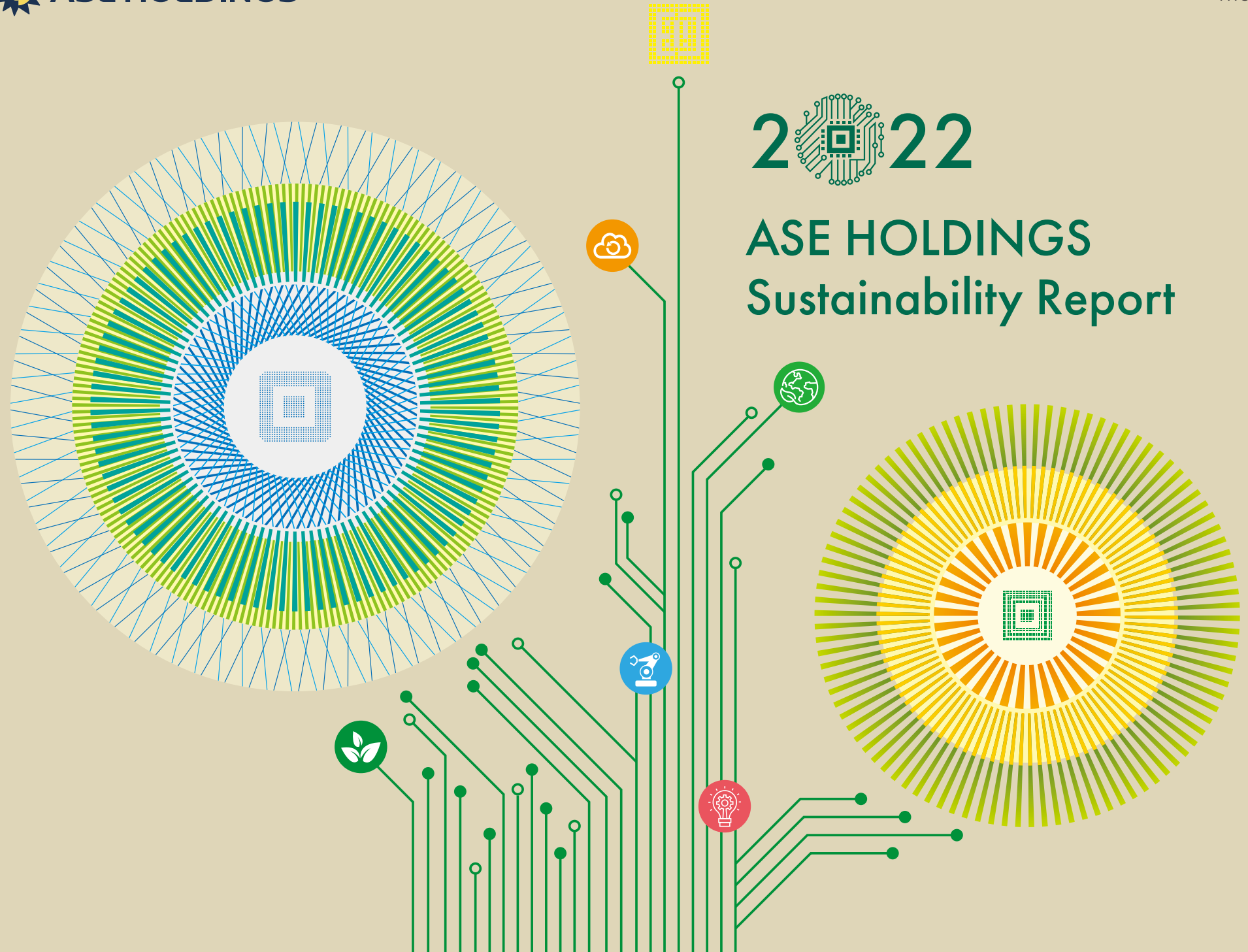
ASE HOLDINGS

TWSE: 3711
NYSE: ASX



2022 ASE HOLDINGS Sustainability Report

Committed to a Win-Win Sustainable Future

As a leading global service provider of semiconductor assembly and testing, ASE Technology Holding Co., Ltd. and its subsidiaries (collectively ASEH) are fully committed to building its core business and strengthening research and development. The company continues to advance its corporate sustainability strategy through a framework that comprises four pillars - Low Carbon, Circular, Inclusive and Collaborative. 2022 was a year of several milestones; we established our first 5G mmWave Smart Factory, and adopted the TNFD-LEAP biodiversity assessment framework. Our innovative and sustainable business model has allowed us to play a leadership role, and work hand-in-hand with our diverse partners towards Net Zero and the protection of our planet. ASEH intends to respond proactively to industry trends and stay abreast of social changes, as well as implement social responsibility and contribute to positive social and environmental impacts.

In our quest towards Net Zero, we're proactively driving energy transition through smart grid research, water and low-carbon management and smart factories. This year's cover design represents our circular approach towards a low carbon future from within and outside the organization, and our close partnerships with the value chain and customers. At ASEH, we are deeply devoted to building a sustainable environment and caring for a planet that thrives through continuous innovation.

Low Carbon

Circular

Inclusive

Collaborative

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Global Lighthouse Network

ASEH began its journey towards Industry 4.0 almost a decade ago, with the creation of the Industry Automation Committee to drive the company's digital transformation. We have so far, accomplished several milestones including the successful establishment of lights-out factories, introduction of AI in core operations, and development of a 5G mmWave smart factory. Amongst the ASEH global sites, ASE Kaohsiung is a leader in the development of smart manufacturing and automation in the IC packaging industry. In particular, the bumping facility at ASEKH has successfully deployed 4IR (4th Industrial Revolution) technologies across hundreds of complex fabrication processes, improving manufacturing yields and accuracy that resulted in a 67% increase in output and a 39% reduction in order leadtime. In 2023, the ASEKH bumping facility was inducted into the WEF Global Lighthouse Network (GLN), joining the ranks of 132 other leading manufacturers worldwide. As businesses continue to deal with rising energy costs, talent shortages, supply chain disruption, climate change, and other challenges, ASEH is taking the lead as a lighthouse member to create a resilient and sustainable smart manufacturing ecosystem through the adoption of 4IR technologies.

Biodiversity Conservation and Restoration

Biodiversity is a cornerstone of human welfare, environmental protection, and economic prosperity. In line with the UN Convention on Biological Diversity, SDG14 (conserve and sustainably use the oceans, seas and marine resources), SDG15 (Protect, restore and promote sustainable use of terrestrial ecosystems), and the TNFD (Taskforce on Nature-related Financial Disclosures) framework, ASEH has adopted the TNFD-LEAP approach to assess biodiversity risks posed by our operations. In 2023, ASEH's facilities in Taiwan began to implement environmental reliance and impact analyses to identify potential risks and opportunities and formulate the corresponding strategies and KPIs. We are also developing environmental protection campaigns together with various stakeholders in Taiwan. We hope to establish the same programs and achieve similar outcomes at our facilities overseas, and become an industry role model in fostering a business model conducive to coprosperity with Nature.

ASEH required its subsidiary, Siliconware Precision Industries (SPIL), to not only comply with regulations in the construction of new buildings at the CTSP Huwei Park, but go a step further and assume responsibility for the ecological restoration of nearby parklands. SPIL initiated the parkland restoration plan in 2023, focusing on growing native vegetation. In addition, by applying food forest concepts, SPIL is aiming to build a model industry park that demonstrates leadership in ecological restoration, environmental education, and local community engagement.

Innovation in Circular Economy and Protection of Marine and Forest Resources

ASEH established the ASE Social Enterprise Co., Ltd. in 2022 as a channel to support the development of economic, environmental, and social sustainability. To step up our employee welfare, we are developing plans to provide long-term care services for our employees' families, including day care centers and providing home-based services in the vicinity of our Taiwan facilities. In addition to introducing smart recycling with our partners in the industrial parks, to apply optical detection technologies to sort and recycle resources and reduce carbon footprints from waste disposal, we are providing shopping discounts as an incentive for participants to help create a circular business model. We have also organized competitions to encourage innovative solutions to solve environmental issues, reduce carbon emissions, promote circular economy, advocate social welfare, protect the environment and create sustainable value. In 2022, the ASE Environmental Sustainability Foundation established the "Guardians of the Ocean". The ASE team of divers comprising 1164 ASEH employees and volunteers, took part in 54 ocean cleanup and 31 beach cleanup events, removing a total of 5 metric tons of garbage from beaches and the ocean floor. In that year, 45 new divers were trained to join the clean-up campaign. Finally, to address the impacts of global warming and foster biodiversity, the ASE Environmental Sustainability Foundation joined hands with the Nantou Forest District Office and elementary school teachers and students to plant trees on Earth day, April 2022. By the end of 2022, ASEH's forestation project has helped plant more than 200,000 trees across 197.26 hectares of land. We hope to establish and promote greater public awareness on social responsibility and inclusivity, and encourage social participation through diverse and multi- dimensional community projects.

Net-zero Initiative

Our targets for Scope 1 and 2 emissions reduction by 35% (compared to 2016) and Scope 3 emissions by 15% (compared to 2020) by the end of 2030 were submitted to and validated by the Science-Based Targets initiative (SBTi) in 2021. To reach Net Zero 2050, we submitted our long-term goals to SBTi for validation in 2023. In parallel, we will be introducing carbon pricing at our three major subsidiary groups together with five action plans—carbon credits, renewable energy, low-carbon logistics, low-carbon products, and supply chain engagement. We hope to extend our low-carbon transformation strategies to our value chain partners. In addition to establishing a supply chain mechanism for GHG emission and product carbon footprint inventories, and carbon reduction subsidies for our value chain partners, we are also combining efforts with customers to collectively procure renewable energy.

