1.81 million[2] tCO_2e, with a 40% reduction in greenhouse gas intensity per unit of revenue compared to the baseline year 2015. Since the main source of emissions in the industry is electricity usage, continuous efforts have been made to improve energy efficiency. In 2024, 19 sites obtained the ISO 50001 certification, covering 73% of the total sites. Additionally, a phased approach has been adopted to procure renewable energy or certificates, gradually increasing the proportion of renewable energy usage based on market maturity in various operating locations worldwide, to attain the reduction targets in 2030 and progressively Net-zero. The major emission category in Scope 3, accounting for 83% of the total emissions, is the procurement of goods and services. In response, we have taken proactive measures to collaborate across the value chain and initiate greenhouse gas and product carbon footprint assessments for suppliers. We provide guidance and support in assessing suppliers' greenhouse gas emissions and product carbon footprints. We also actively engage in various aspects of emissions reduction through technical sharing, cross-industry cooperation, and incentive programs. In recent years, we have also invested in subsidiary companies to assist in greenhouse gas assessments and share emission reduction technologies. Our goal is to enhance the industry's ability to assess emissions across the supply chain, analyze carbon reduction hotspots, and foster collaborations in implementing carbon reduction actions by sharing carbon reduction technologies.

Activity		Emission (tCO_2e)
Scope 1	Stationary Combustion	21,363
	Mobile Combustion	2,630
	Fugitive Emissions	27,200
	Process Emissions	21,049
	Land use, land use change and forestry (LULUCF)	27
Scope 2 (Market-based)	Electricity	1,718,881
	Heating/Cooling/Steam/ Compressed air	14,429
Scope 3		18,067,529

Greenhouse Gas Emissions and Intensities





[1] The electricity carbon emission factor is calculated based on that of local sites
[2] Greenhouse gas inventory reveals emission scope with operational control and the Global Warming Potential derived from the IPCC Sixth Assessment Report



Scope 3 Emission Source	Emission (tCO_2e)	Emission factor	Reduction Courses of Action
Purchased goods and services	14,999,675	SimaPro 9.6.0.1 / Ecoinvent 3.10/EF Database 3.1	• Prioritize the purchase of low-carbon materials/ recycled materials • Encourage the use of renewable energy
Capital goods	2,210,464	SimaPro 9.6.0.1 / Ecoinvent 3.10 / EXIOBASE	• Prioritize the purchase of low-carbon equipment and build low carbon facilities
Fuel- and energy-related activities	379,145	SimaPro 9.6.0.1 / EXIOBASE/USLCI	• Progressively increase the use of renewable energies
Upstream transportation and distribution	209,262	SimaPro 9.6.0.1 / USLCI / Agri-footprint	• Replace current plan with low-carbon transportation solutions • Minimize the use of product packaging materials • Establish a platform that integrates upstream and downstream transportation equipment and transportation distances
Downstream transportation and distribution	61,588	SimaPro 9.6.0.1 / USLCI / Agri-footprint	
Waste generated in operations	15,629	SimaPro 9.6.0.1 /USLCI /Carbon Footprint Information Platform	• Promote circular economy and adopt an end-of-life recyclable component design
Business travel	1,818	GOV.UK-Conversion factors: full set	• Rationalize business travels • Replace physical meetings with video conferencing
Employee commuting	32,323	SimaPro 9.6.0.1 / USLCI	• Offer carbon coins to encourage low-carbon commuting • Promote public transportation
Upstream leased assets	5,439	SimaPro 9.6.0.1 / EXIOBASE / EU & DK Input Output Database	• Improve energy efficiency
Downstream leased assets	25,901	Carbon Footprint Information Platform	
Investments[1]	126,285	Scope 1 and Scope 2 greenhouse gas emissions of investee companies	• Providing Guidance on Greenhouse Gas Inventory and Promoting Emission Reduction
Total	**18,067,529**		

[1] The GHG inventory data of ASEP Cayman Ltd and Cyland Corp were still undergoing third-party verification prior to the publication of ASEH's sustainability report
USI Hirschmann Car Communication GmbH, Hirschmann Car Communication Holding S.a.r.l, USI Asteelflash and related subsidiaries, comprising a total of 21 companies, have completed the GHG inventory and are expected to complete third-party verification in 2026

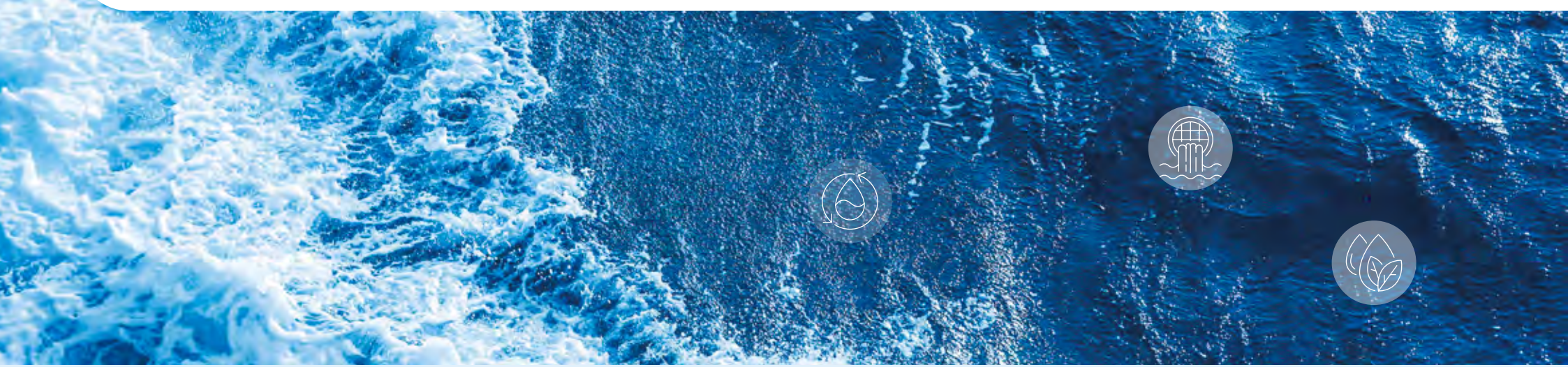
Energy Saving and Carbon Reduction Projects

ASEH adopts 4 key approaches in its carbon reduction management; carbon reduction in manufacturing processes[1], carbon reduction in buildings[2], low-carbon energy development projects[3], and operational and value chain decarbonization[4]. In 2024, we invested a total of approximately US$24 million on 1008 projects, resulting in an emission reduction of 565,806 tCO_2e.

Reduction Scope	Category	Key carbon reduction hotspots	Energy Saving (MWh)	Energy Saving (GJ)	Carbon Reduction (tCO_2e)	Investment (US$)
Scope1+2	Carbon reduction in manufacturing processes	• Scope1: Electrification of transportation	-	-	2	31,000
		• Scope2: Enhancing energy efficiency in processes, equipment, and systems through operational optimization, upgrades, and routine maintenance.	186,730	672,229	94,029	7,773,823
Scope2	Carbon reduction in buildings	• Developing innovative smart energy management systems that optimizes energy efficiency. • Introducing internal carbon pricing, sharing in-house technologies, and holding energy-saving competitions to encourage proactive plant-wide improvement efforts.	39,962	143,864	20,203	5,277,455
Scope2	Low-carbon energy	• ASEH's renewable energy platform coordinates centralized procurement, gradually implementing the low-carbon energy transition in phases.	865,405	2,967,857	451,572	11,203,906
Scope3	Operational and value chain decarbonization	• Encourage employees to switch to electric vehicles for commuting by installing charging and battery swap stations, reducing indirect emissions beyond operational activities.	-	-	-	18,000

[1] Carbon reduction in manufacturing processes includes enhanced performance and decarbonization in the manufacturing process, pneumatic system, pure/waste water systems, equipment replacement, motors and drives, automation and smart control system, waste heat and cold recovery
[2] Carbon reduction in buildings includes saving energy in lighting and air conditioning systems
[3] Low-carbon energy includes self-generated renewable energy, purchasing renewable energy and purchasing renewable energy certificates
[4] Operational and value chain decarbonization includes Scope 3 reduction measures such as employee commuting, company policies or behavioral changes

Scope2 Carbon reduction project			Investment	Performance	
Category	Number	Content	Total investment fees (US$)	Energy Saving (MWh/year)	Carbon Reduction (tCO_2e/year)
Lighting System	52	• plementing Smart Controls • Using High-efficiency LED	84,415	4,333	2,167
Air Conditioning System	159	• Parameters Adjustment • Replacing Low-efficiency equipment	5,178,096	35,210	17,828
Pneumatic System	92	• Parameters Adjustment • Replacing Low-efficiency equipment	2,547,908	40,975	20,454
Enhanced Performance	444	• Optimizing Parameters • Refinement of Operational Processes • Optimization of Machine Idle Time	519,700	110,938	56,355
Pure/waste Water Systems	18	• Optimizing Parameters • Machine and Equipment Maintenance • Water Recycling	154,712	914	454
Equipment Replacement	67	• Process Machine Equipment Replacement • Replacement of Old Parts and Materials	2,832,305	14,312	7,055
Motors and Drives	87	• Replacement of Low-efficiency Motors • Installation of Variable Frequency Drives	1,276,685	12,107	6,014
Automation and Smart Control System	36	• Installation of Automatic Controllers • Implementation of Smart Management in Manufacturing Process	-	4,257	2,103
Waste Heat and Cold Recovery	9	• Heat Recovery • Recycling of Waste Cold	457,457	3,590	1,774
Draught Proofing	3	• Improvement of cleanroom air leakage	-	4	2
Site Conslidation/closure	1	• Workforce / equipment downsizing	-	3	2
Energy-saving operation strategy	1	• Adjustment of freight or passenger elevator operations	-	49	24
Low-carbon Energy	37	• Self-generated Solar Power • Purchasing Renewable Energy / RECs	11,203,906	824,405	451,572



5.3 Water Stewardship

Water Governance

Managing our water resources is a top priority at ASEH, and we aim to continuously improve and optimize the use of water resources efficiently. From establishing management objectives to assessing major areas of water usage, the adoption of ISO 46001 Water Efficiency Management Systems enables us to identify risks and opportunities, and develop water-saving measures, risk mitigation strategies and various action plans. As of 2024, a total of five manufacturing sites have been certified under the ISO 46001 Water Efficiency Management System. These sites include ASE Kaohsiung and ASE Chungli, as well as SPIL Dafeng, Zhongke, and Zhongke II facilities. Moving forward, we will continue to expand the implementation of the ISO 46001 standard to additional sites, reinforcing our commitment to sustainable water resource management.

- Collect water usage/reuse data from each facility.
- Identify water risks and opportunities.
- Establish water resource management objectives.
- Develop water conservation projects for facilities and improvement/adaptation plans for high-risk facilities.
- The target for water withdrawal intensity: reduce 52% water withdrawal intensity in 2030 from the 2015 level.



- Implement water conservation projects and improvement/adaptation plans in each facility.
- Monitor the effectiveness of water resource management in each facility to ensure alignment with management objectives.
- Manage and review the effectiveness of water resource management in each facility, continuously improving water resource efficiency.

Risk and Opportunity Management

Water related Risks and Opportunities

Based on the 2024 site identification and weighted assessment results, in water management, regulatory requirements on water use and mandatory standards on water efficiency, conservation, recycling, or processes are identified as relatively significant water-related risks, while wastewater recovery and reuse are recognized as the greatest opportunities.

		Water	Time scale	Scenario description	Explanation on potential impact	Position in the value chain where the risk occurs	Potential impact on finance	Financial impact assessment (Million USD)	Management approaches	Management costs (Million USD)
Risk	1	Drought	Short term	Production sites face growing water risks as droughts become more frequent and rainfall events more concentrated.	Some manufacturing processes that rely on ultrapure water and cooling water may face temporary suspension or capacity constraints due to drought-related risks.	• Directly operated by the company • Upstream or supply chain • Downstream or end-user	• Increased indirect costs • Increased capital expenditures • Overall revenue decreased	100–177	1. Promote water recycling, adopt water-saving technologies, and continuously optimize processes to reduce reliance on third-party water sources, improve water efficiency, and lower overall consumption. 2. Establish real-time water monitoring and alert systems, along with a platform for drought risk assessment and management. 3. Simulate drought and water rationing scenarios in advance to develop response mechanisms and ensure operational resilience.	11
	2	Limited access to groundwater rights	Medium term	Due to geographical conditions, certain facilities rely on groundwater as a primary or backup water source. However, challenges in securing groundwater extraction rights have constrained water supply availability.	A reduction in water supply could lead to a decline in production capacity, ultimately impacting revenue.	• Directly operated by the company	• Increased indirect costs • Increased capital expenditures • Overall revenue decreased	141–707	1. Establish water recovery systems and implement water-saving control measures to reduce dependence on raw water sources. 2. Develop contingency plans to share process water resources among facilities or nearby industrial parks.	47
Opportunity	1	Water efficiency-Wastewater recycling	Short term	Water from manufacturing processes or domestic wastewater is being recycled and reused.	Improve the reuse rate of process and domestic wastewater to strengthen drought resilience and optimize water resource allocation, while reducing water consumption and wastewater treatment costs.	• Directly operated by the company	• Climate change adaptation • Reduced operating costs • Enhanced brand value	3.5	1. Continue implementing process water recovery projects to reduce raw water intake, enhance water efficiency and drought resilience, and lower adaptation costs. 2. Implement water recycling and reuse technologies in tandem with environmental education to promote sustainability awareness and enhance social capital. 3. Identify and develop alternative potential water sources.	12
	2	Resilience - climate change	Short term	Enhancing Resilience to Climate Change Impacts	Recycling process water can reduce freshwater costs, improve water use efficiency, and decrease dependence on freshwater sources. These efforts help prevent operational disruptions, strengthen competitiveness, and create opportunities for revenue growth and investment.	• Directly operated by the company • Upstream or supply chain • Downstream or end-user	• Climate change adaptation • Improved competitiveness Seized • Investment opportunities	299–498	1. Recycle wastewater into production processes to reduce dependence on freshwater and enhance resilience against operational impacts from water scarcity. 2. Improve water resource management to strengthen climate resilience and gain competitive advantages with less time and resource input.	87.6

Physical Risk Analysis

Global Water Risk Analysis

ASEH adopts the Aqueduct indicators established by the World Resources Institute (WRI) to conduct water risk analysis[1]. We analyzed a total of 110 facilities[2] worldwide in Taiwan, China, Hong Kong, Japan, South Korea, Malaysia, Singapore, Vietnam, Philippines and other Asian countries, as well as America (such as the United States, Mexico, etc.), Europe (Belgium, France, Poland, Germany, the United Kingdom, the Czech Republic, etc.) and Africa (Mauritius, Tunisia) and other regions.

Baseline water stress risk analysis[3]

- 20.9% **Extremely high**: East China, Belgium, Mexico, Tunisia
- 5.5% **High**: East China, Mexico, the United States, Germany
- 14.5% **Medium - High**: East China, Japan, the United States, France, Luxembourg, Germany, Philippines, South Korea
- 33.6% **Low - Medium**: Taiwan, South China, the United States, France, the United Kingdom, Japan, Vietnam
- 22.7% **Low**: South Korea, Singapore, Malaysia, British Virgin Islands, Cayman Islands, Poland, Hungary, Czech Republic, Germany, Romania
- 2.7% **No data**: Bermuda, Mauritius



Baseline overall water risk[4]

- 4.5% **Extremely high**: Tunisia, Mexico
- 22.7% **High**: East China, Vietnam, Philippines
- 12.7% **Medium - High**: South China, Mexico, the United States, Germany, Belgium
- 47.3% **Low - Medium**: Taiwan, the United States, Japan, Malaysia, British Virgin Islands, France, Poland, Luxembourg, Germany, Hungary, the United Kingdom, Romania
- 4.5% **Low**: South Korea, Singapore, Czech Republic, Germany
- 8.2% **No data**: Bermuda, Cayman Islands, Mauritius



[1] In 2023, WRI launched Aqueduct 4.0, the latest version of its water risk analysis framework
[2] Analysis Boundary: Locations of Subsidiaries Included in ASE Technology Holding's Global Consolidated Financial Statements.
[3] Baseline water stress：Measuring the ratio of total water demand to available renewable surface and groundwater supplies. A high baseline water stress indicates greater competition for water among users
[4] Baseline overall water risk is composed of 13 water risks, including baseline water stress, baseline water consumption, interannual variability, seasonal variability, groundwater table decline, riverine flood risk, coastal flood risk, drought risk, untreated connected wastewater, coastal eutrophication potential, unimproved/no drinking water, unimproved/no sanitation, and peak RepRisk country ESG risk index. Scores are aggregated by category (i.e., physical risk quantity, physical risk quality, and regulatory and reputational risk) and weighted according to the importance of the watershed to obtain a national-level water security score

We apply the WRI Aqueduct tools to assess the water stress levels under three climate change scenarios (i.e., BAU, OPT, and PES[1]) over different time scales. Observed from the number of water stress levels under different climate change scenarios and different time scales, the number of ASEH facilities worldwide with an "extremely high" water stress level is on a downward trend compared to the baseline. However, the number of ASEH facilities worldwide with a "high" water stress level exhibits an upward trend. Meanwhile, the number of ASEH facilities around the world with a "medium-to high," "low-to-medium," or "low" water stress level remains unchanged.

Number of ASEH's facilities worldwide under different climate change scenarios, time scales and water stress levels

Level \ Scenario	Baseline	BAU			OPT			PES		
		2030	2050	2080	2030	2030	2050	2080	2050	2030
Extremely high	5	0	0	6	5	0	1	0	0	1
High	2	7	7	1	2	7	6	7	7	6
Medium to high	1	2	1	1	3	2	1	4	2	1
Low to medium	15	14	15	15	13	14	15	12	14	15
Low	3	3	3	3	3	3	3	3	3	3

Global Drought Risk Analysis

ASE Technology Holding Co., Ltd. evaluates drought risk by assessing the likelihood of drought occurrence, the population and assets exposed, and the vulnerability of these exposed elements to the adverse impacts of drought. This comprehensive risk indicator is calculated based on three key components: hazard, exposure, and vulnerability. Historical analyses of precipitation deficits are utilized to represent the hazard aspect. Exposure factors include population density, crop coverage, and water stress levels. Vulnerability is assessed through social, economic, and infrastructure conditions, reflecting the capacity of communities and assets to withstand drought impacts. By integrating these dimensions, ASE Technology Holding provides a holistic assessment of drought risk to inform sustainable management and resilience strategies. Drought risk is quantified on a scale of 0-5, ranging from low to high risk, with higher values indicating higher risk. We analyzed a total of 110 facilities[2] worldwide in Taiwan, China, Hong Kong, Japan, South Korea, Malaysia, Singapore, Vietnam, Philippines and other Asian countries, as well as America (such as the United States, Mexico, etc.), Europe (Belgium, France, Poland, Germany, the United Kingdom, the Czech Republic, etc.) and Africa (Mauritius, Tunisia) and other regions.

Drought Risk Analysis

35.5% **Medium - High**
East China, Philippines, France, Poland, Hungary, Tunisia, United Kingdom, Czech Republic, Romania

28.2% **Medium**
South Korea, Singapore, Malaysia, South China, Mexico, Vietnam, Japan, Belgium, Germany, Luxembourg, the United States

7.3% **Low - Medium**
Japan, the United States

29.1% **No data**
Taiwan, Bermuda, British Virgin Islands, Cayman Islands



[1] Business As Usual (BAU) is the SSP3-RCP7.0 scenario, which is relatively free of climate policy intervention. It not only represents a medium-to-high forcing path as SSP3 combines relatively high social vulnerability and radiative forcing, but also has strong land use changes and high NTCF emissions. Meanwhile, Optimistic (OPT) is the SSP1-RCP2.6 optimistic scenario, which represents a low forcing path. Its simulation results show that the multi-modal average will fall below 2° C in 2100. Pessimistic (PES) is the SSP5-RCP8.5 pessimistic scenario, which exhibits strong reliance on fossil fuel development and represents a high forcing path

[2] Analysis boundary: Sites of ASEH Global Consolidated Subsidiaries

Water Scarcity Risk Analysis of the Taiwan Facilities

As most of ASEH facilities are located in Taiwan, it is crucial to closely monitor water scarcity risk in the region. We have divided our Taiwan facilities into 15 areas based on the supplying water reservoirs by referencing the local government database[1], before assessing[2] the historical frequency of water scarcity events at each reservoir and the frequency of water scarcity risks under different climate change scenarios.

- We analyze the historical frequency of water scarcity events and the probability of water scarcity from different climate change scenarios at each facility's water supply sources. According to the analysis results, the historical frequency of water scarcity events is lower in Hsinchu, Taichung, and Changhua areas, followed by Taoyuan and Nantou areas, and higher in the Kaohsiung area. Under the SSP1-RCP2.6 and SSP2-4.5 scenarios, there is no significant difference between the rainfall at all our Taiwan facilities and the historical average. However, under the SSP3-RCP7.0 and SSP5-RCP8.5 scenarios, the probability of water scarcity over the medium term (2040 to 2100) and beyond increases in north and central Taiwan, but does not change significantly in the Kaohsiung area.
- We assess the water scarcity risk at each Taiwan facility under each scenario using a combination of historical observations and the water scarcity probability, and water scarcity risk[3] measurement matrices under different scenarios: High-risk facilities will be given priority attention and adaptation measures such as continuously enhancing water efficiency, adding water storage facilities, and establishing emergency backup water sources will be implemented to address drought risks and water shortages. Identification, analysis and putting in place appropriate response plans enable us to bolster the resilience of our operations across different scenarios.

Water scarcity risks of the Taiwan facilities under various scenarios

Historical observation \ Future (the probability of water scarcity)	Decrease (<-10%)	Unchanged (<10%)	Increase (10-20%)	Significant increase (>20%)
Low				
Moderate				
High				

■ Maintain: The impact on water resources is low and current management procedures can be maintained.
▲ Attention: For areas with historically medium to high water shortage incidents, more attention.
● Alert: For areas with historically high water shortage incidents, more attention on management procedures is needed.
★ Priority alert: Areas with a history of high water shortage incidents and a high probability of water scarcity in the future will receive priority attention and implement adaptation measures.

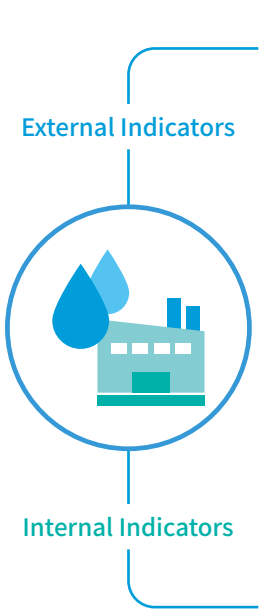
Water scarcity risks of the Taiwan facilities under various scenarios

Area (Number of facilities)	SSP1-RCP2.6				SSP2-RCP4.5				SSP3-RCP7.0				SSP5-RCP8.5			
	Short term	Medium term	Medium to-long term	Long term	Short term	Medium term	Medium to-long term	Long term	Short term	Medium term	Medium to-long term	Long term	Short term	Medium term	Medium to-long term	Long term
Taipei City + New Taipei City (2)	■	■	■	■	■	■	■	■	■	▲	▲	▲	■	■	▲	▲
Taoyuan+New Taipei (2)	★	★	★	●	★	★	★	★	★	★	★	★	★	★	★	★
Hsinchu (1)	■	■	■	■	■	▲	▲	■	▲	▲	▲	●	■	▲	▲	▲
Taichung (4)	■	■	■	■	▲	▲	▲	▲	▲	▲	▲	●	▲	■	▲	▲
Changhua (2)	▲	▲	■	■	▲	▲	▲	▲	▲	●	●	●	▲	▲	▲	▲
Nantou (4)	●	●	▲	▲	●	●	●	●	●	★	●	★	●	●	●	●
Kaohsiung (1)	★	★	●	●	★	★	★	★	★	★	★	★	★	★	★	★

[1] Nanshi River, Feicui Reservoir, Shimen Reservoir, Baoshan and Baoer Reservoirs, Yongheshan Reservoir, Liyutan Reservoir, Mingde Reservoir, Shigangba (Deji Reservoir), Hushan Reservoir, groundwater, Sun Moon Lake Reservoir, Zengwen Wutoushan Reservoir, Nanhua Reservoir, Kaoping Kaoping Weir (including underground water) and Fengshan Reservoir
[2] We define a water scarcity event as one in which the reservoir capacity falls below the lower limit. The probability of water scarcity under climate change scenarios is measured using the Standardized Precipitation Index (SPI) as a reference indicator
[3] High-risk areas: regions with multiple historical water shortages and a high likelihood of future scarcity. Medium-risk areas of concern: regions with many historical water shortages but a low likelihood of future scarcity

Physical Risk Adaptation

For our manufacturing sites, we continuously monitor potential future water scarcity events through annual water risk scenario assessments. At the same time, the facilities will continue to implement various adaptation measures, such as increasing water recovery rates, establishing wastewater recycling systems, increasing reserve water capacity, or reducing reliance on groundwater sources, with a view to not only minimizing the impact of water scarcity in the future, but also bolstering resilience to wet and dry seasons across all ASEH facilities. ASEH Holdings has implemented enterprise risk management and Business Continuity Management (BCM) in 100% of its key production sites to ensure that both existing and new facilities can continue operations when faced with climate risks. In particular, under the global risks of rising temperatures and drought, a series of drills have been established in addition to the launch of BCM plans to implement ASEH's operational risk management. Furthermore, ASEH consistently invests in and expands green factory-related facilities, which include: accounting for heavy rainfall/flood potential during construction and installing infrastructure damage prevention mechanisms (including flood gates); laying highly permeable sidewalks around the premises; building water supply support systems for factory-adjacent areas; investing in biodiversity, and launching biodiversity restoration actions.



WRI External Indicators

1. WRI Drought Indicators
2. WRI Water Stress Indicators

Climate Change Localized Indicators

3. Monthly Water Supply and Demand Correlation Indicators
4. Drought Frequency Indicators
5. Impact Level Indicators

Water Resource Indicators

6. Water Storage Tank Reserve Capacity Indicators
7. Water Recovery Rate Indicators
8. Water Consumption Indicators per Unit of Output
9. Indicators of Business Operation Caused by Water Shortage
10. Indicators of Property Damage Caused by Water Shortage

Current Indicators Future Scenario Indicators



Adaptation plans implemented in Improved the efficiency of the water recovery process

ASEH's water supply system in the past 5 years

- Installed water storage facilities in ASEH factories
- Installed water support systems in factory-adjacent areas
- Installed a rainwater recovery system
- Enhanced wastewater treatment capacity and recovery rate
- Installed a rainwater recovery system



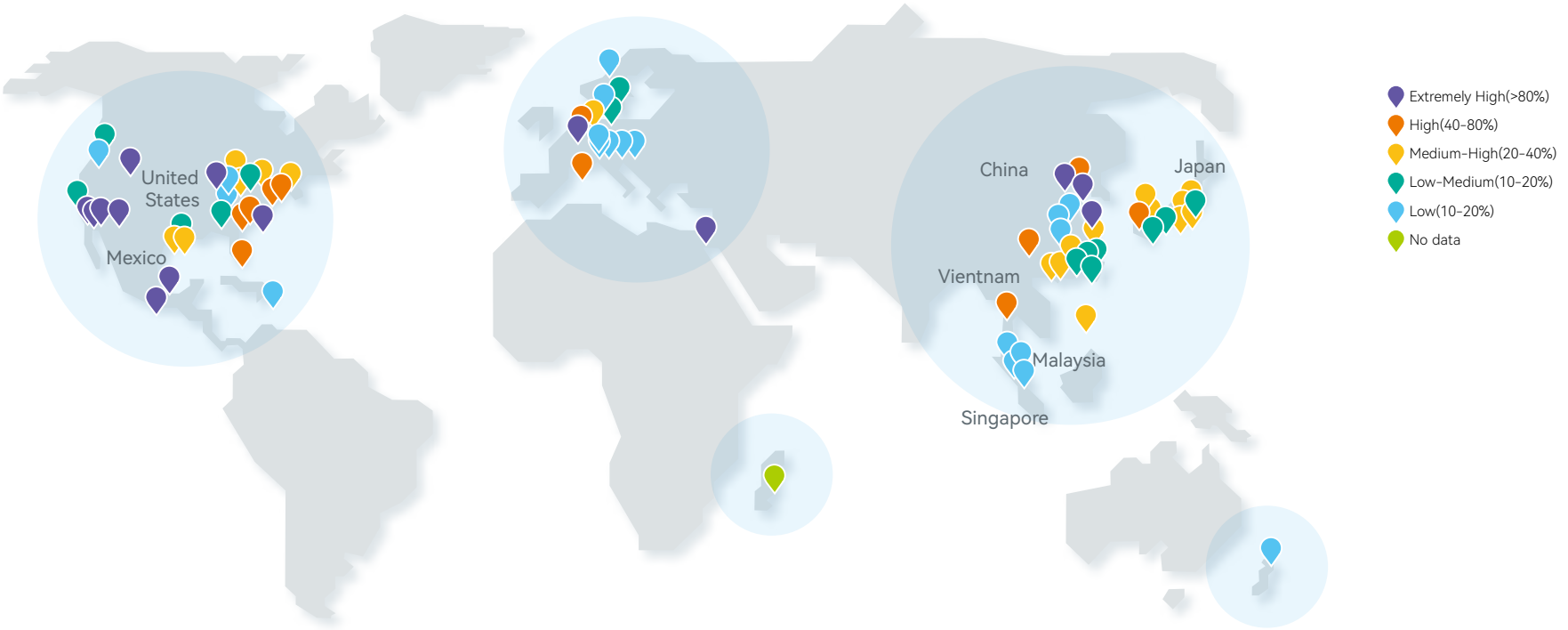
Supply Chain Environmental Risk Analysis

Rapid climate change is causing more natural disasters, and these climate induced events have the potential to disrupt our operations and expose our supply chain to significant risks that further impact our business continuity. To mitigate such risks, ASEH works hand-in-hand with suppliers to implement mitigation and adaptation actions, ensuring operational stability and enhancing climate resilience. We have initiated climate, natural and biodiversity risk assessments on our supply chain, and conducted a comprehensive examination to determine potential disaster risks over short, medium, and long-term periods.

Global Water Risk Analysis

Baseline Water Stress Simulation

Using the WRI database, the Company conducted an analysis of water stress for 748 supplier locations worldwide. The baseline water stress analysis results[1] (shown in the figure below) revealed that approximately 13.9% of suppliers are situated in areas with extremely high stress, primarily in Mainland China and the United States. 4.6% of suppliers are located in areas with high stress, mainly in Mainland China, South Korea, and the United States.



[1] Baseline water stress: Measures the ratio of total water demand to available renewable surface and groundwater supplies. A high baseline water stress indicates greater competition for water among users

Analysis of Climate Disaster Risks for Suppliers

Based on the locations of Taiwanese supplier sites within the water supply areas of various reservoirs, we referenced historical data of water shortages at different reservoirs, and projected the probability of water shortages under the climate change scenario to assign different levels of attention (maintain, monitor, priority monitoring) to supplier sites in each region, using the water shortage risk matrix as illustrated below. Selected suppliers must consistently enhance water resource efficiency, expand water storage facilities, and establish emergency backup water sources. This will improve operational resilience in various situations and prevent disruptions to company operations in the event of a disaster. We will continue to monitor the other suppliers and adjust our level of attention where necessary, in order to effectively manage the risk of water shortage.

Risk Alert Level for Supplier Water Shortage[1]

Region	SSP2-4.5				SSP3-7.0				SSP5-8.5			
	Short term	Medium term	Medium to- long term	Long term	Short term	Medium term	Medium to- long term	Long term	Short term	Medium term	Medium to- long term	Long term
Northern Taiwan[2]			★ Taoyuan City, New Taipei City (73)	★ Taoyuan City, New Taipei City(73)		★ Taoyuan City, New Taipei City (73)	★ Taoyuan City, New Taipei City (73)	★ Taoyuan City, New Taipei City (73)			★ Taoyuan City, New Taipei City (73)	★ Taoyuan City, New Taipei City (73)
Central Taiwan[3]						★ Miaoli (5) Nantou (4)	★ Miaoli (5)	★ Miaoli (5) Nantou (4)	★ Miaoli (5)		★ Miaoli (5)	★ Miaoli (5) Nantou (4)
Southern Taiwan[4]						★ Kaohsiung (36)						

★ Priority alert: If the probability of water shortage events increases due to climate change, discussions on improvement should be prioritized.

[1] Water supply: Keelung City, New Taipei City (Xinshan Reservoir + Xishi Reservoir + Shuangxi); Taipei City, New Taipei City (Nanshi River + Feicui Reservoir); Taoyuan City, New Taipei City (Shimen Reservoir); Hsinchu area (Baoshan Reservoir + Baoer Reservoir + Yongheshan Reservoir); Miaoli area (Yongheshan Reservoir + Liyutan Reservoir + Mingde Reservoir); Taichung area (Liyutan Reservoir + Shigang Dam (Deji Reservoir)); Changhua area (groundwater + Hushan Reservoir + Shigang Dam (Deji Reservoir)); Nantou area (surface water + groundwater); Yunlin area (Hushan Reservoir + Jiji Weir); Chiayi area (Lantan Renyi Reservoir + Zengwen Wushantou Reservoir); Tainan area (Zengwen Wushantou Reservoir + Nanhua Reservoir); Kaohsiung area (Kaoping Weir (including underground water) + Fengshan Reservoir)

[2] Northern Taiwan: Taipei City, New Taipei City, Taoyuan City, Hsinchu

[3] Central Taiwan: Miaoli, Taichung City, Changhua, Nantou, Yunlin

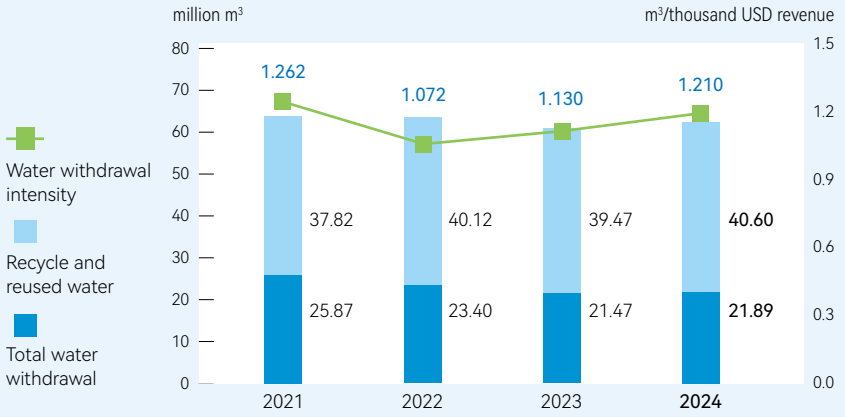
[4] Southern Taiwan: Chiayi, Tainan, Kaohsiung

Water Withdrawal and Reuse

ASEH adopts three water use strategies: reduce, reuse, and recycle. The main source of water-use is tap water. Total water withdrawals in 2024 amounted to 21.89 million tons, while water withdrawal increased by 2% compared to the previous year. The water use intensity per unit revenue (including rainwater) was affected by the revenue decrease to increase by 7% compared with the previous year, but reaching our goal of a 43% decrease compared to the baseline in 2015.

The wastewater reclamation recycling systems were established in ASE Kaohsiung, Chungli, Malaysia, and Singapore facilities to support wastewater treatment that meets local regulations. The wastewater reclamation recycling rate of ASE Kaohsiung is 76% , ASE Chungli is 70%, ASE Malaysia is 50%, and ASE Singapore is 25%. The robust recycling methodology at the facility in effluent discharge, and significantly alleviated the manufacturing sites' pressure on water consumption and wastewater discharge.

Water Resource and Water Withdrawal Intensity



Diverse Water Resources

Total water withdrawals 21,886,295 m³/year

- Municipal water 83.26%
- Third-party water 0.66%
- Groundwater 16.00%
- Rainwater 0.08%

Water Management

Total water withdrawals 40,605,594 m³/year

- Domestic water usage 10%
- Manufacturing process usage[1] 68%
- Process recycling rate 80%
- Public facilities water usage[2] 22%
- Irrigation

Recycling and Processing Wastewater

Wastewater treatment system → Water recycle and reclamation plant[3] → Qualied waste water euent

38,078,520 m³/year

- Discharge to a third party without treatment 4%
- Primary treatment 11%
- Secondary treatment 65%
- Tertiary treatment 20%

Total wastewater discharge 15,871,374 m³/year

to the surface water 100%

to the seawater 0%

Water consumption

Total water consumption 6,014,921 m³/year

Description:
1. Manufacturing process water use includes manufacturing water use cycle, cleaning/grinding water, electroplating water recycling, and other reuse.
2. Public water use includes washing tower discharge, cooling tower discharge, purified/wastewater systems recycling and reuse.
3. Water reclamation includes recycling and renewal of processed water that meets guidelines, supplying the manufacturing water usage cycle.



Water Saving Projects

In 2024, our successful launch of 35 conservation projects involved 3.47 million USD in capital expenditures and operating expenses, which saved a remarkable 1.5 million tons per year. To improve employees' awareness, knowledge, and skills, we generally provide water resource efficiency-related training for employees, a total of training lessons for 3,070 hours, 123 people. That will assist employees in discovering water-saving opportunities in daily operations and propose and implement improvement projects. Incentive mechanisms were implemented to encourage employees to propose feasible solutions to save water that resulted in, an increase of 2% year-on-year recycling rate to 80%. In response to increasing water scarcity and climate-related operational risks, we remain committed to enhancing water management capabilities across our sites. Going forward, we will implement water pricing projects at key facilities[1] to incentivize conservation, improve water-use efficiency, and promote reuse, taking concrete actions to advance circular economic benefits from sustainable water use.

Water Saving Projects			Investment	Performance
Project Type	Number	Description	Investment fees (US$)	Performance (tons/year)
Process recycling rate	19	Add a recycling system to process and recycle machine wastewater	982,543	564,157
Water recycle and reclamation plant	0	Wastewater reclaim efficiency improvement	–	–
Wastewater recycling	12	1) Strip grind wastewater reuse 2) New construction project for organic wastewater recycling	2,470,590	915,354
Public facilities water usage	1	Water spray for garden	11,664	2,592
Domestic water usage	3	Toilet tap and flush water altered to water saver	2,045	14,912
Total	35		3,466,842	1,497,015

[1] Key facilities are defined as facilities with both high revenue contribution and significant water consumption

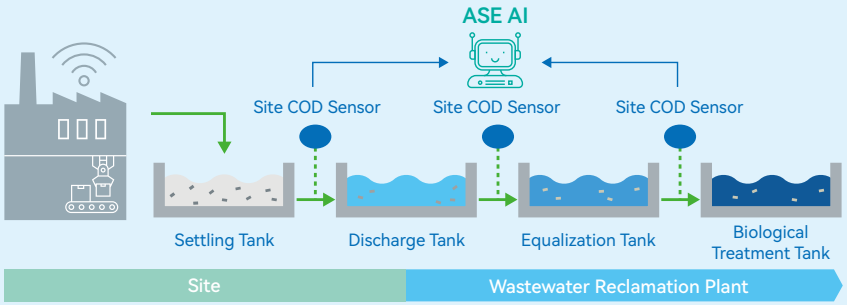
Wastewater Management

In 2024, 15,871,374 tons[1] of effluent was discharged, and our total water consumption was 6,014,921 tons. We conduct internal water quality tests, while also outsourcing offline sampling and water quality analysis to ensure strict control and ecology management of the aquatic environment. In addition, our effluent management adheres to local regulations and discharge water standards. A number of our facilities have set internal goals that are higher than regulatory requirements by consistently monitoring the effluent quality, and employing AI algorithms to optimize and increase the amount of recycled water and reduce water withdrawal. Currently, there are 15 facilities that collect and classify chemicals used in the manufacturing process, so that each type can be treated independently based on its effluent characteristics, and hence, improving the efficiency of our effluent treatment processes. In order to provide employees with clean water and proper sanitation across our operations, we have adopted the WASH (Water, Sanitation, and Hygiene) approach as well as established wastewater treatment facilities. We will continue to conduct regular health and environmental education to further enhance employees' awareness of water security.

AI-driven Early Warning System in Wastewater Monitoring

The AI-powered wastewater monitoring and early warning system utilize historical data and model learning models to collect and analyze wastewater parameters in real time. When anomalies are detected based on deviations from historical patterns, the system triggers a recommended response protocol that includes immediate identification and notification of relevant personnel to ensure real time problem solving. All abnormal information and recovery statuses are automatically compiled into reports, facilitating subsequent analysis and decision-making, and reducing the risk of recurrence.

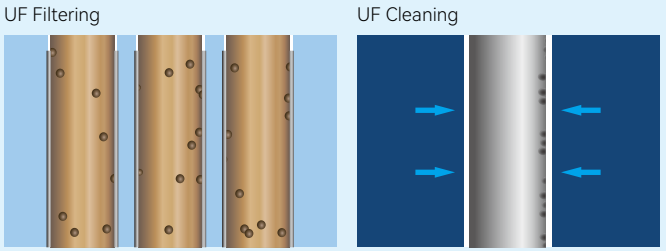
Benefits: Reduces response time by 2 hours.



Intelligent Membrane Filtration System

ASE Kaohsiung's in-house development of an AI-powered UF (Ultrafiltration) prediction system has modeled approximately 200,000 data entries through big data collection and database construction. The system uses seven key features to identify highly correlated combinations, offering a novel solution for optimizing differential pressure monitoring and cleaning cycles. Powered by AI technologies, the system continuously analyzes operational data to predict trends.

Benefits: water savings of 365,000 cubic meters per annum.

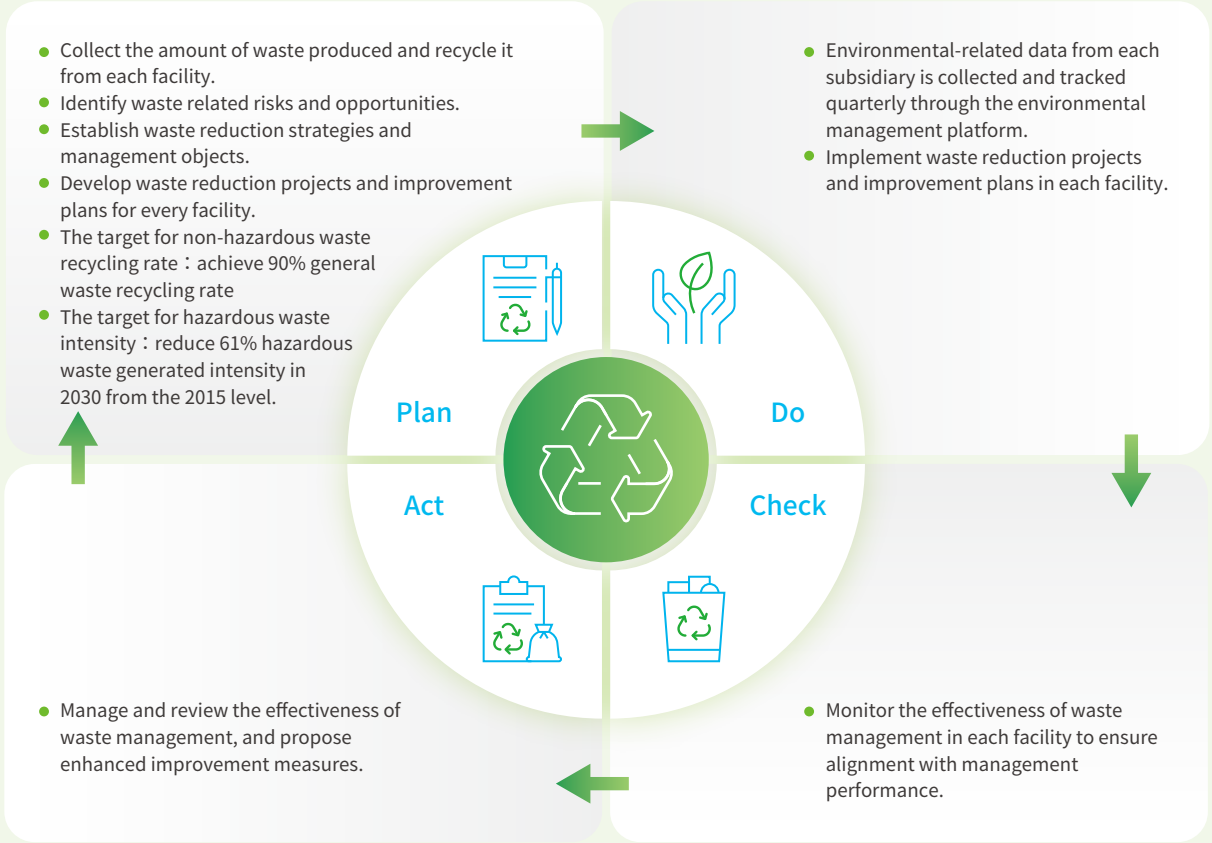


[1] Two electronic manufacturing services facilities (USI Kunshan and Mexico) do not have on-site wastewater treatment facility, so the amount of wastewater discharge is estimated. Others' data is recorded from water meters

5.4 Circular Resources

Waste Management

ASEH adopts source reduction measures and prioritizes the use of eco-friendly materials to minimize waste generation and reduce environmental pollution. We require all facilities to complete ISO14001 certification, and collect and track each facility's environmental-related data from the environmental management platform on a quarterly basis. Facilities that have not achieved the targets will need to propose improvement plans to reduce their waste output and increase their recycling rate. In 2024, a total of 76,857 tons of waste was generated; a positive progress towards our goal of zero landfill. To manage the compliance of waste disposal contractors, each facility conducts regular annual audits of their contractors through online, paper-based, and on-site inspections (a total of 268 sessions). Additionally, unannounced audits are carried out to prevent environmental pollution incidents. To improve waste resource utilization, we have adopted the circularity model with a goal of 90% recycling rate for non-hazardous waste. In 2024, the hazardous waste intensity (hazardous waste generated per revenue) decreased by 53% compared with 2015, resulting in a 93% general and hazardous waste recycling rate which is a 2% increase from the previous year. We also provided employees with education and training on environmental issues, totaling approximately 176.47 training hours for 43,881 participants. This training initiative effectively boosts employees' awareness and understanding of waste reduction, enabling the company to integrate the ethos of waste reduction into its operations and achieving its ultimate goal of zero waste to landfill.