Industry Leader

Named Industry Leader in the 2016-2022 Dow Jones Sustainability Indices, and listed as a constituent of the Dow Jones Sustainability World Index and Emerging Markets Index

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

Top 1% S&P Global Gold Class

Listed on the S&P Global Sustainability Yearbook 2017-2023, and awarded the "Gold Class" for seven consecutive years (within 1% of top performing company's score under the Semiconductors and Semiconductor Equipment Industry Group)

Top 1%
S&P Global ESG Score 2022

Triple Leadership Status

- Maintained leadership position on climate change for seven consecutive years
- Rated "A" in Supplier Engagement Rating for four consecutive years
- Recognized on the water security A List for three consecutive years

CDP
DISCLOSURE INSIGHT ACTION

8 Awards

Received 2022 Taiwan Corporate Sustainability Awards Executive Committee (TCSA): Top 100 Domestic Companies Sustainability Model Award, Corporate Sustainability Report Award (Platinum), People Development Leadership Award, Climate Leadership Award, Social Inclusion Leadership Award, Growth through Innovation Leadership Award, Circular Economy Leadership Award and Information Security Leadership Award

TCSA

2022 Awards and Recognitions

FTSE4Good

8 Years in a Row

Included in the FTSE4GOOD Emerging Markets Index for eight years in a row (2015-2022)

FTSE4Good TIP Taiwan ESG Index

TIP Taiwan Index Plus

6 Consecutive Years

Listed on the 2017-2022 FTSE4Good TIP Taiwan ESG Index [The index has been developed in partnership with Taiwan Stock Exchange's (TWSE) wholly-owned subsidiary, Taiwan Index Plus Corp. (TIP)]

MSCI ESG RATINGS A

CCC | B | BB | BBB | A | AA | AAA

Rated Again

Rated MSCI ESG "A" for the year 2022

AREA ASIA RESPONSIBLE ENTERPRISE AWARDS 2022

Awarded 4 Times

Received the 2022 Asia Responsible Enterprise Awards - Social Empowerment hosted by Enterprise Asia

Corporate ESG Performance Prime
RATED BY ISS ESG

Prime Status

Awarded ISS ESG Prime status for outstanding corporate sustainability performance

ABOUT OUR REPORTING

This is our 5th ESG Report for ASEH. This report has been prepared in accordance with the GRI Standards and SASB Standards. 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-download

If you have any comment or suggestion, please contact us at:
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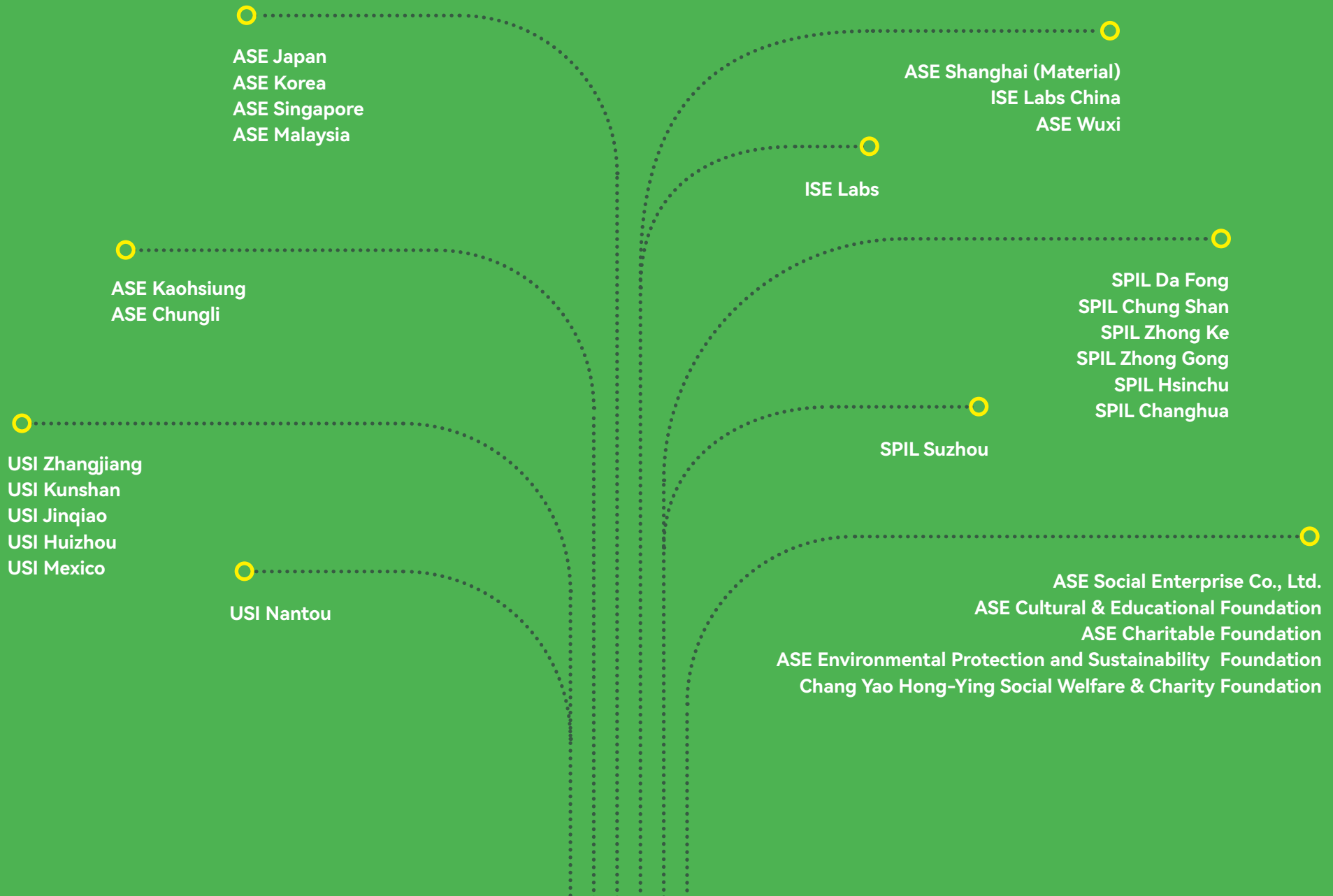
Address: No.26, Chin 3rd Rd., Nanzih Dist., Kaohsiung, Taiwan
Tel: +886-7-361-7131
Email: ASEH_CSR@aseglobal.com

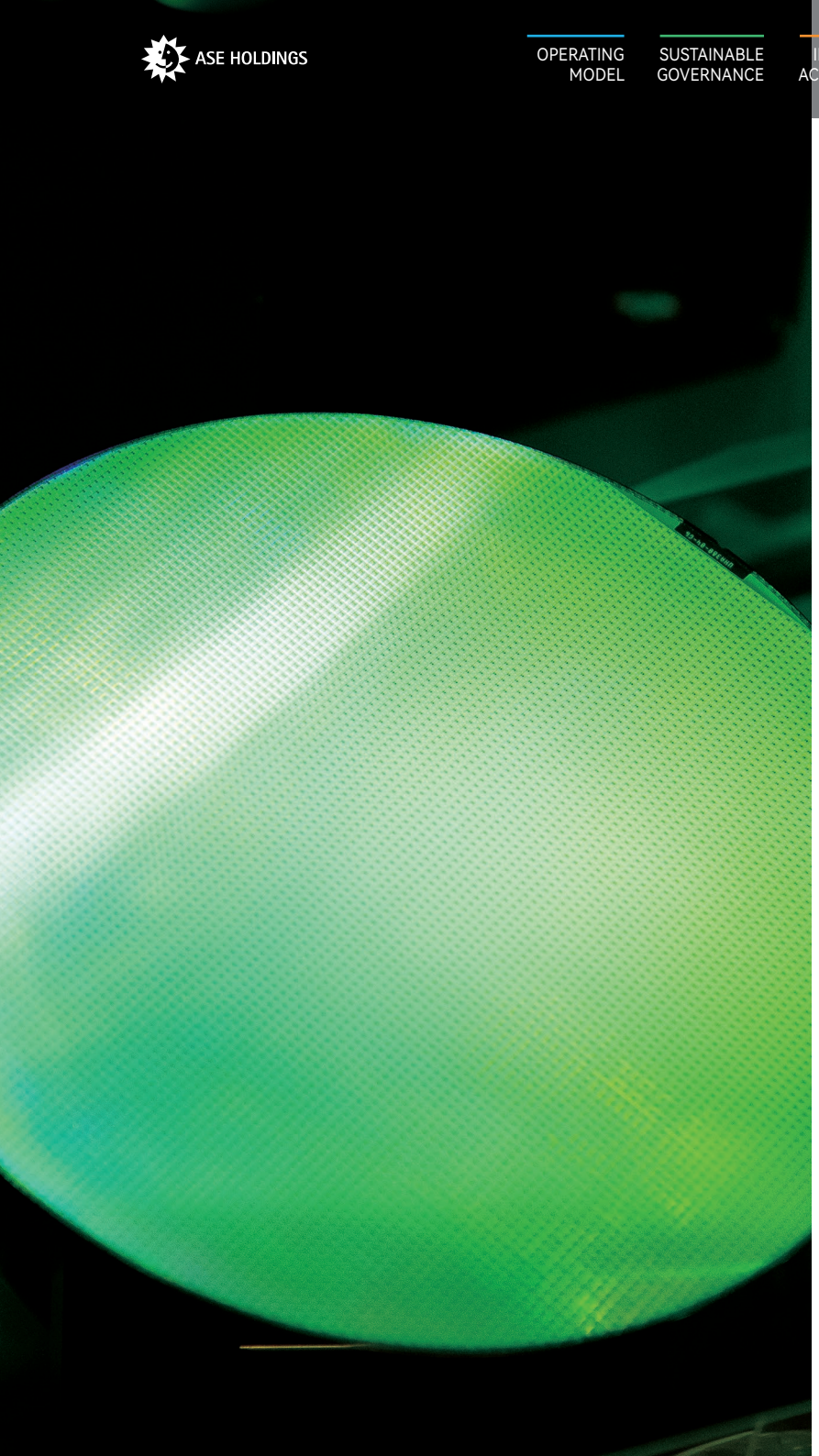
Report Boundary
The report discloses the economic, environmental and social performance of the ASE (Advanced Semiconductor Engineering, Inc. and its subsidiaries), SPIL (Siliconware Precision Industries Co., Ltd. and its subsidiaries), and USI (USI Inc. and its subsidiaries). The scope of this report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

ASE Facilities[1]**:** Kaohsiung, Chungli, Wuxi, Shanghai (Material), ISE labs China, Japan, Korea, Singapore, Malaysia and ISE Labs
SPIL Facilities: Da Fong, Chung Shan, Zhong Ke, Zhong Gong, Hsinchu, Changhua and Suzhou
USI Facilities: Nantou, Zhangjiang, Kunshan, Jinqiao, Huizhou[2] and Mexico

Any boundary adjustment made to the scope of data will be separately explained in the text of the report. Financial figures in this report are prepared in accordance with international standards and domestic regulations approved and promulgated by the Financial Supervisory Commission (FSC), including International Financial Reporting Standards (IFRS), International Accounting Standards (IASs), and the interpretations and statements of Standing Interpretations Committee (SIC) and International Financial Reporting Interpretations Committee (IFRSIC) adopted by the International Accounting Standards Board (IASB), as well as the Regulations Governing the Preparation of Financial Reports by Securities Issuers, and are audited by Deloitte & Touche. All figures are presented in US dollars unless otherwise specified.

[1] ASE Weihai, ASE Suzhou, ASE Advanced Semiconductor (Shanghai) and ASE Kunshan were disposed of in December 2021
[2] USI Shenzhen Facility was relocated to Huizhou Facility in 2022, the data scope of Huizhou Facility disclosed in this report including Shenzhen Facility information


ASE Japan
ASE Korea
ASE Singapore
ASE Malaysia
ASE Shanghai (Material)
ISE Labs China
ASE Wuxi
ISE Labs
ASE Kaohsiung
ASE Chungli
SPIL Da Fong
SPIL Chung Shan
SPIL Zhong Ke
SPIL Zhong Gong
SPIL Hsinchu
SPIL Changhua
USI Zhangjiang
USI Kunshan
USI Jinqiao
USI Huizhou
USI Mexico
SPIL Suzhou
USI Nantou
ASE Social Enterprise Co., Ltd.
ASE Cultural & Educational Foundation
ASE Charitable Foundation
ASE Environmental Protection and Sustainability Foundation
Chang Yao Hong-Ying Social Welfare & Charity Foundation



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 Committee.

Other ESG/Sustainability Reports in ASEH

Within the ASEH, we have also published four separate Sustainability/ ESG 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-download

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:

ASE Kaohsiung · Sustainability Report

ASE ChungLi · ESG Report

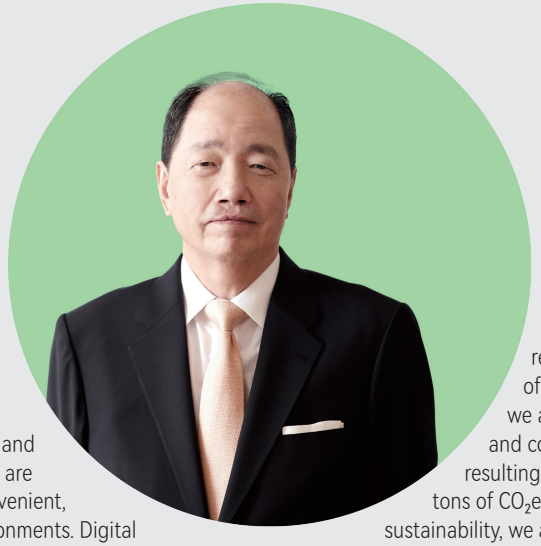
SPIL · Sustainability Report

USI · ESG Report

Facility \ Certification	ISO 14001 Environmental Management Systems	ISO 50001 Energy Management Systems	ISO 46001 Water Efficiency Management Systems	ISO 14064-1 Greenhouse Gases	QC 080000 Hazardous Substance Process Management System	ISO 45001 Occupational Health and Safety Management Systems	ISO/IEC 27001 Information Security Management Systems	Global Lighthouse Network
ASE Kaohsiung	V	V	V	V	V	V	V	V
ASE Chungli	V	V	V	V	V	V	V	
ASE Wuxi	V			V	V	V		
ASE Shanghai (Material)	V			V	V	V	V	
ISE Labs China	N/A[1]			V	N/A[2]			
ASE Japan	V			V	V			
ASE Korea	V			V	V	V		
ASE Singapore	V			V	V	V		
ASE Malaysia	V			V	V			
ISE Labs	V			V	N/A[2]			
SPIL Da Fong	V	V		V	V	V	V	
SPIL Chung Shan	V	V		V	V	V	V	
SPIL Zhong Ke	V	V		V	V	V	V	
SPIL Zhong Gong	V	N/A[3]		V	N/A[2]	V		
SPIL Hsinchu	V	V		V	V	V	V	
SPIL Changhua	V	V		V	V	V	V	
SPIL Suzhou	V	V		V	V	V		
USI Nantou	V	V		V	V	V	V	
USI Zhangjiang	V	V		V	V	V		
USI Kunshan	V	V		V	V	V		
USI Jinqiao	V	V		V	V	V		
USI Huizhou	V	V		V	V	N/A[4]		
USI Mexico	V	V		V	V	V		

[1] Due to the expansion and the change of business license of ISE Labs China, the facility is expected to obtain ISO 14001 Environmental Management Systems certification in September 2023
[2] 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
[3] The newly built facility of SPIL Zhong Gong is scheduled to be certified ISO 50001 Energy Management Systems by the end of 2023
[4] With the move of USI Shenzhen Facility to Huizhou, the Huizhou Facility is scheduled to be certified ISO 45001 Occupational Health and Safety Management Systems in 2023

Letter from the Chairman



Jason C.S. Chang
Chairman

Leading Change in the World

2016-2022 ASEH has been on the leaderboard of the Semiconductors and Semi Equipment Industry Group on the Dow Jones Sustainability Indices for 7 consecutive years

While a certain level of normalcy has returned since the easing of the pandemic in 2022, the world is still beset with multiple challenges. From the Russo-Ukrainian war to geopolitical tensions and inflation, the global economy continues to face many uncertainties. The semiconductor industry plays a crucial role in the global economy, and Taiwan holds a pivotal position. As a key player in the semiconductor manufacturing sector, ASEH continues to increase its business resilience by applying a strategic ESG approach, and balance the company's sustainability development and growth through innovation and digital transformation.

Sustainable Manufacturing through Digitalization

In late 2022, ASEH's wafer bumping facility in Kaohsiung was inducted into the World Economic Forum Global Lighthouse Network (GLN), a community of manufacturing sites and value chains that are leaders in the adoption of Fourth Industrial Revolution (4IR) cutting edge technologies. In the bumping operation, there are more than 100 process steps compared with traditional IC packaging operations. ASE Kaohsiung successfully deployed 4IR technologies across hundreds of complex fabrication processes, improving manufacturing yields and accuracy that resulted in a 67% increase in output and a 39% reduction in order leadtime. As one of the 132 GLN factories in the world, ASEH has truly demonstrated the company's incredible foresight, and strategic thinking in the integration of 4IR technologies into its smart manufacturing blueprints. At the same time, we are continuing to accelerate sustainable manufacturing through digital transformation, and as of the end of 2022, we have established a total of 36 smart factories.

Technology and innovation are our lifeline, and we are deeply committed to applying them for the good of humanity. ASEH is a leader in advanced packaging and a primary architect of Heterogeneous Integration (HI) technologies. Our developments in System-in Package (SiP) technologies have resulted in the creation of VIPack™, a platform designed to enable vertically integrated packaging solutions. The VIPack platform delivers innovative ASE packaging solutions that meet customer demands in 5G, AIoT, smart automotive, high-performance computing and many other applications. Our technologies are indeed enabling our vision of creating convenient, secure and comfortable smart-living environments. Digital technologies are transforming how we work at ASEH. We are not only applying digital technologies to enhance the efficiency and productivity of our operations, but also using it to improve workplace safety. For instance, AIoT and edge computing technologies are used to perform IoT data collection and AI predictive analytics on production equipment to pre-determine anomalies. This approach allows us to plan ahead for maintenance and repairs, and minimizes disruptions from shutdowns. It also ensures operation stability and increases energy efficiency as we can reduce energy wastage associated with obsolete or malfunctioned equipment. Through the use of XR (Extended Reality) technology which combines both VR (Virtual Reality) and AR (Augmented Reality), we are able to simulate equipment performance under certain conditions without disrupting the actual production lines. This has allowed our employees to undergo professional skills training in a safe and secure environment, further improving the efficiency and workplace safety and health.

Race to Net Zero through Climate Science

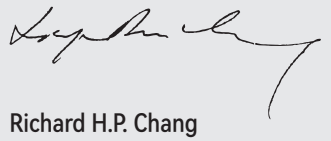
To reach our GHG emissions reduction goals, we have set absolute reduction targets for 2030 and are working towards achieving net zero by 2050. These targets have been submitted and validated by the Science Based Targets initiative (SBTi), an organization promoting best practices in emissions reductions and net-zero targets in line with climate science. Transitioning to renewable energy usage is key to achieving our reduction targets. As such, we have established our own solar power generation capabilities, and are actively procuring renewable energy and RECs. In 2022, 87% of our facilities are utilizing renewable energy, accounting for 19% of total power consumption. In addition, we are increasing our energy efficiency and conducting Scope 1 emission reductions, resulting in the reduction of 600,110 metric tons of CO_2e this year. To level up our supply chain sustainability, we are combining efforts with our customers and suppliers to purchase renewable energy collectively. We will also continue to execute our medium- to long-term carbon guidance plans which have so far, successfully helped 10 suppliers to conduct GHG inventories. Our board directors' remuneration is also closely tied to the performance of the company's sustainability developments that include GHG emission intensity. The leadership of ASEH is committed to the Net Zero pathway through an integrated approach from corporate governance, organizational to supply chain management.