- At our facilities, local government regulations mandate a close to zero landfill for hazardous waste. As such, there still remains approximately 1% of general waste that must be disposed of in landfills, which is 1% less than last year.
- ASE Kaohsiung K21 has achieved UL 2799 Zero Waste to Landfill Platinum Level validation[1]. Additionally, USI Shanghai-Shengxia and Zhangjiang Facilities have each obtained UL 2799 Zero Waste to Landfill Gold Level validation[2].
- To ensure that waste removal is environmentally friendly and conducted responsibly, we have commissioned qualified local vendors to recycle and process 100% of the generated waste within the border. AI-based automatic monitoring of waste collection vehicle movements is being gradually implemented to ensure that waste handling does not impact the environment.

[1] Platinum Level validation: The highest designation; this claim is validated by UL Solutions when a facility can prove that it consistently achieves a landfill waste diversion rate of 100%

[2] Gold Level validation: This designation is reserved for facilities that have achieved a landfill diversion rate of 95% to 99% or greater

Production/Testing

Product manufacturing

tons/year
76,857

Waste Management

Hazardous waste

tons/year	Ratio
22,497	29%

	tons/year	Ratio
Recycle[1]	18,140	81%
Recycle & Reuse	11,580	51%
Incineration (with energy recycle)	6,560	29%
Landfill	0	0%
Incineration (without energy recycle)	695	3%
Others	3,662	16%

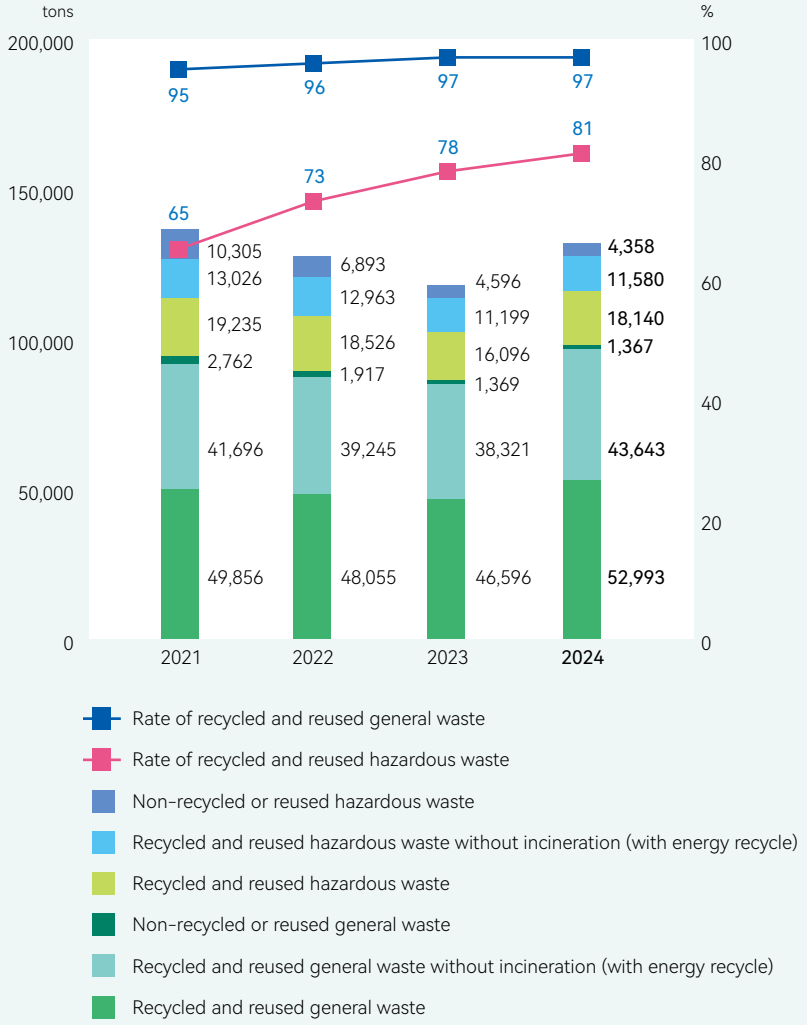
General waste

tons/year	Ratio
54,360	71%

	tons/year	Ratio
Recovery[2]	52,993	97%
Recycle & Reuse	43,643	80%
Compost	1,903	2%
Incineration (with energy recycle)	8,257	15%
Landfill	1,039	2%
Incineration (without energy recycle)	328	1%
Others	0	0%

Description:
1. Rrecycled hazardous waste includes incineration (with energy recycle)
2. Recycled general waste includes compost and incineration (with energy recycle)

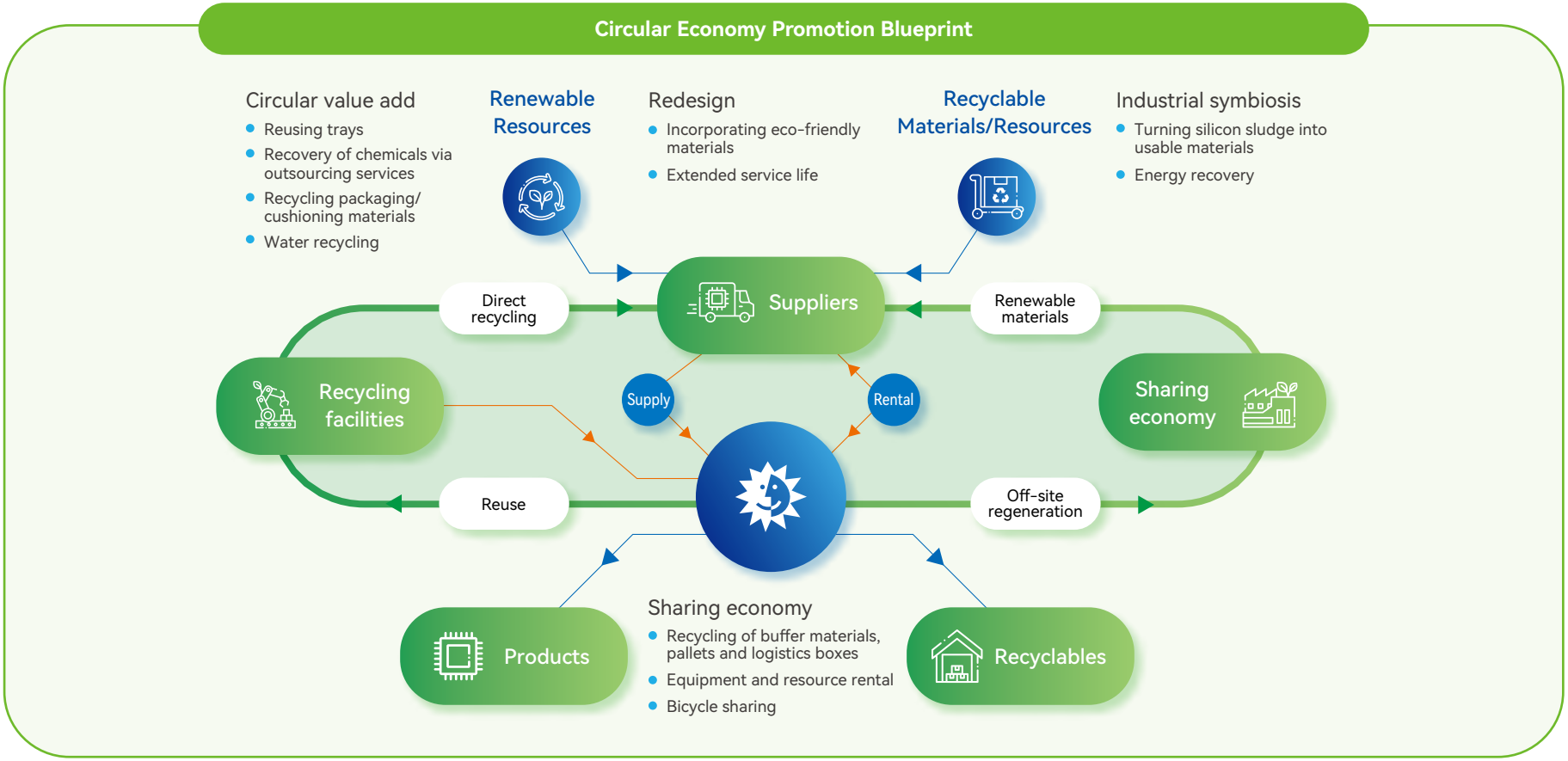
Waste Output and Recovery Rate



Description:
(1) Rate of recycled general waste reached 97% > target recycling rate (90%)
(2) Rate of recycled hazardous waste in 2024 (81%) was 78% higher than the previous year (3%)
(3) Rate of recycling of hazardous waste (excluding incineration with recycled energy) was 19%

Striving Toward a Circular Economy

The concept of the circular economy has garnered greater global attention in recent years as concerns with the continuous depletion of natural resources grow. To optimize the use of Earth's resources, the application of relevant expertise and the weighing of economic benefits are prime factors in implementing a circular economy. At ASEH, we are putting the circular economy in action by adopting five key approaches direct recycling, reuse, off-site regeneration, renewable materials and supply and leasing. We collaborate actively with suppliers and business partners across the industry chain to build a semiconductor circular economy through practical actions such as redesign, value-added circularity, recycling and recovery, shared economy, circular agriculture, and industrial symbiosis. In addition, we have formed alliances with organizations in our industry and from other sectors to examine the life cycles of resources and identify areas where resources can be reduced, recycled, and reused to prolong their lifespan, and maximize resource efficiency. In 2024, we spent approximately USD 1.37 million and launched a total of 38 circular economy projects, resulting in approximately USD 17.57 million cost saving, and the consumption of about 14,454 tons of resource material per year.



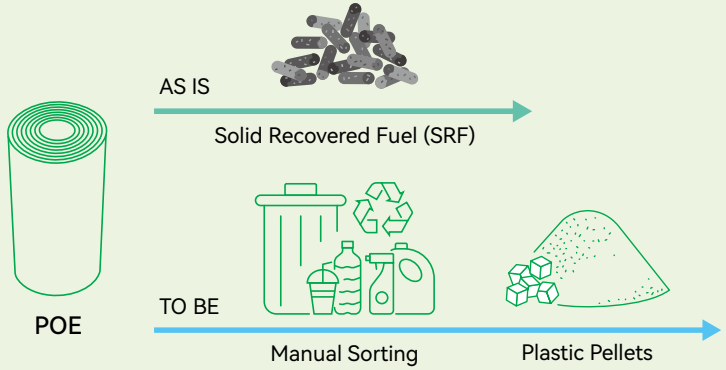
Non-hazardous Waste Project and Beneficial Result				Investment	Performance	
	Project Type	Number of projects	Description	Total investment cost (USD)	Total annual saving (USD)	Total substance weight (ton/year)
	Energy recycling	2	Incinerate mixed waste such as household garbage, waste plastic (non-chemical properties), waste wooden pallets, and combustible materials for energy recovery and reuse	20,935	2,482	160
	Packaging material recycle	5	Recycle and reuse packaging materials such as trays, pallets, and cardboard boxes	47,575	401,809	375
	Packaging material reduction	2	Reduce the use of single-use packaging materials	49,100	195,297	325
	Packaging material reuse	9	Recycle and reuse wafer packaging materials	544,462	16,142,697	5,693
	Other	10	1) Crush waste plastic packaging materials and remanufacture them into plastic pellets 2) Use sintering to process waste compression-molded plastic and replace virgin materials (natural aggregate) with it for the production of eco-friendly bricks	290,221	639,304	5,053
	Total	28	-	952,293	17,381,589	11,606

Hazardous Waste Project and Beneficial Result				Investment	Performance	
	Project Type	Number of projects	Description	Total investment cost (USD)	Total annual saving (USD)	Total substance weight (ton/year)
	Energy recycling	2	High-concentration organic waste liquid, organic wiping cloths, and filter cartridges are processed through incineration and distillation, and then reprocessed into fuel for boiler combustion to generate thermal energy	1,517	-	196
	Packaging material recycle	1	Empty chemical containers are recycled, cleaned, and reused	-	3,015	53
	Other	7	Alkaline copper-containing waste liquid and organic solvents are recovered through distillation	415,563	184,687	2,599
	Total	10	-	417,080	187,702	2,848

Plastic Recycling Center

To address the challenges of sorting diverse categories of plastic waste and the difficulties associated with downstream reuse, ASE Kaohsiung established a Plastic Recycling Center in 2022. This center centralizes and manages plastic waste previously scattered across various storage areas. Based on the circularity concept, the center explores new technologies to enhance the treatment of waste foam (POE - Polyolefin Elastomer). Materials that were once only recyclable into solid recovered fuel (SRF) are now refined into plastic pellets, expanding the possibilities for reuse. Embracing the philosophy that "waste is a misplaced resource" and aiming for "zero waste," the center collaborates with supply chain partners to promote the reuse and recycling of packaging materials, effectively reducing the volume of waste generated.

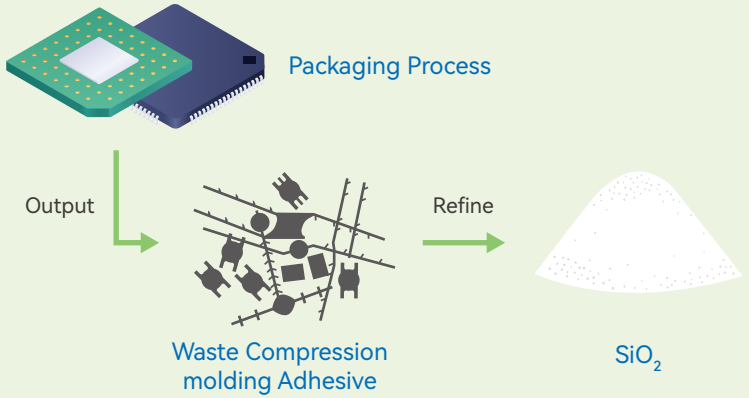
Benefits: Annual conversion of 978 tons of plastic waste into reusable products.



Advancing the Recycling of Waste Compression Molding Adhesive

Since 2021, ASE has been working with recycling companies to repurpose waste compression molding adhesive generated from the encapsulation processes into reusable bricks through physcial processing. Between 2022 and 2023, the sintering process was introduced to convert the waste into raw materials for cement and silica. In 2024, advancements were made to refine the waste into high-purity silicon powder resulting in the development of SilicStep™, a line of eco-friendly and comfortable silicon-based slippers made from low-carbon raw materials. These products are now available through major retail channels, marking a successful transformation of industrial waste into green consumer goods and significantly reducing environmental impact.

Benefits: Annual conversion of 1,053 tons of waste compression molding adhesive into commercial products.



5.5 Air Emissions Control

Air Emissions Control

Air pollutants emitted in 2024 include VOCs[1], SO_x[2], NO_x[3] and particulate pollutants[4]. We adopted the use of wet scrubbers, activated carbon adsorption equipment, condensation equipment, chemical scrubbing, biological scrubbing, UV photolysis, zeolite concentration rotor incineration systems, and other preventive equipment to manage process gases and control the concentration of air pollutant emissions. In 2024, the number of VOCs emissions decreased 61% compared with the previous year. In addition to the original treatment and prevention equipment, we will strengthen our emission management to focus on source emissions and facility upgrades and improvements to reduce the environmental impact caused by the concentration of air pollution emissions.

Operational Manufacturing

Source Management

- Replace existing high VOC concentration materials with clean, low/no VOC content materials
- Strengthen sealed negativepressure environments
- Academic collaborations to optimize treatment efficiency
- Optimization of Scrubber Performance and Operation
- Alternative Raw Material Strategies

Preventive Equipment

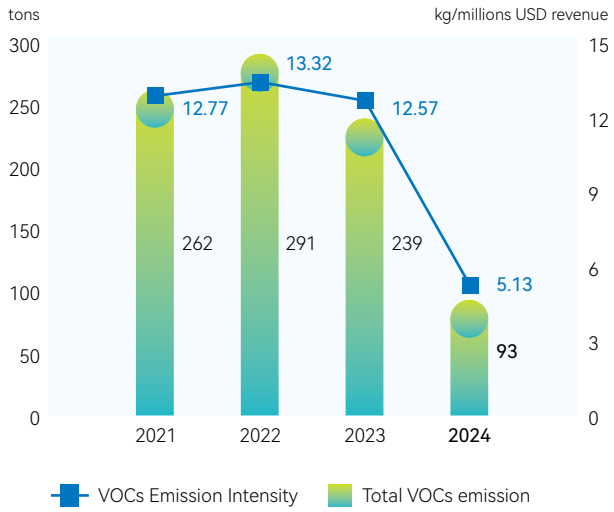
High-efficiency Treatment Equipment

- Web scrubbers
- Activated carbon adsorption equipment
- Condensation equipment
- Chemical scrubbing
- UV photolysis oxidation
- Zeolite concentration rotor incineration

Emissions Monitoring

	tons
VOCs	93
SO_x	27
NO_x	55
$PM_{10}/PM_{2.5}$	31
Ozone depleting substances	-

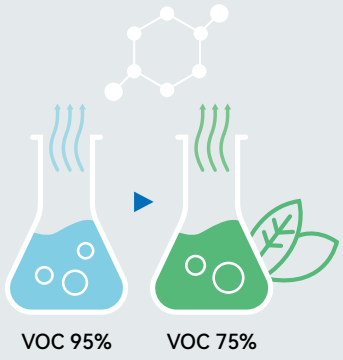
VOCs Emission and Intensity



Raw Material Substitution Strategy

Exhaust gases generated during semiconductor manufacturing contain high concentrations of volatile organic compounds (VOCs) that pose risks to both the environment and human health. Therefore, directly reducing VOC emissions is a critical priority. As part of our raw material substitution strategy, we actively replaced the high-concentration ethanol (95%) used in production processes with a lower-concentration ethanol (75%). This adjustment effectively reduced VOC emissions, contributing to environmental protection and emission reduction goals.

Benefits: Reduction of VOCs by 2,920 kg/year



[1] VOCs are calculated using public coefficients, and are either directly measured or calculated using mass balance
[2] SOx are calculated using public coefficients or converted through the concentration ratio
[3] NOx are calculated using public coefficients or directly measured
[4] Particulate pollutants are calculated using public coefficients or directly measured

AI Monitoring of Air Pollution Control Equipment

Our AI monitoring system is built upon existing air pollution control equipment and is designed to support smart management and digital upgrades. By analyzing data and integrating key operating parameters, the system incorporates seven key parameters—inlet airflow rate, inlet concentration, circulating water volume, liquid nitrogen ratio, airflow rate, pressure differential, and pH value—to calculate and predict pollutant reduction efficiency. AI is further applied to simulate and optimize parameter configurations, thereby enhancing treatment efficiency, reducing pollutant concentrations, and lowering operating costs. This comprehensive approach improves environmental performance and carbon reduction outcomes, ultimately reducing the environmental burden.

Benefits: Reduction of VOCs by 6,764 kg/year

Seven Key Parameters

- Inlet Airflow Rate
- Inlet Concentration
- Circulating Water Volume
- Liquid Nitrogen Ratio
- Airflow Rate
- pH Value

+

Feature Engineering and Combination

Dashboard

- AI-Driven Parameter Optimization through Simulation
- Predict Pollutant Reduction Efficiency
- Prediction of abnormal situations 30 minutes from now
- Real-Time Push Notifications





5.6 Green Facility

Low Carbon Buildings and Green Factories

Reducing the carbon emissions of buildings is a critical step to slowing down climate change. Since 2012, we have transformed existing facilities and built new facilities and offices that comply with international low carbon building standards. Through quantifying and analyzing the entire lifecycle of building carbon emissions, carbon reduction was driven from the design stage and promoted along the value chain to build a sustainable campus. We have also integrated the evaluation of clean production in the manufacturing process, with green buildings to achieve Green Factory Certification, meeting low carbon goals at both hardware and software levels. In the future, we will continue to work towards obtaining certification for 100% of our new facilities, and demonstrate our firm commitment to green transformation.

Green Building Certificate

28 [1]

EEWH

8 Diamond、3 Gold、1 Silver、5 Bronze、2 Qualified

19 [2]

LEED

5 Platinum、3 Gold

8 [3]

Low-Carbon Building

Diamond

1 [4]

Green Factory

14 [5]

Clean Production facilities

22

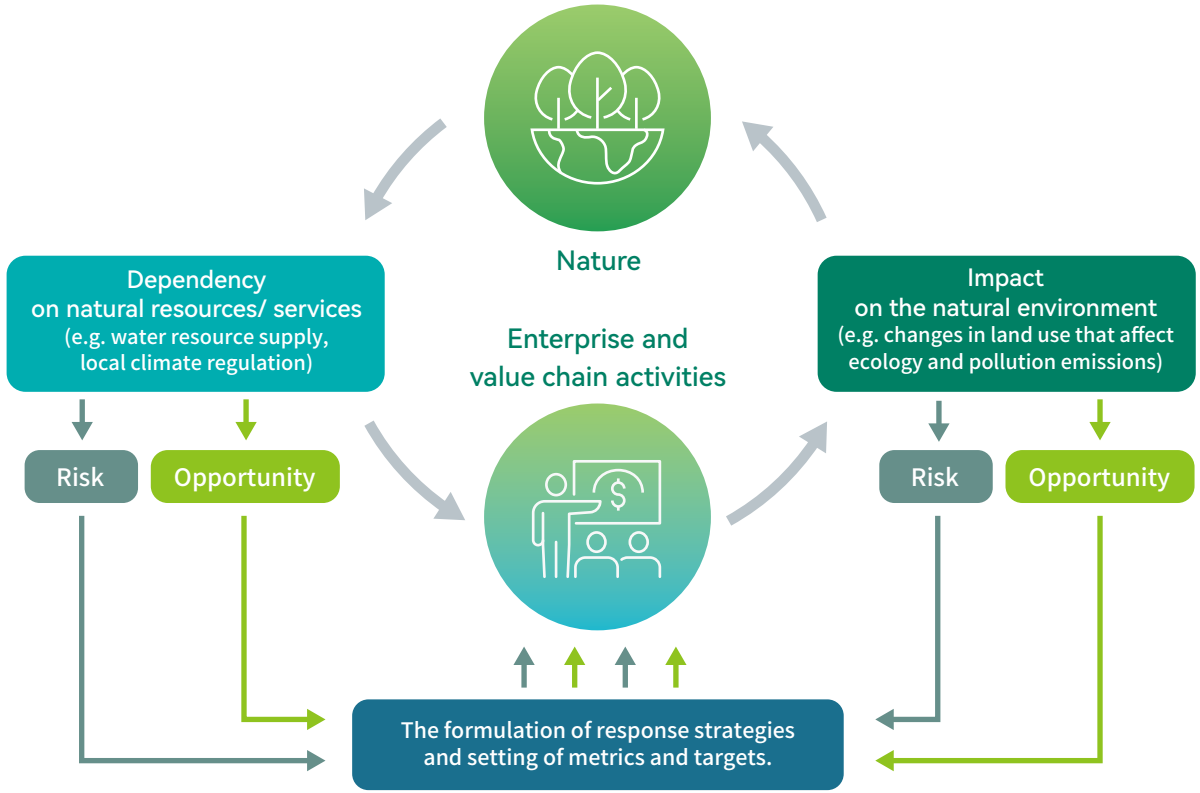
[1] The cumulative number of domestic and international green building certifications obtained to date
[2] EEWH Certification: K3/K4/K5/K7/K11/K12/K14B/K15/K16/K21/K22/K26/KH-dom/CL-A/ CL-K&L/CL-B/CL-M/SPIL Zhong Ke /USI-NK
[3] LEED Certification: K12/K21/K22/K26/CL-K&L/ K23/CN-HQ/CN-SH
[4] Low-Carbon Building Diamond Grade: K24
[5] Green Factory: K3/K5/K7/K11/K12/K15/K21/K22/CL-A/CL-K&L/CL-B/CL-M/SPIL-ZK /USI-NK

5.7 Biodiversity

Risk assessment

ASEH have adopted the TNFD-LEAP guidance for nature-related issues. The steps involved using data collected to locate the interface between our subsidiaries' global locations with biodiversity-sensitive areas (Locate). Next, we evaluate the dependencies and impacts of our subsidiaries' operational activities on nature (Evaluate) and, analyze corresponding risks and opportunities based on dependencies and impact pathways. Key risks and opportunities are properly assessed (Assess) and response strategies, monitoring indicators and management objectives are devised for priority risks and opportunities. Lastly, we continuously improve on our preparation to respond to nature-related risks and opportunities, and to publicly report on the company's material nature-related issues (Prepare).

Dependency, impact, risk, opportunity pathway

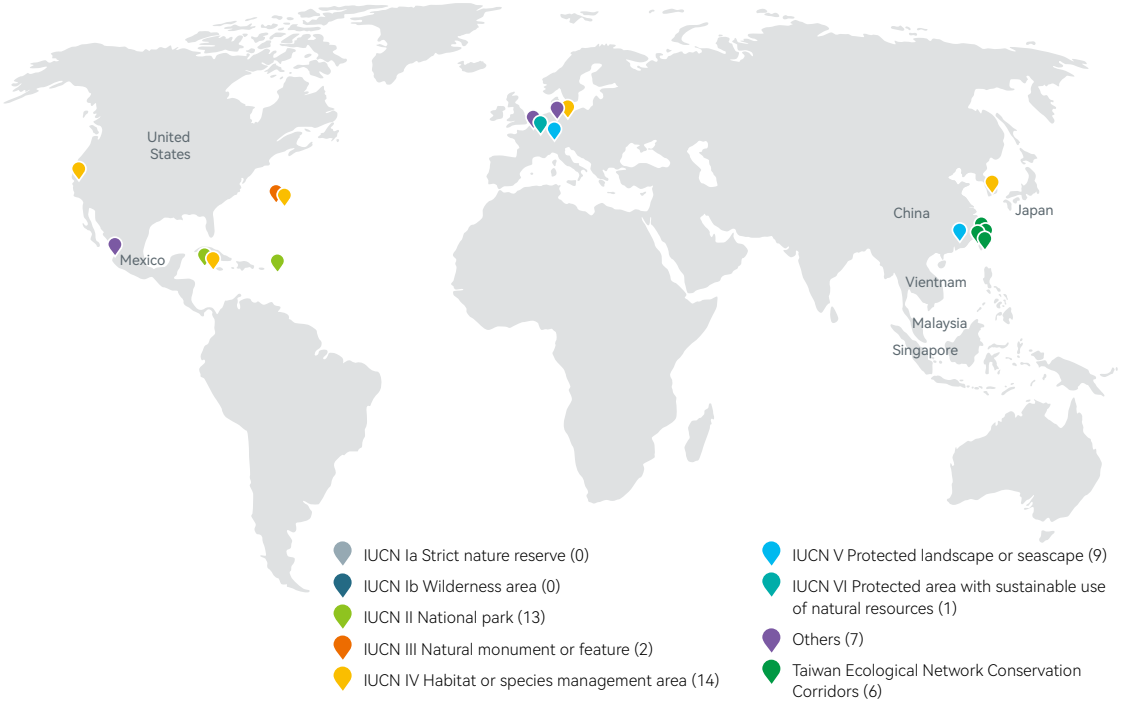


LEAP	Response Measures
L **Locate:** Identify biodiversity-sensitive areas	By integrating data from the World Database on Protected Areas (WDPA) and Taiwan's biodiversity mapping resources, ASEH has mapped the dependencies of 100% of our global operations with their surrounding ecosystems to assess potential impacts on biodiversity.
E **Evaluate:** Assess dependencies and impacts	We designed a questionnaire based on relevance and impact levels to evaluate the ecosystem services that our 26 global manufacturing sites rely on, as well as the potential nature-related impacts from these operations.
A **Assess:** Evaluate nature-related risks and opportunities	We conducted pathway analyses on the top five dependencies and impacts in relation to current site operations, identifying associated nature-related risks and opportunities.
P **Prepare:** Develop response strategies and implement actions	Based on the ecological conditions of each site, ASEH is developing tailored response strategies and rolling out phased action plans to mitigate ecological impacts.

Overlay Analysis of Natural and Biodiversity Hotspots

In nature-related risk analysis, we first identify the existence of any biodiversity sensitive locations surrounding our facilities based on the geographic locations of our 110 facilities[1] worldwide using the International Union for the Conservation of Nature (IUCN) World Database on Protected Areas (WDPA) and Taiwan's biodiversity values map(including Taiwan's relevant ecological conservation laws and regulations and the scope of protected areas designated by non-governmental organizations, e.g. "Coastal Conservation Zone" designated by Ministry of the Interior and "Taiwan Ecological Network Conservation Corridors" designated by Ministry of Agriculture), whereupon a two-kilometer radius is drawn around the center of a facility site as its potential impact area. According to the findings of the overlay analysis, 13 facilities are adjacent to protected areas listed in the IUCN Category II National park, 2 facilities are adjacent to a protected area listed in IUCN Category III Natural monument or feature, 14 facilities are adjacent to a protected area listed in IUCN Category IV Habitat or species management area, 9 facilities are adjacent to a protected area listed in IUCN Category V Protected landscape or seascape, 1 facility is adjacent to a protected area listed in IUCN Category VI Protected area with sustainable use of natural resources,7 facilities are adjacent to a protected area listed in other IUCN categories, while 6 Taiwan sites are adjacent to the non-regulated Taiwan Ecological Network Conservation Corridors. As the facilities on these sites operate in compliance with local laws and regulations, no apparent ecological impact has been observed. We will continue to monitor these facilities and present any adverse impact of our facilities on the ecosystem.

Results of biodiversity conservation area analysis for ASEH's own assets



Region (Number of suppliers)	IUCN Ia Strict nature reserve	IUCN Ib Wilderness area	IUCN II National park	IUCN III Natural monument or feature	IUCN IV Habitat or species management area	IUCN V Protected landscape or seascape	IUCN VI Protected area with sustainable use of natural resources	Other
Taiwan (16)								
Mainland China (32)						5		1
Northeast Asia (5)					1			
Southeast Asia (9)								
Europe (16)					3	4		5
North America (10)					2		1	1
Central America (16)			13	2	8			
Other (4)								

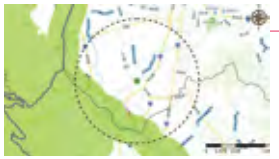
[1] Analysis boundary: Sites of ASEH Global Consolidated Subsidiaries

Biodiversity-Sensitive Area Analysis of Manufacturing Facilities in Taiwan[1]



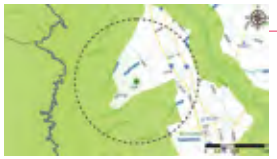
Dadu Plateau Low Mountain Conservation Corridors

Key Species: Leopard cats, Formosan crab-eating mongoose, Ring-necked Pheasant, Gray-faced Buzzard, etc.



Nantou Low Mountain conservation corridors

Key Species: Leopard cats, Formosan Pangolin, Yellow-margined Box Turtle, etc.



Bagua Mountain Low Mountain Forest Conservation Corridors

Key Species: Leopard cats, Formosan crab-eating mongoose, Formosan small indian civet, Fairy pitta, etc.



Wu River Basin Conservation Corridors

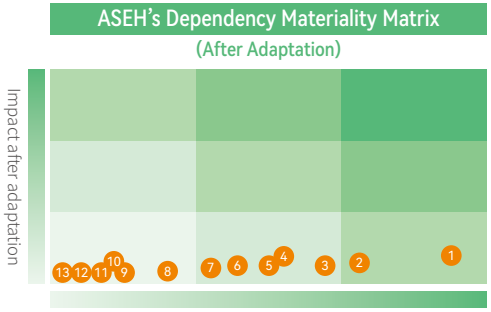
Key Species: Leopard cats, Golden-stripe gudgeon, etc.



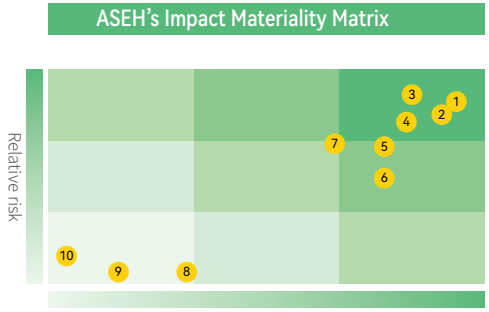
- Coastal Zone Management Act - Coastal conservation Zone
- Cultural Heritage Preservation Act - Natural Reserves
- Wetland Conservation Act - Wetlands of Importance
- National Park Act - National Parks
- Wildlife Conservation Act - Wildlife Refuges
- Wildlife Conservation Act - Major Wildlife Habitats
- National Park Act - Natural Reserves
- Conservation Corridors

Evaluating Nature-related Dependencies and Impacts

Our facilities worldwide conduct individual evaluation of the dependencies and impacts on nature from their operations. The facilities are required to select natural disasters or natural resource shortages of concern to them, and assess the extent of these disasters and issues and their current state of adaptation, thereby identifying the ecosystem services on which their operations depend upon. We investigate whether these facilities engage in activities that cause ecological damage, depletion of resources, environmental pollution, and interference with the ecosystem, as well as whether these facilities have put in place management measures for the said activities or pollution, thereby identifying the impact of activities in these facilities on nature. From the compilation of all facilities' data, the number of facilities that are concerned about a particular issue is used as a measure of exposure, and the impact of the issue on the facilities after adaptation represents relative risk. The survey results are presented in the following matrix, where the top five issues are selected as priority topics for the purpose of risk and opportunity analysis based on the materiality principle.



1 Extreme heat
2 Uneven rainfall
3 Extreme rainfall
4 The occurrence of large-scale epidemic diseases
5 The occurrence of storm disasters (e.g., sandstorms and typhoons)
6 Insufficient water resources
7 Drought occurrences
8 Large-scale noise and vibration occurrences (including earthquakes)
9 Flood occurrences
10 Shortage in the supply of fossil fuels
11 Degradation of air quality
12 Deterioration in the quality of water
13 Eutrophication occurrences



1 Waste
2 Greenhouse gas emissions
3 Indirect energy utilization
4 Emissions of non-greenhouse gas air pollutants
5 Water resource utilization
6 Fossil Fuel Utilization
7 Process wastewater
8 Mineral utilization
9 Soil pollution
10 Proximity to biodiversity sensitive locations

[1] A two-kilometer radius is drawn around the center of each facility site to define its potential impact area

Major Nature-related Risk and Opportunity Metrics

We set corresponding indicators to monitor the status of the top five dependencies and impacts identified through materiality screening. We then analyzed the dependency and impact pathways to determine the corresponding risks and opportunities, allowing us to further conduct financial impact assessments and draw up response strategies. To fulfill our vision of coexisting with nature in harmony, we apply risk mitigation measures on an ongoing basis, and seize the right opportunities that will not only ensure the company's profitability, but also limit our impact on the environment.

Dependencies and impacts on nature				Risks		Opportunities		Response strategies
Items		Explanation	Metrics	Explanation	Financial impacts	Explanation	Financial impacts	
Dependencies	1	Relying on local climate regulation services to avoid high scorching temperatures	Temperature	High scorching temperatures could affect the efficiency of air conditioning equipment, which in turn leads to the need for additional air-conditioning equipment or higher electricity bills.	• Capital expenditure • Operating cost	Enhancing efficiency in the use of energy resources	Reduced operating costs	1. Improve ventilation and step up the use of air conditioning across manufacturing facilities while optimizing the efficiency of chillers.
	2	Relying on precipitation characteristics regulation services to avoid disasters such as droughts	Rainfall data from the Weather Bureau	Droughts cause water shortages, which in turn leads to the need to replenish water using water trucks.	• Capital expenditure • Operating cost	Bolstering resilience to droughts	Reduced financial losses in the event of a drought	1. Improve water recycling efficiency and reduce the need for water withdrawal. 2. Develop a backup mechanism for water tankers to enhance resilience to droughts.
	3	Relying on precipitation characteristics regulation services to avoid disasters such as uneven rainfall	Rainfall data from the Weather Bureau	Heavy rains result in floods at manufacturing facilities, which not only causes damage to equipment, but also disrupts traffic and thus prevents employees from getting to work.	• Capital expenditure • Operating cost	Bolstering resilience to floods	Reduced financial losses in the event of a flood	1. Put in place flood prevention measures and conduct flood prevention emergency response drills to enhance resilience to floods.
	4	Relying on biological control services to avoid or mitigate the impact of large-scale communicable diseases	Statistics on communicable diseases from the Center for Disease Control	The epidemic could potentially result in work stoppages.	• Revenue	Enhancing resilience to large-scale communicable diseases	Reduced financial losses in the event of a large-scale communicable disease	1. Establish an emergency response or control mechanism within manufacturing facilities. 2. Build our own face mask factory to ensure the available of epidemic prevention supplies to support normal operations in the event of an outbreak.
	5	Relying on storm mitigation services to avoid storm damage	Weather data from the Weather Bureau	Frequent or stronger typhoons may cause damage to equipment (i.e., being blown away or water damage), higher risk for employees when getting to work, and increased cost of attendance due to typhoon leave.	• Capital expenditure • Operating cost	Enhancing resilience to wind disasters	Reduced financial losses in the event of a wind disaster	1. Establish a typhoon warning system across manufacturing facilities, which includes making announcements on typhoon warnings, conducting pre-typhoon inspections to bolster typhoon prevention measures, and setting up a typhoon response team.

Dependencies and impacts on nature				Risks		Opportunities		Response strategies
Items		Explanation	Metrics	Explanation	Financial impacts	Explanation	Financial impacts	
Impacts	1	Business waste produced in the company's production process will have an impact on the environment.	1. Total waste recycling rate 2. Hazardous waste disposal capacity	The amount of business waste produced is reduced, and/or the proportion of recycled waste is raised in response to sustainability trends, laws and regulations, or customer requirements.	• Compliance cost	1. Enhancing company goodwill 2. Commoditizing waste	1. Enhanced company goodwill, which in turn leads to customer recognition and opportunities to increase revenue 2. Revenue from the commoditization of waste and reduced waste disposal costs	1. Enhance source management to reduce waste generation. 2. Adopt a circular economy model with the implementation of waste recycling and commoditization to increase recycling rate. 3. Carry out our own R&D initiatives or engage in industry-academia collaboration to develop waste recycling technologies.
	2	Direct and indirect greenhouse gas emissions from the company's operations will have an impact on the climate.	Greenhouse gas emissions	1. Greenhouse gas emissions are being reduced in response to the trend of sustainability transition, laws and regulations or customer requirements. Or the government has imposed carbon tax/fee forcibly aimed at compelling companies to reduce carbon. 2. Climate change causes extreme weather. Floods, droughts and other climate disasters affect the normal operations of enterprises.	• Compliance cost • Capital expenditure • Revenue	1. Enhancing company goodwill 2. Low carbon products	1. Enhanced company goodwill, which in turn leads to customer recognition and opportunities to increase revenue 2. Revenue from the low carbon products	1. Reduce greenhouse gas emissions by using renewable energy to replace fossil energy. 2. Carry out our own R&D initiatives or engage in industry-academia collaboration to develop product manufacturing processes with low carbon emissions or carbon capture technology.
	3	The process of acquiring indirect energy sources (i.e., electricity, heat, steam, and cooling), which are used in large quantities throughout the company's operations, will have an impact on the environment.	Percentage of electricity savings achieved by implementing energy conservation and carbon reduction programs	The cost of producing energy increases in response to environmental protection requirements, which increases the cost of purchasing energy resources.	• Operating cost	Enhancing efficiency in the use of energy resources to reduce operating costs	Reduced energy costs	1. Increase energy efficiency by introducing ISO 50001 energy management system. 2. Carry out our own R&D initiatives or engage in industry-academia collaboration to develop product manufacturing processes with low energy consumption.
	4	Emission of general air pollutants (i.e., NOx, SOx, PM2.5 and VOCs) from the company's operations will have an impact on the environment.	VOC emissions	Air pollutant emissions are being reduced in response to the trend of sustainability transition, laws and regulations or customer requirements.	• Compliance cost	Enhancing company goodwill	Enhanced company goodwill, which in turn leads to customer recognition and opportunities to increase revenue	1. Enhance the efficiency of air pollution reduction facilities. 2. Adopt new air pollution reduction technologies and equipment. 3. Carry out our own R&D initiatives or engage in industry-academia collaboration to develop product manufacturing processes that cause low levels of air pollution or high-efficiency air pollution reduction technologies.
	5	The process of acquiring water resources, which are used in large quantities in the company's operations will have an impact on the environment.	Water withdrawal intensity	1. Owing to increasing water stress levels from growing water consumption among companies, the government has imposed water conservation charges or forcibly raised the water recycling ratio aimed at compelling companies to save water. 2. In line with global sustainability transition trends, customers are requesting a reduction in water withdrawal.	• Compliance cost • Operating cost	1. Enhancing company goodwill 2. Enhancing efficiency in the use of water resources to reduce operating costs	1. Enhanced company goodwill, which in turn leads to customer recognition and opportunities to increase revenue 2. Reduced water withdrawal costs	1. Increase water recycling efficiency to reduce the need for water withdrawal. 2. Carry out our own R&D initiatives or engage in industry-academia collaboration to develop product manufacturing processes with low water consumption.

Supply Chain Environmental Risk Analysis

For ASEH's biodiversity risk analysis, we identify the existence of any biodiversity sensitive locations surrounding the geographic locations of our 784 suppliers worldwide using the International Union for the Conservation of Nature (IUCN) World Database on Protected Areas (WDPA), where a two-kilometer radius is drawn around the center of a supplier as its potential impact area. According to the findings from the overlay analysis, the number of biodiversity-sensitive locations near our global suppliers is shown in the following table, with some suppliers being close to at least one sensitive location. For those suppliers that are close to at least one sensitive location, we prioritize our attention on them and ensure that they establish or enhance their strategies for biodiversity, no-deforestation, and/or land conservation. These strategies must at a minimum, include commitments to monitor, prevent, mitigate, and address local ecosystem impacts to ensure the stability and resilience of company operations.

Region (Number of suppliers)	IUCN Ia Strict nature reserve	IUCN Ib Wilderness area	IUCN II National park	IUCN III Natural monument or feature	IUCN IV Habitat or species management area	IUCN V Protected landscape or seascape	IUCN VI Protected area with sustainable use of natural resources	Other
Taiwan (290)	1	-	-	-	11	-	-	-
Mainland China (242)	-	-	-	-	-	8	-	6
Northeast Asia (125)	-	-	-	-	47	4	5	2
Southeast Asia (21)	-	2	-	-	-	-	-	-
West Asia (2)	-	-	-	-	1	-	-	1
Europe (21)	-	-	-	2	8	7	-	11
North America (79)	-	-	-	2	3	17	1	3
Central America (1)	-	-	1	-	-	-	-	-
Other (3)	-	-	-	-	-	-	-	-

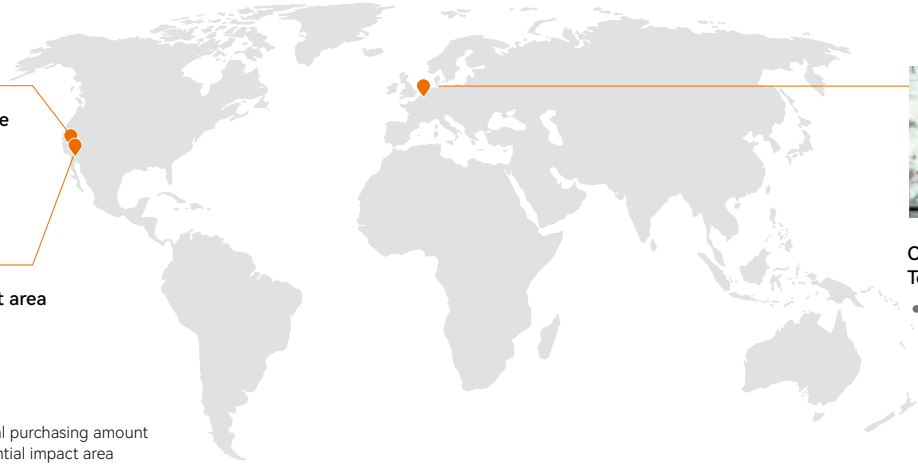
Biodiversity-Sensitive Area Analysis of Global Suppliers[12]



IUCN V – Protected landscape or seascape
- Upper Newport Bay
- San Joaquin Freshwater Marsh



IUCN IV - Habitat or species management area
- Los Penasquitos Canyon





Other-
Terrestrial and Inland Waters Protected Areas
- Nature Reserves owned by professional nature management organizations

[1] The definition of significant supplier as follow: Critical supplier Top 85% of direct material purchasing amount
[2] A two-kilometer radius is drawn around the center of each facility site to define its potential impact area

In addition, given the availability of a rich and diverse biodiversity mapping in Taiwan, and the significance of the local semiconductor ecosystem, particular attention was given to 290 suppliers based in Taiwan. We identified the existence of any biodiversity sensitive locations surrounding these suppliers' operations using Taiwan's biodiversity mapping, where a two-kilometer radius is drawn around the center of a supplier as its potential impact area. According to the findings from the overlay analysis, the number of biodiversity-sensitive locations near the suppliers in Taiwan, classified according to IUCN protected area categories, is compiled in the table below. Similar to the global risk analysis, we prioritized our attention on those suppliers that are close to at least one sensitive location, requiring them to develop corresponding strategies to ensure the stability and resilience of company operations.

Region (Number of suppliers)	Ia Cultural Heritage Preservation Act - natural reserves	II National Park Act - National Parks	III Forestry Act - Nature Reserve	IV Wildlife Conservation Act - Wildlife Refuges /Major Wildlife Habitats	IV Wetland Conservation Act - Wetlands of Importance	V Coastal Zone Management Act - Coastal conservation zone	Other Conservation Corridor/Key Biodiversity Area
Northern Taiwan (212)	1	-	-	14	69	2	74
Central Taiwan (32)	-	-	-	-	-	-	20
Southern Taiwan (46)	-	-	-	-	5	-	18

Biodiversity-Sensitive Area Analysis of Suppliers in Taiwan[1]



IUCN IV- Habitat or species management area
- Important Wetlands
- Wildlife Protection Area
- Important Habitats for Wildlife and Plants



IUCN Ia- Strict nature reserve, IUCN IV- Habitat or species management area, IUCN V- Protected landscape or seascape
- Nature Reserve
- Important Wetlands
- Coastal Protected Area





IUCN IV- Habitat or species management area
- Important Wetlands
- Wildlife Protection Area
- Important Habitats for Wildlife and Plants

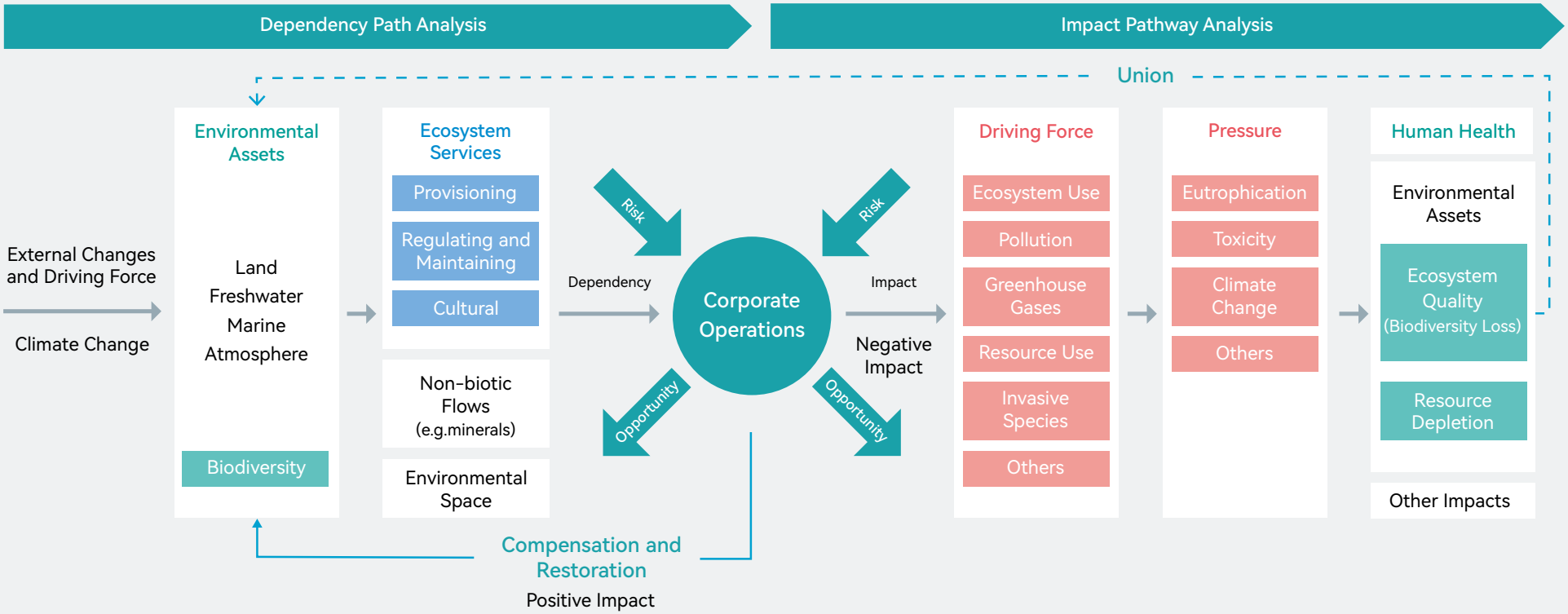
- Coastal Zone Management Act - Coastal conservation Zone
- Cultural Heritage Preservation Act - Natural Reserves
- Wetland Conservation Act - Wetlands of Importance
- National Park Act - National Parks
- Wildlife Conservation Act - Wildlife Refuges
- Wildlife Conservation Act - Major Wildlife Habitats
- National Park Act - Natural Reserves
- Conservation Corridors

[1] A two-kilometer radius is drawn around the center of each facility site to define its potential impact area

Potentially Disappeared Fraction of species[1]

To better understand the impact of its operations on nature, we evaluated both the potential and actual biodiversity loss resulting from environmental emissions including greenhouse gases, air pollutants, water pollutants, and waste disposal, across 26 manufacturing sites. Through scientific data analysis and impact pathway modelling, we aim to identify how operational activities directly or indirectly contribute to habitat degradation, species loss, and ecosystem service decline. Based on these findings, we will implement risk control and improvement measures.

Dependency and Impact Structure



[1] Potential biodiversity loss (PDF): the likelihood of ecosystem degradation caused by pollutant emissions into the natural environment

Category \ Impact	Potential Pollutants	Environmental Impact	Ecosystem Damage
Greenhouse Gas Emissions	GHGs (CO_2、N_2O、CH_4、HFCs、PFCs、SF_6、NF_3)	• Changes in climate conditions (rising temperatures, altered precipitation patterns, shifting climate zones) • Rising temperatures disrupt the global atmospheric energy balance • Ocean acidification • Rising sea levels	• Energy imbalance increases the frequency of extreme weather events (such as droughts and floods), leading to changes in terrestrial biodiversity • Declining dissolved oxygen levels in the ocean results in changes in marine biodiversity • Rising sea levels impact terrestrial ecosystems
Air Pollutants	NO_x, SO_x, PM2.5/PM10, Volatile Organic Compounds (VOCs)	• Th formation of acid rain increases hydrogen ion concentration in precipitation and soil	• Acidic soils affect terrestrial flora and fauna
Water Pollution	COD, BOD, SS, nickel, copper, nitrate nitrogen, orthophosphate	• Nutrient enrichment in water bodies leads to eutrophication, reducing dissolved oxygen • Heavy metals biomagnify in the food chain, resulting in aquatic toxicity and reduced species abundance	• Eutrophication leads to fish mortality • The collapse of benthic communities leads to unstable food webs • Heavy metal poisoning impairs fish reproduction
Waste	Plastics, electronic waste	• Pollutant emissions generated from the final treatment of waste disposal • Emission data modelling for various treatment technologies utilizing the Ecoinvent database • Assessment of impacts on biodiversity using the LC-Impact methodology	• Ecosystem impacts from air emissions, wastewater discharges, and resource use associated with waste treatment processes

The company has adopted the GLAM Phase 3 released in 2024 by UNEP and SETAC as the primary impact assessment model. Due to the current database gap with the GLAM framework, the LC-Impact methodology was adopted as a comparable alternative for assessing waste management. These models help us understand the potential impact of various pollutants on biodiversity. Analysis results show that greenhouse gases, air pollutants, water pollutants, and waste have relatively minor impacts on biodiversity across terrestrial, freshwater, and marine ecosystems. The most significant potential biodiversity losses are found in freshwater ecosystems, with greenhouse gases and water pollution as the primary drivers.

Affected Ecosystems	Biodiversity Loss (PDF) [1]
Terrestrial	9.61×10^{-8}
Freshwater	4.26×10^{-6}
Marine	2.69×10^{-7}

[1] Rate at which pollutant emissions may contribute to global terrestrial species loss

Impact of Greenhouse Gases on Ecosystems

Ecosystem	Cause	Key Pollutants	Result (PDF)	Findings	Mitigation Plan
Terrestrial	Climate change	GHGs	8.68×10^{-8}	Climate change driven by GHG emissions affects all ecosystems, with freshwater ecosystems being comparatively more affected.	Reducing emissions, protecting ecosystems, and enhancing climate adaptation are effective ways to mitigate impacts.
Freshwater	Climate change	GHGs	3.89×10^{-6}		
Marine	Climate change	GHGs	2.12×10^{-7}		

Impact of Water Pollution on Ecosystems

Ecosystem	Cause	Key Pollutants	Result (PDF)	Findings	Mitigation Plan
Freshwater	Toxicity, eutrophication	Toxic chemicals; nitrogen, phosphorus	3.66×10^{-7}	Water pollution significantly impacts fresh water and marine ecosystems, with eutrophication and toxic substances posing serious threats to biodiversity and ecological balance.	Preventing pollution at its source, alongside ecological restoration and continuous monitoring, is key to safeguarding the health of aquatic ecosystems.
Marine	Eutrophication	Nitrogen	5.63×10^{-8}		

Impact of Air Pollutants on Ecosystems

Ecosystem	Cause	Key Pollutants	Result (PDF)	Findings	Mitigation Plan
Terrestrial	Acidification	So_x, No_x	9.27×10^{-9}	Acidification is a slow and cumulative process; while the short-term impact of acidification on terrestrial ecosystems is relatively minor, long-term biodiversity loss is possible.	Controlling air pollutant emissions and strengthening ecosystem monitoring and restoration are key to maintaining the health of terrestrial ecosystems.

Impact of Waste on Ecosystems

Ecosystem	Cause	Key Pollutants	Result (PDF)	Findings	Mitigation Plan
Terrestrial	Combined assessment	LCI data & characterization model	2.72×10^{-6}	The disposal of waste (including incineration and landfilling) affects all ecosystems.	Enhancing waste management systems and promoting circular economy strategies can effectively reduce ecological risks.
Freshwater	Combined assessment	LCI data & characterization model	2.20×10^{-6}		
Marine	Combined assessment	LCI data & characterization model	2.45×10^{-6}		

Through this biodiversity loss assessment, we can confirm that ongoing reductions in greenhouse gas emissions, aligned with net-zero targets, can significantly lower potential impacts on biodiversity. Meanwhile, long-term monitoring mechanisms will be established for water pollutants. Based on emission characteristics and ecological risk, the following indicators will be prioritized: COD, BOD, SS, copper (Cu^{2+}), nickel (Ni^{2+}), nitrate nitrogen, and orthophosphate.

Implementation Actions

ASE Kaohsiung – TNFD-LEAP Action Plan

In 2023, the Kaohsiung Facilities initiated a biodiversity risk and opportunity assessment using the TNFD-LEAP framework, with a focus on the relationship between its manufacturing activities and the natural environment, including the ecological impacts of its operational processes. The assessment identified opportunities for both improvement and ongoing maintenance in key areas, including enhancing circular water use, establishing eco-friendly on-site infrastructure, maintaining and strengthening environmental management, and deepening engagement with local communities. In 2024, ASE Kaohsiung Facilities launched the following action plans and performance results based on the opportunities and areas for maintenance identified through the TNFD assessment:

Positioning		Action Plan	Performance
Opportunity	Enhance circular water use to reduce reliance on natural water resources	Manufacturing Processes: • Adjusted upstream machine operating parameters to reduce DI water usage in rinsing systems, increasing water recovery • Introduced new cutting tools to increase feed speed and reduce water flow during cutting Facility Operations: • Expanded systems to increase reclaimed water volume • Optimized operational procedures of recycling systems to further enhance water reclamation	• Tap water usage in 2024 decreased by 4.7% compared to 2023 • Water recycling rate in 2024 increased by 2.4% compared to 2023
	Establish eco-friendly infrastructure within the facility	Installed small-scale bird window strike prevention measures on windows	Coverage of protective measures increased by 4.5%
Maintenance	Maintain and strengthen environmental management within the facility	Effluent concentrations remained significantly below regulatory standards	Actual values were approximately 87%–99% lower than legal limits
	Continue fostering positive relations with local communities	• Established an energy-saving volunteer team to assist local residents with the maintenance of public facilities, including conducting water and electricity audits and making necessary adjustments • Invited nearby elementary schools and water patrol teams to co-organize river cleanup events	Number of events increased by 50%

ASE Chungli – Huangqian Creek Restoration Project

Beginning in 2024, ASE launched a three-year ecological restoration project aimed at restoring the ecosystem services of the creek and advancing toward the policy goal of achieving a net positive impact (NPI) on biodiversity.

5.8 Environmental Expenditures and Investments

ASEH adopted the "Industry Guidelines for Environmental Accounting" published by Environmental Protection Administration of Taiwan. We combined our existing accounting systems with environmental control coding to classify our environmental expenditures into categories in accordance with the nature of costs incurred. Our environmental expenditure is calculated and analyzed quarterly to ensure data accuracy and facilitate effective assessment.

Environmental Costs

ASEH's total environmental costs for 2024 amounted to US$ 160.25 million, with capital expenditure and expense accounting for 45.81% and 54.19% respectively.

Unit:US$ million

Category		Description	2021		2022		2023		2024	
			Capital Investments	Operating Expenses	Capital Investments	Operating Expenses	Capital Investments	Operating Expenses	Capital Investments	Operating Expenses
Operating Cost	Pollution Prevention Cost	Air, water, other pollution prevention, etc.	33.5	18.9	41.7	22	73.9	20.9	63.45	20.92
	Resource Circulation Cost	Efficient utilization of resources, waste reducing, recycling, and disposal, etc.	7.0	41.8	16.2	39.5	7.5	29.3	5.89	31.43
Upstream/Downstream Cost		Green procurement, recycling of used products, etc.	0.7	5.7	3.4	7.1	0.1	2.0	1.10	22.62
Administration Cost		Manpower engaged in environmental improvement activities and environmental education, acquisition of external environment licenses/certification, government environmental fees, etc.	0.1	11.2	0.5	11.5	0.2	11.3	2.96	10.20
Social Activity Cost		Donations to, and support for, environmental groups or activities, etc.	-	3.7	-	4.0	-	3.6	-	1.61
Environmental Remediation Cost[1]		Pollution remediation, insurance fees, environmental fines, and litigation costs, etc.	-	0.01	-	0.0002	-	0.01	0.01	0.01
Others		Global environmental conservation cost and cost to develop products to curtail environmental impact at the product manufacturing stage, etc.	0.01	0.04	-	0.1	-	0.03	-	0.05
Total			**41.3**	**81.4**	**61.8**	**84.2**	**81.8**	**67.1**	**73.4**	**86.8**

[1] Environmental Remediation Cost: Legal fees incurred by ASE Kaohsiung for administrative consultation and settlement agreement, and costs related to non-major incidences (less than US$10,000/case) at ASE Chungli and USI Nantou. For the year 2024, we were not subjected to any major financial penalties of greater than US$10,000, or non-financial penalties such as facility shutdown or litigation records. For more details, please refer to Appendix: Environmental Data- F. Environmental Violations.2024

Environmental Benefits

ASEH records environmental benefits generated from activities that reduce impacts on the environment. Our total environmental benefits for 2024 amounted to US$84.31 million.

Unit:US$ million

Category	Description	2021		2022		2023		2024	
		Environmental Benefits	Economic Benefits	Environmental Benefits	Economic Benefits	Environmental Benefits	Economic Benefits	Environmental Benefits	Economic Benefits
Cost Savings	Reduction in costs due to energy saving and carbon reduction projects	1,107,145 MWh	62.8	938,236 MWh	50.1	1,022,276 MWh	60.38	1,050,966[1] MWh	49.26
	Reduction in water costs due to water saving projects	37,817,390 metric tons	16.7	45,880,154 metric tons	19.3	47,214,933 metric tons	18.81	48,035,891 metric tons	22.51
	Reduction in waste disposal costs due to waste recycling	69,091 metric tons	18.7	52,207 metric tons	13.5	49,520 metric tons	11.32	56,315 metric tons	12.54
Total		-	**98.2**	-	**82.9**	-	**90.5**	-	**84.3**

Our estimated environmental capital expenditures for 2025 will be approximately US$36.36 million. The board of directors has resolved in 2024 to contribute around US$3.7 million (NT$100.0 million) through the ASE Environmental Protection and Sustainability Foundation to fund various environmental projects in 2025.

Sustainable Financing

At ASEH, sustainable financing serves as a strategic catalyst to advance our low-carbon ambition and accelerate business transformation in response to climate change. To demonstrate this commitment, we have concurrently issued two Green Bonds, structured sustainability-linked Loans, and in 2025, signed a sustainability-linked syndicated loan that directly ties our financial terms to the three key ESG demensions. By directing green capital into initiatives such as energy efficiency improvements, circular resource utilization, and sustainable supply chain development, we aim to strengthen our sustainability performance while collaborating closely with suppliers to embed sustainable practices across the value chain. Going forward, we will continue to assess and pursue green investment opportunities that help drive the global value chain toward a low-carbon, sustainable future.

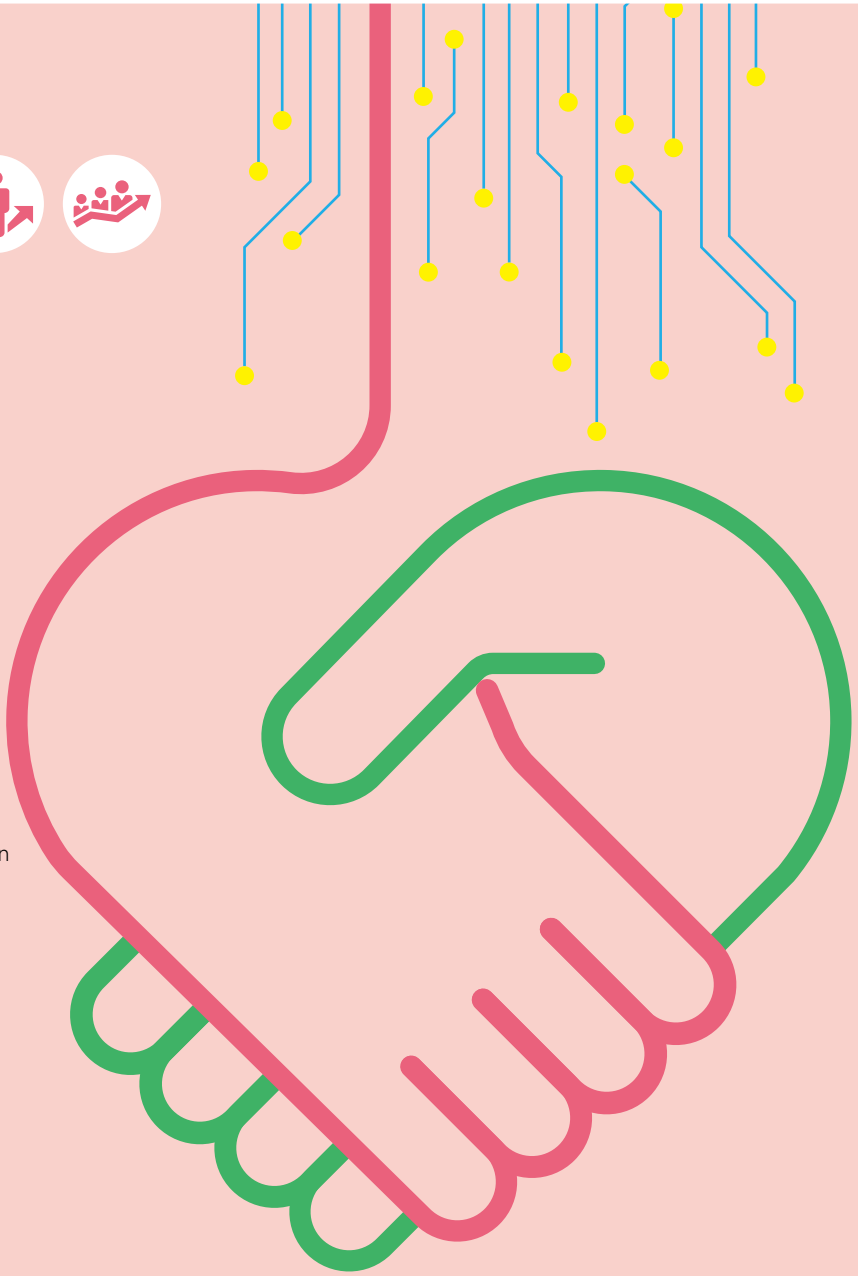
- **2014:** Advanced Semiconductor Engineering, Inc. issued a 3-year Green Bond with a total value of US$300 million via indirect shareholding of its subsidiary, Anstock II Limited.
- **2019:** ASEH issued Green Bonds with 3 year (type A) and 5 year (type B) terms respectively at a total value of US$300 million.
- **2021 to present:** ASEH entered into Sustainability-linked Loans with multiple banks.
- **2025:** ASEH signed a NT$50 billion Sustainability-Linked Syndicated Loan with 17 financial institutions.

[1] The reduction in electricity by using renewable energy and purchasing I-REC is included

Inclusive Workplace

At ASEH, the concept of People-First is fundamental to our corporate philosophy of creating diversity and inclusion. The company respects the differences and values of each individual that help shape a diverse labor force, and commits to providing our employees a safe, healthy and high-quality work environment as well as protecting their human rights.

We are also committed to creating an environment for employees to achieve meaningful and valuable career developments within the organization. To that end, investing in talent management is the lynchpin of our human capital strategy to maintain a skilled and experienced workforce that fuels innovation and provides the company a leading edge.



ASEH Human Capital Development

Education
Training Effectiveness
Competency Development

Retention
Equal Respet and Communication
Safety Workplace

Recruitment
Organization Planning
Recruitment and Selection

Utilization
Career Planning
Performance Appraisals

2024 Key Performance

>352 million
Employees Bonus[1] (US$)

16,041
New Hires

29.7%
Females in Management Positions

16.5%
Females in Top Management Positions

31,055
Regular Employees in Labor Unions

SDGs	Business Actions	2024 Material Aspects	KPI	2024 Target	Status	2024 Performance	2025 Target	2030 Target
4 QUALITY EDUCATION	Ensure that all employees have access to vocational training and lifelong learning opportunities	Talent Cultivation and Development	Employee Engagement Survey Coverage (%)[2]	-	-	-	>90%	>95%
			Turnover Rate (%)	<20%	Achieved	11.4%	<15%	<15%
		Diversity and Inclusion	Female Employee in Top Management Positions (%)	14.6%	Achieved	16.5%	>15%	>17.5%
			Female Employee in STEM Positions (%)[3]	-	-	-	>75%	>20%
		Human Resource Development	Management Positions through Internal Promotions (%)	>75%	Achieved	85.5%	>75%	>75%
			Rate of Open Positions Filled by Internal Candidates (%)	>50%	Achieved	64.1%	>50%	>55%
8 DECENT WORK AND ECONOMIC GROWTH	Formulate and support a comprehensive workplace safety framework to ensure decent working conditions for all employees across the industry	Occupational Health and Safety	Cases of Major Injury[4] and Occupational Disease	0	Not Achieved	Major Injury:0 Occupational Disease:9	0	0
			Disabling Injury Frequency Rate (FR)	<0.5	Not Achieved	0.52	<0.5	<0.5
			Disabling Injury Severity Rate (SR)	<9	Not Achieved	16.06	<9	<9
			Employee Absenteeism Rate (%)	<2.3%	Achieved	1.6%	<2.3%	<2.3%

[1] Employee Bonus includes: Monthly Incentive Bonuses + Annual Profit-sharing Bonuses
[2] The Employee Engagement Survey is conducted every two years, with the next implementation scheduled for 2025
[3] New target in 2025
[4] The definition of major Injury: occupational fatality

6.1 Talent Attraction and Retention

Diversity in Human Resources

In 2024, ASEH has over 84,000 employees worldwide[1], of which 99.7% are regular employees and 0.3% are contract employees. There are 41,069 employees in management, engineering and administration positions, and 43,149 employees in technical positions on the production line. With an average employee age and tenure of 38 years old and 9 years respectively, ASEH's human capital structure is robust enough to support the company's rapid growth. To attract employees, ASEH ensures that its subsidiaries offer compensations and benefits that do not discriminate on the basis of gender, age, nationality, race, religion or job position. Due to the nature of the semiconductor industry, engineering positions require STEM (science, technology, engineering, and mathematics) knowledge and skills. Therefore, 80% of the company's engineering positions are held by male employees, while female employees form the majority in administrative positions (Nearly 70%) and technical positions on the production line (Nearly 70%). More than 6,000 female employees at ASEH hold STEM-related positions, accounting for approximately 18.3% and the proportion of female employees who hold management positions is more than 29.7%.

We understand that a diverse and inclusive workplace environment that maximizes the unique and different traits of employees facilitate the organization's operational efficiency. Globally, ASEH has established 26 operating locations in nine countries and hired employees of 21 different nationalities. More than 96% of our employees are from Taiwan, China, Philippines, Malaysia, Mexico and South Korea. Nearly 70% of our employees are based in Taiwan - the primary location of our operations, 20% in China, and the rest in the Asia-Pacific and America regions. ASEH have gradually increased the hiring of persons with disabilities– achieving 644[2] persons in 2024.

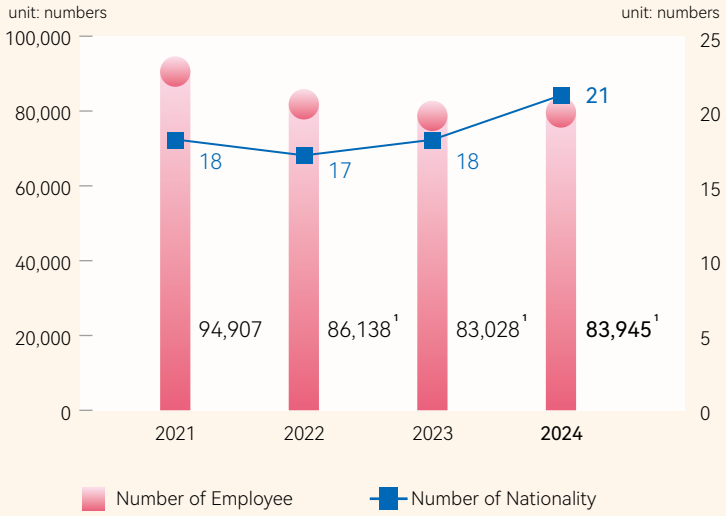
[1] The employees' data covers all of our manufacturing facilities, but excludes our sales, administrative and other offices located in U.S.A. and Europe

[2] According to local legislation, the weighted employment ratio of persons with disabilities at the Taiwan facilities exceeds 1% of the total workforce, which is in compliance with legal requirements; at the USI Nantou facility, workers with disability contributed to less than 1% of the overall workforce and the company paid for the difference in subsidy fees as required by law.

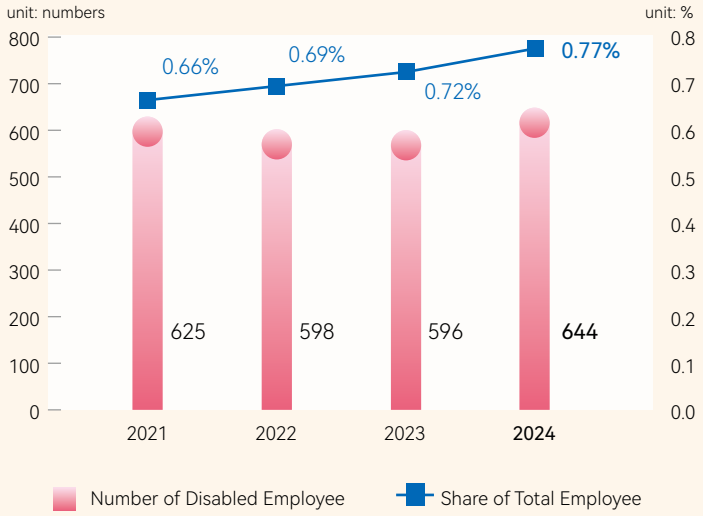
Global Workforce Structure

Category	Group	Number	Percentage of Total Employee (%)
Employment Type	Regular	83,910	99.7%
	Contract	268	0.3%
Gender	Male	44,106	52.4%
	Female	40,072	47.6%
Location	Taiwan	59,628	70.8%
	China	13,880	16.5%
	Rest of Asia	7,476	8.9%
	Americas	3,194	3.8%
Disabled Employee	Male	386	0.5%
	Female	258	0.3%
Position	Management	6,385	7.6%
	Engineering	28,906	34.3%
	Administration	5,738	6.8%
	Skill Job	43,149	51.3%
Age	<30	19,117	22.7%
	30-50	58,417	69.4%
	>50	6,644	7.9%
Education	Ph.D	165	0.2%
	Master	7,722	9.2%
	Bachelor	33,191	39.4%
	Other Higher Education/High School and Below	43,100	51.2%
Total		**84,178**	

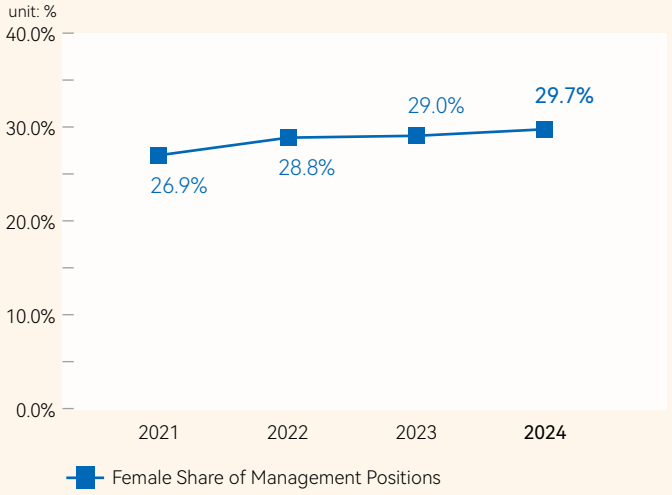
Total Employee and Nationality



Disabled Employee

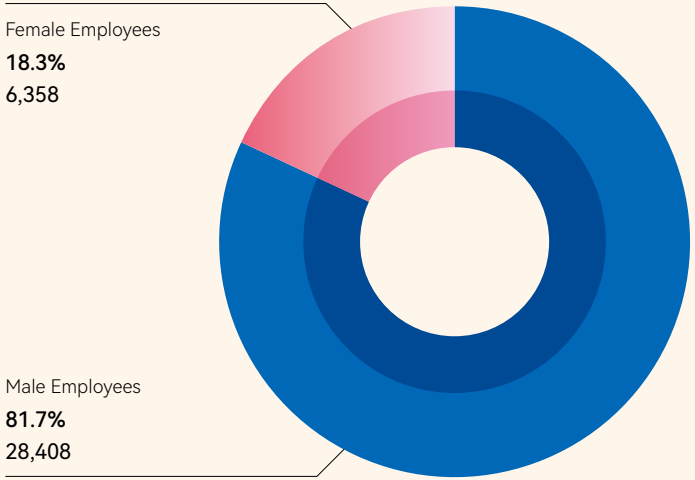


Females in Management Positions



[1] The number of employee by nationality do not include ISE Labs

2024 STEM-related Positions Employee (by Gender)



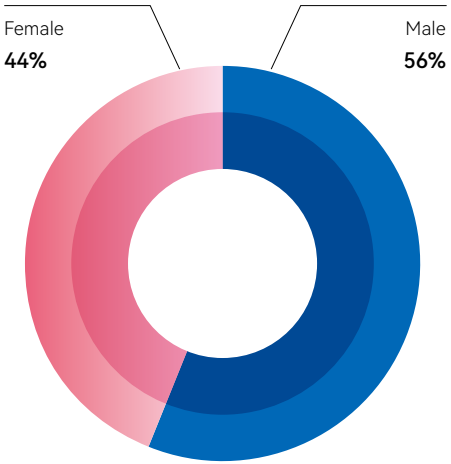
Talent Recruitment

ASEH and its subsidiaries employ a diverse, equality and inclusive recruitment policy that prohibits discrimination against any employee or job applicant on the basis of gender, age, race, nationality, religion, political affiliation or sexual orientation. The company is committed to complying with local laws and regulations, upholding its Code of Business Conduct and Ethics, protecting and respecting human rights and adhering to the Responsible Business Alliance ("RBA") Code of Conduct. ASEH forbids the use of child or forced labor and discourages recruitment agencies from collecting agency fees from foreign employees.

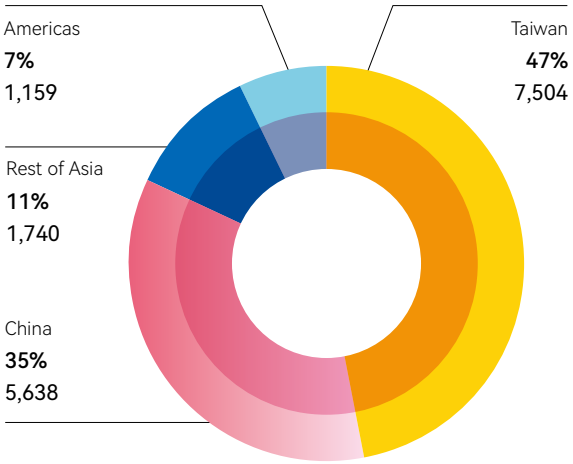
ASEH's corporate recruitment policy takes into account the conditions and culture of the local communities as well as the job characteristics. We recruit through various channels including campus recruitment, employee referrals, industry-academia internship programs, the R&D substitute service program, executive search firms, recruitment fairs, online recruitment and digital job boards. In 2024, ASEH recruited over 16,000 employees, of which 25% are engineering positions, and 15% of female engineering employees, 69.3% are skilled technical positions on the production lines. ASEH has also hired 138 persons with disabilities.

As a global enterprise, we recruit a diverse pool of high-quality talents from all over the world. Helping foreign employees adapt and retaining talent at the workplace are our top priorities. In 2024, we hired over 3,000 new foreign employees. Our subsidiaries provide new hires with interpreter service and also assign them with senior foreign employees from the same country so as to help them adjust to their new work environment and familiarize themselves with the local culture. Foreign employees are also provided educational training programs in languages they understand, and they are accorded the same benefits as local employees. Our global and diverse talent recruitment policy has helped us improve the company's global advantage and competitive capabilities, thus allowing us to meet the market needs of an increasingly diverse customer base. We believe that a workplace culture defined by diversity and inclusion, will allow employees to grow and develop mutual respect, resulting in a genuinely inclusive work environment.

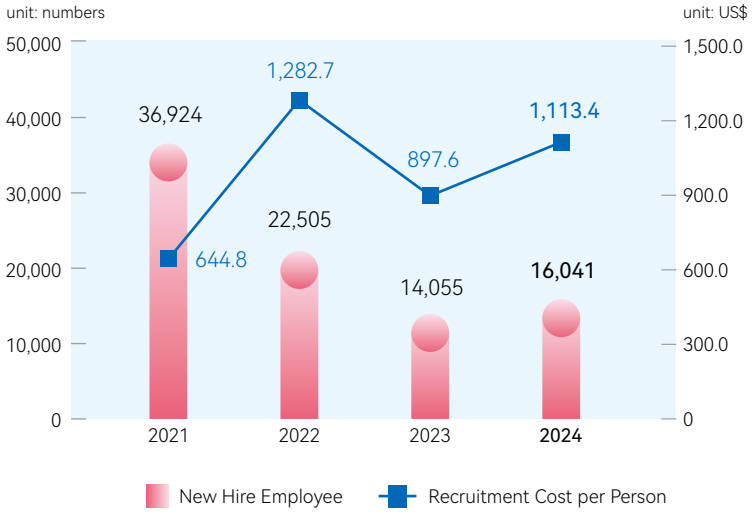
New Hires
(by Gender)



New Hires
(by Location)



New Hires and Recruitment Cost



Key Highlights –

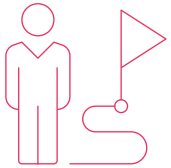
Fostering an Inclusive Environment for Migrant Workers and Cultivating Global Talent for Diversity and Sustainability



In response to intense global competition in the semiconductor industry and a rapidly evolving workforce landscape, the company is striving to support foreign talent through the development of localized programs that provide comprehensive training and welfare oversight. We are committed to building a supportive ecosystem that enables foreign talent to "arrive, thrive, and succeed" in Taiwan. Guided by a people-centric approach, our measures comprise the design of a foreign talent HR framework, language training, career development, and community engagement, that seek to help foreign employees integrate into the workplace and local society, thereby fostering a resilient and inclusive work environment.

[Unified Training System – Building a Foundation for Talent Retention]

ASE Kaohsiung has developed a fully standardized onboarding program tailored for white-collar foreign employment. The program comprises 58 English-language digital classes that provide new hires pre-employment training, tiered instruction, and employee care. Assessments conducted at each training phase, combined with interactive forum discussions and regular supervisor check-ins ensure employees receive timely support, facilitating a smooth transition into their roles and workplace.



[Improving Language Skills – Bridging the Communication Gap]

To support non-Chinese-speaking employees in overcoming language barriers, ASE Kaohsiung partnered with local schools in 2022 to offer Mandarin courses. By 2024, a total of 230 employees had participated in the program. The curriculum includes learning pinyin, vocabulary for daily use, transportation and self-introduction, as well as common workplace jargon. Language proficiency levels are evaluated through end-of-term oral exams, with follow-up learning plans developed based on individual performance. In 2024 alone, over half of the 82 employees enrolled scored a B or above, demonstrating strong learning outcomes. ASE Kaohsiung also collaborated with universities to design digital teaching materials covering pinyin and workplace Mandarin to further strengthen the quality of language classes. The company is also expanding its reach to promote multicultural awareness and engagement through videos documenting the major cultures of various countries. These videos, screened during major festive celebrations of each country, have averaged over 5,600 views each and hit a high of 68% impression rate among foreign employees.

[Building Cultural Communities – Strengthening Local Connections]

To help new employees adapt quickly to local cultural norms, ASE Kaohsiung presents them with "Welcome Kits" that include practical information on transportation, shopping, and local attractions. Newcomer care seminars are held at one-month and three-month intervals to familiarize foreign employees with company policies, living conditions, and job responsibilities. Feedback is collected through surveys to track their adjustment process. ASE Kaohsiung has also established an exclusive employee club for foreign workers, the "Bayanihan Club", organize cultural celebrations and social gatherings to foster mutual support, cross-cultural exchange, and stronger connections to the community, enhancing foreign employees' sense of belonging.



[Holistic Care and Career Development]

ASEH is committed to a holistic approach that supports foreign employees throughout their entire tenure at the company; from recruitment and onboarding to their career journey and eventual return to their home countries. We uphold a zero-fee policy to eliminate risks of modern slavery and our multi-channel communication platform that is operated 24/7, allows employees to voice concerns at any time. These are complemented by mentorship programs, team-building competitions, and social activities that promote workplace engagement and enhance quality of life. On the career development front, we offer continuous professional development programs during the employee's service with the company. These include tuition subsidies that help support them in obtaining university degrees and progressing into engineering or managerial roles. In line with government policies promoting mid-level skilled talent, the company also extends support to eligible employees in applying for permanent residency, helping them transition from temporary migrant workers into locally integrated professionals

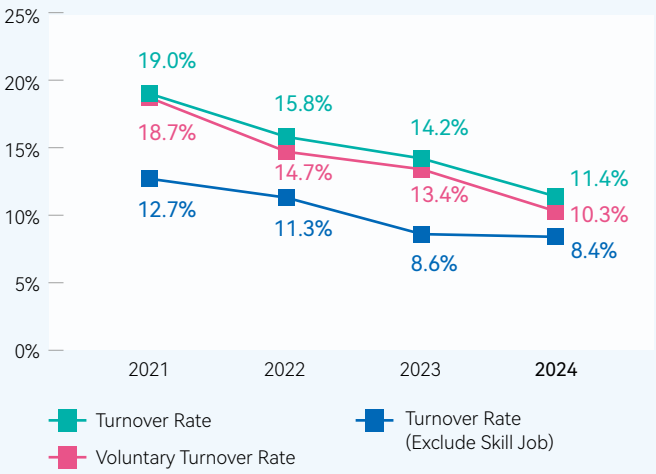
Employee Turnover[1]

Employee turnover at ASEH was 11.4% in 2024, a 2.8% decrease from the previous year. The turnover at our facilities in Taiwan was lower than 7%. The employee turnover rate at ASEH broken down into 55% male vs 45% female. In terms of job types, production line skill job position form the majority with 64.16%, while management, engineering and administrative positions formed the remaining 35.84%. On a biannual basis, ASEH subsidiaries conduct employee engagement surveys to encourage feedback and opinion sharing from employees. ASEH also perform annual analyses on the causes of attrition for different job types, the turnover was mainly attributed to factors such as remuneration, career growth and personal reasons, so as to make corresponding improvements for increasing employee job satisfaction and talent retention rates. As a technology company, we apply big data analytics to identify underlying and correlating factors that affect turnover and extrapolate behavioral factors that contribute to talent attrition. The analysis combines other factors such as regional attributes and challenges, to identify talent retention risks and project potential employee turnover rates. A deeper understanding of the dynamics affecting turnover will help the company to formulate strategies to manage the risks for retaining talent. Meanwhile, for facilities with high turnover among new hires, various actions will be adopted to help employees adapt to their work environment and prevent the depletion of human capital.