Extreme climate impacts water resources and biodiversity, causing disruptions to the ecosystem and putting society and the economy at risk. Apart from publishing the Task Force on Climate-related Financial Disclosures (TCFD) report, we have also adopted the Taskforce on Nature-related Financial Disclosure (TNFD) framework to address the impact of risks and opportunities on the environment and formulate response measures. To manage our water resources, we have built the largest semiconductor water recycling facility in Taiwan that has allowed us to maximize the use of each drop of water up to 3.5 times on average. As of the end of 2022, we have recycled over 30 million tons of water through our water recycling efforts.

Building a circular economy is important for the semiconductor supply chain to achieve net-zero emissions. At ASEH, we are taking active steps towards a zero waste future with our supply chain. We have established a carbon reduction alliance consisting of energy, water, environmental protection, and circular economy experts. In 2022, the plastic recycling center was established to transform recycled plastic waste into raw materials for the production of useful products, such

CDP Leadership

The first Taiwanese company to be recognized on the CDP Climate Change list for seven consecutive years.
ASEH has been listed on the CDP Water Security A List for 3 consecutive years



Richard H.P. Chang
Vice Chairman and President

as eco-friendly plastic bags, or conversion into fuel rods. Waste plastic strips are also recycled into eco-bricks and, silica component can be recycled for use in refractory materials or the ceramic industry.

Building an Open and Inclusive Workplace

ASEH operates in 23 locations spanning across eight countries, with employees from 17 nationalities. In 2022, we have hired over 3,500 new employees who are foreign nationals, and about 600 employees with disabilities. We are committed to building a diverse and inclusive workplace, and promoting a corporate culture of treating each and every employee with dignity and respect.

Talent is a prime company asset and we have developed several strategies to ensure we hire and retain the best talents. Each of our subsidiary formulates and implements different programs based on the nature of their business and local attributes. Specifically, for female employees, our Kaohsiung and Chungli facilities provide paid maternity leave that is extended from 8 weeks (as stipulated by law) to 10 weeks. SPIL provides a monthly childcare subsidy of NT$5,000 to employees with children aged 0 to 6 years old, NT$10,000 if the parents both work at SPIL. After the pandemic, we made further adjustments to our work models, providing flexible work schedules and work from home opportunities, as well as reducing work hours to help employees balance work and family life.

As a global technology company, we have a strong belief in our ability to do more for society and the environment. The ASE Social Enterprise Co., Ltd., was incorporated to focus on innovative business models that employ smart technology for the sustainable utilization of agricultural land, and the development of environmentally friendly, circular products. In addition, to prepare for an aging society in Taiwan, we are planning to establish more day care centers and provide home care services in the vicinity of our facilities. These establishments will provide our employees the necessary support to help relieve their caregiving burden. We hope to do more for our employees and increase employee engagement, so that we can attract and retain top talent through the creation of a secure and caring workplace environment.

Driving Greater Social Responsibility through Value Creation

The famous Chinese adage of 'taking from the community, giving back to the community' resonates strongly with the goals of our corporate social responsibility from a strategic, long term and influential perspective. Key focused topics that are highly relevant to our business model and our connection to society and the environment include women's empowerment, environmental conservation, talent development, and active aging. We carefully curate scalable and replicable programs to address these topics in a long term manner, while continuously striving for progress and improvement to our programs.

In 2022, as a tribute to the entrepreneurial spirit of our founder, Madam Chang Yao Hong-Ying, we launched the 'Women's Sustainable Innovative Talents Cultivation Competition and Dream Building Plan' with a total prize pool of NT$10 million. Through this initiative, we aim to foster entrepreneurial and thinking among female and empower them to pursue their dreams. A total of 195 teams participated in the competition, and the top 3 winning projects are 'Utilizing AI for Precision Prevention of Dementia', 'Creating a Dual Circular Economy through Agricultural Waste Recycling in the Mushroom Industry', and 'Transforming Long-term Care with the ALL IN ONE Long-term Homecare Program'. Through our investments in resources and funding, we hope to inspire and support more women in achieving their ambitions and to contribute positively to society.

Since 2013, USI, the ASE Cultural and Educational Foundation, and the ASE Environmental Protection and Sustainability Foundation have been planting trees in various locations in Taiwan, as well as in regions such as Inner Mongolia and Ningxia, China. The total cumulative afforestation area has since reached 197.26 hectares, with over 200,000 trees planted. Our long term tree planting and afforestation projects are contributing greatly to mitigating climate change, improving air quality, and ensuring that future generations have access to a greener and more sustainable environment.

We are rapidly expanding our environmental conservation programs beyond our facilities, from the land to the sea. To that end, we have launched the ASEH marine conservation program that included the formation of the ASE Environmental Diving Team. In 2022, 54 ocean and 31 beach cleanup activities were organized, with a total of 1,164 participants who collectively cleaned up 5 tons of marine debris. The program has received enthusiastic responses from the company's employees and the public, which is motivating us to organize more ocean and beach cleanup, and coral and reef maintenance activities regularly. We are projecting to mobilize more than 200 divers in 2023 to help rehabilitate 540 coral colonies and safeguard the marine ecosystem.

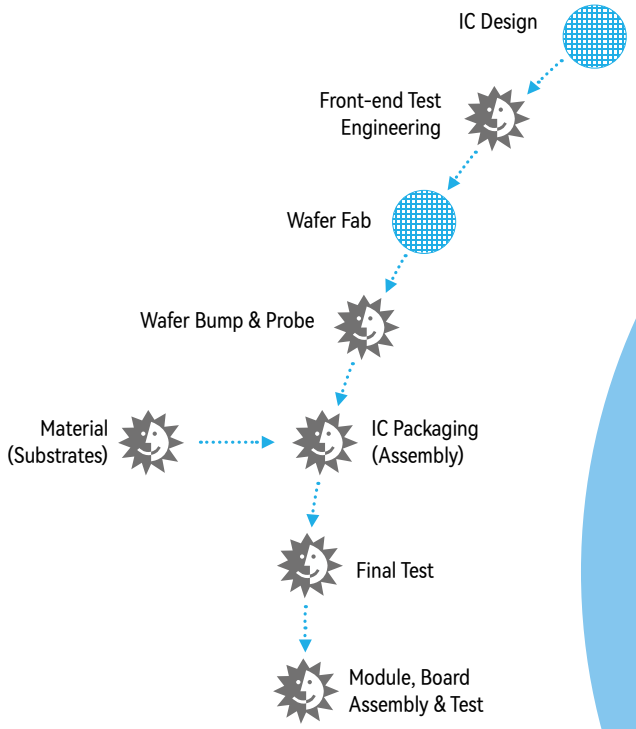
The Future and Beyond

Change is a constant, and we at ASEH are very cognizant of the challenges from emerging digital technology trends, pathways to net zero, evolving talent requirements and the increasing complexity of social issues. However, with every challenge comes an opportunity that we can tap upon. ASEH will continue to leverage our leadership role within the industry and use technology creatively to advance humanity. Transformative changes are like promising seeds of sustainability that blossom, flower and bear fruits in arid deserts. There may be factors outside of our control, but we are determined, and working harder than ever to do all we can to keep global warming below 1.5 degree Celsius and shape a new sustainability landscape for our next generation and beyond.

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.

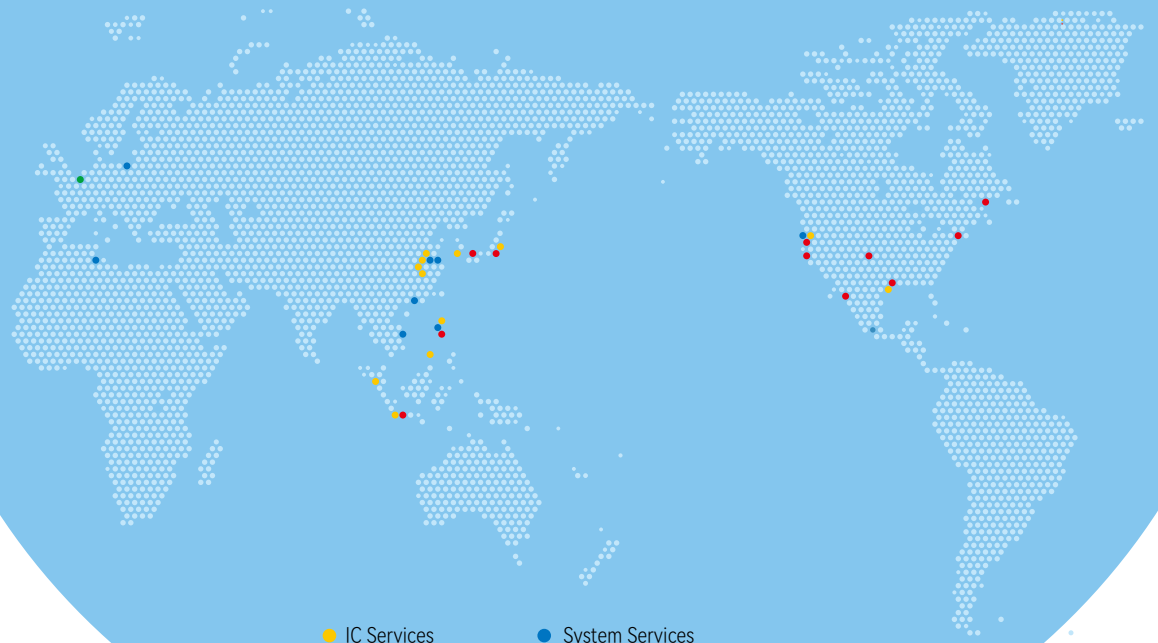


Service Scope

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, Vietnam, Mexico, U.S.A., Tunisia and European countries. ASEH has a worldwide headcount of over 86,000 employees[1] (as of December 2022).