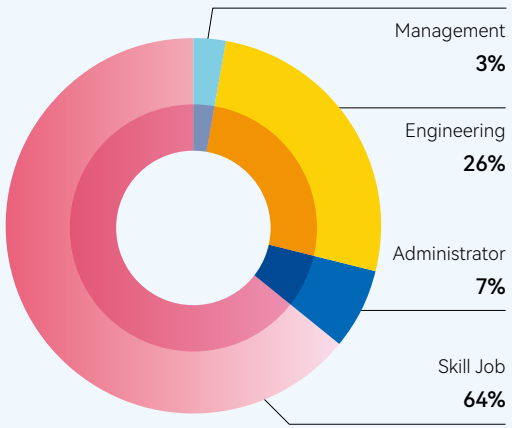
Reason for Resignation	Improvement Measures
Salary and Benefits	• Periodically adjust salary and benefit packages based on industry standards to maintain the Company's competitiveness • Issue stock options and cash bonuses to employees that display outstanding performance
Career Advancement	• Build a comprehensive career advancement system that provides multi-channel trainings (internal and external training programs) and an internal job rotation and transfer mechanism, helping employees to acquire the necessary on-the-job training and project experience and offering promotion or job transfer opportunities based on organizational/ business needs • Create a direct communication channel through which management can explain future career pathways to entry-level employees in person
Family and Personal Health Issues	• Develop an in-house working hours management and control system to help supervisors manage their subordinates' working hours, send SMS or email alerts to employees working longer hours and remind them to complete their tasks more efficiently so as to balance their work and family life • For family/personal health issues that can be resolved by the company, supervisors may adjust the job requirements or place of work of subordinates with their consent

[1] Turnover rate includes voluntary resignations and terminations due to poor performance, but does not include employees on probation at time of termination.

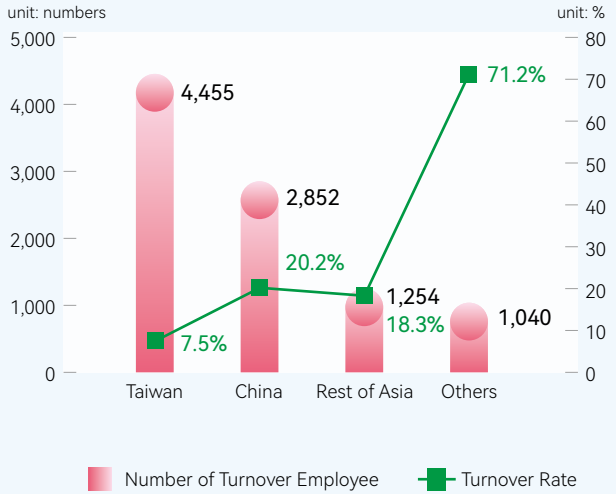
Turnover Rate



2024 Turnover Employees (by Position)



2024 Turnover Rate (By Working Location)



Talent Retention

ASEH provides a conducive environment for employees to unleash their full potential to create innovative technologies or to demonstrate effective management skills. The growth of the company is strongly dependent on attracting and retaining talent.

Key Retention Strategy

a. Highly Competitive Compensation and Benefits

b. Fair and Comprehensive Performance Review

c. Open Communication and a Grievance Mechanism

d. A Multi-faceted Employee Engagement Survey

Compensation and Benefit Policy

ASEH provides competitive remuneration packages that consist of base salary, subsidies, employee cash bonuses and other compensation based on a combination of the company's achievements of business objectives and profitability, as well as the employees' job responsibilities, professional qualifications and job performance etc. Employee remuneration is not determined based on factors such as gender, age, race, nationality, religion, political stance or gender orientation. Every year, our facilities benchmark employee base salaries with the local market rates to ensure a competitive compensation structure. In order to attract and retain talent, and reward performing employees, the company has established monthly incentive and annual profit-sharing bonuses. Monthly cash incentive bonuses are provided to employees with outstanding performance based on the company's operating goals and profitability, while annual profit-sharing bonuses vary according to the employee's individual contribution levels and performance. In 2024, ASEH's employee bonuses amounted to US$352 million (including monthly incentive and annual profit-sharing bonuses), with the accumulated total from 2017 to the end of 2024 reaching US$2,976 million. In addition, employees with outstanding performance are awarded company stock options, is aimed at retaining outstanding employees.

Employees Bonus



Male/Female Salary and Compensation Ratio

Category	Group	2021		2022		2023		2024	
		Male	Female	Male	Female	Male	Female	Male	Female
Executive Level	Salary	1	0.96	1	1.03	1	1.03	1	1.03
	Compensation	1	0.88	1	1.02	1	1.00	1	1.03
Management[1]	Salary	1	0.94	1	0.96	1	0.99	1	0.97
	Compensation	1	0.96	1	0.96	1	1.00	1	1.01
Non-management	Salary	1	0.989	1	0.989	1	0.993	1	0.985
Engineering	Salary	1	1.01	1	0.98	1	0.97	1	0.94
Administration	Salary	1	0.97	1	0.99	1	0.96	1	0.94
Skill Job	Salary	1	0.99	1	0.99	1	1.02	1	1.02

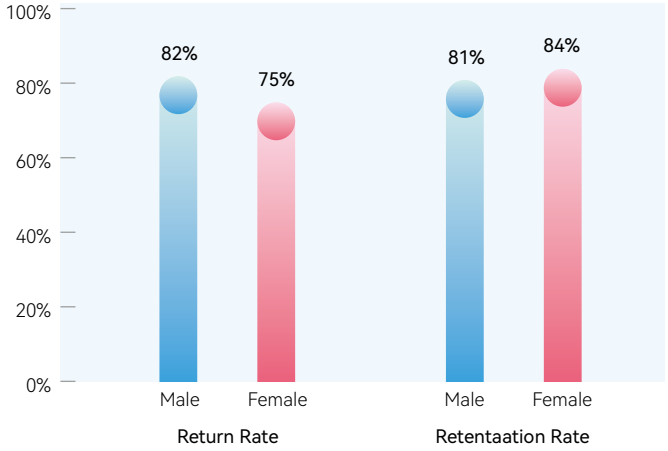
[1] The management level encompasses both managerial and assistant managerial positions

Maternity Benefits and Parental Care

Friendly Workplace

To alleviate the burden on employees, ASEH has built a comprehensive leave management system in alignment with the various local government policies on parental leave. We proactively provide employees with information on labor insurance and subsidies, and assist them with the leave application procedure. A total of 4,923 ASEH employees were on parental leave in 2024, including 988 on unpaid leave. Among the 915 workers expected to return to work, 708 actually returned, equivalent to a 77% return rate and a 83% retention rate. The number of newborn children at all facilities in 2024 was 2,003. Of the total number, 1,344 were from the Taiwan sites, accounting for 1% of all newborns in Taiwan. The data demonstrated the success of the company's comprehensive parental care and benefits allowing our employees mind plan a for a family and the peace of mind to raise children.

ASEH's subsidiaries have implemented a number of maternity benefits that go above and beyond the legal requirements ranging from maternity leave, paternity leave, prenatal check-up leave, childbirth subsidies, to childcare allowances. These initiatives are intended to support employees' worklife balance, and encouraging more childbirth while at the same time, helping to address Taiwan's aging population trend.



Maternity Benefits

Paid Maternity Leave (For the Primary Caregiver)

- **ASE:** Female employees at the ASE Kaohsiung and ASE Chungli facilities are entitled to paid maternity leave of 10 weeks, exceeding the statutory requirement of 8 weeks. They can also apply for an additional 24 weeks of parental leave at 80% of their insured salary.

Paternity Leave and Paternity Check-up Leave (For the Non-primary Caregiver)

- **ASE:** Paternity/prenatal check-up leave for employees at the ASE Kaohsiung and Chungli facilities was extended from the legally mandated 7 days to 10 days. Employees can also apply for an additional 24 weeks of parental leave at 80% of their insured salary.

Congratulations leave

- ASE Malaysia offers a one-day congratulatory paid leave a day after an employee's new born child

Childbirth Subsidies

- **ASE:** ASE Kaohsiung and ASE Chungli offer a child birth subsidy of NT$10,000 per child
- **SPIL:** SPIL plans to offer a child birth subsidy of NT$3,600 per child
- **USI:** USI offers a child birth subsidy of NT$6,000 per child

Childcare Allowance

- **ASE:** Childcare facilities established in ASE Chungli and ASE Kaohsiung in Taiwan, and ASE Korea
- **SPIL:** SPIL offers a monthly subsidy of NT$5,000 per child (NT$10,000 if both husband and wife work at SPIL) aged 0–6 years-old

Breastfeeding and Maternal Health

- Our facilities have dedicated on-site breastfeeding rooms that provide a private, comfortable and safe environment for breastfeeding employees
- A one hour breast milk expression break is provided for employees per day. If employee's overtime exceeds one hour, an additional 30 minute break will be granted. The expression time can be used multiple times within the allocated period and is counted as regular working hours
- A special maternity program was designed to monitor the health and provide support for employees who are pregnant, one year postpartum or are breastfeeding. Other pregnancy friendly workplace programs include conducting health hazard assessments, adjusting work duties during pregnancy, and providing maternity benefits and reinstatement after giving birth



Childcare Facilities

ASEH has 3 facilities worldwide that have set up childcare facilities within their premises – ASE Chungli and ASE Kaohsiung in Taiwan, and ASE Korea.

The ASE kindergartens and childcare centers provide high-quality and affordable education and day care services for employees. To adjust to employee work schedules, our kindergartens operate flexible hours with the nursery operating from 7am to 8pm so that our employees do not need to worry about their children while at work. The ASE childcare and kindergartens are an extension of our employee-care management and we will continue to implement programs that support family values and strengthen employees' loyalty.



ASE Kaohsiung's Kindergarten



ASE Chungli's Kindergarten



ASE Korea's Kindergarten

Flexible Work Arrangements

Taking care of employees' health and well-being is critical to ensure high job satisfaction, productivity and retention rates. A flexible work scheme that allows employees to adjust their work schedules according to personal needs and commitments can drive improvements in morale and productivity, and lower absenteeism. It can also augment our human resource programs to attract and retain top talents, and reduce employee turnover. Flexible work schemes at ASEH and its subsidiary companies include flexible working hours, work from home arrangements and part-time working.

Flexible Work Hours

Providing flexible working hours based on the nature of work and personal needs (including family care or on-the-job training) to meet the requirements of different work hours or time zones. Our employees may apply for work hour adjustments with their supervisor's approval. Flexible work hour schemes have been implemented at ASE facilities in Chungli, Japan and Singapore, as well as USI facilities.

- Employees are allowed to apply for flexible work arrangements due to health or other personal reasons.
- Attend to work duties during scheduled hours, while allowing work flexibility beyond that.
- Maintain flexibility to adjust working hours. Employees are allowed to end their work day whenever they have completed the day's task.

Work from Home

ASE Japan, ISE Labs and USI : Designed a set of policies/ guidelines to allow eligible employees to apply for work from home (remote) on a short or long-term basis.

Part-time Working

ISE Labs has officially implemented a part-time employee policy which provides company benefits to part-timers who work a minimum of 30 hours per week.

Performance Management

We consider performance management a means to improve the performance outcome and value of individuals, organizations, and the company as a whole. ASEH's subsidiaries adopt a multi-dimensional performance management system to evaluate employee job performance which is conducted twice a year for all employees. In addition to receiving timely feedback from their immediate supervisors based on the evaluation, employees can also obtain cross-departmental suggestions from senior management or colleagues. The performance evaluation focuses on individual achievements and goals, and team goals. These assessments serve as the basis for employee promotion, training and development, and compensation. Our evaluation incorporates various approaches which include management by objectives, multi-dimensional performance appraisal, team-based performance appraisal, and agile assessments. Development plans are formulated accordingly after the employees and their supervisors identify areas for improvement in their current roles or future career plans. For employees experiencing performance gaps, supervisors will provide immediate feedback and targeted coaching. Supervisors will be focused on assisting the affected employees to maximize their efficiency in their job roles and responsibilities.

Key Highlights – Team-Based Performance Evaluation Mechanism Drives Organizational Collaboration and Sustainable Growth

To unlock employee potential and reinforce the value of collaboration, ASEH places teamwork at the core of its organizational mindset and operations. While individual contributions are valued, we place even greater emphasis on cultivating trust and a collaborative spirit among teams, encouraging all members to work together toward shared goals. Exceptional individuals may secure major business opportunities but sustained industry leadership relies on the strength and synergy of a capable and cohesive team.

We have developed a Team-Based Performance Evaluation Mechanism that integrates team outcomes into overall performance assessments as a mean to strengthen our team-oriented culture. The evaluation mechanism facilitates greater job alignment and the collective achievement of objectives by establishing clear goals, cross-functional collaboration metrics, and performance illustrations. At ASE Kaohsiung, a variety of internal competitions have been designed to encourage team collaboration and build high-performing teams, stimulating creativity and action, while serving as important benchmarks for team performance evaluation and incentives. Over the year, the competitions organized include the Annual Best Team Award, CIM Technical Competition, Safety Committee Project Challenge, Engineering and Quality Committee Annual Contest, Energy Conservation and Carbon Reduction Campaign, and Equipment Safety Challenge. Such competitions drive employees to contribute proactively to improving quality, efficiency, automation safety and technological innovation, as well as align progressively with the broader team-based performance framework. The effectiveness of these internal competitions depend on a set of clear, measurable objectives and evaluation criteria, where the teams are encouraged to collaborate strategically and divide responsibilities effectively. Through presentations, peer reviews, and score-based assessments, employees not only gain more knowledge but also learn to compete in a healthy environment.

Internal competitions complement the company's annual performance appraisals and reward systems, boosting employee engagement and reinforcing organizational cohesion. This approach not only validates technical skill and innovation, but also serves as a vehicle for embedding shared values and corporate culture. Consequently, a more resilient, unified, and sustainably competitive organizational culture adds fuel to future growth and prosperity.

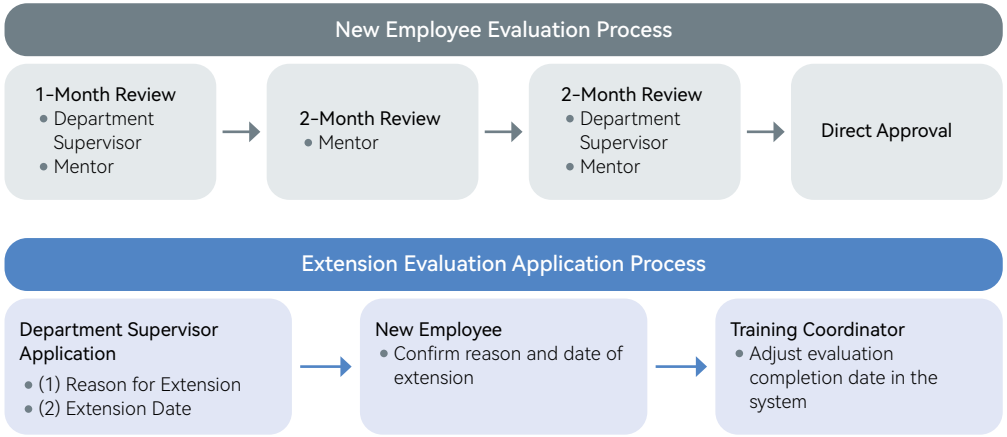
Performance Appraisal

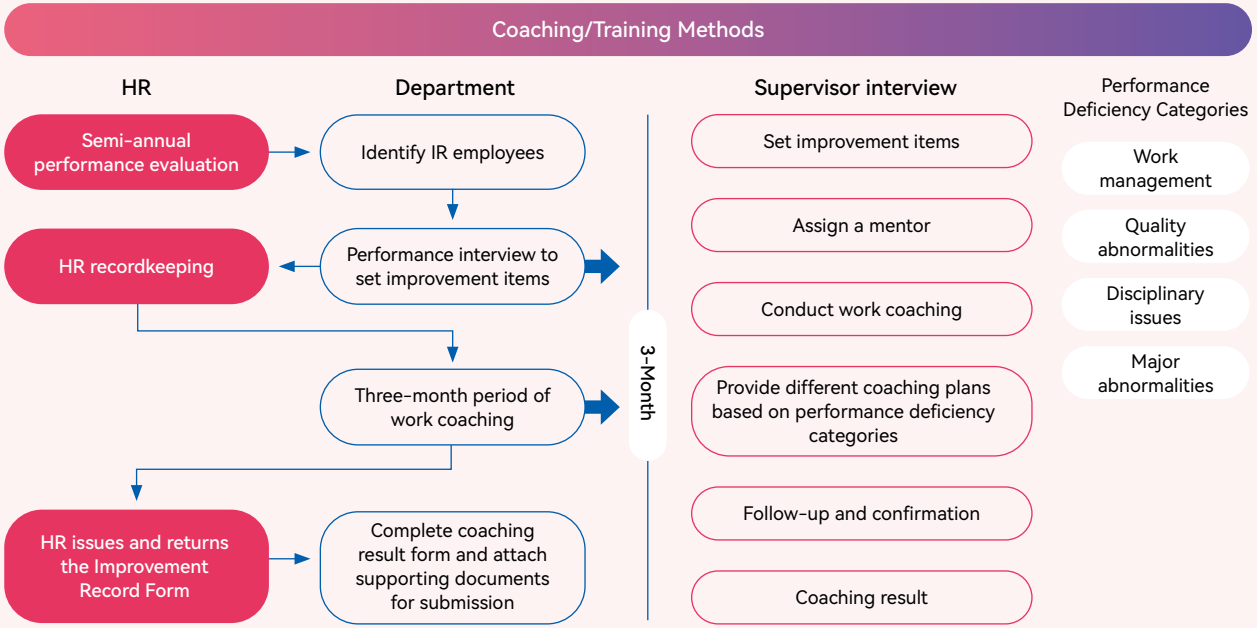
Evaluation	Type	Frequency	Approaches
Management by Objectives	• Performance Evaluation • Management Level Evaluation	Every half-year	• Employees propose work goals and measurable performance indicators. After discussing and confirming with their immediate supervisors, they set periodic goals. At the end of each period, a review to check on the alignment of performance indicators and self-assessment of accomplishments are conducted. The supervisor evaluates the level of goal achievement and provides feedback and suggestions. • Employees at the deputy manager level and above receive evaluations and improvement feedback from their superiors at the vice president level and above.
Multidimensional	• Job Attitude and Promotion Evaluation • Performance Evaluation	Every half-year	• (1) Cross-departmental supervisors provide assessments on team collaboration, accountability, innovation, leadership mindset, and other aspects of daily interactions with the evaluated employees. (2) The employee will present an overview of their past achievements and offer a glimpse into his/her future plans if promoted. The review process is carried out by the individuals' directors or vice presidents to assess their readiness for a higher level of responsibilities. • The evaluation is conducted through a review committee consisting of the immediate supervisors, cross-departmental unit supervisors, team members, and customers. This multi-dimensional approach allows for a comprehensive assessment of the evaluated employee.
Team-based	• Individual Performance Reviews • Team Goal Reviews	Monthly	• On an annual basis, the company formulates overall organizational goals and engages selected key employees through the Annual Objective Deployment (AOD) framework that further connects individual employee goals to long-term company goal. Department heads and key business unit (BU) employees proceed to establish annual goals, project objectives, expected outcomes, and so on. Annual team goals will then be submitted to the company's committee through each BU. • As a team, each BU and factory formulate effective Key Performance Indicators (KPIs) based on the overall annual goals. Within each team, smaller functional groups take stock of the key results at each stage, demonstrating the team's Objectives and Key Results (OKR) and apply them further to individual OKRs.
Agile Conversations	• Monthly Evaluation	Monthly	• Goals are set based on employees' semi-annual performance evaluations. Monthly progress discussions and indicator reviews are conducted between supervisors and employees to provide timely feedback to employees. This practice fosters monthly dialogues between supervisors and employees, monitors organizational productivity, and enables timely response to department and employee performance.

Transition Support Program – Enhancing Employee Growth Opportunities through Training

For newly hired employees with adaptation problems yet willing to continue working, and employees with poor performance evaluations, we provide targeted training and development to ensure proper onboarding guidance, evaluation, and reassignment opportunities. For employees whose performance falls short of expectations or who encounter other exceptional circumstances during the initial three-month evaluation period, department heads may extend the evaluation period to strengthen training and skill development, and conduct progress monitoring.

Throughout the evaluation process, supervisors and mentors provide structured feedback on the employee's learning progress, interpersonal engagement, and work performance. Where adaptation difficulties are identified, departments may adjust training plans or redesign practical learning assignments accordingly. Through hands-on practice, process improvements, and enhanced training arrangements, we aim to improve individual execution capability and efficiency. This enables new hires with potential and aptitude for learning or underperforming employees to be given renewed opportunities for growth. This systematic approach, reinforced by inter-departmental collaboration, not only safeguards organizational performance but also fosters the development of employee potential, achieving the dual objectives of sustainable human resource management and mutual success.





Coaching Process for Underperforming Employees with Below-Standard Performance

To help underperforming employees achieve tangible results that improve job performance and promote workplace stability, we have established a set of Standards for Coaching Underperforming Employees. Our Human Resources Department will work jointly with the relevant business units to identify, interview, provide job-specific coaching, monitor progress, and verify results. Coaching and training approaches are tailored to address the performance discrepancies. By implementing effective improvement plans, we are able to help employees rebuild workplace confidence and regain the momentum for sustained professional growth.

- Improvement Plan: A comprehensive process for coaching and tracking underperforming employees, in which the supervisor conducts review meetings and sets forth specific improvement objectives based on evaluation results and actual performance.
- Coaching and Tracking: The department implements a three-month period of job coaching, providing individualized guidance, progress tracking, and performance verification tailored to the employee's needs.
- Effectiveness Review: Upon completion of the coaching program, the case is submitted to the Human Resources Department for data verification and assessment of improvement outcomes, thereby facilitating future follow-up and ongoing management. This process ensures continued support in clarifying improvement directions and promoting stable career development for the employee.

Employee Communication

ASEH values and respects the opinions and rights of its employees. In an effort to promote open and transparent communication, the company has established comprehensive communication channels including unidirectional and bidirectional communication modes. Employees are able to receive the latest news about the company and express any opinions or concerns they may have about the workplace. To protect and ensure employees' rights, employee opinions may be submitted anonymously.

We promise to maintain the confidentiality of the identities and opinions of employees, who shall not be subject to any unfair treatment or retaliation as a result of their whistleblowing or grievance.

Announcements and Publications

- Intranet - to publish the company's latest news
- E-mail Announcements - to announce company-wide updates and messages from top management
- Bulletin Boards - to provide information related to labor compliance policy, health and safety and company events
- Internal Periodical Publications – interviews with employees and a platform for employees to express their opinions
- News/Information TV Screens - to broadcast employee welfare information

Communications

- Employee Opinion Box / Employee Care Mailbox - to collect and respond to employees' grievance and feedback
- Employee/Foreign Employee Symposium - to share and discuss work experiences; to hold regular symposiums with foreign employees
- Counseling Room - to provide one-on-one counseling sessions
- Email Mailboxes - General Manager/Plant Director Mailbox
- Service/Grievance Hotline – designated telephone hotlines
- Labor Unions and Labor Management Meeting - to have regular communication with labor representatives

In 2024, ASEH and its subsidiaries received a total of 803 employee complaints. Of which, 612 cases were resolved after conducting formal investigations. We have engaged in dialogue with complainants to clarify issues and seek consensus-based solutions, ensuring effective resolution of all cases. Currently, Among the complaint cases, 7 pertained to labor disputes, all of which were resolved amicably after clarifying the facts and giving proper care to complainants; and another 17 cases were sexual harassment complaints relating to nonconsensual physical contact in the workplace where the victims felt violated. Pursuant to internal regulations and procedures formulated in accordance with the 'Act of Gender Equality in Employment' and 'Regulations for Establishing Measures of Prevention, Correction, Complaint and Punishment of Sexual Harassment at Workplace', we forwarded these cases to an internal sexual harassment complaint processing committee to conduct closed door investigations to protect the privacy of complainants. An agent was assigned by the committee to interview both the complainants and appellees, whose given statements were presented to the committee for a final decision on whether each case constituted sexual harassment. Sexual harassment prevention is integral to promoting a healthy and gender-neutral work environment. In addition to carrying out awareness campaigns within our facilities and implementing thorough complaint and processing procedures, we have protective measures in place that give victims the proper care required.

To increase the human rights awareness of all employees, we launched the multifaceted training programs of human rights. In 2024, all of our employees (157,406 person-times) completed a total of 100,161 hours of compulsory human rights training which covered the topics of RBA management, labor rights, gender equality and sexual harassment awareness.

Item	2024	2023	2022	2021
Training Content	RBA management, Labor Rights, Gender Equality and Sexual Harassment Awareness			
Target Audience	All Employees (including New Employees)			
Training Hour (hour)	100,161	145,562	168,044	179,775
Training Person-times	157,406	174,677	184,588	198,603

Guidelines for Processing Sexual Harassment Complaints

Punishment

For cases that constitute sexual harassment, the committee shall issue a warning, disciplinary order, or another form of punishment to the offenders and require that they make an apology to the victims. Serious offenses may be grounds for dismissal.

Counseling

Victims' personal information shall be kept confidential. Victims may apply to transfer to another position as appropriate, or may receive enhanced counseling and care as needed from the HR department to facilitate their smooth return to the workplace.

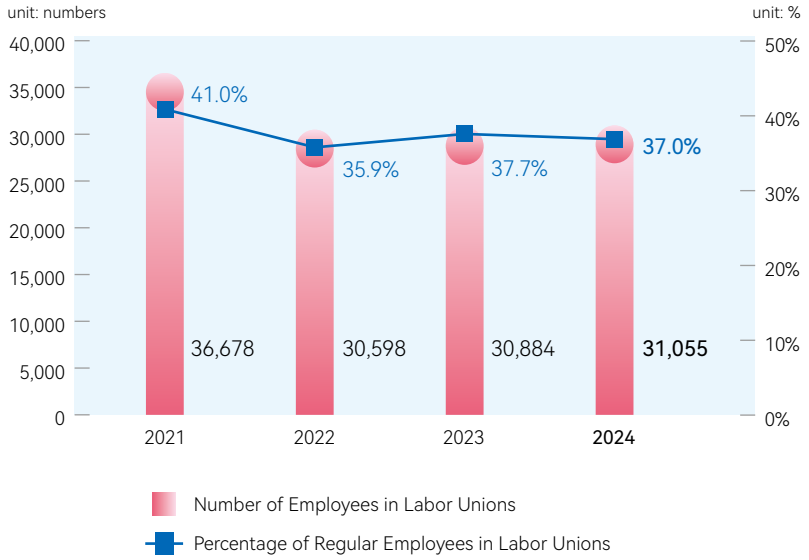
Remediation

Each case shall be reviewed to determine its cause, and offenders shall be tracked, reviewed and monitored to ensure the effectiveness of the disciplinary or counseling measures, and to prevent similar incidents or retaliation from occurring. The results of such processes will then be used as a reference for making adjustments to workplace environment and regulations.

Labor Unions

ASEH recognizes employees' right to freedom of assembly and association. As of the end of 2024, the total number of union members was 31,055, accounting for around 37% of all ASEH regular employees. Among the three ASEH subsidiaries, 20 facilities that have established a labor union – ASE facilities in Kaohsiung, Shanghai (Material), Wuxi, Korea, Japan and Singapore; all of SPIL facility; and USI facilities in Zhangjiang, Jinqiao, Huizhou, Kunshan , Mexico and Suzhou(Asteelflash). Of these facilities, the labor unions of 9 facilities have signed a collective agreement[1] with the company and have regular meetings organized to discuss and resolve issues with employee representatives on employee benefits and the health and safety of the working environment.

Union Statistics

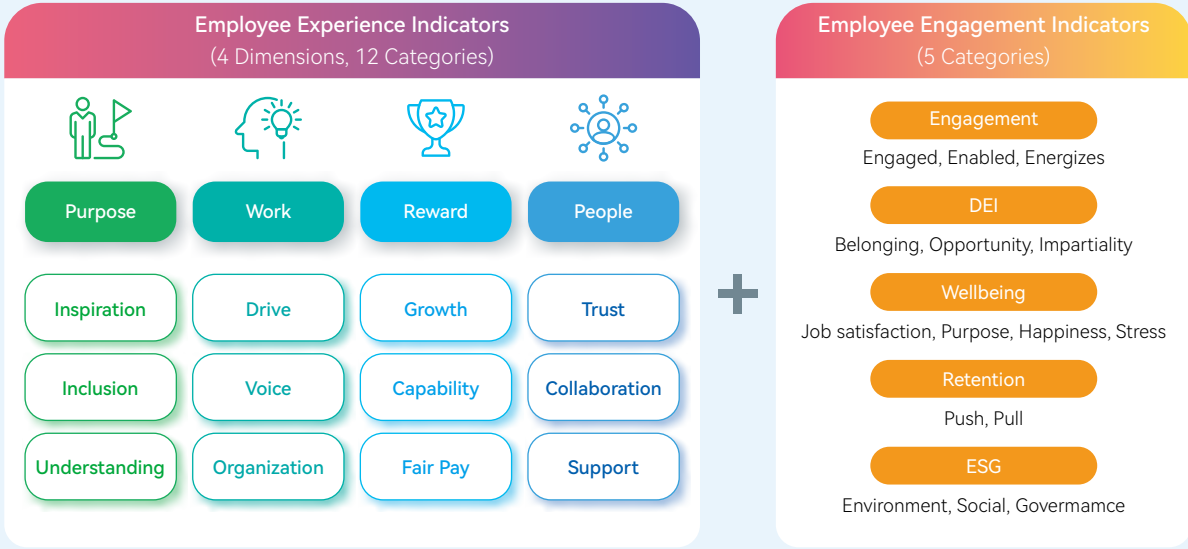


[1] The facilities that have signed a collective agreement are ASE facilities in Wuxi, Korea and Japan and USI's Zhangjiang, Jinqiao, Huizhou, Kunshan, Mexico and Asteelflash Suzhou facilities. The total number of employees in the collective agreement account for16.6% of all regular employees. The terms and conditions of employment for employees that did not participate in the collective agreement remain the same as others and their rights are unaffected

Employee Sustainability Engagement Surveys

Employees are ASEH's most valuable asset and strategic to the company's sustainability development and competitiveness. Maximizing the potential of our human capital to create value forms a key pillar of ASEH's sustainable development strategy. We began conducting the Employee Engagement Survey every two years since 2017, in 2021, we introduced a new survey framework that extended our focus to employee sustainability engagement. The engagement survey is now based on a 5-point scale, and we will aggregate the results of the total number of responses selected under 'agree' and 'agree strongly' on the scale.

In 2023, further adjustments were made to the employee engagement survey. The survey now includes Employee Experience Indicators and Employee Engagement Outcome Indicators. The Employee Experience Indicators cover four dimensions: "Purpose, Work, Reward, and People," and 12 categories. In addition to the existing three categories (Sustainability Engagement/Retention /ESG), two new categories (DEI, and Well-being) have been added to the Engagement Outcome Indicators. These categories are tailored for individual engagement surveys based on the different job attributes of direct and indirect employees. In 2023, the scope of the engagement survey is now expanded to all three major subsidiaries covering direct and indirect employees at 25 facilities in 9 countries, accounting for 95.1% (74,490) of total employees surveyed. Survey results indicated that employees demonstrated higher engagement in the categories of "ESG," "Collaboration," and "Understanding." Overall, the 2023 sustainability engagement survey recorded a score of 77%, exceeding the company's target of >75%. The next Employee Sustainability Engagement Survey will be administered in 2025.

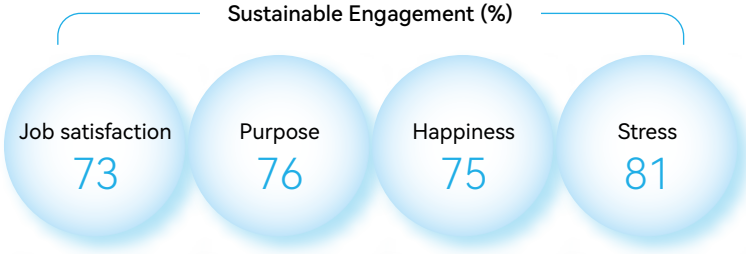


Employee Engagement Surveys Results

Category \ Year	2019 - 2020		2021 - 2022		2023 - 2024		2025 Target
	Target	Result	Target	Result	Target	Result	
Engagement (%)	73	83	>75	79	>75	77	>75
Coverage[1] (%)	80	82.1	>85	96.1	>87	95.1	>90

[1] Coverage = Actual number of employees surveyed/ Targeted number of employees to be surveyed

The employee engagement survey is an important tool for the company to understand the employee experience, and design strategies that attract and retain talent, and groom outstanding employees. In addition to conducting employee engagement surveys every two years, we also measure the four key dimensions of employee wellbeing developed by the University of Oxford's Wellbeing Research Centre: job satisfaction, happiness, stress and sense of purpose. A further analysis of employee productivity, retention rate, recruitment, and company performance, can help us to determine and formulate relevant strategies to improve the employee experience.



Improvement Action

Category	Improvement Focus	Action Plan
Fair Pay	Establish a competitive and incentive-based compensation system that links performance with rewards, ensuring top talent is fairly rewarded and promoted.	• Conduct salary adjustments based on market compensation studies • Establish promotion and salary frameworks to recognize and reward high performers
Retention	Enhance retention mechanisms and employee benefits through onboarding support, career planning, and strategic job design to increase employee belonging and retention.	• Implement onboarding buddy/mentor programs • Strengthen rewards for critical positions and launch talent rotation and succession plans • Set up potential high-risk employee care mechanisms, regularly analyse reasons for resignation, and improve work environment and company culture
Trust	Strengthen managerial trustworthiness and leadership effectiveness through improved communication, organizational health monitoring, and leadership training to foster a positive and transparent management culture.	• Establish a regular feedback and performance review systems • Promote organizational health monitoring indicators • Ensure open communication channels and grievance reporting mechanisms • Revamp leadership training materials and develop internal trainers to enhance managerial leadership and talent development

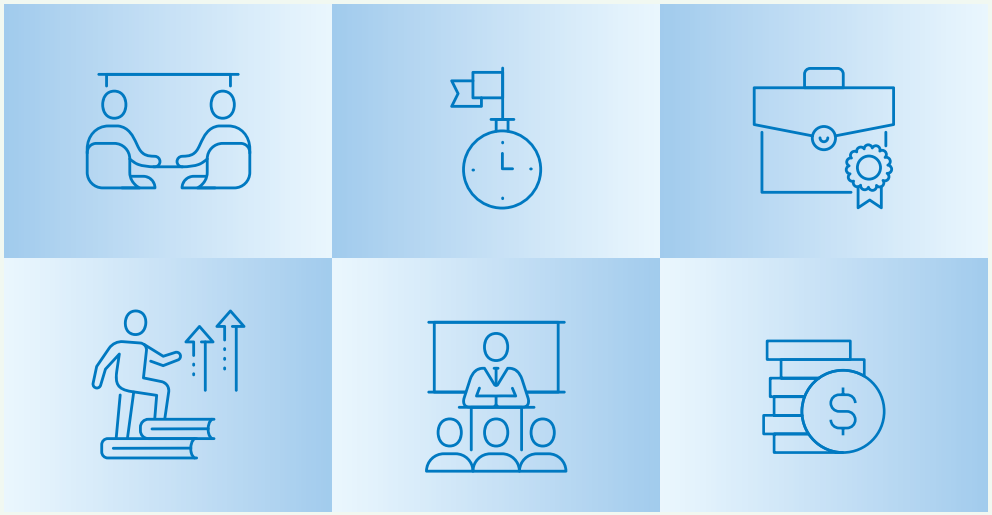


6.2 Talent Cultivation and Development

The innovative spirit, talent, and passion of employees are the driving force behind the company's sustainable operations. We therefore place great emphasis on improving the development and cultivation of talents in the fields of "management", "technology" and "manufacturing". In response to the organization's growth, we continue to invest resources into collaborations with management consulting companies and top universities, thereby increasing innovative momentum and maintaining our competitive edge in the industry.

Key Strategy of Talent Cultivation

Management	**Development of Management Talent**	
Leadership Communication Influence	We dedicated significant resources into creating management blueprints for leadership, communication and influencing skills. These courses will allow our management level employees to achieve self-growth and realize their potential, and in turn motivate team members to learn and grow, leading to the mutual creation of a valuable and meaningful career at ASEH.	
Technology	**Development for R&D Talent**	
Innovation Problem Solving Centripetal Force	We have embedded in our corporate culture the key tenets of innovation, problem solving and the fostering of unity amongst colleagues. We also constructed an interdisciplinary professional technical platform, and formulated innovative blueprints on intelligent manufacturing and Heterogeneous Integration. Active collaboration with top universities combining theoretical and practical courses were also applied to various aspects of intelligent manufacturing processes, and enabled us to offer innovative solutions to customers.	
Manufacturing	**Development for Production Line Employees**	
Productivity Execution Power	We train and hone the skills for production line employees to increase productivity and make smart decisions that will maximize production utilization rates through flexibility and capacity deployment for high volume and high-mix/low-volume production.	



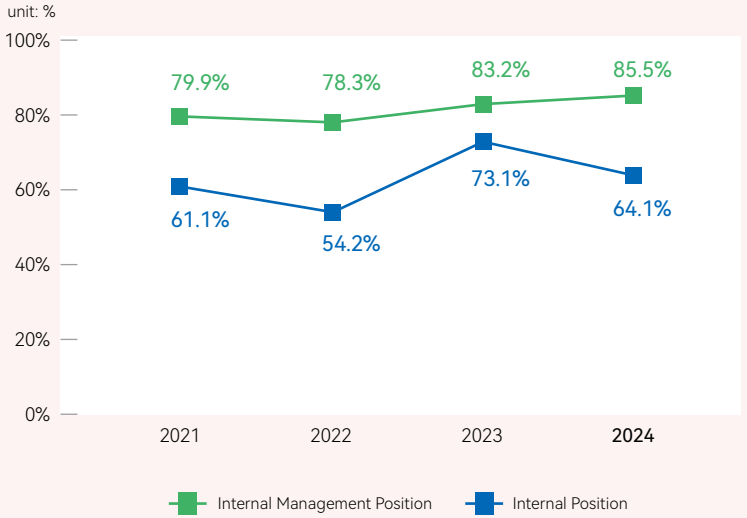
ASEH is committed to the nurturing of talent through consolidating comprehensive and multifaceted courses and training resources for the creation of diverse training methods, including physical training, online courses, work practice, and external training, etc. In 2024, more than US$7.57 million training hours in total were completed, with each employee completing 91.2 hours of training on average. The total spent on training exceeded US$7.9 million, averaging around US$94 per employee. The company also encourages employees to further their studies on skills and knowledge in work-related fields by funding certified courses in work-related disciplines. In 2024, a total of 394 employees received a work related certification.

To foster an outstanding workforce, we are focused on building a pool of future talent that will turbocharge the company's growth engines. Through a systematic talent development mechanism, we provide comprehensive training for employees and encourage internal jobs rotation and transfers that add diverse values to their career planning. In 2024, 64.1% of the available job vacancies were fulfilled internally. We also focus on grooming employees for middle and senior management roles. Approximately 85.5% of the company's management ranks are internal promotions. We endeavor to create an environment that enables employees to maximize their potential and grow together with the company.

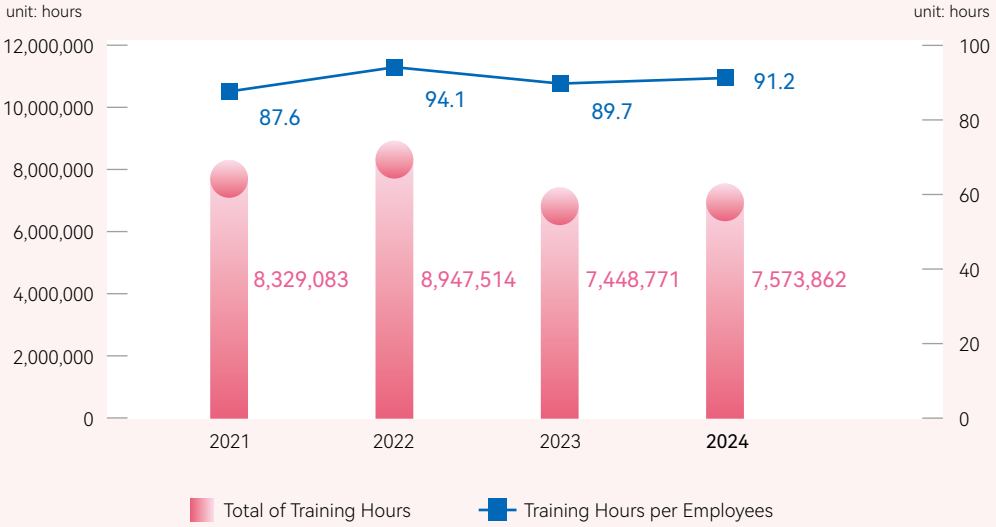
Training Index

Category	Group		Number	Training Hours per Employee
Training Hours (Hour)	Gender	Male	4,092,386	92.8
		Female	3,481,476	86.9
	Position	Management	512,554	80.3
		Engineering	2,877,095	99.5
		Administration	243,364	42.4
		Skill Job	3,940,849	91.3
Total			7,573,862	91.2

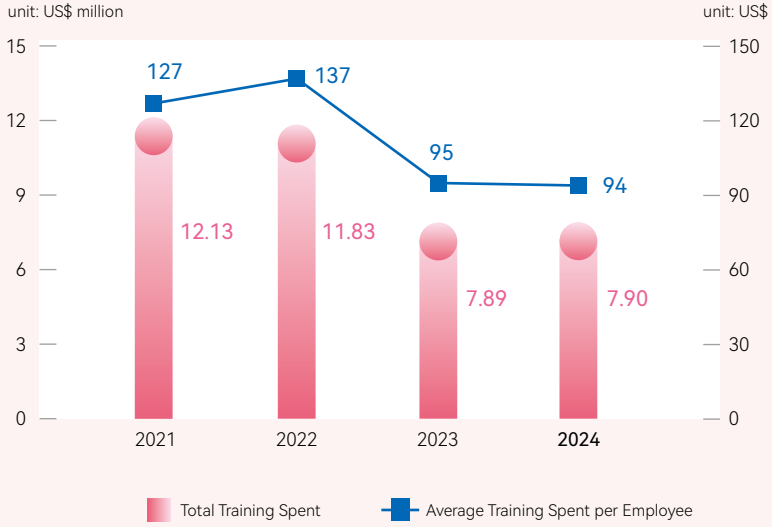
Internal Position and Internal Management Position (%)



Training Hours



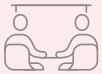
Training Spent



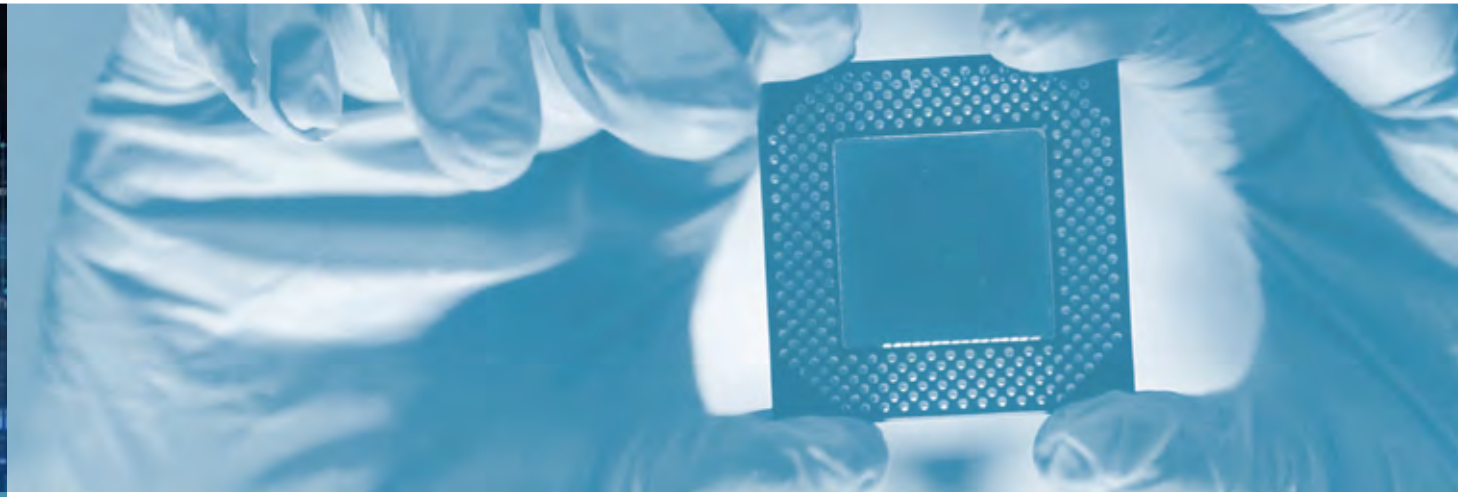
Diverse Learning

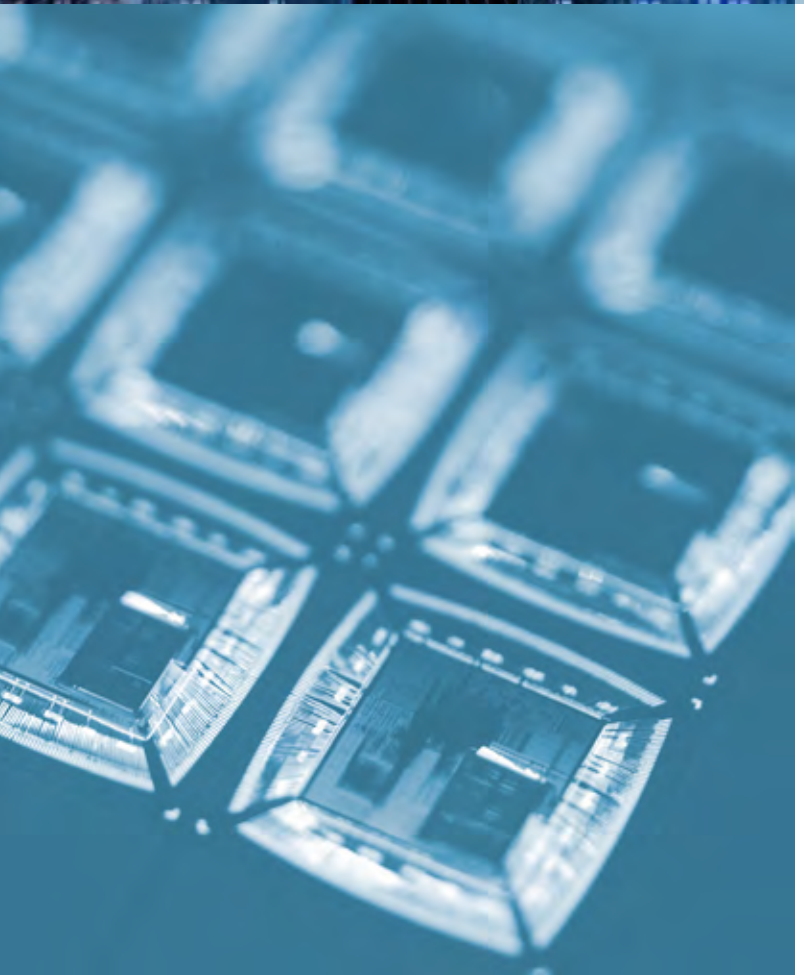
ASEH embraces the spirit of a learning organization, fostering continuous learning, adaptation, and innovation to equip employees with the skills necessary for industry advancement and sustainable transformation. In response to a rapidly changing environment, the company implements an empowering talent sustainability program designed to build long-term capabilities. We offer a variety of learning pathways through a blended learning approach, combining multiple channels such as in-person courses, digital and online learning, external training programs, coaching and mentoring systems, as well as emerging learning pathways including cross-departmental team collaboration and community network engagement.

Employee Development – Learning Methods

Learning Pathways	Description	Application
Physical Courses 	In-person training sessions organized internally, delivered through instructor-led teaching and interactive activities to strengthen professional knowledge and practical skills.	1. New Employee Training 2. ASE Management Academy Courses
Online Courses 	Self-paced learning conducted via digital learning platforms, offering flexibility in time and location for continued education.	Regulatory and Customer Audit-Related Courses
External Training 	Participation in professional courses, forums, or certification programs conducted by external organizations to gain fresh perspectives and new knowledge.	1. Professional Certification Programs 2. Sustainability Talent Development Training
Coaching or Mentorship 	One-on-one guidance and knowledge transfer provided by supervisors or senior employees serving as coaches or mentors to support employee growth.	1. Leadership Mentorship Program 2. On-the-Job Training
Teams and Networks 	Cross-departmental collaboration, knowledge exchange, and participation in community networks to foster a spirit of interactive sharing.	ASE Knowledge Platform





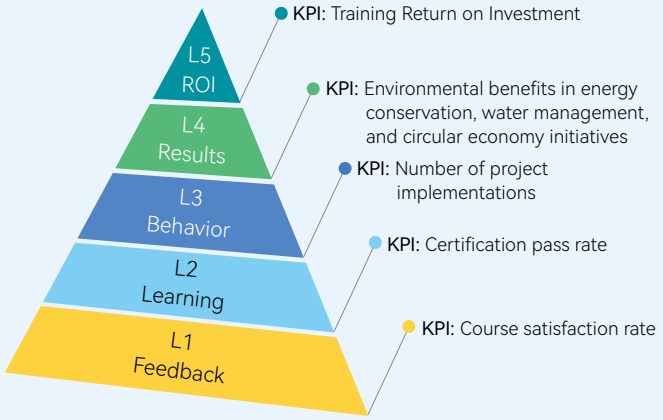


Key Focus Areas in Talent Sustainability Development

In alignment with the company's business objectives, we have developed a sustainable talent development blueprint, establishing a systematic talent cultivation strategy to strengthen four core competencies - Leadership, Sustainability, Digital, Cultural, through dedicated programs. We are also actively developing specialist and general talents to help accelerate our journey towards achieving our COP26 (United Nations Framework Convention on Climate Change). Our strategic approach enables us to build a resilient pool of sustainable talent while laying a solid foundation to support green manufacturing, digital transformation, and global competitiveness, advancing the company's long-term sustainability goals.

- **Sustainability Competence:** Encompassing capabilities in carbon management, energy efficiency, circular economy, and ESG governance to address the global net-zero transition.
- **Leadership Competence:** Enhancing cross-functional collaboration, change leadership, and strategic thinking to develop forward-looking and execution-driven managers.
- **Digital Competence:** Building data literacy, smart manufacturing capabilities, and AI application skills to drive digital transformation and operational innovation.
- **Cultural Competence:** Fostering intergenerational understanding, diversity and inclusion, and cross-cultural communication to strengthen organizational cohesion.

Sustainability Competence



Project Name **Net-Zero and Circular Economy Transition Project**

Primary Site of Implementation **ASE Kaohsiung**

Core Training Themes

(1) From process optimization, energy management, and waste reduction to changes in daily work behaviors, employees' knowledge and actions play a pivotal role in enabling the company's advancement of sustainability transition and net-zero goals.

(2) Sustainability Generalists: Offering professional license training programs such as Corporate Sustainability Manager and Carbon Asset Manager to strengthen sustainability awareness and establish a common sustainability language.

(3) Sustainability Specialists: Collaboration with external institutions to offer certification courses to enhance the professional capabilities of dedicated sustainability personnel, thereby improving core competencies and building a competitive talent pool.

- Achieved an energy-saving rate of 6.42%
- Water resource management: Average reuse rate of 4.25 times per drop of water
- Circular economy promotion: Generated NT$ 620 million in economic benefits
- Obtained 11 types of sustainability-related professional certifications (including ISO 14064, ISO 14067, ISO 14068, etc.)

Target Audience

R&D, process, and equipment engineers

Operational Benefits

- Number of projects implemented
- Environmental benefits
- Economic benefits
- Sustainability professional certifications

Leadership Competence



Project Name **Leadership and Management Competency Program**

Primary Site of Implementation **ASE Kaohsiung, ASE Chungli**

Core Training Themes

(1) **Awesome** – Advanced Communication Skills: Enhance knowledge transfer capabilities and cross-departmental collaboration, fostering professional knowledge and practical skills.

(2) **Super** – Excellence in Supervisory Skills: Establish a common language among front-line supervisors, strengthening people management capabilities and performance dialogue.

(3) **Excellent** – Project Management Expertise: Strengthen EPM (Enterprise Project Management) role knowledge, introducing project tools and management processes.

(4) **Plus** – Core Leadership: Develop core leadership competencies and inspirational management thinking for mid- to senior-level managers.

- Post-training satisfaction score: 4.73–4.89
- Certification pass rate: 51%–72%
- Leadership: 70% reduction in grievance cases
- Managerial promotion rate: 61%
- Internal position replacement rate: 89%

Target Audience

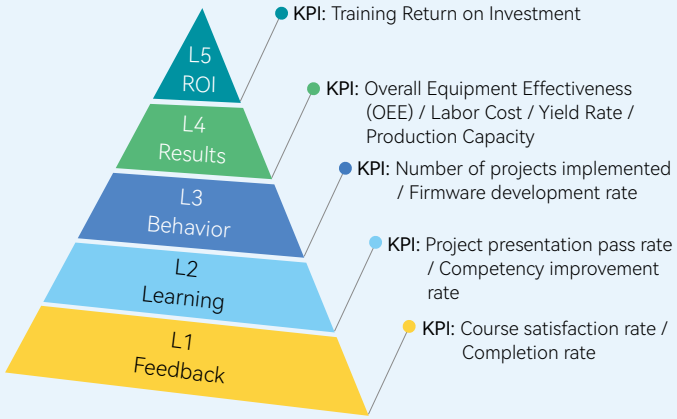
Front-line supervisors, department managers

3,265 employees trained under the program

Operational Benefits

- Number of projects implemented
- Application of managerial competencies
- Managerial promotion rate
- Internal replacement rate

Digital Competence



Project Name **Smart Manufacturing and Digital Transformation Program**

Primary Site of Implementation **ASE Kaohsiung, ASE Chungli**

Core Training Themes

(1) Introduce AI platform tools and develop proprietary platforms with progressive learning content to cultivate AI talent at varying knowledge levels.

(2) Explore digital applications including Industry 4.0 robotic arm development and automated material handling systems, that can be implemented into factory operations. Digital transformation drives productivity through efficiency and smart factory automation.

(3) Develop software for automating rule-based business processes, integrating them into factory workflows to improve efficiency and advance smart factory capabilities.

- Post-training satisfaction score: 4.49–4.75
- Course assessment pass rate: 71%–92%
- Self-developed robotic programs: 5,169
- Digital and AI projects implemented: 79
- AI-enabled defect detection reduced manual inspection workload by 9.3%
- Smart factories established: 56

Target Audience

R&D, process, and equipment engineers

6,853 employees trained under the program

Operational Benefits

- Reduction in software outsourcing costs
- Improved machine utilization rate
- Reduced equipment inspection time
- Enhanced product yield rate
- Increased overall equipment efficiency
- Reduced labor costs
- Improved customer satisfaction

Cultural Competence



Project Name **Multicultural and Intergenerational Program**

Primary Site of Implementation **ASE Kaohsiung, ASE Chungli**

Core Training Themes

(1) Initiatives for addressing Intergenerational Differences: In light of changing workforce demographics, retaining employees aged 35 and below has become increasingly challenging.

(2) Training for Foreign White-Collar Employees: Strengthening workplace integration by facilitating faster adaptation to the workplace and cultural differences through pre-employment training and targeted programs during the first and third months of employment.

(3) Fostering Cross-National Cultural Inclusion: With a workforce representing multiple nationalities, the company promotes diversity through "multicultural learning communities," enhancing the value and sense of belonging of foreign migrant workers while reducing cultural conflicts.

- Employee turnover rate (age 35 and below) decreased to 8.6% in 2024
- Over 50% of participants achieved Level B or above in Mandarin proficiency tests

Target Audience

Younger generation employees, foreign employees

Operational Benefits

- Employee engagement
- Lower turnover rate
- Improvement in Mandarin proficiency
- Examination pass rate
- Course satisfaction rate / Completion rate

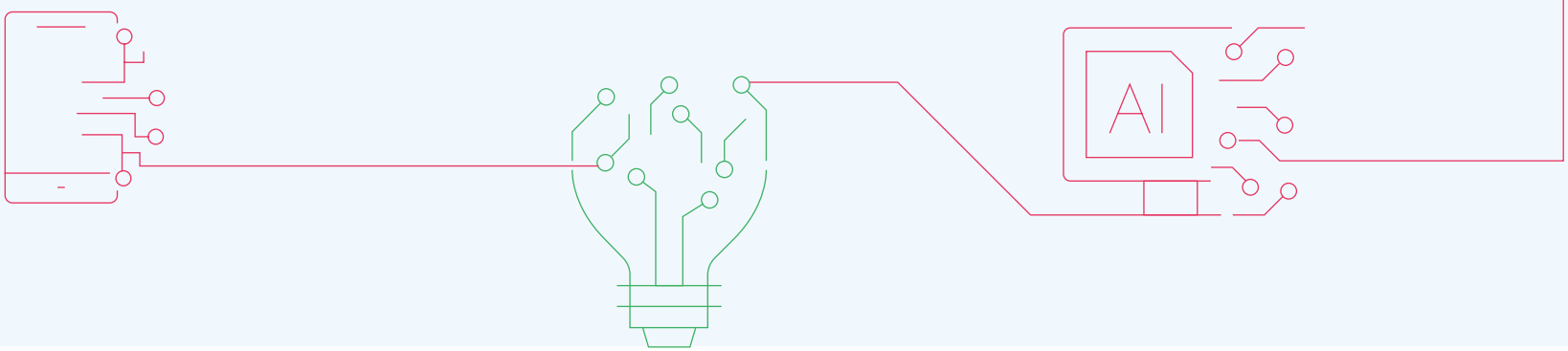
Key Highlights – Empowering a Digitally Ready Workforce through Smart Talent Development

Digital transformation is accelerating the speed of smart technologies in the manufacturing industry. As such, we are committed to building a digital-ready workforce equipped in data analysis, process optimization, and AI applications. Through a combination of in-house training initiatives and external partnerships, we are expanding our digital learning ecosystem across all functions and levels to support both operational efficiency and enhanced decision-making.

ASE Kaohsiung has introduced a series of courses that include Fundamentals of AI Applications, Smart Manufacturing System Integration, Practical Process Automation Tools, and Data Visualization and Analysis. These are structured along phased learning paths tailored to job functions and business needs. A blended learning approach - incorporating theoretical instruction, digital learning resources, practical simulations, and project-based applications, ensures that knowledge can be effectively applied in reality. In 2024, ASEH recorded over 9,000 employee attendances in digital transformation-related training. Advanced-level courses achieved an average pass rate exceeding 80%, with post-training satisfaction scores averaging above 4.7 out of 5.

In process automation, training on Robotic Process Automation Tool Application was rolled out to help departments streamline routine tasks. Employees developed scripts to optimize operations such as report generation, manual task integration, and repetitive workflows.
To enhance data-driven decision-making, Data Visualization and Reporting Tool courses teach employees how to analyze key metrics including production anomalies, workforce allocation, and quality control, thereby strengthening management transparency and responsiveness. Additionally, a performance- and behavior-based evaluation framework that tracks impacts across multiple levels, from course feedback and learning outcomes to real-world application, was formulated to provide actionable insights for future program design and resource allocation.

Our digital talent development initiative operates on a well-structured digital blueprint, cultivating a Digitally Ready Talent Pool. We are not only actively addressing the evolving demands of smart manufacturing but also advancing our core sustainability goals of nurturing future talent, enhancing organizational agility, and improving operational performance. Moving forward, the company will step up cross-departmental application scenarios and data governance capabilities, allowing us to achieve a high-value smart manufacturing footprint.



6.3 Occupational Health and Safety

ASEH is committed to providing workers with a safe, healthy, and conducive work environment. To ensure the health and safety of employees, and prevent accidents at the workplace, we have formulated comprehensive procedures for managing occupational health and safety ("OHS"). The main focuses of ASEH's OHS Management include the "Management System" and "Healthy Workplace".

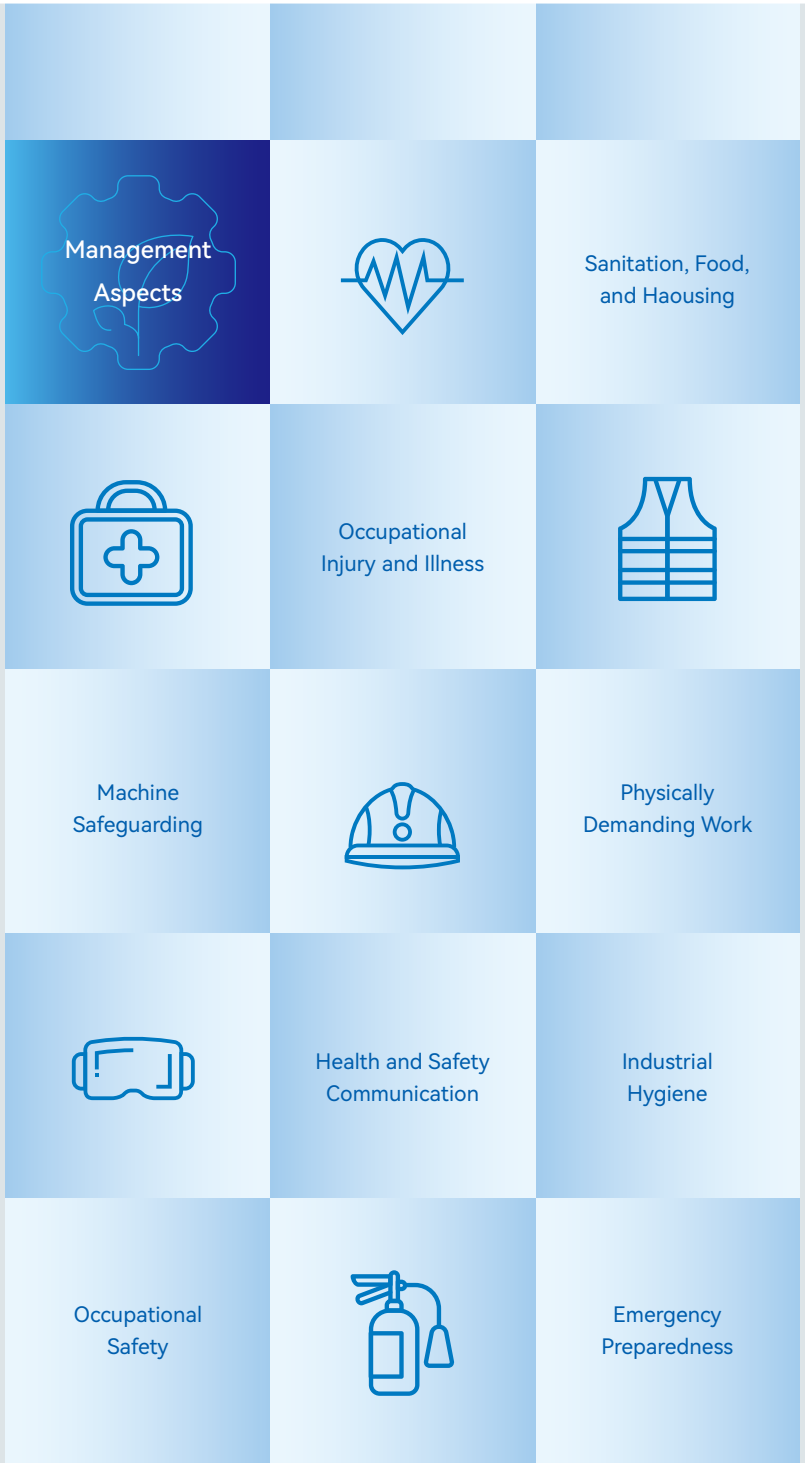
Management System

ASEH is committed to strict compliance with local regulations and international standards such as ISO 45001 Occupational Health and Safety Management System1 and the RBA Code of Conduct. To further improve the management standards of our health and safety performance, ASEH's subsidiaries have established site management organizations, management policies and procedures, and regular internal audit processes. ASEH employs the PDCA model as an approach to prevent all incidents and achieve the management goal of "zero accident."

The OHS Committees at ASEH's worldwide facilities are tasked to keep abreast of local regulatory updates and evaluate internal policies, emergency response and environmental safety procedures, so as to ensure compliance with applicable laws and regulations. On an annual basis, we perform hazard identification and risk assessment procedures on the work environment, facility, equipment and services, to determine risk levels and devise appropriate management plans based on severity of hazard, frequency of occurrence and incidence rate. For high-risk work environments, immediate risk control measures are put in place to reduce risks. In addition, we identify higher-risk operating environments within our facilities such as locations that could expose employees to ionizing radiation, noise, dangerous chemicals and dust, and provide such employees with high quality protective equipment and regular health examinations to monitor their health.

When introducing new chemicals, the respective department is required to submit a system application in accordance with the New Process Introduction and Change Management Procedure. The application is subject to rigorous review by relevant units and must comply with ASE Kaohsiung's High-Risk Restricted Substances Management Policy. This policy encompasses the strict control of: 186 carcinogenic (CMR) substances identified by the Ministry of Labor; 151 per- and polyfluoroalkyl substances (PFAS) identified by the Ministry of Environment, including those with carbon chains of four or more (C4); the 17 substances restricted under REACH; and process-prohibited substances specified by customers. These measures ensure strict control over the introduction of new materials. A total of 575 chemicals were reviewed by ASE Kaohsiung in 2024, of which 5 high-risk substances were prohibited.

[1] ISO 45001: All ASE, SPIL, and USI facilities have obtained ISO 45001 certification, the management system includes all worker in the facilities



Safety and Health Regulations	Develop workplace safety and health management systems and standard operating procedures in compliance with ISO 45001, RBA Code of Conduct, and local laws and regulations.
Safety and Health Training	We utilize diverse training methods and workplace safety and health educational training in the local language of workers. The training and education include online courses, physical training, and external workshops. Additionally, we create educational materials and videos to communicate safety regulations and guidelines to employees. We also conduct internal safety campaigns regularly. In 2024, a total of 309,108 hours of safety training were provided, reaching 295,217 participants.
Procurement Management	We adopted the ISO 45001 management framework to formulate relevant procurement regulations in accordance with workplace safety and health regulations, targeting raw material, equipment, and engineering suppliers/contractors to establish regulations related to safety, health and environmental practices. • **Raw Material Suppliers:** For the first time procurement of chemicals or in the case of any changes, the unit managing the chemical material must counter approve. All procured materials must comply with the local safety and environment regulations. • **Engineering Contractors:** Contractors undertaking high risk work must obtain the ISO 45001 certification.
Risk Identification and Assessment	To analyze the potential source of hazards and the underlying impact on the activities, products and services produced at each facility, we established a hazard identification and risk assessment system. Every year, we conduct hazard identification on the physical, chemical, human, biological and psychological factors that may lead to workplace accidents and illnesses. We categorize risks according to their severity and frequency, and analyze the possible hazards to the work environment that may affect employees and implement the appropriate preventive measures. If an unacceptably high risk is identified upon the assessment, improvement and regulation measures are carried out to ensure workplace health and safety. In 2024, ASE Kaohsiung identified a total of 4,907 operating processes, with no unacceptable risks detected. Among these, 4,203 were classified as medium risk and 704 as low risk. A total of 22 improvement action plans were formulated, including initiatives such as: optimizing motor chain pinch-point protection, enhancing leak detection alarms in chemical storage areas, improving ergonomic hazard controls at sputtering workstations, and redesigning trolleys for safer operation. These actions aim to effectively reduce hazard risks and reinforce the continuous implementation of a comprehensive occupational health and safety management system.
Internal and External Audit	To ensure the safety of workers and facility, we verify and assess each facility's management system and processes by conducting an internal audit. On-site inspections are conducted to evaluate the effectiveness of internal audit processes within the factory premises. Detected deficiencies are added into the internal management system for monitoring and the audited unit is required to propose improvement measures. These approaches are taken to gain a better understanding of the root causes of non-compliance issues, strive for continuous improvement, and ensure compliance with the requirements of the ISO 45001 framework. In 2024, 1,381 internal audits were undertaken across all facilities, resulting in the identification of approximately 3,600 non-conformances in areas such as fire safety, equipment safety, chemical management, and emergency response. All non-conformances were addressed within the timeframe indicated. We quickly discovered shortcomings and possible risks using the internal audit system and applied corrective measures to improve operational safety.
Accident Prevention and Reoccurrence	We developed effective improvement measures and implemented them across all sites, based on the identification of the root causes of incidents. We also review and make adjustments according to the outcomes of hazard identification and risk assessments to prevent the reoccurrence of accidents at the source.
Disaster Response and Emergency Drills	All of our manufacturing facilities have developed disaster response and recovery plans and conducted full-scale emergency drills annually in cooperation with the local authorities. Various scenarios are simulated at these drills to improve our disaster response plans. In 2024, we completed 464 drills for earthquakes, fire and chemical disasters. • Emergency Response: The company continues to focus on building a robust disaster prevention and response framework. We document experiences from major industry incidents to strengthen our preparedness through preventive measures, early warning, emergency response, and training. In light of significant fire incidents in the industry and relevant regulatory updates, we conducted a thorough review of our fire emergency reporting process, and added plans for multiple reinforcement measures. These include joint rescue drills in collaboration with government fire departments, as well as the development of an "Emergency Response Information Integration App" that consolidates all emergency response information into a one-stop platform. This application, accessible via tablets, provides accurate, real-time information to enable swift and informed decision-making in the event of an incident. • Emerging Energy Potential Risks: ASE Kaohsiung has established safety standards for newly installed solar power generation systems and developed fire emergency response procedures for photovoltaic equipment. In addition, a full life cycle management for lithium batteries used in automated equipment was implemented to review and finetune fire emergency handling procedures, further enhancing fire protection capabilities.

Occupational Injury Management

Occupational injury and incident reporting and investigation procedures are firmly established at all ASEH facilities. When an occupational injury incident occurs, standard operating procedures shall be followed and reported to local authorities in accordance with the management policy and local regulations, while injury incidents are reviewed regularly to improve preventive measures. Each subsidiary manages the statistical analysis of occupational injuries using the major indicators published by the Ministry of Labor and the Global Standards for Sustainability Reporting (GRI Standards) - Disabling Injury Frequency Rate (FR) and Disabling Injury Severity Rate (SR) are key measurements but the statistics do not include traffic accidents. There were 93 incidents of occupational injuries in 2024, amounting to 2,729 lost working days. Physical injuries had the highest proportion out of all incidents, followed by ergonomic injuries caused by human factors and chemical injuries. ASEH recorded a total of 9 cases of occupational disease, which occurred at ASE Malaysia and there do not have any death case due to occupational disease. For more information, please refer to the 「Appendix-M. Workers Occupational Health and Safety」

Occupational Disease

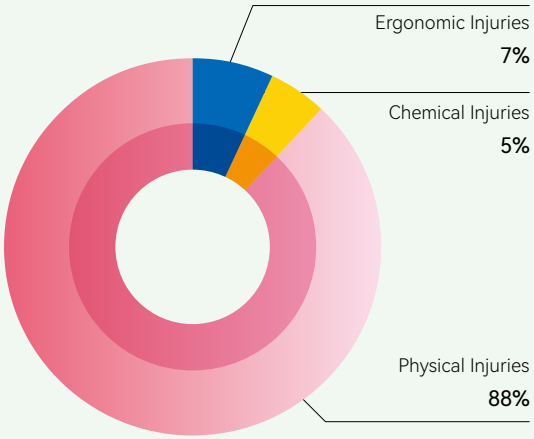
A total of 9 occupational disease incidents involving hearing loss caused by machine operation, occurred were reported at ASE Malaysia. Immediate actions were taken to redeploy the affected workers and follow up on their health condition regularly. Sound proofing systems were also installed in the machines to further reduce the noise levels.

Occupational Injury Statistics

Category	2024	
	Male	Female
Number of Occupational Injury Accidents	49	44
Injury Rate[1]	0.10	0.11
Disabling Injury Frequency Rate (FR)[2]	0.52	0.53
Disabling Injury Severity Rate (SR)[3]	11.71	21.00

[1] Injury Rate = (total number of injuries×200,000) / total hours worked, excluding traffic accidents
[2] Disabling Injury Frequency Rate (FR) = (total number of disabling injuries ×1,000,000) / total hours worked
[3] Disabling Injury Severity Rate (SR) = (disabling injury work loss days× 1,000,000) / total hours worked

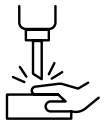
Occupational Injury Category in 2024



Occupational Injuries and Improvement Measures in 2024

Physical Injuries

Causes:
(1) Falls/Slips
(2) Caught in/Between objects
(3) Cuts/Bruises



Improvement Measures:
(1) Strengthen communication (videos, warning signs)
(2) Increase adequate machine safeguards
(3) Formulate relevant protocols and standard operating procedures (SOP)
(4) Personnel education and training
(5) Wearing of protective equipment

Chemical Injuries

Causes:
Spraying of chemicals

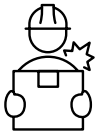
Improvement Measures:
(1) Formulate relevant protocols and standard operating procedures (SOP)
(2) Personnel education and training
(3) Increase notices on the use of protective equipment



Ergonomic Injuries

Causes:
Poor posture when carrying items, resulting in muscle strain

Improvement Measures:
(1) Formulate relevant protocols and standard operating procedures (SOP)
(2) Personnel education and training
(3) Auxiliary equipment



Accident reporting and investigation process

Accident Occurrence	Reporting	Accident Occurrence	Accident Occurrence	Accident OccurArence
	1. After an accident occurred, report it to the unit supervisor and workplace safety staff at the facility site. Meanwhile, help the injured with medical treatment and facilitate the process of hospitalizing them 2. If an employee identifies an immediate danger in the workplace or while performing their duties, they have the right to stop working and move to a safe location without endangering the safety of others. The company will not take any disciplinary action in such cases	1. After the occurrence of the accident, temporary measures are initiated immediately 2. Units where the accident happened and the workplace safety unit will form an investigation and improvement team, and initiate an analysis of the causes of the accident.	Initiate improvement actions targeting the cause of the accident	After the analysis, formulate effective improvement measures based on the root cause of the accident. The measures will be implemented in each subsidiary/facility site to ensure improvements in dealing with similar situations and prevent the reoccurrence of similar accidents

Building a Healthy Workplace

The physical and mental well-being of our employees are central to organizational stability and the company has developed a multifaceted mechanism that covers health management, health promotion, employee assistance programs and community care. To better manage our employees' health and wellbeing, we employ 4 basic principles; health examinations, risk tracking, mitigation actions, and health protection. High risk health issues are identified from employees' health screening results. The company has also established a healthcare structure based on risk levels, and through consultations with occupational nurses and specialist referrals, provide work adjustments and promote weight loss programs. At ASE Kaohsiung, the facility has a care program that comprises employee volunteers that serve as seed caregivers for the early detection of symptoms and support.

The company greatly promotes the prevention of occupational illness due to abnormal workloads by addressing concerns about employee workloads and stress. Health check-ups and assessments of personal, job and overtime work help to identify high-risk and high-stress individuals who would benefit from time management and counseling. Regular reports are also provided to the Occupational Safety and Health Committee.

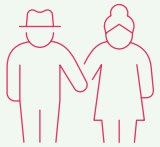
Health Management Principles

Health Examinations	Risk Tracking	Mitigation Actions	Health Protection
Conduct employee health screenings, analyze and evaluate results, and manage health data.	Track risks, care for employees with abnormal health screening results, formulate improvement plans based on analysis.	Plan and provide health education, hygiene guides, and wellbeing protection; promote weight loss programs, workshops, advocacy, and first aid training.	Preventive plans for ergonomic hazards, illnesses from excessive workload and wrongful harm, and maternal health protection plans.

Health Risk Management Process

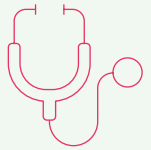
Health Risk Levels	Management Measures	Improvement Plans	2024	Key Health Risk	Key Health Promotion Programs in 2024
Level 1	Provide doctors' recommendations from health checkups and encourage regular self-tracking.	• Manage work hours • Encourage participation in health promotion activities	49.2%	• Abnormal body mass index (BMI) • Metabolic Syndrome • High blood sugar • High blood lipids	• Provide employees with health consultation services • Review employees' overtime and working conditions • Organize diverse health seminars
Level 2					
Level 3	Occupational nurses conduct consultations based on the level of care, and decide if specialist referrals or work adjustments are necessary.		34.6%		
Level 4			16.2%		

Key Highlights –
Creating an Age-Friendly Workplace and Lifelong Health Care System to Sustain Career and Quality of Life



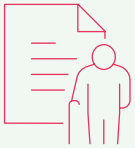
Today, an aging society and delayed retirement are pressing companies to pursue policies addressing the health needs and post-retirement support of older employees. At ASEH, our comprehensive healthcare and support system is designed to serve employees throughout their employment period and beyond retirement. Our strategies are directed by a people-centric philosophy that champions a shared prosperity between our people and the organization.

ASEH promotes an Age-Friendly Workplace Health Promotion Program to help older staff improve health management, maintain physical and mental well-being, and prolong their employment. The fundamental basis of the program is a comprehensive health assessment that includes muscle strength tests, physical fitness evaluations, and job suitability analyses. The assessment helps employees understand their health condition and the degree of compatibility with job requirements.



To raise awareness of health issues, seminars on topics such as balanced nutrition and sarcopenia prevention are held regularly to help employees better understand age-related topics, and make timely adjustments to lifestyle and work habits. In addition, the company partners with external experts to provide strength training and posture correction classes that help reduce occupational discomfort, allowing them to continue their effectiveness and stability at work.

Our care for employees continue beyond their retirement from the company. The company's Retired Employee Lifelong Health Care System offers a comprehensive suite of services encompassing physical health, medical access, and psychosocial support. Retired employees receive a free annual health check-up, proactively arranged by the HR department. To help reduce the burden of healthcare costs, retired employees also have direct access to the company's on-site clinics which offers lower registration fees.



Mental health and social wellness are important aspects to maintaining a quality life after retirement. ASEH provides retired employees easy access to company clubs such as hiking and cultural interest groups, and regularly sends newsletters to maintain connection, reduce isolation, and promote continued social engagement.

The integration of an age-friendly workplace with post-retirement care extends the value and vitality of employees and reflects ASEH's commitment to sustainable human capital strategies. It is important to us that our employees feel a strong sense of belonging at the company. Our policies are drafted to ensure that employees are treated with respect and dignity, and their well-being are prioritized. The unique scope of ASEH's health care model covering both professional and personal life, exemplifies how sustainability principles are embedded in our daily operations, consistently fostering a secure, supportive, and stable environment for all.

Health screening – 61,011 people; Expenditure of US$3.12 million

Health Management

- Free periodic health screening for all employees and retired employees
- Health screening for employees working in special conditions
- Follow-up consultancy on anomalies discovered through health screening and providing medical advice
- **Employees' clinic:** ASE Kaohsiung has partnered with a local hospital to establish an employees' clinic

Community Care

- Smart mobile clinic that serves remote areas
- Conducting active-ageing activities and courses for seniors in the community
- The ASE Kaohsiung employees' clinic is also open to the neighboring community, friends and relatives of employees and our customers

Health Promotion

- Specialist clinics covering general medicine, cardiology, mental health, weight loss, smoking cessation, vaccination and cancer screening etc
- Breastfeeding rooms and courses for new parent
- Lectures and health education promotion, sports









Employee Support Program

Gym – 5 gyms, Social Clubs – 58 clubs

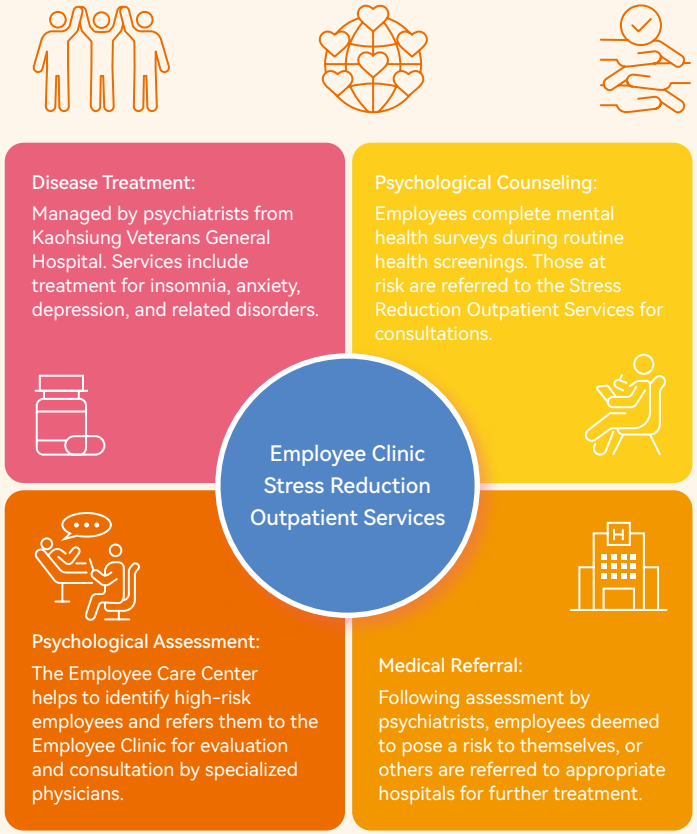
Physical Health

- **Establishing massage facilities and gyms:** To encourage our employees to exercise regularly, we work with professional trainers to develop a range of classes including spinning, yoga and zumba. These group classes not only help employees maintain a healthy physical and mental well-being, but also facilitate interactions and bonding between coworkers.
- **Social clubs:** These clubs organize a wide variety of activities including sporting events, outdoor activities, indoor cardio sports, arts and crafts, and community service. In particular, ASE Kaohsiung has a foreign employee club.
- **Competitions and Activities:** Through various types of sports clubs and competitions, we cultivate employees' interests and encourage good exercise habits, that help strike a balance between work, physical and mental well-being.



Mental Health

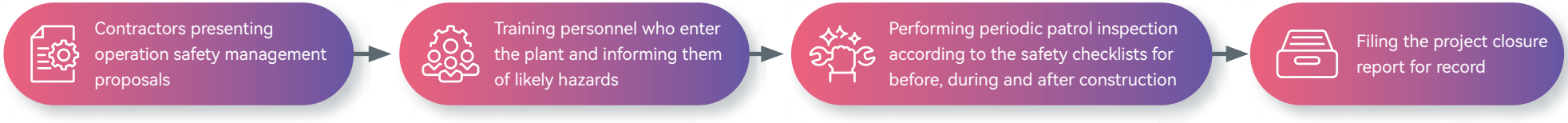
- **Employee counsellors:** Beginning in 2017, ASE Kaohsiung rolled out a seeding program to recruit employees as volunteer counsellors to recognize warning signs of mental health issues and establish front-line support to employees exhibiting symptoms. In 2024, more than 350 employees received counseling support, and six counsellor alumni days events were organized (including professional courses and experience-sharing sessions by caregivers). Through experiential learning in emotional awareness, the program fostered cohesion among caregivers and enhanced their caring capacity.
- **Stress-relieve center:** Employees can access the center with complete privacy to seek professional counselling.



Contractor Operation Safety Management

ASEH facilities have established contractor management policies to ensure that safety protocols are observed when contractors work at our facilities and to achieve the target of zero contractor occupational injuries. Eight high-risk types of operations at ASEH's facilities were identified which include work on pipelines, flammable sources, work inside confined spaces, live-line, crane operations, elevated operations, chemical filling and roof works, for which stricter SOPs were instituted. Additionally, ASEH will continue to request contractors conducting high-risk operations to meet the requirements specified in the ISO 45001 management systems.

Contractors in-plant Construction Procedures



Key Highlights –

Launching The "Safety Orange Handbook for Safety": a Pledge towards to Foster a Zero - Accidents Vision with Contractors

Amid ongoing capacity expansion and an increasing volume of projects, ASE Kaohsiung handles a cumulative number of nearly 25,000 contractors, with approximately 2,000 on-site daily. Contractors have become indispensable partners in ASEH's operations. To enhance on-site safety management and ensure operational consistency, we have integrated applicable regulations such as the Occupational Safety and Health Act and the Labor Standards Act, with years of management experience to compile and formally release the Contractor Safety Orange Handbook. The handbook provides essential safety knowledge and practical operational guidance to strengthen contractors' capacity for autonomous safety management. Featuring clear visuals and concise content, it organizes safety protocols by work type and risk category, enabling contractors to identify and prevent high-risk situations more effectively. The Orange Handbook establishes a common language and shared understanding, and serves as a communication tool to achieve the vision of zero accidents and zero occupational injuries through concrete actions. To amplify awareness and impact, ASEH hosted the 2025 "Work with Care, Safety We Share" Orange Handbook Launch Event, inviting representatives from central and local occupational safety authorities and 165 contractor companies. The event underscored our strong commitment to safety governance, fostering stakeholder dialogue and collaboration.

Since 2020, ASEH has implemented a range of contractor safety management systems, including designated supervision for high-risk operations, safety certifications for supervisors and personnel, contractor interviews and coaching sessions, and daily end-of-work safety briefings. These initiatives have continuously refined our operational workflows and strengthened the safety culture. In 2023, the company further mandated that contractors adopt the ISO 45001 Occupational Health and Safety Management System, establish self-governing safety protocols, utilize the E-inspection system, and maintain transparent, two-way communication channels to enhance real-time responsiveness. In 2024, ASE Kaohsiung introduced AI-assisted risk assessment tools, upgraded its High-Risk Operation Entry Control System to Version 2.0, and implemented a Contractor Performance Rating System to promote greater risk awareness and continuous improvement across its contractor network. ASEH embraces the principles of shared responsibility and proactive governance, and the Contractor Safety Orange Handbook reaffirms our efforts to instill a people-centric safety culture, embedding values, attitudes and behaviors into daily operations.

Looking ahead, ASEH will continue to integrate innovative technologies, AI-powered early warning systems, and full employee and contractor engagement to build a safer, more resilient operational environment, further advancing our commitment to sustainable corporate development.



7 RESPONSIBLE PROCUREMENT

The supply chain plays a critical role in maintaining and boosting our competitive advantage. We believe in developing mutually beneficial partnerships with our suppliers, and supporting one another to achieve common sustainability goals. Our comprehensive and sustainable supply chain framework ensures an environmentally responsible supply chain that complies fully with business ethics, and supports a safe and healthy working environment by respecting employee and labor rights.

Sustainable development across the supply chain is an important tenet of our corporate strategy, and the company's board of directors has been designated the highest decision-making body for supply chain management. The board regularly reviews sustainability-related practices and performance, formulates strategies, and actively develops supplier capabilities to build a more resilient, diverse and sustainable value chain.