[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

1.2 Mission and Vision

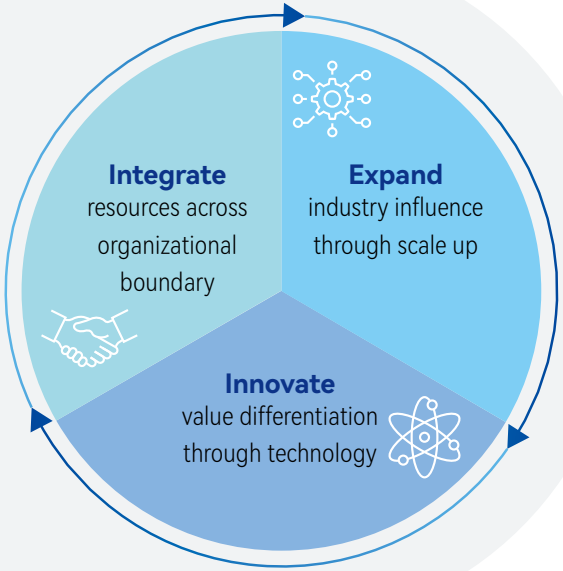
ASEH offers the best manufacturing services in semiconductor packaging/testing, substrates, and systems. We act as an extension of our customers' own operations, helping them achieve maximum success through efficient resource utilization and our extensive manufacturing chain. To stay ahead of the semiconductor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

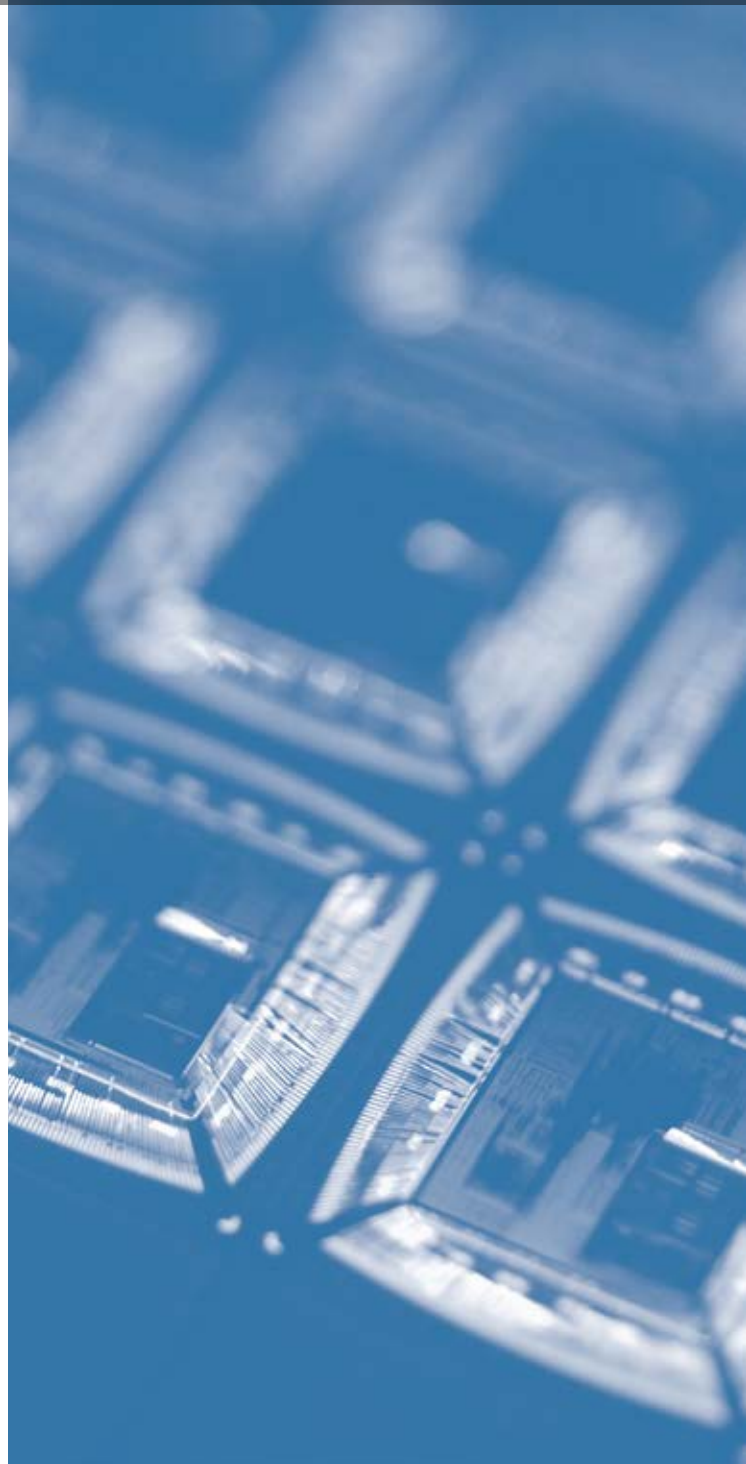
ASEH adheres to the highest corporate governance standards and transforms business philosophies into sustainable actions. As a major player of the global semiconductor chain, we carefully strategize according to industry development and trends, and seek talent and resources worldwide. We form strategic 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.



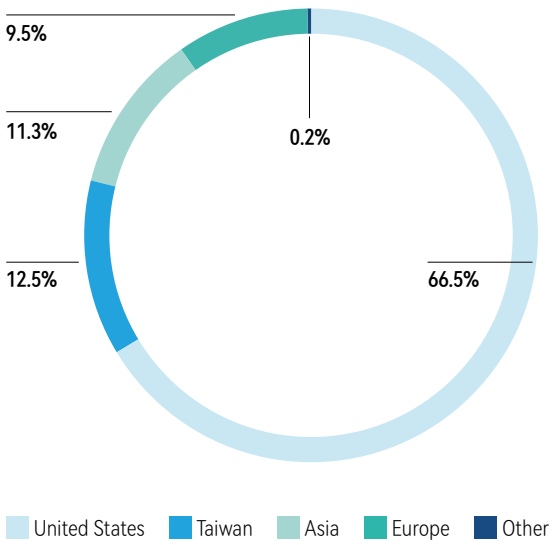


1.3 Financial Performance[1]

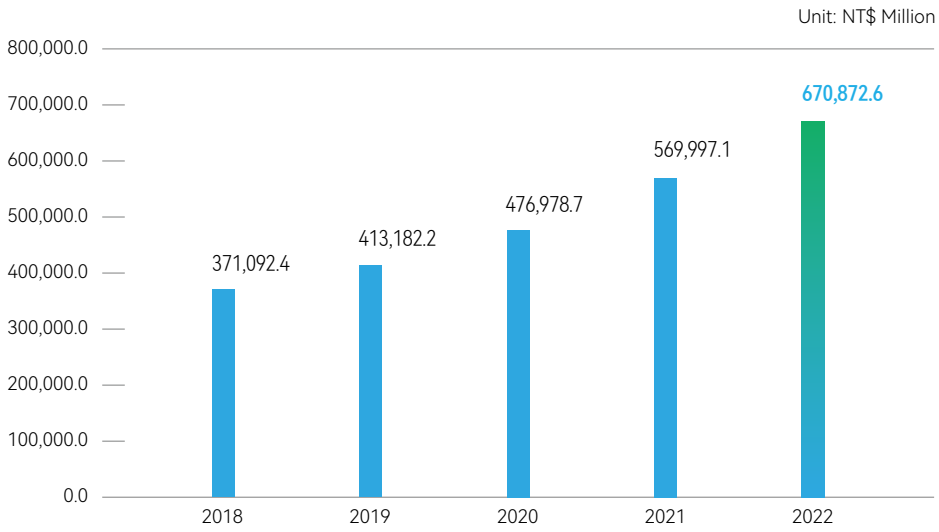
The Group's consolidated revenue in 2022 amounted to NT$670.9 billion (including NT$359.9 billion in semiconductor assembly and testing business, NT$302 billion in electronic manufacturing services and NT$9 billion in others), an increase of approximately $100.9 billion over 2021, with an annual growth of 17.7%. We've achieved the highest record than ever for the past year. In terms of the semiconductor packaging and testing business, the consolidated revenue in 2022 increased $37.4 billion over 2021, with an annual growth of 11.6% (excluding substrate and inter-segment revenue). In addition, for the electronic manufacturing services business, the consolidated revenue in 2022 increased approximately $62.5 billion over 2021, with an annual growth of about 26.1%. The overall financial data have grown significantly compared with that in 2021.