2024 Key Performance



229 Suppliers
Supplier Sustainability Physical Assessment



730 Suppliers
NonTier-1 Suppliers Management



369 Suppliers
Conflict Minerals Suppliers' Survey



100%
DRC Conflict-Free Products

SDGs	Business Actions	2024 Material Aspects	KPI	2024 Target	Status	2024 Performance	2025 Target	2030 Target
4 QUALITY EDUCATION, 8 DECENT WORK AND ECONOMIC GROWTH	Ensure that all employees across the business and supply chain earn a wage that allows them to support the education of their dependents and ensure that there is zero child labor.	Sustainability Supply Chain	DRC Conflict-Free Product Lines of Packaging and Material Services (%)	100%	Achieved	100%	100%	100%
			DRC Conflict-Free Product Lines of Electronic Manufacturing Services (%)	100%	Achieved	100%	100%	100%
			Number of Supplier Sustainability On-site Assessment[1]	100	Achieved	229	120	120
			Non Tier-1 Suppliers Conduct Risk Assessment[2] (%)	>50%	Achieved	57.6%	>50%	>50%
13 CLIMATE ACTION	Substantially reduce emissions from our supply chain and our operations, in alignment with climate science.		The percentage of key carbon reduction suppliers[3] who have obtained GHG emissions verification (ISO 14064 or equivalent) (%)[4]	-	-	-	50%	100%
			The percentage of key carbon reduction suppliers who have obtained product carbon footprint verification (%)[4]	-	-	-	30%	80%

[1] On-site Assessment includes remote audit, on-site audit, RBA VAP and independent 3rd-party audit
[2] The percentage of non Tier-1 raw material suppliers conduct risk assessment are calculated based on their share of total procurement amount relative to Tier-1 raw material suppliers
[3] Key Carbon Reduction Suppliers: For ATM: (1) Top 10 raw material categories by carbon emissions; (2) Equipment suppliers with high procurement amount ; For EMS: (1) Top 5 raw material categories by carbon emissions; (2) Equipment suppliers with high energy consumption. In 2024, a total of 80 key carbon reduction suppliers were identified (53 raw material suppliers and 27 equipment suppliers)
[4] New Targets in 2025

7.1 Supply Chain Sustainability Management

ASEH is committed to become an advocator and an action maker with regard to corporate sustainability issues. Since 2015, ASEH has joined RBA and proactively participated in relevant conferences and training courses. In addition to complying with the RBA Code of Conduct, The ASEH Supplier Code of Conduct and Sustainability Assessment Questionnaire (SAQ) have been formulated based on the standards and guidelines of the RBA, OECD Guidelines for Multinational Enterprises, UN Guiding Principles on Business and Human Rights, UN Universal Declaration of Human Rights, ILO Declaration of Fundamental Principles and Rights at Work, ILO Fundamental Conventions and SA8000 in the management of labor, environment and ethics. ASEH also applies the code to its supply chain management to ensure the provision of a safe work environment, respect for workers, environmental protection, ethical conduct and actively applied to sustainability management in supply chain.

New suppliers are required to sign the Supplier Code of Conduct before any business engagement, and the relevant policies will also be stated clearly in our supplier e-platforms, to ensure full compliance. Suppliers' status of compliance with this Code will be a prerequisite for ASEH's evaluation of qualified suppliers and purchasing decisions. In parallel, we require approved suppliers to acquire certifications in ISO 9001, IATF 16949, ISO14001, ISO 45001, while key carbon reduction suppliers are required to acquire ISO 14064-1 (or equivalent third-party certification) or ISO 14067 certifications for continuous sustainability improvements and raising their competitiveness.

Supplier Code of Conduct

To ensure ASEH's core sustainability value can be extended throughout our supply chain. ASEH's suppliers are expected to comply with our Supplier Code of Conduct which requires them to comply with local laws and regulations where they operate, and conduct business in a manner that meets labor, health and safety, environment, business ethics, management and various corporate compliance standards. The suppliers are required to drive their suppliers to meet such standards and oversee their compliance status. ASEH also applies the code to its supply chain management to ensure the provision of a safe work environment, respect for workers, environmental protection and ethical conduct. ASEH forbids the use of child labor or forced labor by its suppliers, and shall terminate its relationship with suppliers involved in serious violations although no such instances were found in 2024.
Please visit: https://www.aseglobal.com/en/pdf/aseh-supplier-coc-en.pdf

Purchasing and Supply Chain Development Policy

The ASEH corporate purchasing and supply chain development policy is published on our official website. We are committed to working closely with our suppliers to innovate and develop sustainable technologies that enable us to offer high-quality products and services to our customers.
Please visit: https://www.aseglobal.com/en/pdf/2019_aseth_purchasingandsupplychaindevelopmentpolicy.pdf

Supply Chain Management Strategy

ASEH is committed to building solid supplier relationships and engaging in responsible procurement practices. While cost and quality are primary factors influencing our procurement decisions, we place an equally high emphasis on the overall sustainable value provided by the supply chain. We actively address emerging sustainability issues and risks in the supply chain, develop detailed management strategies, implement them through realistic action plans, and conduct dynamic and timely risk and opportunity assessments. In recent years, we have designed innovative programs that encourage supplier collaboration on sustainability topics. This further strengthens supplier resilience and collaboration for a win-win ecosystem.

ASEH Supply Chain Management Strategy

Value Oriented

Strategy: To obtain a competitive overall value in the supply chain

Implementation: Integrating group resources and achieve the most competitive value through strategic cooperation and joint procurement

Diversified Sources

Strategy: To maintain at least two suppliers for the same material to ensure continuous supply

Implementation: Assist supplier capabilities in quality and technical to increase local supplier ratio in each manufacture area and strengthen the diversity of supply

Strategic Cooperation

Strategy: To integrate suppliers' resources and capabilities for greater innovation

Implementation: We have established a supply chain e-platform that allows real time information exchange and a high degree of flexibility in the supply chain management process.

Sustainable Sourcing

Strategy: To raise suppliers' economic, environmental and social performance in sustainability

Implementation:

(1) Incorporate an ESG assessment framework in our supplier selection and retention process. In parallel, implement a mechanism for reducing business and disengagement with high-risk suppliers who do not meet ASEH requirements.

(2) On selected ESG topics, help to build up the ESG capability of suppliers, and introduce multi-faceted ESG guidance projects.

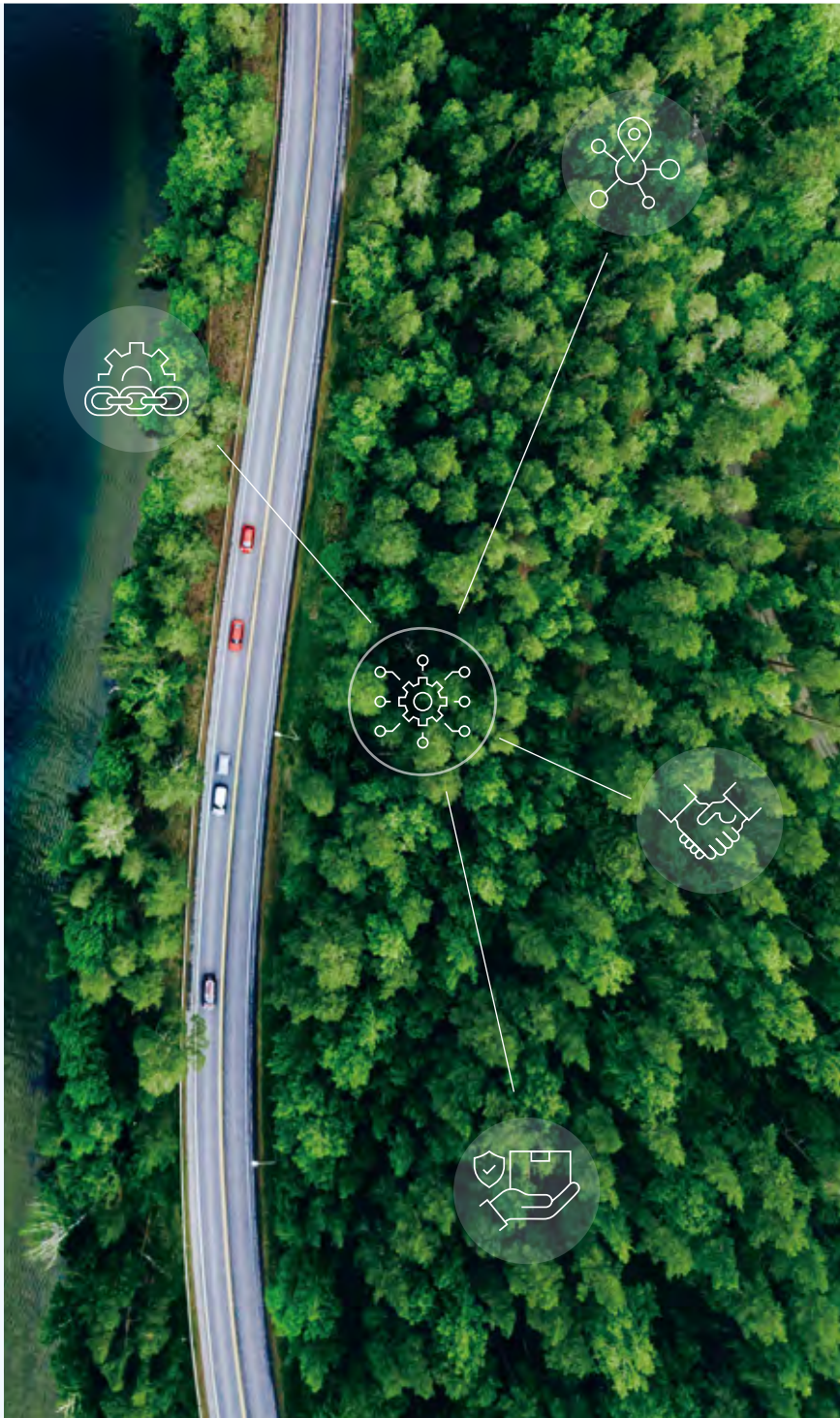
Responsible Minerals Sourcing

Strategy: To ensure that suppliers are using only responsibly sourced, conflict-free minerals in their products

Implementation: Conducting Responsible Minerals due diligence and management

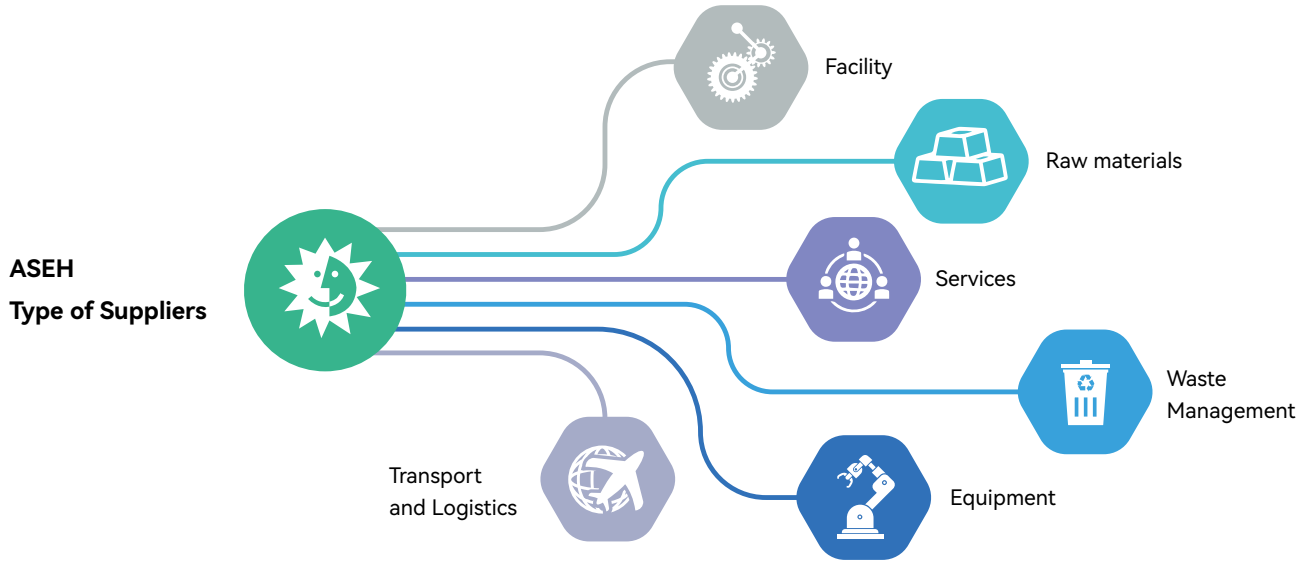
Quality First

Strategy: To obtain the best quality products and services from suppliers



7.2 Supply Chain Overview

As a global leader in semiconductor assembly and testing services as well as a key systems and core technology integrator, ASEH primarily provides assembly, testing and material (ATM) services and electronics manufacturing services (EMS). With an aim to continuously elevate customer trust, we strengthen our service globally by providing manufacture base throughout Taiwan, China, Japan, South Korea, Malaysia, Singapore, Vietnam, the U.S.A. and Mexico. Our procurement is classified into raw materials, equipment, facility, engineering, waste management, services, transport, logistics and subcontract services. We require all our suppliers to strictly follow the Supplier Code of Conduct and the company's risk assessment policies.



The supplier of raw material and equipment has the most direct impact on ASEH's day-to-day operations and manufacturing. Raw material suppliers are classified into two categories according to their attributes: direct material suppliers (suppliers of materials directly related to manufacturing) and indirect/packaging material suppliers (suppliers of packaging materials or materials indirectly related to manufacturing). To enhance supply chain resilience, we have established different levels of requirements and management policies according to the grade of importance of each operation. To manage our resources effectively, we place a high level of focus on raw material and equipment suppliers that regularly conduct business with us. Essentially, regular suppliers whose annual sale to us is in excess of a certain amount are classified as Tier-1 suppliers[1], and subjected to greater oversight. On the other hand, suppliers who have recorded major infractions or significant incidents, or potential negative ESG exposures, are also classified as significant suppliers and subjected to higher levels of scrutiny and supervision.

[1] Definition of a Tier-1 supplier: (1) Raw material supplier: Annual procurement spend of over US$0.2 million with 2 consecutive years of business with ASEH. (2) Equipment supplier: Among the top 80% of annual procurement amount, and 2 consecutive years of active transactions with the company. In 2024, a total of 904 Tier-1 suppliers were identified





Significant Supplier (Tier-1 and non Tier-1)[1]

Significant Tier-1 Supplier

(1) Top 85% of raw material and equipment procurement amount with 2 consecutive years of business with ASEH

(2) Sole-source or irreplaceable

(3) Records of major incidents or violations

(4) Potential ESG risks (Environmental: hazardous substance management；Social: child labor, forced labor；Governance: corruption, bribery, supply disruptions)

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Significant non Tier-1 Supplier

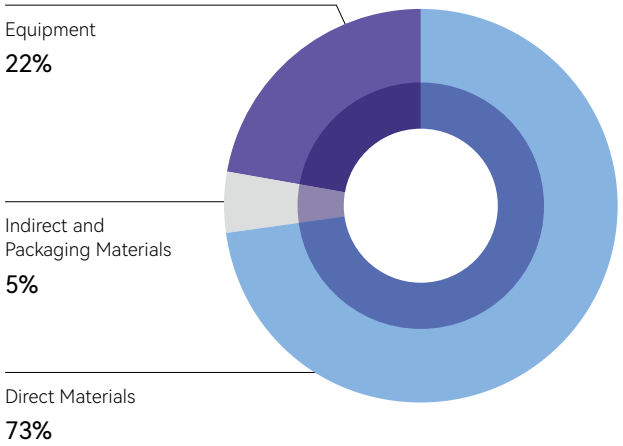
(1) ATM: Top 5 suppliers of critical raw materials; EMS: Raw material producers for Tier-1 critical raw material suppliers

(2) Records of major incidents or violations

(3) Potential ESG risks (Environmental: hazardous substance management；Social: child labor, forced labor；Governance: corruption, bribery, supply disruptions)

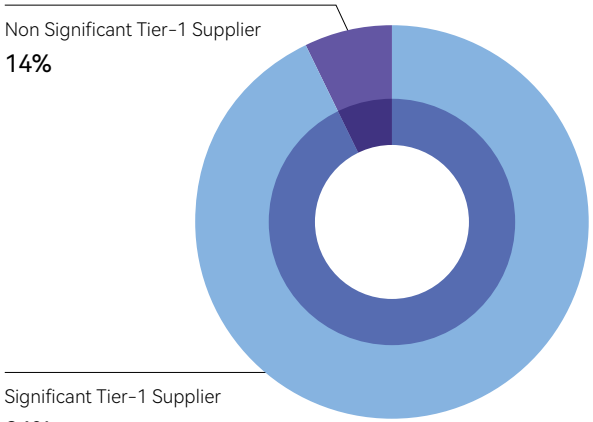
2024 Significant Tier-1 Supplier Category

(by Procurement Amount)



2024 Significant Tier-1 Supplier and Non Significant Tier-1 Supplier Distribution

(by Procurement Amount)



[1] In 2024, a total of 218 significant suppliers (182 significant Tier-1 suppliers and 36 significant non Tier-1 suppliers)



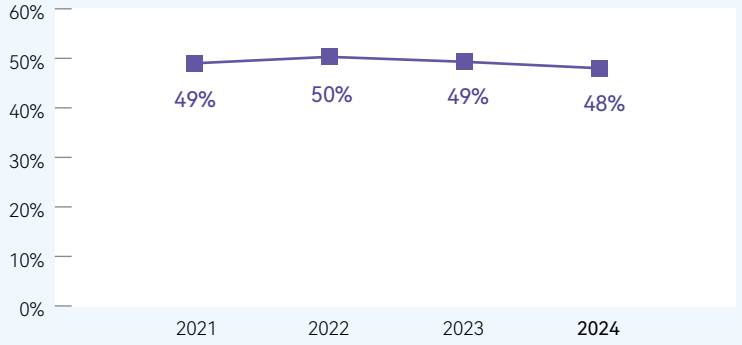
Non Tier-1 Suppliers Risk Management

Our scope of risk management was also expanded to non Tier-1 suppliers. There are currently over 730 non Tier-1 raw material suppliers which accounted for 57.6% of Tier-1 supplier's total procurement amount. Initial risk assessments were conducted on non Tier-1 suppliers by geographic locations as well as material type. We identified non Tier-1 significant suppliers by preliminary risk assessments, which were based on geographical locations and the types of materials supplied, as well as business relationships with their Tier-1 raw material suppliers, major accident records, and potential negative ESG impacts. ASEH shall continue to monitor our suppliers' performance closely, and pursue greater risk control measures. Moreover, to further reduce supply chain risks, ASEH has begun to implement sustainability risk management for non Tier-1 suppliers. In 2024, we conducted sustainability surveys on 23% of our non Tier-1 suppliers, of which 6% had undergone on-site/remote audits or RBA VAPs. We will continue to expand the integration of our sustainability risk management processes for non Tier-1 suppliers so that we can achieve a more robust and resilient supply chain.

Supporting Local Suppliers

In 2024, procurement from local suppliers[1] is accounted for approximately 48.1% of our total procurement amount while local procurement is account for 52% in main operation base, Taiwan. The close collaboration between ASEH and its local suppliers help to boost product quality and technological capabilities. Besides lowering carbon emissions and creating more job opportunities within the domestic market, local procurement also provides cost advantages and a shorter cycle time. Overall, a robust local procurement strategy contributes to the advancement of a highly efficient and competitive semiconductor industry chain.

Local Purchasing Spends (%)



[1] Local supplier refers to the supplier's register location is located at the same country where our manufacturing facility is located. For example, if the supplier's factory is registered in Taiwan, it is regarded as local procurement for ASE's Taiwan



7.3 Supply Chain Resilience

ASEH believes that proactively assisting suppliers in enhancing their capabilities is critical to the prosperity of the supply chain and progress toward a sustainable future. As part of our supply chain growth strategy, we have formulated a wide range of programs that provide suppliers a variety of resources and information, such as the annual sustainability forums, sustainability enhancement programs, and ESG workshops and educational training. These programs aim to drive stronger partnerships, allowing us to respond quickly to changing environments.

Building Low-Carbon Supply Chain

As we race towards net-zero, enhancing the integrity of carbon emissions data and targeted reduction measures across the supply chain are key approaches to our supply chain decarbonization. Our strategy comprises 5 key pillars: establishing low-carbon strategies, enhancing carbon data transparency, driving low-carbon supply chain transformation, implementing low-carbon transportation solutions, and building a low-carbon supply chain.

5 Key Pillars of a Low-Carbon Supply Chain

Establishing a Low-Carbon Strategies	Enhancing Carbon Data Transparency	Driving Low-Carbon Supply Chain Transformation	Implementing Low-Carbon Transportation Solutions	Building a Low-Carbon Supply Chain
• Establishing a low-carbon supplier selection and retention system • Supply chain emissions hotspot analysis and decarbonization target setting	• Developing a supplier carbon data platform • Improving supplier carbon data transparency and promoting third-party verification • Inviting suppliers to join the CDP supply chain program	• Promoting the use of low-carbon materials • Designing low-energy and high-efficiency equipment • Facilitating supplier adoption of renewable energy through joint procurement initiatives	• Encouraging suppliers to adopt low-carbon vehicles and fuels	• Enhancing carbon management awareness and reduction actions among sub-tier suppliers

Establishing Low-Carbon Strategies

Carbon emissions performance metrics are integrated into our supplier selection and retention criteria, framed together with a clear set of reduction targets to guide supplier engagement and accountability. Suppliers are also classified into different categories with attention prioritized on managing those providing high volumes of goods and services to the company, as well as suppliers with substantial carbon footprints. For these category of suppliers, we require them to set short- and medium-term carbon reduction goals and implement decarbonization measures.

Enhancing Carbon Data Transparency

We conducted a thorough analysis of emission hotspots across our supply chain to identify key decarbonization partners (suppliers of high-emission raw materials, high procurement volume of goods and services, and energy-intensive equipment) from the ATM and EMS sectors. These critical suppliers are expected to obtain ISO 14064-1 greenhouse gas inventory verification or equivalent third-party certification by 2030. Additionally, designated raw materials must undergo verification in accordance with ISO 14067 for product carbon footprint assessment. We are stepping up our engagement with suppliers to strengthen capabilities and performance in carbon management (including responses to climate risk and opportunities) by setting decarbonization targets and actions. In 2025, the company is collaborating with CDP to launch a Supply Chain Climate Change and Water Security questionnaire. ASEH's suppliers are highly encouraged to participate in the CDP Supply Chain Program, which aims to improve the quality and transparency of supply chain carbon data.

Since 2022, ASEH has invested in resources as well as partnered with external consultants to help suppliers develop GHG and product carbon footprint management systems that meet regulatory requirements. We are also providing online and on-site guidance to our suppliers in developing ISO 14064 and ISO 14067 inventory capabilities and obtaining third-party verification. As of 2024, we have supported 28 raw material and equipment suppliers to achieve external certification successfully. By continuously expanding our collaboration with suppliers, we aim to enhance carbon management capabilities collectively through identifying carbon hotspots across our supply chain and driving the development of emission reduction plans. Suppliers who have successfully obtained GHG and carbon footprint verification are publicly commended at the ASEH annual supplier conference. Through peer-sharing and healthy competition, we can confidently influence suppliers to incorporate robust carbon management in their business operations.



2024 Best Supplier Award Ceremony –Recognition of suppliers who have achieved carbon inventory verification

Driving Low-Carbon Supply Chain Transformation

To support ASEH's net-zero emissions goal, we are committed to reducing the climate impact of our supply chain, making Scope 3 emissions reduction a critical priority. ASEH has launched tailored low-carbon initiatives for different categories of suppliers. For raw material suppliers, our focus is on reducing their production-related emissions by enhancing material use efficiency, requiring the adoption of low-carbon manufacturing processes or the substitution of low-carbon materials, and increasing the use of recycled minerals to reduce dependence on virgin metal resources. In addition, we have asked key raw material suppliers engaged in carbon reduction initiatives to achieve a 20% reduction in greenhouse gas emissions by 2035. For equipment suppliers, we have jointly released the Equipment Energy Management White Paper and incorporated energy-saving requirements into new equipment procurement specifications. In 2025, we have launched the Equipment Supplier Energy-Saving Project, which introduces energy management and efficiency design standards for packaging and testing equipment. Through the white paper and innovative design efforts, we will partner with suppliers to develop the next generation of low-energy, and high-efficiency equipment with the goal of reducing energy consumption per unit output by 20% by 2030. ASEH also promotes a joint renewable energy procurement initiative across the supply chain. By surveying suppliers' renewable energy needs and helping them expand their renewable sourcing, we are working to build a low-carbon and resilient supplier ecosystem.



2024 Best Supplier Award Ceremony – Launch ceremony for the Equipment Supplier Energy-Saving Project

Facilitating Low-Carbon Transportation

Upstream and downstream emissions from transportation have a direct impact to ASEH's Scope 3 emissions. To reduce emissions, we optimize procurement strategies and delivery schedules for products and equipment, favoring sea freight over air freight and promoting local sourcing. Additionally, we encourage suppliers to progressively adopt low-carbon transportation methods, including the use of low-carbon fuels, to lower transportation-related emissions across the supply chain.



Sustainable Supply Chain Development Program

Annual Sustainability Forum

In 2024, USI hosted the Annual Sustainability Forum, bringing in a total number of 500 participants from suppliers

USI

- Communicate USI Corporation's requirements for supplier sustainability risk management
- Promote USI Corporation's green products, conflict minerals policy and management requirements, and sustainable raw material requirement
- Sharing ESG Experiences by Suppliers
- Featured Topic – Green Ocean Business Opportunities in the Supply Chain Market

Sustainable Capacity Building Program

Carbon Reduction and Water Conservation Guidance Project	Target: Raw material supplier

To reduce the waste of resources and enhance green sustainability awareness, since 2021, ASE Kaohsiung has provided support to suppliers in reducing GHG and water resource consumption and, at the same time, established a 3% reduction target for both GHG and water resources. In 2024, a total of 61 critical suppliers committed to this endeavor and worked with ASE to set reduction targets and action plans. In 2024, we successfully reduced GHG emissions by 840,226 tons of CO_2e across our supply chain, equivalent to a 3.04% annual reduction, and reduced water consumption by 4,875,629 tons, equivalent to 3.38% annual water saving. Both reduction outcomes exceeded our established target of 3% for 2024.

To enhance suppliers' carbon reduction performance, ASE Kaohsiung invited experts to conduct online classes to help suppliers identify carbon hotspots and provide relevant recommendations. In 2025, expert teams will be scheduled to conduct on-site support to strengthen our suppliers' carbon reduction and water conservation efforts.

Information Security Evaluation and Management	Target: Raw material and Equipment supplier

As a response to the increasing digitalization of the supply chain and cybersecurity threats, we established a supplier information security evaluation system in 2022 to ensure supply chain resilience. Evaluation of key suppliers are conducted in four steps: current status assessment, improvement support, results confirmation, and cyclical review. In 2024, we completed cybersecurity evaluations for 96 equipment suppliers, identifying their cyber risks and weaknesses. A support team, formed by our subsidiaries, provides prioritized improvement suggestions and conducts follow-up site visits the following year to track the improvement results. This comprehensive supply chain cybersecurity management ensures the operational safety of ASEH and enhances the overall cybersecurity resilience of the supply chain.

ESG Workshops and Educational Training

We believe in sharing and communicating with our suppliers to promote our commitment of a sustainable value chain and expectations on sustainability management and ESG performance. In tandem, we hold regular workshops on sustainability topics and training sessions adapted to the different attributes of each supplier category. Establishing effective platforms for dynamic two-way communication with our suppliers help foster continuous cooperation on sustainable development and boost the agility of the supply chain in responding to sustainability trends and risks.

Supplier ESG Academy	Number of total participants: nearly 1000
ASE – Kaohsiung Target: Raw material supplier, Equipment supplier	In 2024, ASE Kaohsiung launched the Supplier ESG Academy and established an online learning platform to support supplier ESG development. The platform offers a series of video-based courses aligned with international sustainability trends, enabling suppliers to access training at any time and from anywhere, with the flexibility to revisit content as needed. To ensure structured learning, our ESG project team has developed a customized curriculum of 10 ESG courses, organized into 3 levels: foundational, intermediate, and advanced. Suppliers are required to complete a minimum of 3 hours of ESG training annually. The platform also tracks supplier learning progress, allowing us to provide timely support and enhance supplier sustainability capabilities.
ESG Workshops – Sustainable Supply Chain Transformation Program	**Number of total participants :62**
ASE – Kaohsiung Target: Raw material supplier, Equipment supplier	• Knowledge sharing of global net-zero trends • Sharing practical techniques for greenhouse gas and product carbon footprint inventory • Sharing of SBTi, renewable energy, and supply chain net-zero best practices
Regular Educational Training	**Number of total participants: 11,900**
ASE – Kaohsiung, Chungli, ASE Shanghai (Material), Wuxi, and Korea USI Target: Raw material supplier, Facility, and Waste management supplier, Recruitment agency and Service provider	• Corporate sustainability requirements • Promote health and safety, food safety, and environmental health and safety policies • Disseminate knowledge on fire management, fire rescue, and fire emergency response mechanism • Hazard identification • Waste management carbon inventory

ASEH Supplier Sustainability Awards

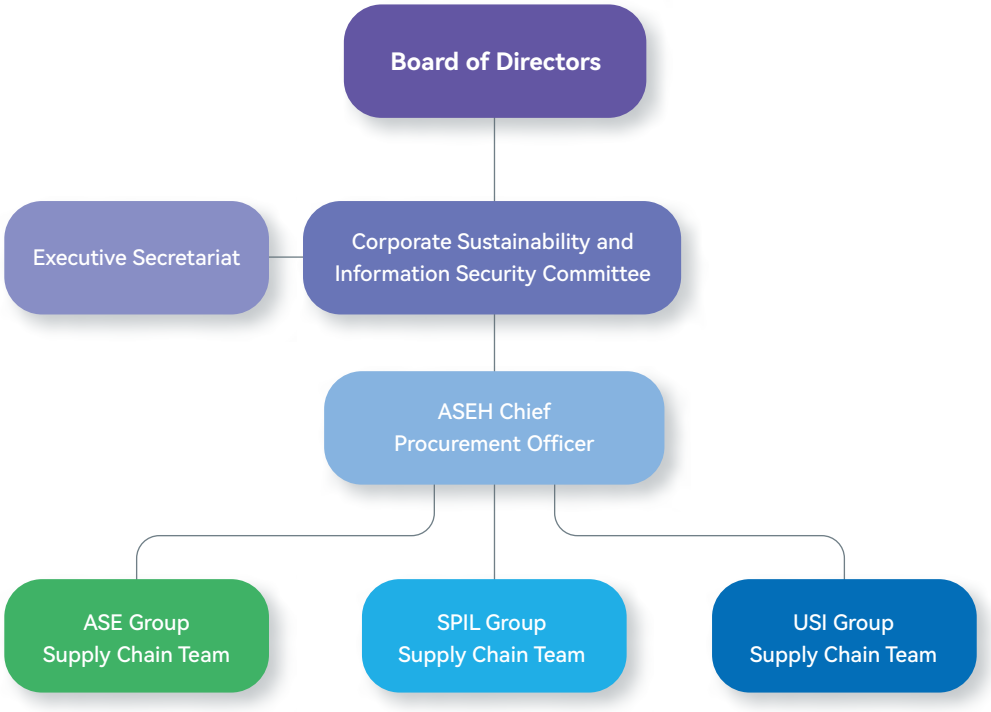
As part of the company's endeavor to drive sustainable development across the supply chain, ASEH launched the Supplier Sustainability Awards in 2017 to recognize suppliers with outstanding sustainability performance. In 2020, we launched the Supplier Sustainability Awards, a brand new category that aligns with 2 of our core sustainability strategies - low-carbon and circular. The program encourages suppliers to submit sustainability partnership projects of between 1-2 year duration, for reviewed by ASEH and independent third parties. The submitted projects undergo a rigorous selection process based on the implementation timeframe and efficacy, and selected projects will be funded by the ASE Environmental Protection and Sustainability Foundation. At the second Supplier Sustainability Awards event held in 2023, we presented recognition plaques to 2 suppliers - one for the low carbon achievement and another for the circular achievement. We have currently completed on-site supplier audits through external consultants, and will conduct third-party verifications throughout 2025 on the supplier progress and performance. Funding will be provided based on the progress of the projects.

Sustainable Strategies	Selected Suppliers	Collaboration Project	2024 Achievements
Low Carbon	Hwa Shu Enterprise Co., Ltd.	Introduction of energy-saving electric heating system	• Electricity savings: 955,197.4 kWh • Carbon emissions reduction: 471.8 tCO_2e
Circular	Chiu Tze Chemical Co., Ltd.	Waste liquid recycling and reuse	• Waste liquid recovery and reuse rate: 90% • Reduction in plastic drum usage through circular packaging: 6,128 units

7.4 Supply Chain Management Framework

Supply Chain Management Organization

The supply chain plays an indispensable role in ASEH's corporate sustainability development. The ASEH board of directors is the highest decision making body of our supply chain management, and is responsible for endorsing key strategies and execution plans. To further our sustainability goals, the Corporate Sustainability and Information Security Committee was established to plan and supervise the company's sustainability management, submit progress and status reports to the board of directors, and establish the sustainability management policies and goals of the three subsidiaries. The Board of Directors formally approved the appointment of a Chief Procurement Officer (CPO). Mr. Andrew Tang, a board member, was elected to the post and is responsible for the development of group-wide sustainable supply chain strategies and overseeing the execution and performance of critical initiatives. He will also lead regular reviews of key sustainability targets and the corresponding implementation across the three major subsidiaries. Each subsidiary has its own Supply Chain Management Team tasked with driving action plans related to supply chain sustainability and advancing ASEH's mid- to long-term sustainability goals. The CPO and the subsidiary teams will jointly assess ESG-related supply chain issues and risks, providing necessary support, advocacy, and training to all sites as part of daily internal management.



Enhancing Sustainability in Procurement through Education and Training

To improve the skillsets of ASEH's procurement teams at each subsidiary, we conduct regular systematic training that aims to increase the teams' sustainability awareness. This ensures that the teams have a deeper understanding of the company's yearly supply chain sustainability goals as well as effectively execute ASEH's procurement and supply chain development policies and strategies. The internal trainings instill the importance of sustainability in corporate procurement, and team interactions allow procurement teams from different entities to exchange ideas and foster a corporate culture of sustainability.

2024 procurement education and training focus:

- Sustainable supply chain management organization
- Sustainable supply chain management mechanism and performance
- ASEH's net-zero commitment and supply chain engagement strategy and mid/ long- term goals
- Stakeholders' concerns on sustainability topics
- Supply chain information security management



Supplier Sustainability Management Approach

As part of the ASEH Procurement and Supply Chain Development Policy and Commitment, we established a four-stage sustainability supply chain management process that is run repeatedly to ensure supplier compliance and enhance their sustainability performance. We have also established a series of supplier programs that aim to guide, and help build up our suppliers' ESG capabilities, so as to create a more sustainable supply chain together. We have also formulated mechanisms to closely monitor ESG performance for rewarding or disengaging with suppliers.

Sustainability Requirement	ESG Risk Screening	Sustainability Assessment and Validation	Enhance Supply Chain Sustainability
Suppliers are required to comply with ASEH's Supplier Code of Conduct and sign the "ASEH Supplier Code of Conduct Commitment Letter". [Qualified Suppliers] Qualified supplier are required to sign Supplier Code of Conduct Commitment Letter and pass our environmental and social risk assessment	Active Survey: Conduct preliminary assessment and grade risk level according to type of supplier business relationship, category of product, location and potential ESG risk.	(1) Desk Assessment: Complete desk assessment through reviewing relevant supporting information in SAQ (2) On-site Assessment: Risk level will be graded and analyzed by sustainability assessment (including labor, health and safety, environment, ethics, and management system aspects) which conducted by ASEH procurement and sustainability team	Improvement and Capacity Build-up (1) Request suppliers to make improvements according to audit reports while suggestion and guidance will be provided by ASEH during the audit process. To lower risk, follow-up actions and secondary audits will be conducted. (2) Disengage Mechanism: (i) Suppliers whose improvement still incompliant with ASEH requirements are graded as significant suppliers, in the first year and subjected to lower procurement following by consultation. ASEH will conduct physical audit in the next year. (ii) Supplier incompliant with ASEH requirement for 2 consecutive years will be disqualified and terminated business Sustainability Performance Assessment (1) Incorporate ESG evaluation framework into major material and significant supplier business review, to ensure supplier's ESG performance besides product

Sustainability Assessment

ASEH is committed to continuously improving the sustainability and resilience of its supply chain. We incorporate ESG indicators into the evaluation of key raw materials and critical suppliers, accounting for 10%. ESG indicators are integral factors influencing our selection in addition to quality, cost, delivery time, and technology. We drive our suppliers diligently to adopt sustainable practices through proactive management strategies. Suppliers with the best ESG performance are recognized at our annual supplier day, and invited to share their expertise in sustainability development with other suppliers at the annual supplier forum. Outstanding suppliers also receive priority in our procurement selection policy.

ESG Assessment Indicators

- Carbon Management: Greenhouse Gas Emission, Product Carbon Footprints, Carbon Reduction Target, Renewable Energy Target
- Environmental and Occupational Health Safety
- Responsible Minerals Management
- Penalty Record



2024 Supplier Conference – Best Supplier Award

7.5 Supply Chain Sustainability Management Performance

Supplier ESG Risk Assessment

To better manage supplier risks, we established a 3-phase process to evaluates any underlying ESG risks at our suppliers. For suppliers that exhibit high levels of ESG risks, ASEH will closely monitor and supervise them through periodic audits and guidance to mitigate and control the risks effectively.

Phase I: Active Risk Assessment – Suppliers trading directly with ASEH	Phase II: Sustainability Assessment – Tier-1 Suppliers & Significant High-Risk Suppliers	Phase III- Supplier Sustainability Performance Improvement – Suppliers with Audit Findings
We conduct a preliminary risk assessment for all direct suppliers based on the procurement amount, business relationship, industry classification, and negative impacts on ESG performance (governance, environment, and society).	Conduct desk assessments of all Tier-1 suppliers, focusing on supplier location, product-specific risks, and procurement amount. On-site assessments will be conducted based on the desk assessment results. • **Desk Assessment:** Conduct SAQ surveys on Tier-1 suppliers and request supporting documentation. • **On-site Assessment:** Based on the aforementioned assessment results, identify suppliers' potential impact and close business relationship with ASEH, and initiate on-site sustainability assessments and counseling.	Performance Improvement: Regarding audit findings, on-site or remote support has been implemented to help suppliers develop corrective action plans and complete improvements within a specified timeframe.

Phase I: Active Risk Assessment – Suppliers trading directly with ASEH

We base our selection on the business relationship with our company and the purchase amount of all direct trading suppliers, we then assess the procurement category (eg. raw material, facility, equipment, contract services) and potential ESG risks.

Category	Assessment Methodology
Business Closeness	Conduct preliminary assessment by reviewing purchase amount and category of supplier (including material, facility, equipment supplier and service contractor)
Environment	(1) Major incidents or governmental, environmental, or social violation record (2) Potential negative impact (Environmental: hazardous substance management; Social: child labor, forced labor; Governance: corruption, bribery or supply disruption risk)
Social	
Governance	
Location/Country	Employ localized and high-risk regional controls at the supplier location. Identify risks according to geopolitics, regional conflicts and high-risk country factors.
Sector-specific	Identify industry specific risks by designing different types of sustainability assessment questionnaires focusing on specific risk topics
Commodity-specific	Screen key materials containing hazardous substances by material properties.

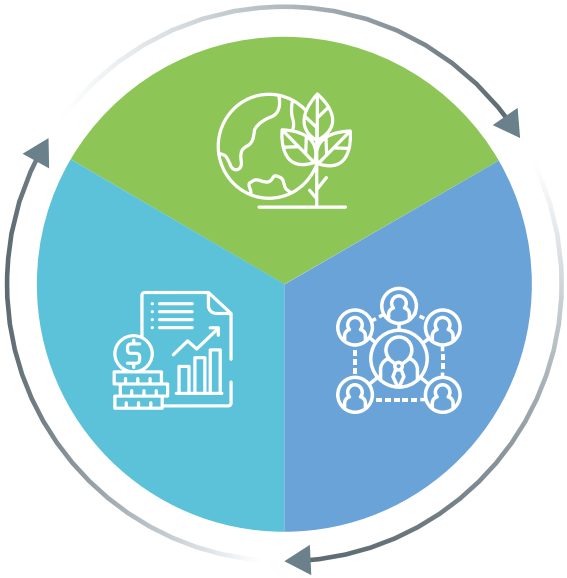
Phase II: Sustainability Assessment - Tier-1 Supplier and Significant High-Risk Supplier

To cater for a diverse and complex supplier base, we have customized our sustainability self-assessment questionnaire (SAQ) according to the industry classification, and ESG risk assessments for different categories of suppliers. Facility, waste disposal, and service contractors are required to carry out annual sustainability risk assessments, based on our procurement amount and business relationship.

Supplier Category and Sustainability Assessment Aspects

- **Raw Material and Equipment Supplier:** Labor, Health and Safety, Environmental Protection, Sustainable Governance and Risk Management, and Supply Chain Management
- **Facility and Waste Management Suppliers:** Labor, Health and Safety, Environmental Protection, Ethics, and Sustainable Management System
- **Service Providers:** Labor, Health and safety, Ethics, and Sustainable Management System

Sustainability Risk Assessment Factors



Environment

- Environmental Management System
- Renewable Energy Management
- Carbon Management and Reduction Strategy
- Water Management
- Waste Management
- Biodiversity
- Plastic Management

Governance and Economic

- Flexibility, Quality, Cost, Service and Technology
- Sustainability Management Policies and Organization
- Risk Management
- Business Ethics
- Information Security
- Conflict Minerals Management
- Supply Chain Management

Social

- Occupational Health and Safety
- Management System
- Emergency Preparedness
- Labor Rights
- Labor Management System
- Human Rights
- Social Involvement

Desk Assessment

We've conducted sustainability assessment questionnaire to all Tier-1 suppliers[1]. Suppliers are required to self-assess risk and provide corresponding supporting document in accordance with their responses to the question. To improve the completeness and response rate of the supplier sustainability risk assessment questionnaire, we've launched an E-platform which build up a sharing and analyzing sustainability information database for ASEH subsidiaries. With the E-platform, the progress of the questionnaire can be effectively managed and tracked. The response rate for the supplier sustainability assessment questionnaire is exceeded 81% in 2024 with a number of 729 suppliers. 40 suppliers with high risk potential have been identified[2].

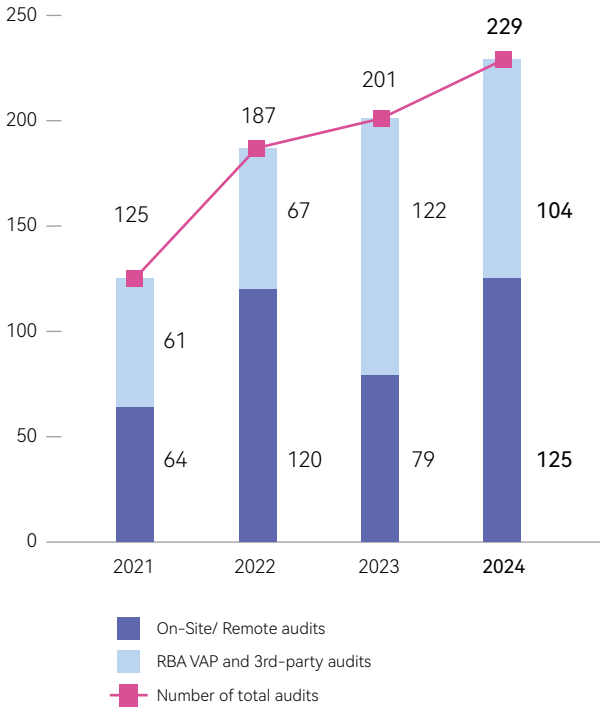
2024 Supplier Sustainability Risks

Category	Risk Gap Description	
Governance and Economic	Risk and Business Continuity Management	Procedures for the identification of regulatory risks affecting business operations have yet to be established
	Personal Data and Privacy Management	Privacy and personal data risk management procedures have yet to be established
	Information Security Management	Regular internal/external information security audits, as well as employee education and training, have yet to be conducted
	Supplier Sustainability Management	Procedures for managing sustainability risks in the supply chain have yet to be established
		A regular sustainability audit and improvement mechanism for the supply chain have yet to be established
Environment	Climate Change and Carbon Management	Procedure for climate risk evaluation, mitigation, and adaptation measures have yet to be established
		Mechanisms to measure GHG inventory and reduction targets have yet to be established
	Waste Management	Reduction targets and recycling mechanisms in waste management have yet to be established
Social	Occupational Health and Safety	Risk assessment processes to evaluate employees' health and safety have yet to be established
	Human Rights Management	Commitment or policies related to human rights management have yet to be established
	Labor Rights	A system for the assessment of labor-related risks and impact has yet to be established

On-Site Assessment [3]

The results of the sustainability risk assessment questionnaire allow us to accurately identify suppliers with potential impact and close business relationship with ASEH. Then we conduct on-site sustainability assessment and counselling to ensure supplier's risk circumstance and continually reduce risk level. In 2024, we conducted on-site sustainability assessments (on-site/ remote audit and RBA VAP) on 229 suppliers.