2022 Revenue

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



Annual Operating Revenue



[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 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 CSC comprises ASEH's directors and top management executives 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 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 Corporate CSR Division was established to serve as the executive secretariat of the CSC. 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 2022 CSC annual meeting, the CSC 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 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

Chairperson:

Jason C.S. Chang	ASEH	Chairman

Vice Chairperson:

Joseph Tung	ASEH	Group CFO

Members:

Tien Wu	ASE	General Manager and CEO
Chi-Wen Tsai	SPIL	Chairman and General Manager
Jeffrey Chen	USI	Chairman
Du-Tsuen Uang	ASEH	Group CAO

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 Care & Social Involvement
- 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

2022 Key Sustainability Projects

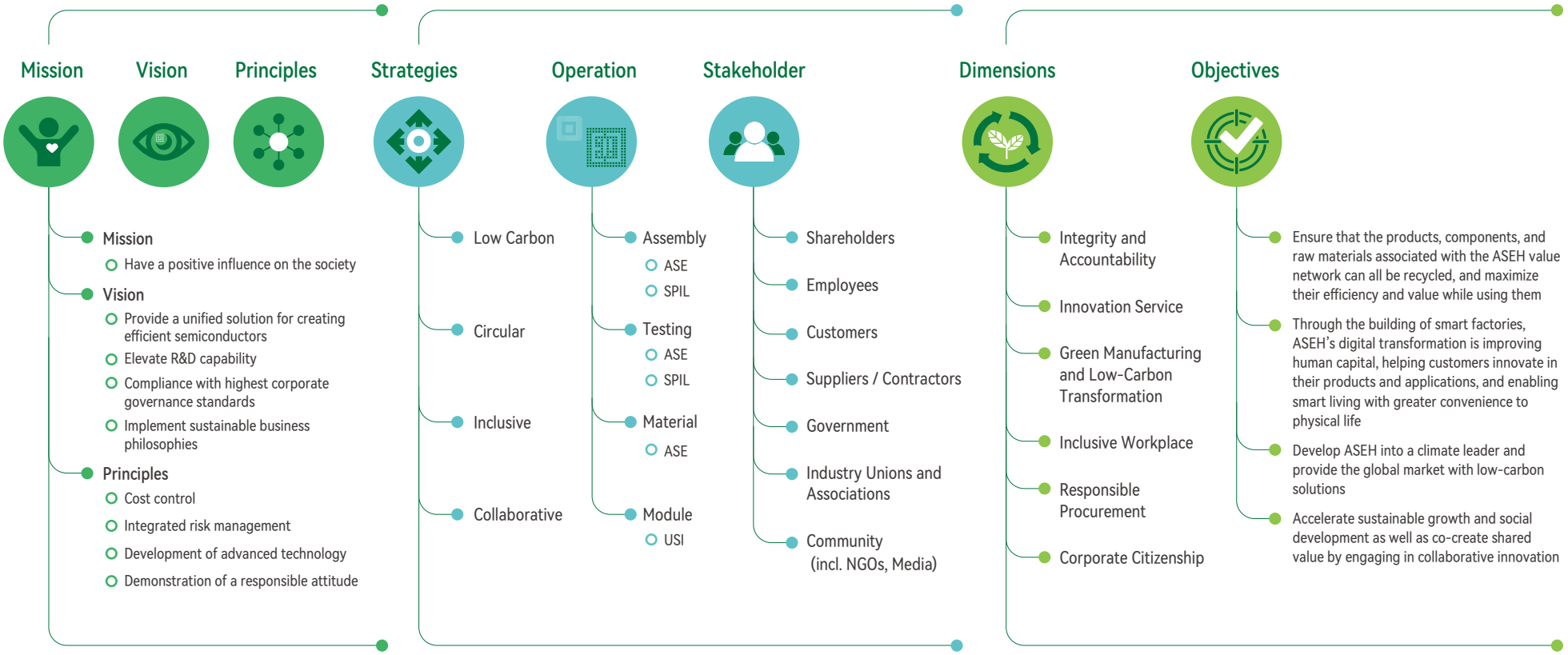
Dimensions	Key Projects	Partners	Positive Changes
Environmental	Net Zero Emission	• Government • External Consultants	• Structural Transformation of Energy and Lower Operational Risks • Mitigation of Extreme Climate Change
	TCFD Report	• External Consultants	• Strengthening Global Climate Risk Management • Responding to Stakeholders' Concerns
	Water Risk Analysis of Facilities Worldwide	• External Consultants	• The Integration of Scientific Analysis in Risk Management • 100% Effective Oversight of Water Risks at Our Facilities Worldwide
	Biodiversity Conservation and Restoration	• Government • External Consultants	• Mitigating or Compensating the Impact of Operations on Nature • Slowing Down Biodiversity Loss
	Circular Economy within Our Value Chain	• Academic and Research Institutions • Suppliers	• Increasing the Circular of Energy Resource and the Eco-efficiency
	Expanding the Scope of Implementation of Innovative Technologies	• External Consultants • Customers • Academic and Research Institutions	• Improving the Positive Impact of Value Chain Activities
Social	ASEH Ocean Guardian Project	• Government • External Professional Institutions • Non-profit Organizations	• Cleaning the Coast and Marine Environment • Conservation of Marine Ecology and Biodiversity
	ASEH Female Sustainable Innovation Talent Cultivation Competition and Dream Building Program	• External Consultants • Academic and Research Institution	• Cultivating Female Innovative Talents • Supporting Women's Entrepreneurial Dreams and Creating Social Influence
	Assistance Program for Disadvantaged Students	• Academic and Research Institutions	• Improving Learning Environment • Increasing the Willingness of and Opportunities for Disadvantaged Students to Learn
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 Perform Carbon Inventory
	Conflict Minerals Management	• External Auditing Organizations • Authorities	• Implementing Conflict-Free Sourcing
	Corporate Governance Evaluation System	• Authorities	• Enhancement of Corporate Governance Mechanisms
	Performance Evaluations for the Board of Directors and Its Subordinate Functional Committees	• Authorities	• Enhancing the Functions of the Board of Directors
	Information Security Management	• External Professional 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.

2022 Activities to Cultivate Sustainable Culture at ASEH

Dimensions	Activities	Impact of Cultivating Culture
Environmental	In response to climate change, ASEH has implemented internal carbon pricing and carbon reduction programs across all our global facilities. We are also engaging in conversations actively with the industry, government, academia and NGOs. ASEH has joined the SEMI Semiconductor Climate Consortium as a founding partner and the Taiwan Zero Emissions Association. We are also fully committed to the SBTi Net Zero targets, with the aim to influence and build a semiconductor industry that is resilient, transformative and prosperous.	• Extending the Influence of Net Zero Initiative • Driving Low-carbon Transformation across the Supply Chain • Driving Low-carbon Manufacturing through Innovation
Social	Published the "Grandma Chang's Magical Castle – volume 2", a children's picture book focused on eco-education. The second edition expands on the concepts of energy saving and carbon reduction, and is in line with our Net Zero 2050 ambition. The book is inspired by a maxim of ASE's founder, Madam Chang Yao-Hong Yin; "as long as there is a way, we can find a solution." The book encourages children to care about the environment, explore and be creative. In conjunction with the book launch, we hosted over 30 attendees at 2 eco-education workshops. In addition, we donated 60 copies to 2 elementary schools in Kaohsiung, and conducted 12 eco-education sessions in schools that drew about 580 students in attendance.	• Elevating Environmental Literacy • Promoting Sustainability Awareness • Facilitating Social Involvement
Economic	In 2022, ASEH initiated a low carbon program across its supply chain. The goal of the program is to assist at least 10 suppliers annually, in adopting and obtaining certifications in ISO 14064-1:2018 (greenhouse gas emissions) and ISO 14064 (product carbon footprint). We conduct both online and on-site training with our suppliers to build up their capabilities in managing their carbon inventory. In addition, we continue to collaborate closely with suppliers to formulate carbon reduction plans and strengthen ties to increase the resilience and value of the overall supply chain.	• Encouraging Suppliers to Boost Their Sustainability Performance • Building a Circular Industry Chain • Reducing Social Cost of Carbon

ASE CSC Annual Meeting


SPIL Sustainability Committee Annual Forum


USI Sustainability Committee Annual Meeting and Forum

92 points

Average RBA SAQ score

91%[1]

Percentage of RBA VAP-certified facilities globally

100%

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

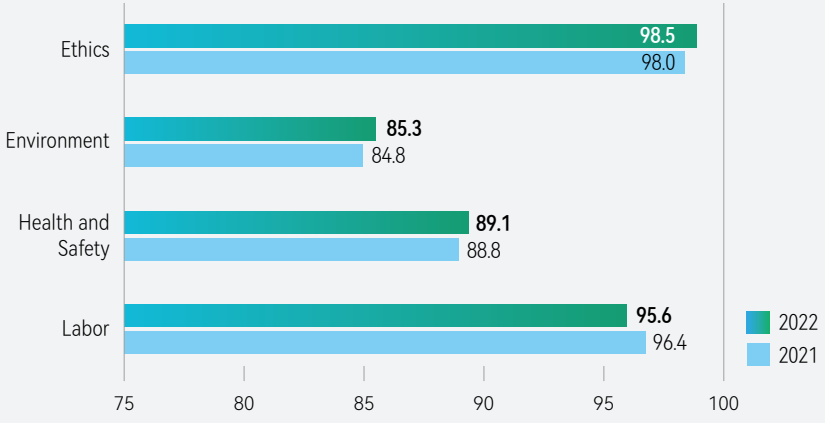
As a global leader in semiconductor packaging and testing, and system integration, ASEH is committed to environmental protection and compliance to the highest ethical standards. As a member of the RBA (Responsible Business Alliance), all our manufacturing facilities participate in the annual RBA Self-Assessment Questionnaire (SAQ) to evaluate specific inherent risk areas in labor, health and safety, environment, and ethics. In 2022, our manufacturing facilities scored over 92 points on average, representing a 1-point increase from the previous year.

The RBA VAP (Validated Assessment Process) was initiated by the ASEH Corporate Sustainability Committee (CSC) since 2017, and 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.

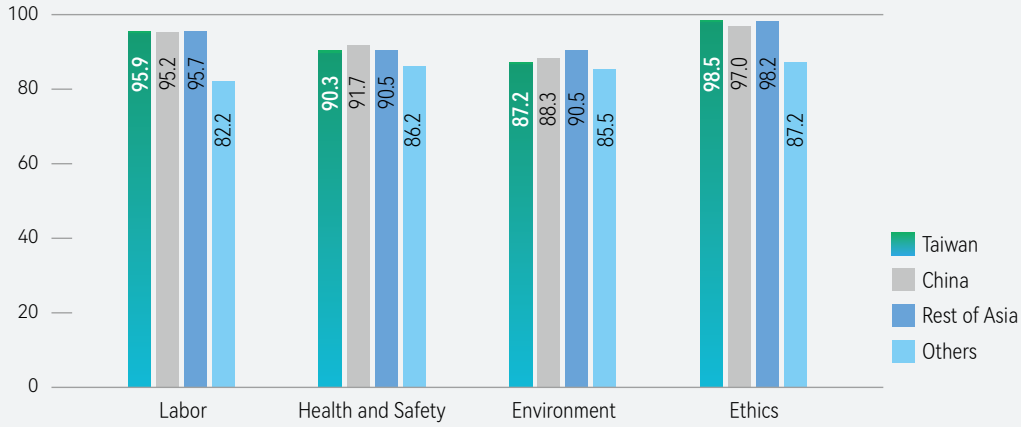
Our global locations include Taiwan, China, Japan, South Korea, Singapore, Malaysia, the United States and Mexico. As of 2022, 20 of our facilities have completed the RBA VAP, while the ASE Shanghai (Material) and ISE Labs China are scheduled to complete the RBA VAP before 2024. Customers can request 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 (by category)

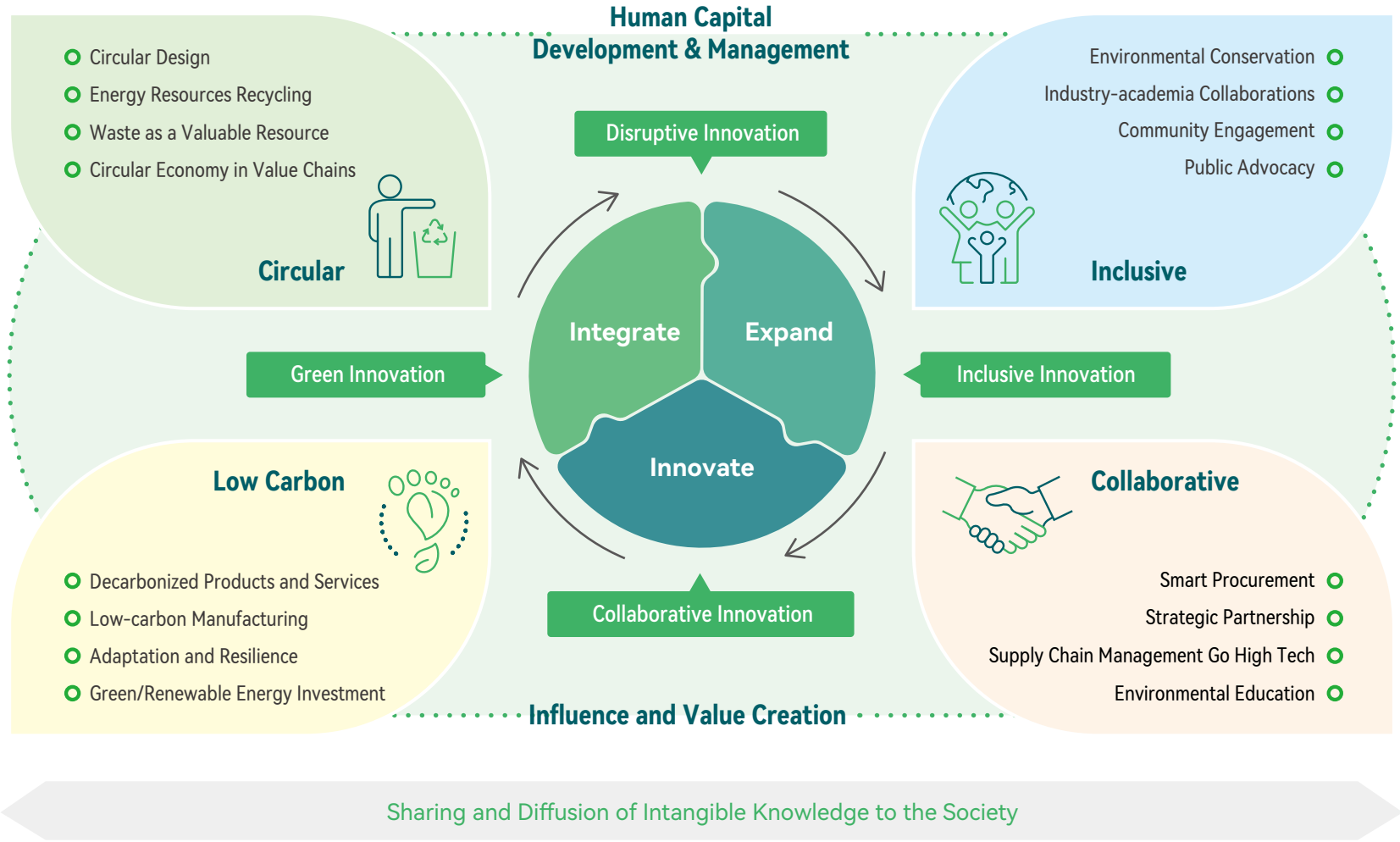


Average SAQ scores in 2022 (by region)



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 CSC 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. In 2022, 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 Approach and Goals of Key Issues

On Schedule Room for Improvement

Dimensions	Key Issues	Business Impact on ASEH	Strategic Approach	2030 Target	Progress/ Status
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.	• 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% • Subsidiary roll-out 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%	
Innovation Service	Innovation Management and Sustainable Manufacturing	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).	• 9,000 patents granted[1] • Scope of product Life Cycle Assessment (LCA): 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: 90%	

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

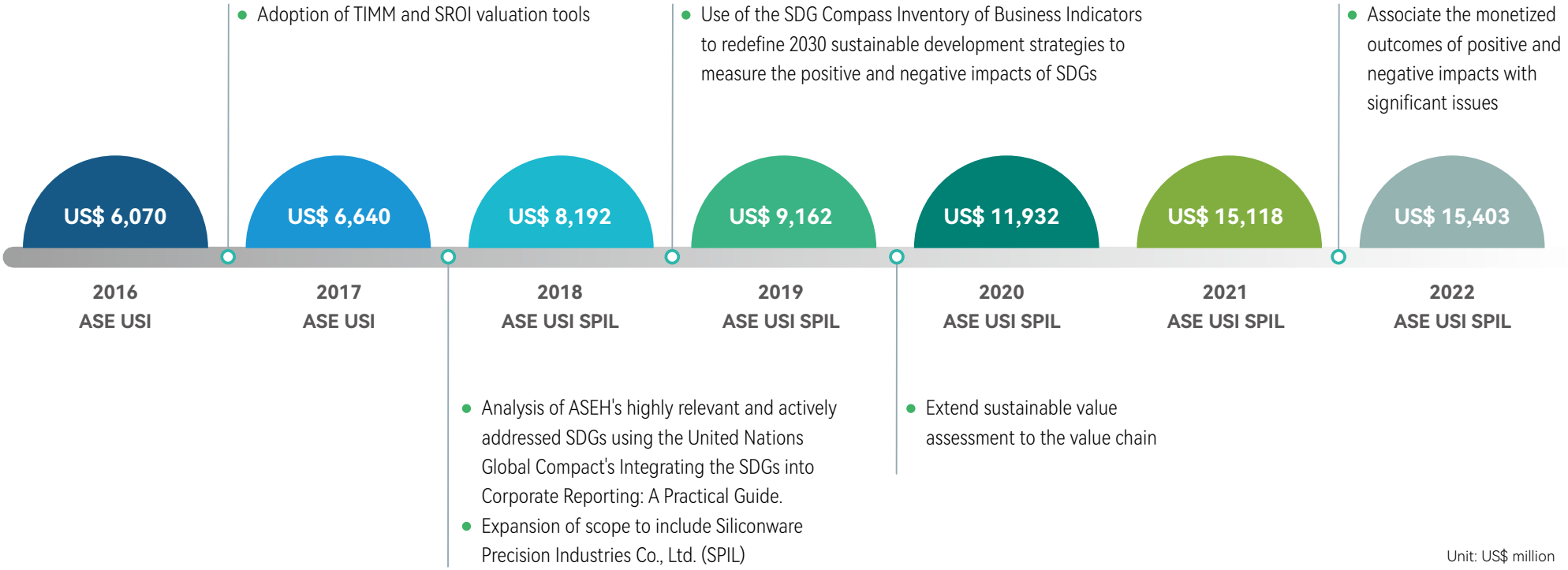
Dimensions	Key Issues	Business Impact on ASEH	Strategic Approach	2030 Target	Progress/ Status
Green Manufacturing and Low-carbon Transformation	Energy Management	Use of low carbon and diverse energy sources and smart energy management will increase energy efficiency, reduce GHG emissions, and lower operational 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 42% of total energy consumption.	
	Climate Change	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 renewable energy certificates and green product designs.	• 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 35% with 2016 as baseline and Scope 3 emission by 15% 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 15% 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: > 90% • Hazardous waste intensity (hazardous waste generated per revenue): achieve 15% reduction compared with 2015.	

Dimensions	Key Issues	Business Impact on ASEH	Strategic Approach	2030 Target	Progress/ Status
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 every 2 years: ➤ Result of employee engagement survey: >85% ➤ Employee coverage: >95% • Overall turnover rate: <20%	
	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: >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: 15%	
	Human Rights	Upholding fundamental rights of employees as well as creating an environment that guarantees human rights are essential for a sustainable business.	**Protection of human rights:** Prohibition of forced labor, child labor, discrimination and harassment; ensuring rights of freedom of association and privacy; provision of reasonable working hours and appropriate compensation and benefits.	• 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.): <0.5 • Disabling Severity Rate (S.R.): <9 • Major injury and occupational disease: 0 case • Employee absenteeism rate: <2.3%	
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.	• Signing of Code of Conduct Agreement and completion of sustainability risk self-assessment: ➤ 100% for new suppliers. • Completion of sustainability risk survey: ➤ 100% for all tier-1 suppliers. ➤ Over 50% for Non-tier 1 suppliers. • Completion of sustainability audits conducted: ➤ 100 tier-1 suppliers. ➤ 100% for high-risk 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.	• Over 150 industry-academia collaboration projects on environmental technology. • Organizing semiconductor courses for 2,000+ students. • Over 2,000 disadvantaged students attending the after school program. • Offering financial aid to 95,000+ school children from underprivileged families. • Advocating 25+ semiconductor industry-related regulatory initiatives.	