Number of Supplier Sustainability Audit

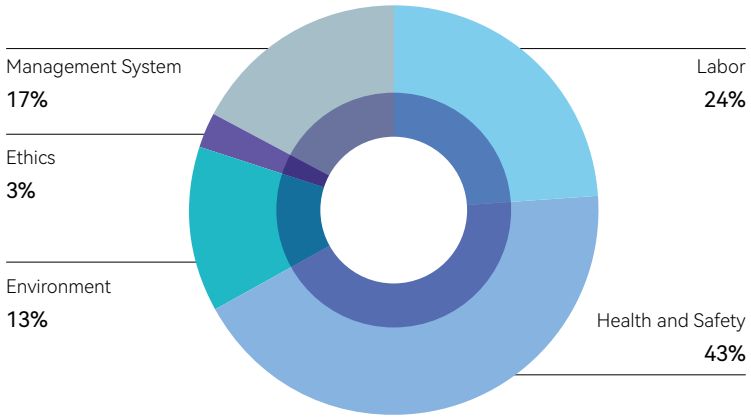


[1] In 2024, among 904 Tier-1 suppliers, 824 had completed desk assessments
[2] Among Tier-1 suppliers with high ESG risk potential, there are 37 Tier-1 significant high-risk suppliers and 3 non Tier-1 significant high-risk suppliers
[3] On-Site Assessment: 2nd and 3rd party assessment and supplier assessments with industry initiative

Phase III- Supplier Sustainability Performance Improvement[1]

Upon completion of the sustainability assessment, we will inform suppliers of any discrepancies and their assessment results. We will also inform them of the benchmark ESG performance across the same supplier category, and request corrective action plans as well as provide support to underperforming suppliers. The corrective action plans must be mutually agreed upon and reviewed during the next assessment to close all gaps. For suppliers with persistent underperformance despite corrective engagement, we will provide another year's grace period of support, where we will also consider a gradual reduction of our procurement volumes and include them in the supplier watch list To fulfill our commitment to sustainability, suppliers will be removed from our qualified supplier list if they fail to meet expectations in the second year, and all dealings with them will be suspended. In 2024, 229 Tier-1 raw material suppliers, who conducted on-site sustainability assessments, have taken corrective actions and 100% completed supplier improvements. No supplier was terminated for non-compliance.

Supplier Sustainability Audit Findings by Category in 2024



Tier-1 Raw Material Supplier Audit Results and Corrective Actions in 2024

Category	RBA Code of Conduct	Major Findings	Improvement Actions
Labor	Wages and Benefits	• Salary deductions used as a disciplinary action	• Ensure the company's labor policy prohibits salary deductions as a form of disciplinary action
Health and Safety	Occupational Health and Safety	• High-risk areas lack necessary safety signage and warning labels • First aid personnel's certifications have expired, and no refresher training has been conducted	• Conduct regular inspections to ensure that safety signage and warning labels are properly placed in visible locations within high-risk areas, ensuring compliance with regulations • Establish a re-certification expiry reminder system to ensure continued compliance with regulatory requirements
	Emergency Preparedness	• Firefighting equipment not regularly inspected • Emergency exits and fire safety facilities blocked	• Conduct regular inspections to ensure firefighting equipment is fully operational and emergency exits remain unblocked
Environment	Hazardous substances	• Lack of comprehensive tracking and recording system for hazardous substances	• Establish a process for tracking and recording the sourcing, storage, usage, and disposal of hazardous substances
	Solid Waste	• Lack of comprehensive waste management systed	• Establish a comprehensive waste management system with regular audits
Ethics	Protection of identity and from retaliation	• Lack of an anonymous reporting, complaint, and anti-retaliation mechanism	• Establish internal and external anonymous reporting mechanisms and channels
Management System	Legal and Customer Requirements	• Lack of a comprehensive mechanism has been established to identify applicable laws and regulations, and procedures for regulatory review and update	• Establish procedures for identifying applicable laws and regulations, and designate a responsible unit to track regulatory updates and ensure continued compliance with regulatory requirements
	Risk Assessment and Risk Management	• Lack of a comprehensive risk identification process	• Establish a management mechanism and procedures for the regular identification of potential risks to business continuity
	Supplier Responsibility	• Lack of supplier ESG risk assessment procedures and audit systems	• Establish supplier ESG risk assessment procedures and audit systems

[1] In 2024, we have set a target for 100% of assessed Tier-1 significant high-risk suppliers to implement and complete their corrective actions

7.6 Responsible Minerals Compliance

To prevent the unintentional use of any conflict mineral such as tantalum, tin, tungsten and gold (3TG) from the Democratic Republic of the Congo and its neighboring countries, we have established the ASEH Corporate Policy for Sourcing Conflict Minerals, joined the Responsible Minerals Initiative (RMI)1, and participated in the RMI Mineral Reporting Templates (MRT) Teams and Due Diligence (DD) Practices Team to resolve conflict minerals issues in the supply chain and support responsible sourcing.

To communicate ASEH's conflict minerals management requirements, the ASEH Corporate Policy for Sourcing Conflict Minerals is posted on our company website, please visit: https://www.aseglobal.com/csr/responsible-procurement/conflict-minerals-compliance/

Responsible Minerals Management

ASEH communicates conflict mineral policies to our suppliers through our website. The suppliers are required to comply with ASEH Corporate Policy for Sourcing Conflict Minerals and establish their own conflict minerals policies and to their own suppliers. We also require our suppliers to actively assess and validate their supply chain, and encourage them to source minerals from Smelters or Refiners (SoRs) that have received "conflict-free" designations by the Responsible Minerals Assurance Process (RMAP), or other independent third-party audit program.

Responsible Minerals Management Approach

Conflict Minerals Requirements

- Comply with ASEH Corporate Policy for Sourcing

Reasonable Country of Origin Inquiry (RCOI)

- Conflict Minerals Reporting Template (CMRT)
- Conflict Minerals Representation Letters
- On-site/paper audit

Due Diligence (DD)

- Comply with the OECD Guidance to execute ASEH's due diligence procedure

Independent Private Sector Audit (IPSA)

- Conduct IPSA to verify ASEH's due diligence results

Public Disclosure (CM Report)

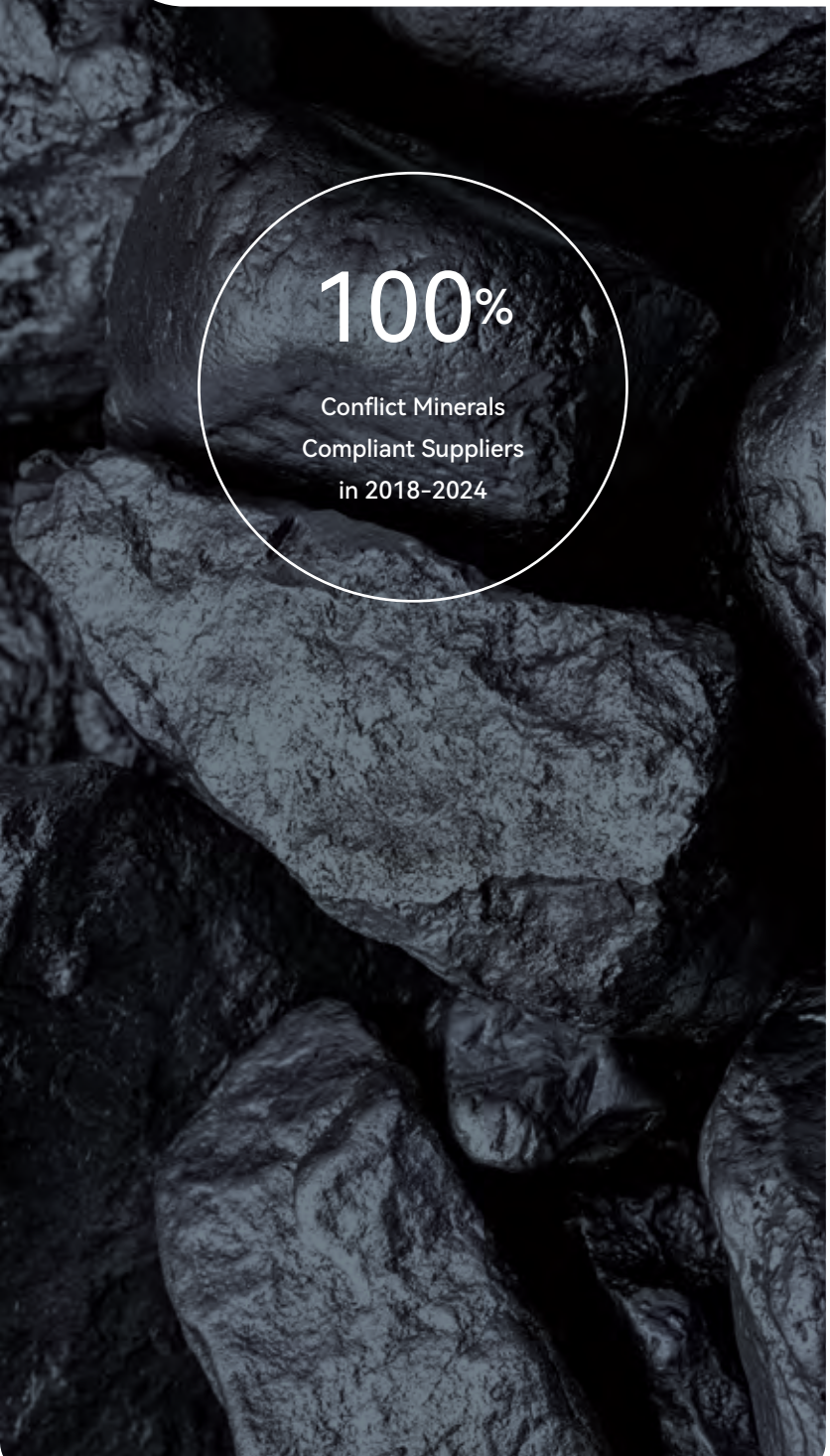
- Public Conflict Minerals Report on U.S. SEC and ASEH website

Each year, ASEH performs RCOI to identify and validate the sources of 3TG in our packaging and material services and electronic manufacturing services and products, and whether they come from conflict affected regions.

Our RCOI includes two steps:

1. Identify sources of 3TG SoRs through CMRT by conducting supplier survey.
2. Suppliers are asked to sign the Representation Letters of compliance with ASEH Corporate Policy for Sourcing Conflict Minerals and to fully reveal the source of the SoRs they sourced from.

[1] ASE took the initiative to join the RMI in 2015 and has continued its participation as ASEH to this day



2024 Due Diligence Results

SEH designed its DD measures to conform to the Organization for Economic Co-operation and Development Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (the "OECD Guidance") and we also adopted the OECD Guidance to not only identify/ assess supplier risks and mitigate these identified risks, but also to design a conflict minerals audit form for ASEH's suppliers. We were therefore able to provide guidance through both on-site/remote and off-site audits to help suppliers set up management mechanisms that complied with OECD Guidance.

In 2024, we have identified 249 SoRs from more than 369 suppliers. According to the supplier survey we conducted in 2024, 100% of our suppliers are compliant with ASEH's requirement for sourcing DRC conflict-free minerals. With regard to critical materials, we have expanded our scope of investigation to cover suppliers for cobalt and mica, in addition to 3TG. In 2024, 217 suppliers used cobalt and 1 suppliers used mica, identified 84 cobalt smelters and 1 mica smelters. In 2023, we start intensified our efforts to investigate the sources of copper, iron, nickel, aluminum, and other metals, and disclosed smelter sources to customers.

Independent Private Sector Audit (IPSA) and Public Disclosure

We undertake an IPSA on our Conflict Minerals Report and DD procedure to ensure they are in compliance with the requirements set forth by the U.S. Securities and Exchange Commission (SEC). Each year, the Conflict Minerals Report is also disclosed publicly1. Based on our RCOI analysis and DD measures in 2024, we reasonably believe that the identified SoRs used for all of our packaging and materials services products are DRC Conflict-Free. Given the large number of suppliers for our electronic manufacturing services, we developed a sampling program to select material suppliers for the purpose of identifying SoRs. We believe that our due diligence performed based on the sampling program is sufficient and appropriate to provide a reasonable basis for our determination. Therefore, we reasonably believe that such SoRs used for all of our electronic manufacturing services products are DRC Conflict-Free.

[1] For complete file of ASEH SEC Conflict Minerals Filing, please visit our website at https://www.aseglobal.com/ch/csr/responsible-procurement/conflict-minerals-compliance/ or SEC's website at https://www.sec.gov/Archives/edgar/data/1122411/000095010323008127/dp193728_ex0101.htm

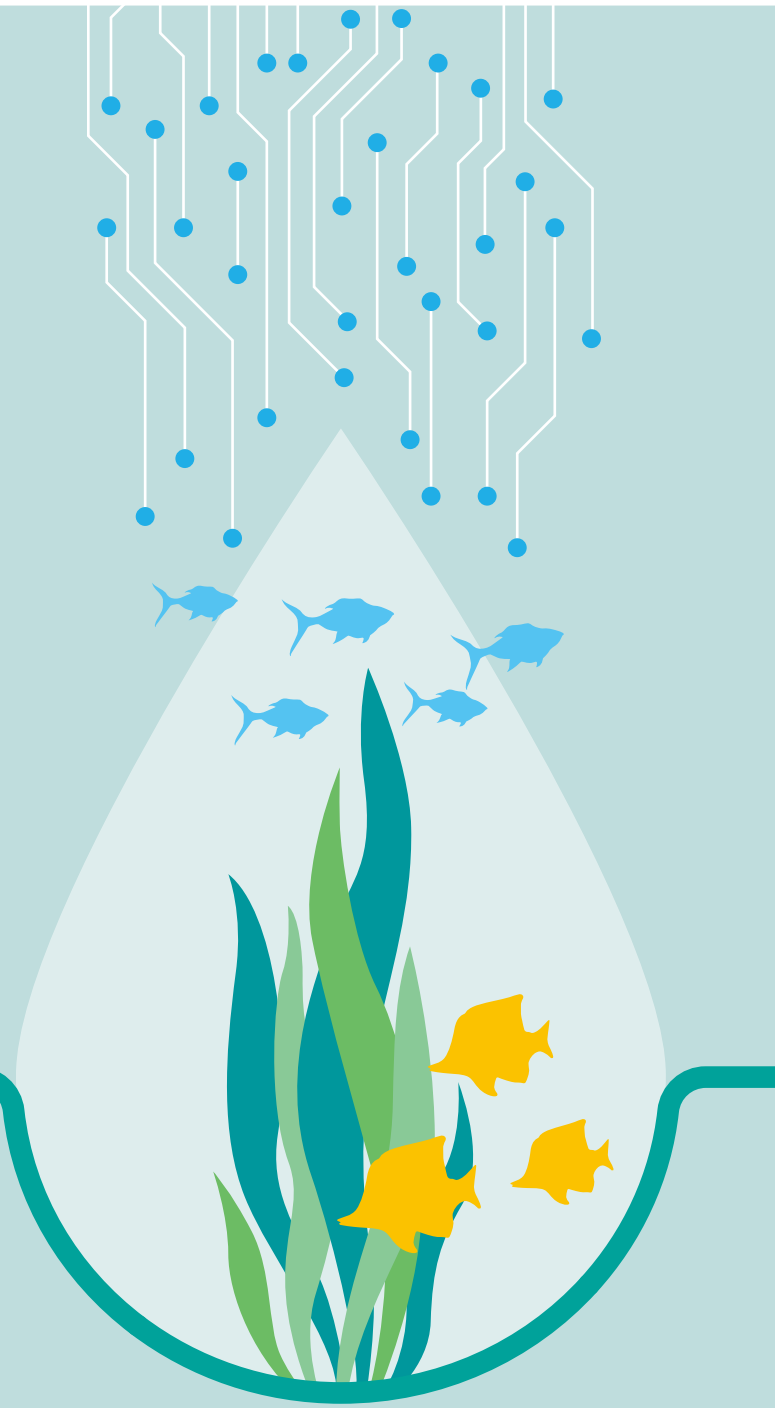
CORPORATE CITIZENSHIP

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

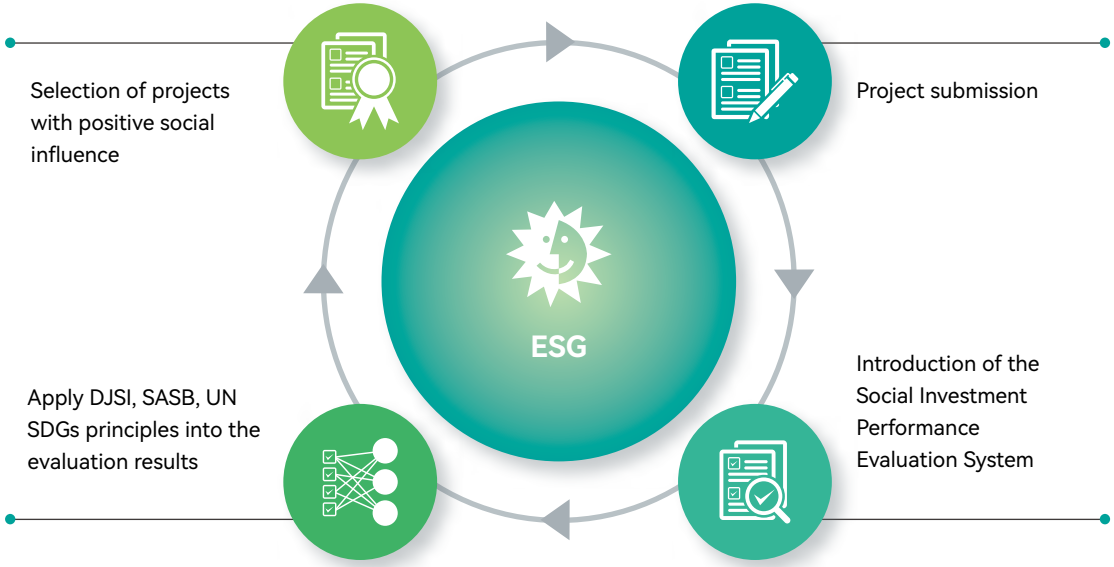
To achieve the common good for society, ASEH harnesses its power to stimulate positive social change, bringing about an increase in sustainable awareness and positive impacting behavioral change, skills development, and quality of life. Established as ASEH's highest level of organization for social involvement, 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.

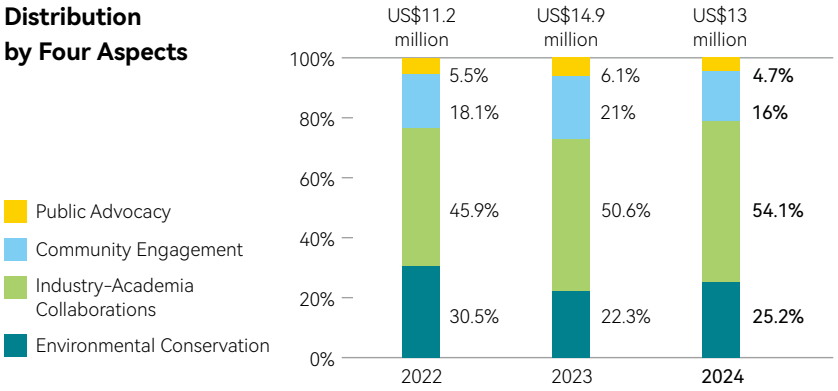
In 2024, we spent approximately US$13 million on social involvement activities, representing 1.02%[2] of ASEH's pre-tax net profit. The distribution ratio is similar to that in 2023. Industry-academia collaboration on education continues to account for the largest portion of our spending as we continue 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

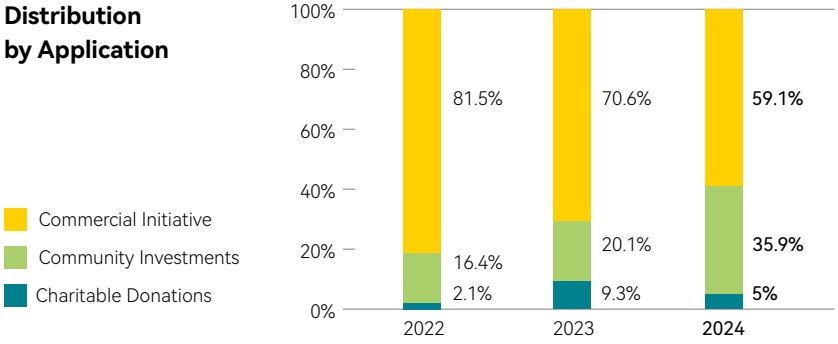


[1] ASEH Public Affairs Engagement Policy (https://www.aseglobal.com/en/pdf/aseh_public_affairs_policy.pdf)
[2] The 2024 pre-tax net profit was NT$41,733.4 million (for more information, please refer to ASEH Form 20-F)

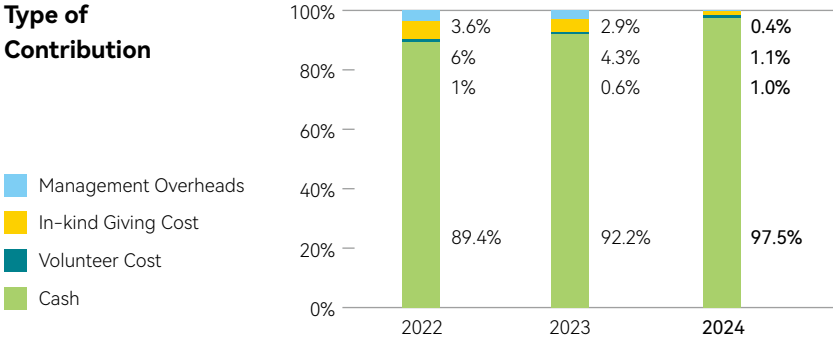
Distribution by Four Aspects



Distribution by Application



Type of Contribution





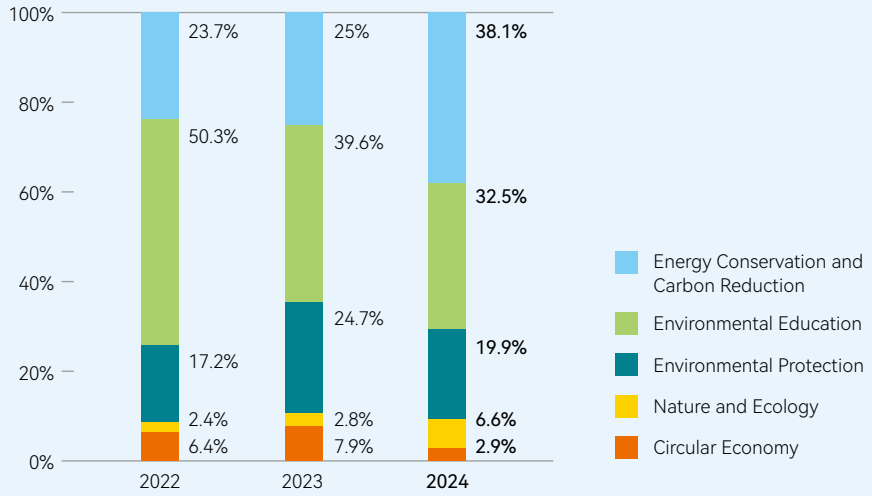
8.2 Environmental Conservation

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.

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.

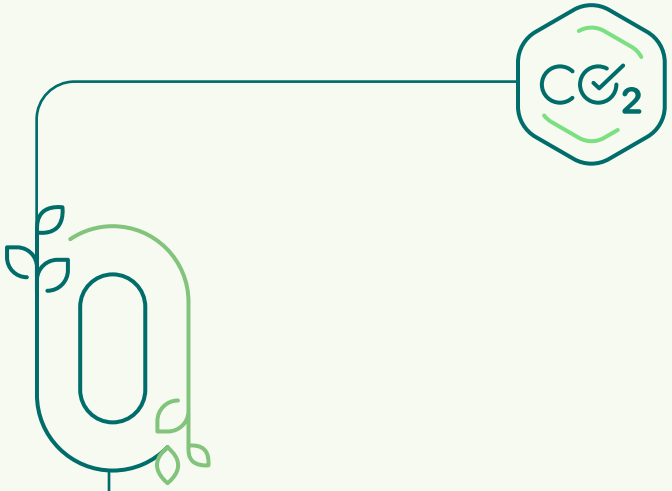
2024 Evaluation Results

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

APPENDIX

Environmental Data

A. Waste, Water, Energy, GHG & Air emission[1]

Category	Environmental Performance Index	Unit	2020	2021	3022	2023	2024
Waste	Total general and hazardous waste	ton	75,814	82,158	75,391	68,657	76,857
	General waste production	ton	45,139	52,618	49,972	47,965	54,359
	Recycled and reused (without energy recovery)	ton	33,813	41,696	39,245	38,321	43,643
	Landfilled	ton	1,872	1,976	1,368	1,114	1,039
	Incinerated with energy recovery	ton	8,442	8,160	8,810	8,275	8,257
	Incinerated without energy recovery	ton	1,012	786	549	255	328
	Hazardous waste production	ton	30,675	29,540	25,419	20,692	22,497
	Recycled and reused (without energy recovery)	ton	13,048	14,064	12,963	11,199	11,580
	Landfilled	ton	870	1,326	0	0	0
	Incinerated with energy recovery	ton	6,740	5,171	5,563	4,897	6,560
	Incinerated without energy recovery	ton	7,201	7,262	1,864	819	695
	Others	ton	2,816	1,717	5,029	3,777	3,662
	Total recycled and reused	ton	62,043	69,091	66,581	62,692	71,132
	Total non-recycled and reused	ton	13,771	13,067	8,810	5,965	5,725
	Total recycled and reused rate	%	82	84	88	91	93
Water	Water withdrawal	m^3	24,961,039	25,872,192	23,398,956	21,467,999	21,886,295
	Water withdrawal intensity	m^3/ thousand USD revenue	1.468	1.262	1.072	1.130	1.21
	Ultra-pure water usage	m^3	26,304,664	28,660,692	28,571,562	28,923,983	30,060,603
	Water recycled and reuse	m^3	34,437,950	37,817,390	40,121,082	39,474,668	40,605,594
	Process water recycle rate	%	72	72	76	78	80
	Wastewater discharge	m^3	19,454,037	19,569,329	17,461,146	15,386,252	15,871,374
	Water consumption	m^3	5,507,002	6,302,863	5,937,810	6,081,747	6,014,921
	Total fresh water consumption	Million m^3	24.71	24.45	23.17	20.93	21.72

[1] The data from 2022 to 2023 does not include the facilities sold in 2022

Category	Environmental Performance Index	Unit	2020	2021	3022	2023	2024
Energy	Electricity consumption	MWh	3,900,915	4,285,155	4,233,363	4,211,006	4,294,177
	Renewable electricity	MWh	706,105	1,030,137	819,863	844,044	824,401
	Non-renewable electricity	MWh	3,194,810	3,255,018	3,413,500	3,366,962	3,469,776
	Electricity intensity	MWh/ thousand USD revenue	0.230	0.209	0.194	0.222	0.236
	Total Renewable energy consumption	MWh	706,105	1,030,137	819,863	844,044	824,401
	Liquefied Petroleum Gas (LPG)	GJ	16,770	2,273	3,253	3,340	4,123
	Liquefied Natural Gas (LNG)	GJ	324,214	332,561	333,904	335,803	354,105
	Motor gasoline	GJ	6,593	5,972	4,863	5,570	5,912
	Diesel	GJ	73,337	27,231	26,586	25,925	35,058
	Heavy oil	GJ	32,534	34,703	37,917	43,460	43,942
	Total non-renewable energy consumption	MWh	3,352,289	3,416,482	3,571,744	3,536,828	3,636,293
Green House Gas (GHG)	SCOPE 1	tCO_2e	93,996	90,591	90,993	75,274	72,269
	SCOPE 2 (Market-based)	tCO_2e	1,658,606	1,612,050	1,671,242	1,649,347	1,733,310
	SCOPE 1 + SCOPE 2 (Market-based)	tCO_2e	1,752,602	1,702,641	1,762,235	1,724,621	1,805,579
	GHG intensity (Market-based)	tCO_2e / thousand USD revenue	0.103	0.083	0.081	0.091	0.099
	SCOPE 3	tCO_2e	19,804,255	15,639,991	13,350,245	9,891,845	18,067,529[1]
	PFC emissions / number package output	tCO_2e/kPCs	0.00077	0.00062	0.00091	0.00073	0.00042
Air Emission	VOC (Volatile organic compounds)	ton	219	262	291	239	93

[1] In a recently published report on "Scope 3 Category 11 GHG Emissions: A Sectoral Assessment for the Semiconductor Industry" by SEMI, a global industry organization representing the semiconductor sector, it was ascertained that these categories are not applicable to the OSAT (Outsourced Semiconductor Assembly and Test) industry and should therefore be excluded from Category 11&12. (https://discover.semi.org/scope-3-category-11-ghg-assessment-download-form.html)

Greenhouse Gas Inventory Information of TWSE/TPEx Listed Company		2024
		Emissions (t CO_2e)
ASE Technology Holding Co., Ltd.	Scope 1 Direct Greenhouse Gas (GHG) Emissions	32
	Scope 2 (market-based) Indirect Greenhouse Gas (GHG) Emissions	112
	Subtotal	144
Consolidated Subsidiaries	Scope 1 Direct Greenhouse Gas (GHG) Emissions	132,217
	Scope 2 (market-based) Indirect Greenhouse Gas (GHG) Emissions	1,799,647
	Subtotal	1,931,864
Total [1]		1,932,009
Intensity (metric tons CO_2e/NT$ million revenue)		3.2448

[1] The GHG inventory data of ASEP Cayman Ltd and Cyland Corp were still undergoing third-party verification prior to the publication of ASEH's sustainability report
USI Hirschmann Car Communication GmbH, Hirschmann Car Communication Holding S.a.r.l., USI Asteelflash and related subsidiaries, comprising a total of 21 companies, have completed the GHG inventory and are expected to complete third-party verification in 2026

B. The amount of water withdrawals and discharge in water-stressed regions [1]

Water withdrawal

		Water withdrawals at ASEH facilities (ML)	Water withdrawals in water-stressed regions[2] (ML)
Total water withdrawals	Surface water	18	0
	Groundwater	3,502	0
	Third-party water	18,367	4,264
Water withdrawals by source of water	Freshwater (TDS ≤ 1,000 mg/L)	19,603	4,252
	Other sources of water (TDS > 1,000 mg/L)	0	0

Water discharge

		Water discharge at ASEH facilities (ML)	Water discharge in water-stressed regions[3] (ML)
Water discharge by discharge destination	Surface water	10,034	0
	Groundwater	0	0
	Marine water	0	0
	Third-party water	5,837	3,576
Total water discharge	Surface water + groundwater + marine water + third-party water	15,871	3,576
Water discharge by source of water	Freshwater (TDS ≤ 1,000 mg/L)	471	527
	Other sources of water (TDS > 1,000 mg/L)	2,805	0

Water consumption

Total water consumption	Total water withdrawals - Total water discharge	6,015	688

[1] Areas in water stress (Stress>40%): Water withdrawal in these areas accounted for 19% of the overall water withdrawal. Water discharge accounted for 23% of the total water consumption
[2] Water withdrawals in water-stressed regions (Stress>40%): (1) ASE: Shanghai Material, ISE Labs China, Wuxi; (2) USI: Zhangjiang, Shengxia, Jinqiao, Kunshan, Mexico, Suzhou(ASTEELFLASH); (3) SPIL: Suzhou
[3] Water discharge in water-stressed regions (Stress>40%): (1) ASE: Shanghai Material, ISE Labs China, Wuxi; (2) USI: Zhangjiang, Jinqiao, Kunshan, Mexico, Suzhou(ASTEELFLASH); (3) SPIL: Suzhou

C. Effluent quality of our facilities with on-site wastewater treatment [1]

Item	Unit	Taiwan_to land		Taiwan_to ocean		China		Japan	
		Effluent Standard	Min. ~ Max.	Effluent Standard [2]	Min. ~ Max.	Effluent Standard (Nation)	Min. ~ Max.	Effluent Standard (Nation)	Min. ~ Max.
pH	pH	6~9	6.2~8.3	6~9	7.4~7.9	6~9	7~8.6	5.8~8.6	6.9~7.9
COD concentration [3]	mg/L	100	3.2~42.3	280	6.1~24.1	500	24.5~487	160	-
BOD concentration [4]	mg/L	-	1~11.8	100	1~5.8	300	10.3~209.8	160	0.5~1
Suspended Solid (SS) concentration [5]	mg/L	30	1~16.9	100	1.2~15.5	400	5.8~48.67	200	0.5~16
Cu^{2}+ concentration	mg/L	1.5	ND~0.34	2	0.0097~0.35	1	0.05~0.09	3	ND<0.1000
Ni^{2}+ concentration	mg/L	0.7	ND~0.12	1	0.006~0.08	0.1	0.002~0.011	-	-

Item	Unit	South Korea		Malayisa		Vietnam	
		Effluent Standard	Min. ~ Max.	Effluent Standard	Min. ~ Max.	Effluent Standard	Min. ~ Max.
pH	pH	5.8~8.6	6.7~7.6	5.5~9.0	7.1~7.7	5~9	7~9
COD concentration [3]	mg/L	NA	-	200	4~20	500	110~145
BOD concentration [4]	mg/L	80	5.2~24	50	2~5	500	56~76
Suspended Solid (SS) concentration [5]	mg/L	80	0.3~8.3	100	1~2	500	52~95
Cu^{2}+ concentration	mg/L	3	ND~0.028	1	0.05~0.13	2	-
Ni^{2}+ concentration	mg/L	3	-	1	0.1	0.2	-

[1] ASE ISE Labs China and ISE Labs are the testing laboratories where water usage is only for public facilities and domestic. ASE Singapore and the other electronic manufacturing service facilities (USI Kunshan, Huizhou, Mexico, and Suzhou(ASTEELFLASH)) do not have on-site wastewater treatment. Thus, these six facilities are not included in the statistics
[2] Refer to the Class B marine areas of Marine Discharge Pipe Effluent Standards released on October 20, 2017, to the discharge water standards for marine discharge pipelines
[3] Waste water discharge from the SPIL Hsinchu Facility is diverted into the park's sewer system and waste water treatment plant in accordance with the Hsinchu Science Park Effluent Standards. Also, USI Nantou Facility is diverted into the park's sewer system and waste water treatment plant in accordance with the Nankang Industrial Park Effluent Standards. Therefore, these two facilities are not included
[4] USI Nantou Facility is diverted into the park's sewer system and waste water treatment plant in accordance with the Nankang Industrial Park Effluent Standards. Therefore, this facility is not included
[5] Waste water discharge of the SPIL Zhong Ke and Zhong Ke II facilities is diverted into the park's sewer system and waste water treatment plant in accordance with the Central Taiwan Science Park Effluent Standards, and is therefore not included

D. Product Lifecycle Management

Category	Index	Unit	2024
Life Cycle Assessment Approach	Full LCAs	% (Percentage of Total Products)	38.67%
	Simplified LCAs	% (Percentage of Total Products)	12.88%
	Others (green products meet international regulations & customer requirements.)	% (Percentage of Total Products)	48.45%
End-of-life products and e-waste	Weight of end-of-life products and e-waste [1]	ton	641
	The percentage of end-of-life products and e-waste that were recovered [2]	%	3
	The percentage of end-of-life material recovered that was recycled [3]	%	1

E. Environmental issues Training

Topic	Training course description	Total time (Hours)	Total participants
Energy	Training courses include matters related to efficiency management or raising awareness to reduce energy consumption	812	1,463
Water	Training courses include matters related to water efficiency management or raising awareness of water conservation	123	3,070
Waste	Training courses include matters related to waste management or raising awareness to reduce waste	176	43,881

F. Environmental Violations

	2021	2022	2023	2024
Number of significant violations of legal obligations/regulations [4]	0	0	0	0
Amount of fines/penalties related to the above (unit: US$)	0	0	0	0
Environmental liability accrued at year end (unit: US$)	0	0	0	0

[1] End-of-life material is defined as products, materials, and parts, including electronic waste material (e-waste), that at the end of their useful life would have been disposed of as waste. The scope of end-of-life material excludes materials that have been returned to customer
[2] End-of-life material that was recovered is defined as the above-mentioned end-of-life material that have instead been collected to be recovered or regenerated a usable product
[3] Recycled material is defined as the above-mentioned end-of-life material recovered that are used for the same purpose for which they were conceived, including products donated and/or refurbished by the entity or by third parties
[4] Fine/penalty individually costs more than US$10,000 is defined as significant

G. Implementation of Climate-Related Information

Item	Implementation Status
1. Describe the board of directors' and management's oversight and governance of climate-related risks and opportunities.	1. The Board of Directors of the Company serves as the supervisory and governance body for climate-related issues. It is responsible for approving risk policies, overseeing climate-related risks, and making decisions pertaining to climate matters. The Board of Directors has established the Risk Management Committee and the Corporate Sustainability and Information Security Committee (CSISC) as bodies responsible for climate-related risks and opportunities. Each committee consists of Directors who are separately responsible for managing climate risks and climate sustainability strategies, promoting sustainable developments of climate-related issues and the operation of risk management mechanisms, and implementing decisions made by the Board of Directors. We report on the management and execution status of climate-related issues to the Board of Directors on a quarterly basis, enabling the Board of Directors to understand the impact of climate change on the Company's business operations and develop corresponding strategies.
2. Describe how the identified climate risks and opportunities affect the business, strategy, and finances of the business (short, medium, and long term).	2. The Company regularly identifies and assesses climate-related physical and transition risks on a yearly basis. This is implemented by using questionnaires and integrating international (national) risk management tools and databases. Risks and opportunities are distinguished based on short-term (< 3 years), medium-term (3-5 years), and long-term (> 5 years) occurrences. The impacts of these risks and opportunities on the Company's finances and operations are identified, followed by proposing countermeasures and management strategies. For detailed information, please refer to the Company's Climate and Environmental Report (TCFD&TNFD), and publicly available information on our website.
3. Describe the financial impact of extreme weather events and transformative actions.	3. The Company conducts annual assessments of climate-related physical and transition risks. We utilize questionnaires to identify extreme weather events, including but not limited to heavy rainfall, drought, and significant temperature changes. Additionally, we assess the potential impact and influence of these weather events on our business operations and finances. For more detailed information, please consult the Company's Climate and Environmental Report, and publicly available information on our website.
4. Describe how climate risk identification, assessment, and management processes are integrated into the overall risk management system.	4. The executive secretariat of the Risk Management Committee collaborates with our subsidiaries to conduct an identification and assessment of climate-related physical and transition risks. This process involves using questionnaires and collecting data to identify physical and transition risks or events that could affect our business objectives, as well as their financial and operational implications. Based on the findings of this process, countermeasures and management strategies are proposed, and the results of climate risk identification are reported to the Board of Directors annually, which tracks the implementation status of our climate measures regularly.
5. If scenario analysis is used to assess resilience to climate change risks, the scenarios, parameters, assumptions, analysis factors and major financial impacts used should be described.	5. The Company has established climate scenarios based on the IPCC AR6 and international energy parameters, taking into account regulatory, technological, market, and reputational factors. These factors are used to assess the resilience of the company to climate change. For more detailed information, please refer to the Company's Climate and Environmental Report (TCFD&TNFD), and publicly available information on our website.
6. If there is a transition plan for managing climate-related risks, describe the content of the plan, and the indicators and targets used to identify and manage physical risks and transition risks.	6. The Company will develop a transition plan in response to the annual risk identification results. This plan will include indicators and goals for identifying and managing physical risks and transition risks. For more information, please consult the Company's Climate and Environmental Report (TCFD&TNFD), and the publicly available information on our website.
7. If internal carbon pricing is used as a planning tool, the basis for setting the price should be stated.	7. Internal carbon pricing is being gradually introduced based on the regions of subsidiary companies. This is done in conjunction with the budget system to encourage subsidiary companies to implement emission reduction projects.
8. If climate-related targets have been set, the activities covered, the scope of greenhouse gas emissions, the planning horizon, and the progress achieved each year should be specified. If carbon credits or renewable energy certificates (RECs) are used to achieve relevant targets, the source and quantity of carbon credits or RECs to be offset should be specified.	8. To access information about the annual GHG emissions and renewable energy usage, please refer to the Company's Climate and Environmental Report (TCFD&TNFD), and the publicly available information on our website.
9. Greenhouse gas inventory and assurance status.	9. The Company has established short-term and long-term net zero goals, with annual greenhouse gas inventories verified by third-party organizations. Progress, achievements, and specific actions are reported to the Board of Directors on a quarterly basis. For more detailed information, please refer to the Company's Climate and Environmental Report (TCFD&TNFD), and the publicly available information on our website.

Social Data

A. Global Workforce Structure by Nationality/Race

Nationality [1]	Employee		Management Level	
	Number	Percentage of Total Employee (%)	Number	Percentage of Total Management Level (%)
Taiwan	47,660	56.78%	4,383	69.11%
China	13,905	16.56%	1,491	23.51%
Philippines	12,160	14.49%	27	0.42%
Mexico	2,938	3.50%	96	1.51%
Malaysia	2,088	2.49%	154	2.43%
South Korea	1,942	2.31%	40	0.63%
Indonesia	1,102	1.31%	1	0.02%
Vietnam	1,333	1.59%	39	0.61%
Japan	392	0.47%	31	0.49%
Singapore	232	0.28%	63	0.99%
Nepal	99	0.12%	0	0%
Thailand	35	0.04%	0	0%
Myanmar	20	0.02%	0	0%
U.S.A	14	0.02%	10	0.16%
India	14	0.02%	1	0.02%
United Kingdom	4	0.00%	4	0.06%
Canada	2	0.00%	1	0.02%
France	2	0.00%	1	0.02%
Belize	1	0.00%	0	0%
Bangladesh	1	0.00%	0	0%
Turkey	1	0.00%	0	0%
Total	83,945		6,342	

Race [2]	Employee		Management Level	
	Number	Percentage of Total Employee (%)	Number	Percentage of Total Management Level (%)
Asian	158	67.80%	25	58.14%
Hispanic or Latino	34	14.59%	5	11.63%
White	30	12.88%	12	27.91%
Native Hawaiian or Other Pacific Islander	5	2.15%	0	0%
Two or More Races	5	2.15%	1	2.32%
Black or African American	1	0.43%	0	0%
Total	233		43	

[1] The global workforce by nationality do not include ISE Labs employees
[2] The global workforce by race only includes ISE Labs employees

B. Foreign Employee

Business Unit	Category	Group		Number	Percentage of Total Employee in Business Unit (%)
Semiconductor Assembly (packaging), Testing and Materials (ATM)	Employment Type	Regular		13,686	19.96%
		Contract		4	0.01%
	Gender	Male		2,668	3.89%
		Female		11,022	16.08%
	Total			13,690	
	Employment Visa	Gender	Male	2,193	3.20%
			Female	10,687	15.59%
	Total			12,880	
Electronic Manufacturing Service (EMS)	Employment Type	Regular		638	4.09%
		Contract		2	0.01%
	Gender	Male		156	1.00%
		Female		484	3.10%
	Total			640	
	Employment Visa	Gender	Male	156	1.00%
			Female	484	3.10%
	Total			640	

[1] The employee information: the number of employees still employed as of December 31st
[2] Top Management Positions: Senior Manager to Senior Vice President

C.Employee Information [1]

Employment Category	Gender		Location			
	Male	Female	Taiwan	China	Rest of Asia	Americas
Permanent Employees	42,478	35,646	54,644	12,968	7,345	3,176
Temporary Employees	1,618	4,425	4,984	912	131	16
Non-guaranteed Hours Employees	1	1	0	0	0	2
Total	44,106	40,072	59,628	13,880	7,476	3,194
Full-time Employees	44,047	40,035	59,551	13,880	7,471	3,180
Part-time Employees	59	37	77	0	5	14
Total	44,106	40,072	59,628	13,880	7,476	3,194

D.Male/Female Employee (by Job Position)

Category	Group	Male		Female	
		Number	Group Percentage(%)	Number	Group Percentage (%)
Position	Management	4,488	70.29%	1,897	29.71%
	Engineering	24,773	85.70%	4,133	14.30%
	Administration	1,763	30.72%	3,975	69.28%
	Skill Job	13,083	30.32%	30,066	69.68%
Management Level	Top Management Positions [2]	611	83.47%	121	16.53%
	Middle management Positions	1,713	81.11%	399	18.89%
	Junior Management Positions	1,891	66.12%	969	33.88%
	Management Positions in Revenue-generating Function	3,698	71.83%	1,450	28.17%
STEM Related Position		28,408	81.71%	6,358	18.29%

E. New Hire Employee

Category	Group	Number	Percentage of Total New Hire Employee (%)
Gender	Male	8,944	55.76%
	Female	7,097	44.24%
Nationality	Native	12,766	79.58%
	Foreign	3,275	20.42%
Disabled	Male	92	0.57%
	Female	46	0.29%
Position	Management	187	1.17%
	Engineering	4,007	24.98%
	Administration	733	4.57%
	Skill Job	11,114	69.28%
Age	<30	10,438	65.07%
	30-50	5,396	33.64%
	>50	207	1.29%
Education	Ph.D	68	0.42%
	Master	1,053	6.57%
	Bachelor	4,761	29.68%
	Other Higher Education/ High School and Below	10,159	63.33%
Total		16,041	

F. Turnover Rate

Category	Group	2021		2022		2023		2024	
		Number	Percentage of Group (%)	Number	Percentage of Group (%)	Number	Percentage of Group (%)	Number	Percentage of Group (%)
Gender	Male	10,339	57.3%	7,319	53.7%	6,518	55.2%	5,300	55.20%
	Female	7,695	42.7%	6,312	46.3%	5,286	44.8%	4,301	44.80%
Position	Management	433	2.4%	369	2.7%	297	2.5%	301	3.13%
	Engineering	3,956	21.9%	3,364	24.7%	2,424	20.5%	2,494	25.98%
	Administration	843	4.7%	791	5.8%	684	5.8%	646	6.73%
	Skill Job	12,802	71.0%	9,107	66.8%	8,399	71.2%	6,160	64.16%
Age	<30	9,995	55.4%	6,738	49.4%	6,080	51.5%	4,296	44.75%
	30-50	7,591	42.1%	6,451	47.3%	5,242	44.4%	4,722	49.18%
	>50	448	2.5%	442	3.2%	482	4.1%	583	6.07%
Education	Ph.D	21	0.1%	15	0.1%	12	0.1%	14	0.15%
	Master	909	5.0%	739	5.4%	529	4.5%	632	6.58%
	Bachelor	6,420	35.6%	3,809	27.9%	2,963	25.1%	2,793	29.09%
	Other Higher Education/ High School and Below	10,684	59.2%	9,069	66.5%	8,300	70.3%	6,162	64.18%
Total		18,034		13,631		11,804		9,601	

G. Full-time Employees in Non-executive Positions

Category	2021	2022	2023	2024	Difference of 2023-2024
Employee [1]	48,013	50,061	52,948	51,163	-1,785
Average Compensation (NT$)	914,627	1,001,460	929,206	975,821	46,615
Median Compensation (NT$)	726,063	771,532	739,048	809,892	70,844

H. Parental Leave

Category	Group	Number	Percentage of Group (%)	Total
Employees Qualified for Parental Leave in 2024	Male	3,142	63.82%	4,923
	Female	1,781	36.18%	
Employees that Applied for Parental Leave in 2024	Male	345	34.92%	988
	Female	643	65.08%	
Application Rate (%)	Male	11%		20%
	Female	36%		
Employees Expected to Return to Work in 2024 After Parental Leave	Male	334	36.05%	915
	Female	581	63.50%	
Employees Return to Work in 2024 After Parental Leave and Returned as Scheduled or In Advance	Male	273	38.56%	708
	Female	435	61.44%	
Return Rate (%)	Male	82%		77%
	Female	75%		
Actual Number of Employees Returned to Work in 2023	Male	205	33.33%	615
	Female	410	66.67%	
Employees that Returned to Work in 2023 and Still in Service in 2024	Male	167	32.62%	512
	Female	345	67.38%	
Retention Rate (%)	Male	81%		83%
	Female	84%		
NewBorns in 2024		2,003		

[1] "Employees" here refers to those under the employment of ASEH, ASE (ASE Kaohsiung and ASE Chungli; excluding ASE Test Inc. and ASE Electronics Inc.), SPIL and USI facilities in Taiwan；only employees who have been employed and receiving regular pay for a minimum of 6 months will be included in the calculation

I. Employee Engagement Survey [1]

Category	Total Employee	Gender		Age							Management Level		
		Male	Female	<20	20-24	25-29	30-34	35-39	40-45	>45	Junior	Middle	Senior
Employee Experience Indicators (% in 2023)													
Inspiration	79	78	82	67	80	75	76	78	80	84	83	88	85
Inclusion	82	81	83	75	83	80	81	82	82	83	83	88	83
Understanding	79	79	80	68	79	75	77	79	81	83	82	87	85
Drive	79	79	80	71	79	77	77	78	80	83	82	86	88
Voice	79	79	81	68	79	76	78	79	80	82	84	86	86
Organization	82	82	83	70	81	79	81	81	83	85	84	87	87
Growth	75	75	76	66	75	72	73	74	76	79	80	82	81
Capability	71	71	71	62	71	68	70	70	72	74	76	80	78
Fair Rewards	68	67	69	67	68	66	67	67	68	71	70	78	74
Trust	69	69	71	63	72	66	66	68	70	74	74	78	76
Collaboration	84	83	87	72	85	82	83	83	84	87	87	91	89
Support	82	82	81	76	83	82	82	81	81	81	84	90	88
Employee Engagement Indicators (% in 2023)													
ESG	81	81	83	74	79	78	80	81	83	86	83	88	88
Retention	70	70	71	62	62	64	67	70	75	79	72	80	78
Sustainable Engagement	77	76	78	76	76	76	77	76	76	80	76	84	87
DEI - Belonging	77	77	77	80	78	78	78	77	76	77	76	83	84
DEI - Impartiality	78	79	77	79	79	79	79	77	77	78	79	89	88
DEI - Opportunity	73	73	74	77	75	74	74	73	72	73	72	83	81
Wellbeing	62	61	63	65	62	61	62	61	61	65	60	69	74

[1] The Employee Engagement Survey is conducted once every two years and the next survey will be in 2025

J. Training Hours and Training Spent

Category	Group		Number	Percentage of Group (%)
Training Hour (Hour)	Gender	Male	4,092,386	54%
		Female	3,481,476	46%
		Total	7,573,862	
	Position	Management	512,554	7%
		Engineering	2,877,095	38%
		Administration	243,364	3%
		Skill Job	3,940,849	52%
	Training Type	Mandatory Trainings	3,962,275	52%
		Non-mandatory Trainings	3,611,586	48%
Training Spent (US$)	Gender	Male	4,682,961	59%
		Female	3,217,223	41%
		Total	7,900,184	
	Age	<30	2,254,793	29%
		30-50	5,144,239	65%
		>50	501,152	6%
	Management Level	Senior	74,009	10%
		Middle	257,225	36%
		Junior	389,839	54%
	Training Type	Mandatory Trainings [1]	2,982,007	38%
		Non-mandatory Trainings [2]	4,918,177	62%

K. Human Capital Return on Investment [3]

Year	2021	2022	2023	2024
Human Capital Return on Investment (ROI)	1.63	1.75	1.43	1.38

L. Non-employee Workers [4]

Working Location	Number [5]
Taiwan	18,648
China	5,486
Rest of Asia	1,734
Americas	1,096
Total	26,964

[1] Mandatory Trainings refer to the trainings that provide employees with the basic skills they need to carry out their daily work. For example, training on occupational health and safety, legal/regulation compliance and RBA etc.
[2] Non-mandatory Trainings refer to the trainings that develop or improve employee skills. For example, smart manufacturing, automation and quality related courses
[3] Human Capital ROI = (Total Revenue – (Total Operating Expenses - Total employee-related expenses)) / Total employee-related expenses
[4] Non-employee workers:
(1) Types and job functions include: engineering contractors, equipment maintenance, IT contractors, cleaning, janitorial services, catering, and convenience store services
(2) Contractual relationship: employed through third-party contractors
(3) The reason of non-employee workers increases than 2023: increase in engineering contractors
[5] Headcount calculation: Depending on the availability and accessibility of data from each subsidiary/factory site, the calculation includes (1) the number of wokers still employed as of December 31st and (2) the number of individuals who have been employed at any point between January 1st and December 31st (including those who have already resigned)

M. Workers[1] Occupational Health and Safety

Category	Group	Employee	Non-employee
Category of Occupational Injuries	Number of Physical Injuries	82	4
	Number of Chemical Injuries	5	0
	Number of Ergonomic Injuries	6	0
	Number of Biological Injuries	0	0
	Number of Psychosocial Injuries	0	0
	Total	93	4
Occupational Injuries	Rate of Occupational Injury [2]	0.53	0.13
	Number of Disability Cases	0	0
	Rate of Disability Cases [3]	0	0
	Number of Fatalities	0	0
	Rate of Fatalities [4]	0	0
Occupational Diseases	Occupational Diseases	9	0
	Number of Fatalities	0	0
	Rate of Fatalities [5]	0	0
Total Number of Working Hours (Hour)		176,076,911	30,065,412[6]

N. Employee Absence Statistics

Year	2021	2022	2023	2024
Absence Ratio (%)	2.0%	2.1%	2.2%	1.6%

[1] The Workers include employee and non-employee workers (exclude visitors)
[2] Rate of occupational injury= (number of occupational injury *1,000,000)/ total hours of actually worked
[3] Rate of disability cases from occupational injuries = (number of disability cases from occupational injuries *1,000,000)/ total number of working hours, excluding number of fatalities
[4] Rate of fatalities from occupational injuries= (number of fatalities from occupational injuries *1,000,000)/ total number of working hours
[5] Rate of fatalities from occupational diseases= (number of fatalities from occupational diseases *1,000,000)/ total number of working hours
[6] Actual working hours of non-employee workers: Depending on the availability and accessibility of data from each subsidiary/ factory site, the calculation includes (1) calculating annual working hours based on actual attendance records and (2) estimating annual working hours based on the total headcount

O. Social Involvement Key Performance

Environmental Technology Research Projects

	2021	2022	2023	2024
No. of project	10	19	13	8

Industry-Academia Collaboration Programs

	2021	2022	2023	2024
No. of interns	224	410	502	686
No. of people participated in the semiconductor courses	862	209	453	615
No. of innovative industry-academia collaboration projects	66	74	81	65

Afforestation Projects

	2021	2022	2023	2024
No. of planting area (hectares)	13.42	31.79	31.68	16.84

Volunteer

	2021	2022	2023	2024
No. of volunteers participating in the event	3,810	4,700	3,660	4,384
No. of volunteer hours	8,500	12,560	11,300	13,582

Environmental Education Program

	2021	2022	2023	2024
No. of courses	45	1,348	264	93
No. of participation	1,770	26,017	11,460	5,214
No. of seed teachers	42	173	163	4
No. of training materials/films	27	59	53	10

Supply Chain Data

A. Supplier Sustainability Assessment

Category		Supplier		2024	2024 Target
Desk Assessment		Tier-1 Supplier		824	Supplier Sustainability Assessment: 1. Tier-1 Supplier: At least 800 suppliers 2. Significant Supplier: At least 80%
		Significant Supplier	Tier-1 Supplier	162	
			Non Tier-1 Supplier	20	
Physical Assessment	On-site and Remote Assessment	Tier-1 Supplier		125	
		Significant Supplier	Tier-1 Supplier	43	
			Non Tier-1 Supplier	1	
	RBA VAP and 3 rd party Assessment	Tier-1 Supplier		104	
		Significant Supplier	Tier-1 Supplier	22	
			Non Tier-1 Supplier	4	

B. Supplier ESG Capacity Building Programs

Category	2024	2024 Target
Total Number of Tier-1 Suppliers in ESG Capacity Building Programs	185	Supplier ESG Capacity Building Programs: 1. Tier-1 Suppliers: At least 100 suppliers 2. Significant Suppliers: At least 60 suppliers
Total Number of Significant Suppliers in ESG Capacity Building Programs	88	
Significant Suppliers in ESG Capacity Building Programs (%)	40.3%	

C. Non Tier-1 Raw Material Suppliers Risk Assessment

Category	2021	2022	2023	2024
Non Tier-1 Suppliers Conduct Risk Assessment (by Tier-1 procurement amount) (%)	61%	53%	46%	57.6%

D. Conflict Minerals

Category	2021	2022	2023	2024
DRC Conflict-Free Product Lines of Packaging and Material Services (%)	100%	100%	100%	100%
DRC Conflict-Free Product Lines of Electronic Manufacturing Services (%)	100%	100%	100%	100%

E. Sustainable Raw Material

Category	2024	
Metal Materials	Amount (tonnes)	Share of Metal used that is Recycled (%)
Aluminium	1263.64	11.76%
Cobalt	0.67	22.77%
Copper	15621.00	8.04%
Iron/Steel	519.69	0.23%
Nickel	402.85	0.00%
Lithium	0.53	0.00%
Titanium	0.11	2.44%

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INDEPENDENT AUDITORS' LIMITED ASSURANCE REPORT

ASE Technology Holding Co., Ltd.

We have undertaken a limited assurance engagement on the Sustainability Report ("the Report") of ASE Technology Holding Co., Ltd. ("the Company") for the year ended December 31, 2024.

Responsibilities of Management

The management of the Company is responsible for the preparation of the Report in accordance with Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies, Universal Standards, Sector Standards and Topic Standards published by the Global Reporting Initiative (GRI), SASB Standards published by the Sustainability Accounting Standards Board (SASB), and for such internal control as management determines is necessary to enable the preparation of the Report that are free from material misstatement resulted from fraud or error.

Auditors' Responsibilities

Our responsibility is to plan and conduct our limited assurance engagement in accordance with the International Standard on Assurance Engagements 3000 (Revised), "Assurance Engagements Other than Audits or Reviews of Historical Financial Information" issued by the International Auditing and Assurance Standards Board to issue a limited assurance report on whether the Report is free from material misstatement. The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement and, therefore, a lower assurance level is obtained than a reasonable assurance.

The information on greenhouse gas emission (scope 1, scope 2 and scope 3) and related energy and electricity consumption that is disclosed in the Report has been verified (or amended as necessary) by other third-party verification organization. Thus, the scope of this Independent Auditors' Limited Assurance Report does not include conclusion on the disclosure of information on greenhouse gas emission (scope 1, scope 2 and scope 3) and related energy and electricity consumption.

We based on our professional judgment in the planning and conducting of our work to obtain evidence supporting the limited assurance. Because of the inherent limitations of any internal control, there is an unavoidable risk that even some material misstatements may remain undetected. The procedures we performed include, but not limited to:

- Inquiring of management and the personnel responsible for the Report to obtain an understanding of the policies, procedures, including the understanding of procedure and result for materiality analysis, internal control, and information system, relevant to the Report to identify areas where a material misstatement of the Report is likely to arise.
- Selecting sample items from the Report and performing procedures such as inspection, re-calculation, re-performance, observation, and analytical procedures to obtain evidence supporting limited assurance.

Inherent Limitations

The Report involved non-financial information, which was subject to more inherent limitations than financial information. The information may involve significant judgment, assumptions and interpretations by the management, and the different stakeholders may have different interpretations of such information.

Independence and Quality Control

We have complied with the independence and other ethical requirements of the Norm of Professional Ethics for Certified Public Accountant in the Republic of China, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

The firm applies Standard on Quality Management 1 "Quality Management for Public Accounting Firms" issued by the Accounting Research and Development Foundation of the Republic of China, which requires the firm to design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

Conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Report is not prepared, in all material respects, in accordance with the applicable criteria.

Other Matters

We shall not be responsible for conducting any further assurance work for any change of the Report or the applicable criteria after the issuance date of this report.

Deloitte & Touche

Deloitte & Touche
Taipei, Taiwan
Republic of China

August 11, 2025

GRI Content Index

Statement of use	ASEH has reported in accordance with the GRI Standards for the period 2024/01/01~2024/12/31.
GRI 1 used	GRI 1: Foundation 2021
Applicable GRI Sector Standard(s)	N/A

GRI Standard	Disclosure	Related Section / Explanatory Notes	Page No.
GRI 2: General Disclosures 2021			
The organization and its reporting practices			
2-1	Organizational details	1.1 Company Profile	14-15
2-2	Entities included in the organization's sustainability reporting	Report Boundary	8
2-3	Reporting period, frequency and contact point	The reporting period of this report is from January 1, 2024 to December 31, 2024, which is the same as the reporting period of the financial report. We publish the sustainability report every year in August. ABOUT OUR REPORTING	8
2-4	Restatements of information	There is no restatement of information from previous report.	-
2-5	External assurance	ABOUT OUR REPORTING Third Party Assurance Statement	8 257
Activities and workers			
2-6	Activities, value chain and other business relationships	1.1 Company Profile	14-15
2-7	Employees	Appendix: Social Data - C. Employee Information 6.1 Talent Attraction and Retention	249 164
2-8	Workers who are not employees	Appendix: Social Data - L. Non-employee Workers	253
Governance			
2-9	Governance structure and composition	2.1 Organization and Structure 3.1 Board of Directors For information on the composition of the board of directors, please refer to the diversity and management objectives of board of directors at the company's official website https://ir.aseglobal.com/html/ir_board.php	18-19 56
2-10	Nomination and selection of the highest governance body	3.1 Board of Directors	56
2-11	Chair of the highest governance body	3.1 Board of Directors	56
2-12	Role of the highest governance body in overseeing the management of impacts	2.1 Organization and Structure 2.4 Materiality Assessment and Stakeholder Communication 3.4 Risk Management	18-19 38-52 64-73
2-13	Delegation of responsibility for managing impacts	3.4 Risk Management	64-73
2-14	Role of the highest governance body in sustainability reporting	This report was approved and authorized by the Corporate Sustainability and Information Security Committee.	-
2-15	Conflicts of interest	3.1 Board of Directors For more information, please refer to 2024 Annual Report " List of Major Shareholders", "Relationships among the Top Ten Shareholders", and 2024 Consolidated Financial Report "Marketable Securities Held", "Total Purchases from or Sales to Related Parties", and "Receivables from Related Parties".	56
2-16	Communication of critical concerns	3.1 Board of Directors For more information, please refer to 2024 Annual Report "Ch. 2.3 Corporate Governance".	56-57
2-17	Collective knowledge of the highest governance body	3.1 Board of Directors	56
2-18	Evaluation of the performance of the highest governance body	3.1 Board of Directors	56-57

GRI Standard	Disclosure	Related Section / Explanatory Notes	Page No.
2-19	Remuneration policies	3.1 Board of Directors When necessary, the company will provide recruitment incentive or termination payments based on market conditions and personal performance of directors. For the retirement benefits, please refer to page 142 of the 2024 Annual Report (English version).	56-57
2-20	Process to determine remuneration	2.4 Materiality Assessment and Stakeholder Communication 3.1 Board of Directors	38-52 56
2-21	Annual total compensation ratio	Appendix: Social Data - G. Full-time Employees in Non-executive Positions Due to the company's privacy guidelines, we do not report the annual total compensation for the organization's highest-paid individual. For more information on the ratio between annual compensation of the president and the mean of annual compensation of all other employees, please refer to https://ir.aseglobal.com/html/ir_committees.php?	251
Strategy, policies and practices			
2-22	Statement on sustainable development strategy	LETTER FROM THE CHAIRMAN 2.2 Sustainability Strategies	11-13 24-29
2-23	Policy commitments	3.3 Business Ethics 3.4 Risk Management 3.5 Human Rights Management	61 64-73 74-80
2-24	Embedding policy commitments	3.3 Business Ethics	61-62
2-25	Processes to remediate negative impacts	2.4 Materiality Assessment and Stakeholder Communication	38-52
2-26	Mechanisms for seeking advice and raising concerns	3.3 Business Ethics	63
2-27	Compliance with laws and regulations	3.6 Regulatory Compliance Appendix: Environmental Data - F. Environmental Violation	81 246
2-28	Membership associations	8.5 Public Advocacy	233-239

GRI Standard	Disclosure	Related Section / Explanatory Notes	Page No.
Stakeholder engagement			
2-29	Approach to stakeholder engagement	2.4 Materiality Assessment and Stakeholder Communication	38-52
2-30	Collective bargaining agreements	6.1 Talent Attraction and Retention	175
GRI 3: Material Topics 2021			
3-1	Process to determine material topics	2.4 Materiality Assessment and Stakeholder Communication	38-52
3-2	List of material topics	2.4 Materiality Assessment and Stakeholder Communication	38-52
GRI 201: Economic Performance 2016			
3-3	Management of material topics	LETTER FROM THE CHAIRMAN 1.3 Financial Performance 2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication	11-13 17 24-29 38-52
201-1	Direct economic value generated and distributed	1.3 Financial Performance 2.3 UN Sustainable Development Goals and Sustainable Value Assessment 3.2 Economic Performance and Tax Governance For further details on financial performance, please refer to the ASEH 2024 Consolidated Financial Report: https://ir.aseglobal.com/html/ir_financial.php	17 30-37 59-60
201-2	Financial implications and other risks and opportunities due to climate change	5.1 Climate Leadership	105-116
201-3	Defined benefit plan obligations and other retirement plans	6.1 Talent Attraction and Retention - Compensation and Benefit Policy Retirement/pension plans for ASEH employees were formulated in compliance with relevant Taiwanese laws such as the Labor Standards Act, Labor Pension Act, and applicable laws in the countries in which ASEH offices are located. For more information, please refer to page 138-145 of the ASEH 2024 Annual Report (English version) and page 64-69 of the ASEH 2024 Financial Report (English version)	169

GRI Standard	Disclosure	Related Section / Explanatory Notes	Page No.
201-4	Financial assistance received from government	ASEH is entitled to tax incentive. Please refer to page 84 of the ASEH 2024 Consolidated Financial Report (English version).	-
GRI 202: Market Presence 2016			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 6.1 Talent Attraction and Retention	24-29 38-52 164-167
202-2	Proportion of senior management hired from the local community	3.1 Board of Directors ASEH is a registered company established under the jurisdiction of the Republic of China. Among board members who also serve as top managements (directors who hold executives positions), 25% were local residents (with Republic of China citizenship).	56
GRI 203: Indirect Economic Impacts 2016			
3-3	Management of material topics	2.2 Sustainability Strategies 2.3 UN Sustainable Development Goals and Sustainable Value Assessment 2.4 Materiality Assessment and Stakeholder Communication	24-29 30-37 38-52
203-1	Infrastructure investments and services supported	2.3 UN Sustainable Development Goals and Sustainable Value Assessment	30-37
GRI 204: Procurement Practices 2016			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 7.4 Supply Chain Management Framework	24-29 38-52 206-207
204-1	Proportion of spending on local suppliers	7.2 Supply Chain Overview - Supporting Local Suppliers	200
GRI 205: Anti-corruption 2016			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 3.3 Business Ethics	24-29 38-52 61-63
205-1	Operations assessed for risks related to corruption	3.3 Business Ethics	62
205-2	Communication and training about anti-corruption policies and procedures	3.3 Business Ethics 6.1 Talent Attraction and Retention 7.1 Supply Chain Sustainability Management	62 164 196
205-3	Confirmed incidents of corruption and actions taken	3.3 Business Ethics In 2024, ASEH did not engage in any political contributions.	63
GRI 206: Anti-competitive Behavior 2016			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 3.3 Business Ethics	24-29 38-52 61-63
206-1	Legal actions for anticompetitive behavior, antitrust, and monopoly practices	In 2024, ASEH was not subjected to any legal actions regarding anti-competitive behavior and violations of anti-trust and monopoly legislation.	-
GRI 302: Energy 2016			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 5.1 Climate Leadership 5.2 Energy and Carbon Management	24-29 38-52 105-121 122-125
302-1	Energy consumption within the organization	5.2 Energy and Carbon Management- Fossil Fuels (Non-renewable), Electricity and Renewable Energy Consumption	122-125
302-3	Energy intensity	5.2 Energy and Carbon Management- Electricity and Renewable Energy Consumption	123-124
302-4	Reduction of energy consumption	5.2 Energy and Carbon Management- Energy Management, Energy Saving and Carbon Reduction Projects	122 128-129
GRI 303: Water and Effluents 2018			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 5.3 Water Stewardship	24-29 38-52 130-140
303-1	Interactions with water as a shared resource	2024 Key Performance 5.3 Water Stewardship	130-140

GRI Standard	Disclosure	Related Section / Explanatory Notes	Page No.
303-2	Management of water discharge related impacts	5.3 Water Stewardship-Wastewater management	140
303-3	Water withdrawal	5.3 Water Stewardship-Water withdrawal and reuse Appendix: Environmental Data - A. Waste, Water, Energy, GHG & Air emission Appendix: Environmental Data-B. The amount of water withdrawals and discharge in water-stressed regions	138 241 244
303-4	Water discharge	5.3 Water Stewardship - Wastewater management Appendix: Environmental Data - A. Waste, Water, Energy, GHG & Air emission Appendix: Environmental Data - B. The amount of water withdrawals and discharge in water-stressed regions Appendix: Environmental Data - C. Water discharge in water-stressed regions	140 241 244 245
303-5	Water consumption	5.3 Water Stewardship- Water withdrawal and reuse Appendix: Environmental Data - A. Waste, Water, Energy, GHG & Air emission Appendix: Environmental Data-B. The amount of water withdrawals and discharge in water-stressed regions	138 241 244
GRI 305: Emissions 2016			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 5.2 Energy and Carbon Management	24-29 38-52 122-125
305-1	Direct (Scope 1) GHG emissions	5.2 Energy and Carbon Management-Greenhouse Gas Emissions Management	126
305-2	Energy indirect (Scope 2) GHG emissions	5.2 Energy and Carbon Management-Greenhouse Gas Emissions Management	126
305-3	Other indirect (Scope 3) GHG emissions	5.2 Energy and Carbon Management-Greenhouse Gas Emissions Management	127
305-4	GHG emissions intensity	5.2 Energy and Carbon Management-Greenhouse Gas Emissions Management Appendix: Environmental Data-A. waste, water, energy, GHG & air emission	126 242-243
305-5	Reduction of GHG emissions	5.1 Climate leadership - Greenhouse Gas Emissions Management 5.1 Climate leadership - Energy Saving and Carbon Reduction Projects	126 128-129
305-6	Emissions of ozone-depleting substances (ODS)	5.5 Air Emissions Control	146-147
305-7	Nitrogen oxides, sulfur oxides, and other significant air emissions	5.5 Air Emissions Control Appendix: Environmental Data - A. Waste, Water, Energy, GHG & Air emission	146-147 242
GRI 306: Waste 2020			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 5.4 Circular Resources	24-29 38-52 141-145
306-1	Waste generation and significant waste-related impacts	5.4 Circular Resources	141-145
306-2	Management of significant waste-related impacts	5.4 Circular Resources	141-145
306-3	Waste generated	5.4 Circular Resources Appendix: Environmental Data - A. Waste, Water, Energy, GHG & Air emission	141-145 241
306-4	Waste diverted from disposal	5.4 Circular Resources Appendix: Environmental Data - A. Waste, Water, Energy, GHG & Air emission	141-145 241
306-5	Waste directed to disposal	5.4 Circular Resources Appendix: Environmental Data - A. Waste, Water, Energy, GHG & Air emission	141-145 241
GRI 308: Supplier Environmental Assessment 2016			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 7.1 Supply Chain Sustainability Management 7.5 Supply Chain Sustainability Management Performance	24-29 38-52 196 208-211

GRI Standard	Disclosure	Related Section / Explanatory Notes	Page No.
308-1	New suppliers that were screened using environmental criteria	3.3 Business Ethics 7.4 Supply Chain Management Framework – Supplier Sustainability Management Approach	62 207
308-2	Negative environmental impacts in the supply chain and actions taken	7.1 Supply Chain Sustainability Management 7.5 Supply Chain Sustainability Management Performance	196 208-211
GRI 401: Employment 2016			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 6.1 Talent Attraction and Retention	24-29 38-52 164-167
401-1	New employee hires and employee turnover	6.1 Talent Attraction and Retention Appendix: Social Data – E. New Hire Employee, F. Turnover Rate	164-168 250
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	ASEH has provided all full-time employees with comprehensive insurance / parental leave / retirement schemes.	-
401-3	Parental leave	Appendix: Social Data – H. Parental Leave	251
GRI 402: Labor/Management Relations 2016			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 6.1 Talent Attraction and Retention	24-29 38-52 164-177
402-1	Minimum notice periods regarding operational changes	Regarding employee discharges and layoffs, all ASEH sites notify their employees of significant changes to collective agreements in advance pursuant to local laws and regulations. Any labor-management dispute regarding collective agreements is submitted to the employee representatives in writing for further negotiation.	-
GRI 403: Occupational Health and Safety 2018			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 6.3 Occupational Health and Safety	24-29 38-52 185-186
403-1	Occupational health and safety management system	6.3 Occupational Health and Safety	185-186
403-2	Hazard identification, risk assessment, and incident investigation	6.3 Occupational Health and Safety	185-188
403-3	Occupational health services	6.3 Occupational Health and Safety	188-191
403-4	Worker participation, consultation, and communication on occupational health and safety	6.3 Occupational Health and Safety	185-192
403-5	Worker training on occupational health and safety	6.3 Occupational Health and Safety	185-192
403-6	Promotion of worker health	6.3 Occupational Health and Safety	185-192
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	6.3 Occupational Health and Safety	185-192
403-8	Workers covered by an occupational health and safety management system	6.3 Occupational Health and Safety Appendix: Social Data – M. Workers Occupational Health and Safety	185-192 254
403-9	Work-related injuries	6.3 Occupational Health and Safety Appendix: Social Data – M. Workers Occupational Health and Safety	185-192 254
403-10	Work-related ill health	6.3 Occupational Health and Safety Appendix: Social Data –M. Workers Occupational Health and Safety	185-192 254
GRI 404: Training and Education 2016			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 6.2 Talent Cultivation and Development	24-29 38-52 178-184

GRI Standard	Disclosure	Related Section / Explanatory Notes	Page No.
404-1	Average hours of training per year per employee	6.2 Talent Cultivation and Development	178-184
404-2	Programs for upgrading employee skills and transition assistance programs	6.2 Talent Cultivation and Development ASEH does not provide terminated employees with any continued employability or career transition assistance.	178-184
404-3	Percentage of employees receiving regular performance and career development reviews	6.1 Talent Attraction and Retention	172
GRI 405: Diversity and Equal Opportunity 2016			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 6.1 Talent Attraction and Retention - Diversity in Human Resources	24-29 38-52 164-165
405-1	Diversity of governance bodies and employees	3.1 Board of Directors 6.1 Talent Attraction and Retention - Diversity in Human Resources	57 164-165
GRI 408: Child Labor 2016			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 3.5 Human Rights Management 7.1 Supply Chain Sustainability Management 7.4 Supply Chain Management Framework - Supplier Sustainability Management Approach	24-29 38-52 74-80 196 207
408-1	Operations and suppliers at significant risk for incidents of child labor	3.5 Human Rights Management 7.1 Supply Chain Sustainability Management 7.4 Supply Chain Management Framework - Supplier Sustainability Management Approach No significant risk of hire child labor and young workers exposed to hazardous work.	74-80 196 207

GRI Standard	Disclosure	Related Section / Explanatory Notes	Page No.
GRI 409: Forced or Compulsory Labor 2016			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 3.5 Human Rights Management 7.1 Supply Chain Sustainability Management 7.4 Supply Chain Management Framework – Supplier Sustainability Management Approach	24-29 38-52 74-80 196 207
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	3.5 Human Rights Management 7.1 Supply Chain Sustainability Management 7.4 Supply Chain Management Framework – Supplier Sustainability Management Approach Non-significant risk for incidents of forced or compulsory labor either.	74-80 196 207
GRI 414: Supplier Social Assessment 2016			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 7.1 Supply Chain Sustainability Management 7.4 Supply Chain Management Framework - Supplier Sustainability Management Approach 7.5 Supply Chain Sustainability Management Performance	24-29 38-52 196 207 208-211
414-1	New suppliers that were screened using social criteria	3.3 Business Ethics 7.4 Supply Chain Management Framework - Supplier Sustainability Management Approach	62 207
414-2	Negative social impacts in the supply chain and actions taken	7.1 Supply Chain Sustainability Management 7.4 Supply Chain Management Framework - Supplier Sustainability Management Approach 7.5 Supply Chain Sustainability Management Performance	196 207 208-211
GRI 418: Customer Privacy 2016			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 3.7 Information Security Management	24-29 38-52 82-87

GRI Standard	Disclosure	Related Section / Explanatory Notes	Page No.
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	3.5 Human Rights Management We don't have any substantiated complaints regarding breaches of customer privacy and losses of customer data in 2023.	74-80
Customized Standard			
Innovation Management and Sustainable Manufacturing			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 4.1 R&D and Innovation 4.2 Sustainable Manufacturing	24-29 38-52 89-93 94-98
Customer Relationship Management			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 4.3 Products and Services - Customer Service	24-29 38-52 100-101
Information Security Management			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 3.7 Information Security Management	24-29 38-52 82-87
Social Involvement			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 8. Corporate Citizenship	24-29 38-52 214
Local Communities			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 8.1 Social Involvement Overview	24-29 38-52 219-220

Sustainability Accounting Standards Board

SEMICONDUCTORS (Applicable to ASE and SPIL Facilities)

Topic / Code	Accounting Metric	Related Section / Explanatory Notes	Page No.
Greenhouse Gas Emissions			
TC-SC-110a.1.	(1) Gross global Scope 1 emissions and (2) amount of total emissions from perfluorinated compounds	5.2 Energy and Carbon Management	126
TC-SC-110a.2.	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	5.1 Climate leadership 5.2 Energy and Carbon Management- Greenhouse Gas Emissions Management	105-112 126
Energy Management in Manufacturing			
TC-SC-130a.1	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable	5.2 Energy and Carbon Management- Energy Management Appendix: Sustainability Indicators – SEMICONDUCTORS – No. 1	124 267
Water Management			
TC-SC-140a.1	(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	5.3 Water Stewardship Appendix: Environmental Data - A. Waste, Water, Energy, GHG & Air emission Appendix: Environmental Data - B. The amount of water withdrawals and discharge in water-stressed regions	130-140 241 244
Waste Management			
TC-SC-150a.1	Amount of hazardous waste from manufacturing, percentage recycled	5.4 Circular Resources Appendix: Environmental Data - A. Waste, Water, Energy, GHG & Air emission	142 241
Employee Health & Safety			
TC-SC-320a.1	Description of efforts to assess, monitor, and reduce exposure of employees to human health hazards	6.3 Occupational Health and Safety	185-188
TC-SC-320a.2	Total amount of monetary losses as a result of legal proceedings associated with employee health and safety violations	In 2024, ASEH was fined approximately US$3,064for violating employee health and safety protocols (there were no fines exceeding US$10,000).	-
Recruiting & Managing a Global & Skilled Workforce			
TC-SC-330a.1	Percentage of employees that are (1) foreign nationals and (2) located offshore	3.5 Human Rights Management Appendix: Social data - B. Foreign Employee Taiwan is the registered location of ASEH and the employees of ASEH's facilities outside Taiwan are considered overseas employees. Overseas employees account for 30.6% of the total ASEH employees.	74-80 249
Materials Sourcing			
TC-SC-440a.1	Description of the management of risks associated with the use of critical materials	7.1 Supply Chain Sustainability Management 7.4 Supply Chain Management Framework - Supplier Sustainability Management Approach 7.5 Supply Chain Sustainability Management Performance	196 207 208-211
Intellectual Property Protection & Competitive Behavior			
TC-SC-520a.1	Total amount of monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations	In 2024, ASEH did not suffer any financial losses from violating anti-competitive regulations.	-
Product Lifecycle Management			
TC-SC-410a.1	Percentage of products by revenue that contain IEC 62474 declarable substances	18% Taking ASEH's 2024 revenue as the denominator	-

ELECTRONIC MANUFACTURING SERVICES & ORIGINAL DESIGN MANUFACTURING (Applicable to USI Facilities)

Topic / Code	Accounting Metric	Related Section / Explanatory Notes	Page No.
Water Management			
TC-ES-140a.1	(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	5.3 Water Stewardship Appendix: Environmental Data - A. Waste, Water, Energy, GHG & Air emission Appendix: Environmental Data - B. The amount of water withdrawals and discharge in water-stressed regions	130-140 241 244
Waste Management			
TC-ES-150a.1	Amount of hazardous waste from manufacturing, percentage recycled	5.4 Circular Resources Appendix: Environmental Data - A. Waste, Water, Energy, GHG & Air emission	142 241
Labor Practices			
TC-ES-310a.1	(1) Number of work stoppages and (2) total days idle	In 2024, there were no incidents that resulted in a shutdown at USI.	-
Materials Sourcing			
TC-ES-440a.1	Description of the management of risks associated with the use of critical materials	7.1 Supply Chain Sustainability Management 7.4 Supply Chain Management Framework - Supplier Sustainability Management Approach 7.5 Supply Chain Sustainability Management Performance	196 207 208-211
Activity Metrics			
TC-ES-000.C	Number of employees	Total number of USI employees is 15,612	-

Sustainability Indicators — SEMICONDUCTORS

No.	Indicators	Disclosure
1	Total energy consumption, percentage of purchased electricity, utilization rate (renewable energy)	In 2024, total energy consumption was 16,058,499 GJ, with grid (imported) electricity accounting for 79.29% of the total consumption and renewable energies accounting for 18.48 %
2	Total Water r withdrawal and Total Water Consumption	In 2024, total water withdrawals amounted to 21,886,295 m^3, and total water consumption amounted to 6,014,921 m^3
3	The weight and recycling percentage of hazardous waste generated	In 2024, total hazardous waste was produced to 22,497 tons, and the recycling rate was 81%
4	The type, number and rate of occupational incidents	Category of Occupational Injuries in 2024: 1. Number of Physical Injuries: 82peoples (88%) 2. Number of Chemical Injuries: 5 peoples (5%) 3. Number of Ergonomic Injuries: 6 peoples (7%) 4. Number of Biological Injuries: 0 people (0%) 5. Number of Psychosocial Injuries: 0 people (0%)
5	Disclosure of product life cycle management: including the weight of scraped products and e-waste and the percentage of recycling	In 2024, the weight of end-of-life products and e-waste were 641 tons, and the recycling rate was 1%
6	Risk management regarding the use of critical materials	Please refer to 7.5 Supply Chain Sustainability Management
7	Total amount of monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations	In 2024, ASEH did not suffer any financial losses from violating anti-competitive regulations
8	Yield of main products by product category	1. Semiconductor Assembly (packaging), Testing and Materials (ATM): 37,790,855 kpcs 2. Electronic Manufacturing Service (EMS): 922,541 kpcs

TCFD Index

Dimension	General industry index (2021 edition)	Comparing Section
Governance	(a) The board's oversight of climate-related risks and opportunities.	3.1 Board of Directors 3.4 Risk Management 5.1.2 Climate Risk Management
	(b) Management's role in assessing and managing climate-related risks and opportunities.	3.4 Risk Management 5.1.2 Climate Risk Management
Strategy	(a) The climate-related risks and opportunities the organization has identified over the short, medium, and long term.	5.1.2 Climate Risk Management 5.3.2 Risk and Opportunity Management
	(b) The impact of climate related risks and opportunities on the organization's businesses, strategy, and financial planning.	5.1.2 Climate Risk Management 5.3.2 Risk and Opportunity Management
	(c) The resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2° C or lower scenario.	5.1.2 Climate Risk Management 5.3.2 Risk and Opportunity Management
Risk Management	(a) The organization's processes for identifying and assessing climate-related risks.	5.1.2 Climate Risk Management
	(b) The organization's processes for managing climate-related risks.	5.1.2 Climate Risk Management
	(c) How processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	5.1.2 Climate Risk Management
Metrics and Targets	(a) The metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	5.1.2 Climate Risk Management
	(b) Scope1, Scope2 , and if appropriate, scope3 greenhouse gas (GHG) emissions and the related risks.	5.2.2 Greenhouse Gas Emissions Management
	(c) The targets used by the organization to manage climate-related risks and opportunities and performance against targets.	5.1.3 Metrics and Targets 5.1.4 Net-Zero Actions

TNFD Index

Dimension	General industry index (2021 edition)	Comparing Section
Governance	(a) The board's oversight of nature-related dependencies, impacts, risks and opportunities.	3.1 Board of Directors 3.4 Risk Management 5.7 Biodiversity-Risk assessment
	(b) Management's role in assessing and managing nature-related dependencies, impacts, risks and opportunities.	3.4 Risk Management 5.7 Biodiversity-Risk assessment
	(c) Describe the organisation's human rights policies and engagement activities, and oversight by the board and management, with respect to Indigenous Peoples, Local Communities, affected and other stakeholders, in the organisation's assessment of, and response to, nature related dependencies, impacts, risks and opportunities.	NA
Strategy	(a) The nature-related dependencies, impacts, risks and opportunities the organisation has identified over the short, medium and long term.	5.7 Biodiversity-Evaluating Nature-related Dependencies and Impacts 5.7 Biodiversity-Major Nature-related Risk and Opportunity Metrics
	(b) The effect nature-related risks and opportunities have had on the organisation's business model, strategy and financial planning, as well as any transition plans or analysis in place.	5.7 Biodiversity-Major Nature-related Risk and Opportunity Metrics
	(c) Describe the resilience of the organisation's strategy to nature-related risks and opportunities, taking into consideration different scenarios.	NA
	(d) Disclose the locations of assets and/or activities in the organisation's direct operations and, where possible, upstream and downstream value chain(s) that meet the criteria for priority locations.	5.7 Biodiversity-Overlay Analysis of Natural and Biodiversity Hotspots 5.7 Biodiversity-Supply Chain Environmental Risk Analysis
Risk and impact Management	(a-1) Describe the organisation's processes for identifying, assessing and prioritising nature related dependencies, impacts, risks and opportunities in its direct operations. (a-2) Describe the organisation's processes for identifying, assessing and prioritising nature-related dependencies, impacts, risks and opportunities in its upstream and downstream value chain(s).	5.7 Biodiversity-Risk assessment
	(b) Describe the organisation's processes for managing nature-related dependencies, impacts, risksand opportunities.	5.7 Biodiversity-Risk assessment 5.7 Biodiversity-Potentially Disappeared Fraction of species 5.7 Biodiversity-Implementation Actions
	(c) Describe how processes for identifying, assessing, prioritising and monitoring nature-related risks are integrated into and inform the organisation's overall risk management processes.	5.7 Biodiversity-Risk assessment
Metrics and Targets	(a) The metrics used b y the organisation to assess and manage material nature-related risks and opportunities in line with its strategy and risk management process.	5.7 Biodiversity-Major Nature-related Risk and Opportunity Metrics
	(b) The metrics used by the organisation to assess and manage dependencies and impacts on nature.	5.7 Biodiversity-Major Nature-related Risk and Opportunity Metrics
	(c) Describe the targets and goals used by the organization to manage nature-related dependencies, impacts, risks and opportunities and its performance	5.7 Biodiversity-Major Nature-related Risk and Opportunity Metrics 5.7 Biodiversity-Potentially Disappeared Fraction of species 5.7 Biodiversity-Implementation Actions

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