2.3 UN Sustainable Development Goals and Sustainable Values Assessment

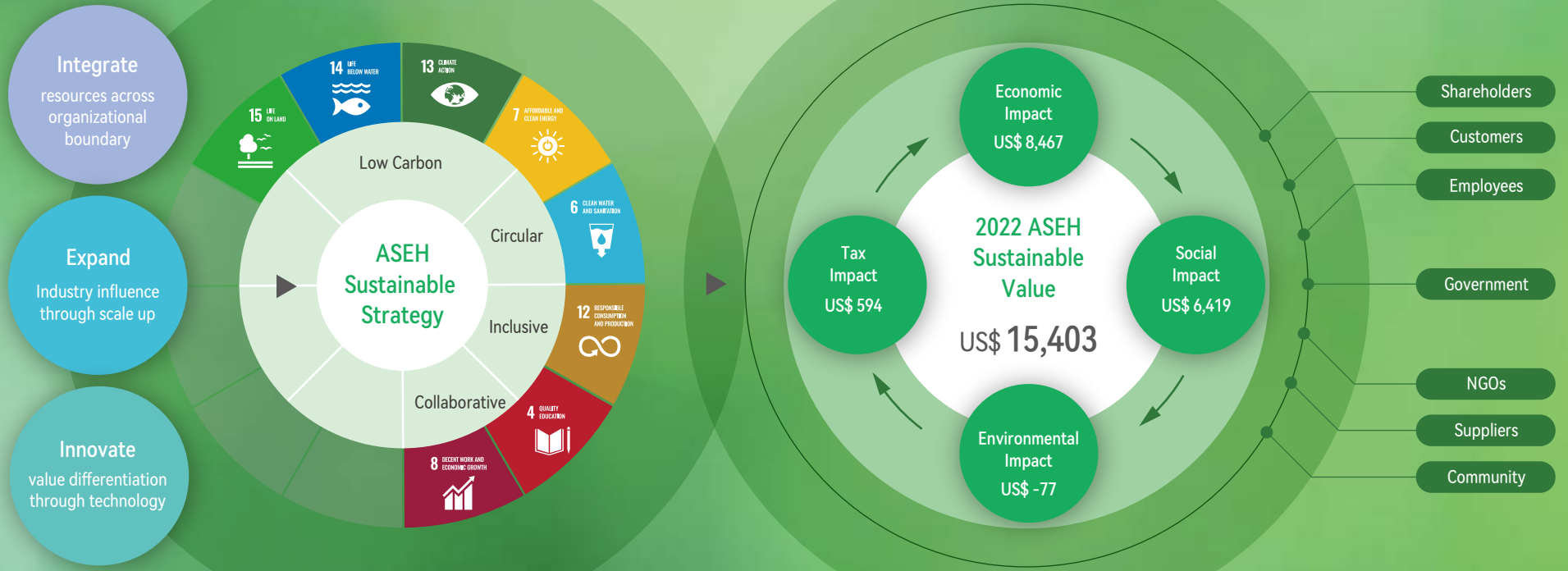
ASEH is building upon its technology leadership to steer the semiconductor industry towards greater sustainability. Since 2017, we have adopted the Total Impact Measurement and Management (TIMM) framework and Social Return on Investment (SROI) analysis to assess the social impacts and operational risks 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 CSC 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



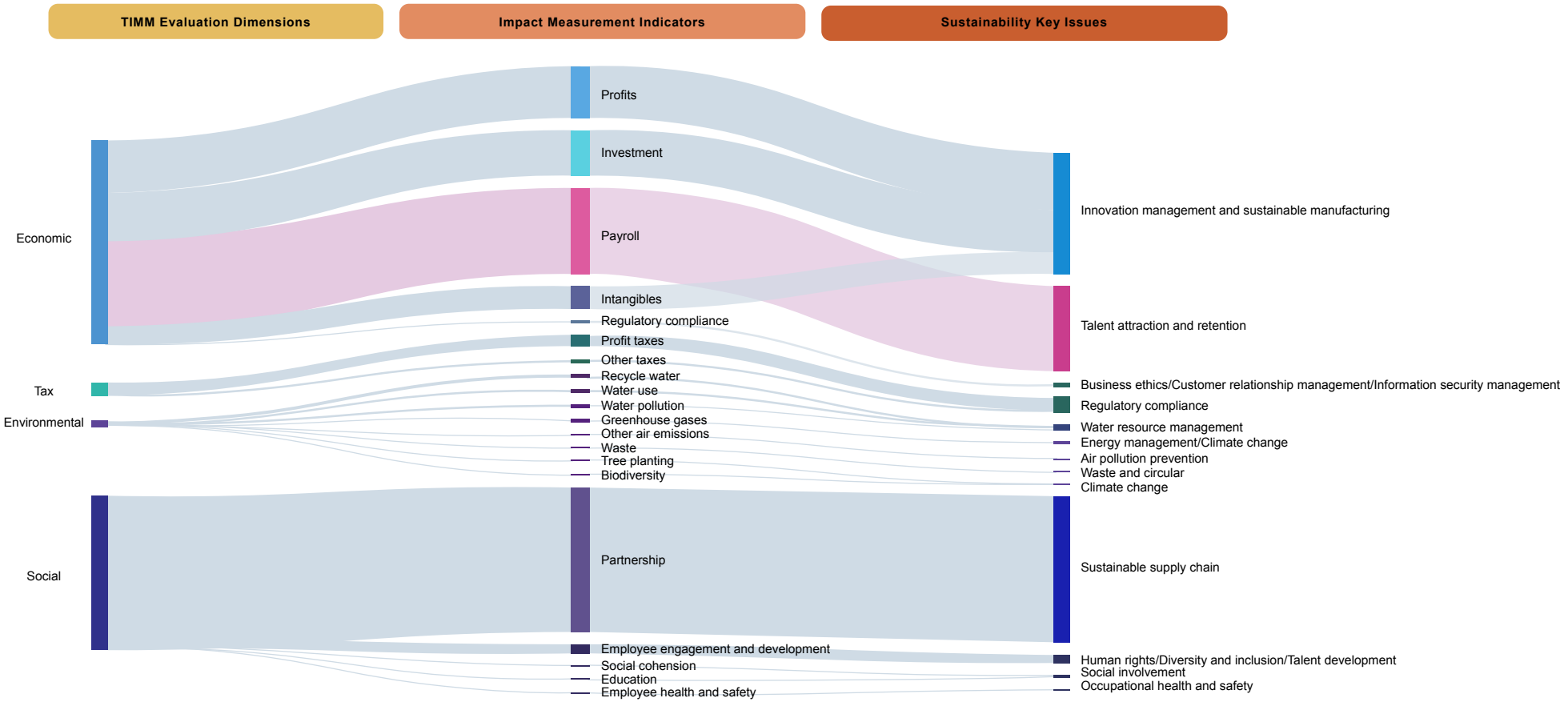
Unit: US$ million

ASEH Valuation Model



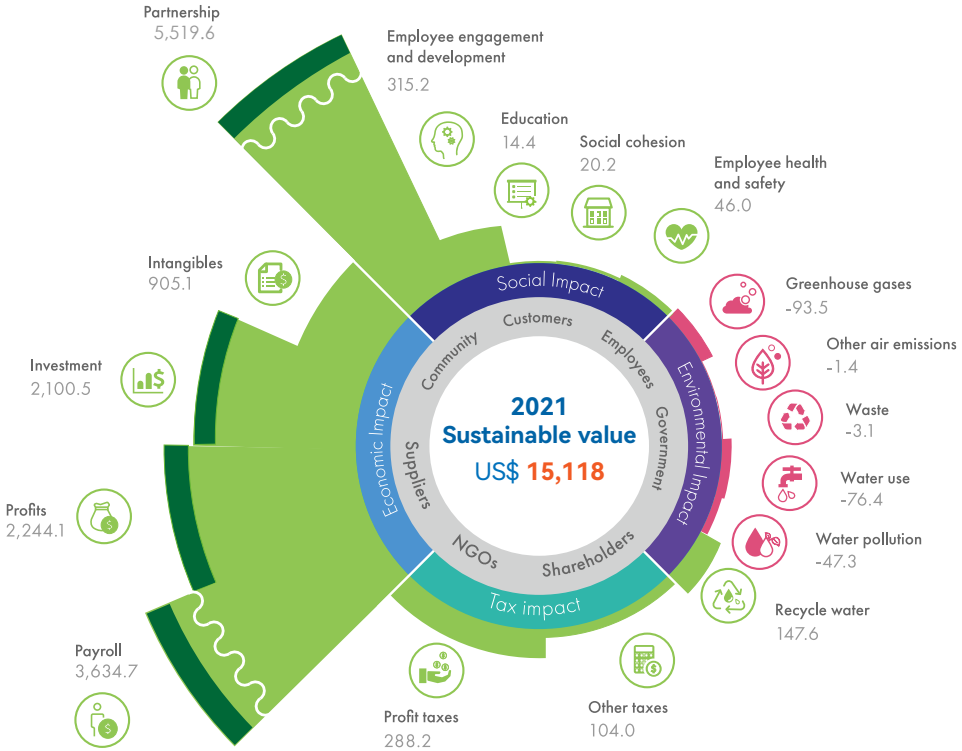
Unit: US$ million

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 2022, 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 2022, 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: US$ million

Unit: US$ million

Sustainability Value and Impacts

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 2022, ASEH generated US$15,403 million worth of sustainable value for stakeholders, which is 1.9% higher than in 2021. The sustainable value of positive impacts increased by US$285 million.

Economic and tax dimensions: The semiconductor industry has continued to remain resilient post-pandemic, largely due to strategic investments in meeting 'work-from-home' electronics needs, business expansions and digital transformation. Overall, semiconductor applications in the internet, computing, industrial, healthcare and transportation sectors continued to perform well in 2022. In addition, developments in AI, IoT, automotive and high-performance computing (HPC) electronics have not only boosted the total output value of Taiwan's semiconductor industry but also accelerated ASEH's growth. The rise of the vehicle electrification market has further derived a profitable revenue growth in ASEH's assembly and testing business. However, due to the impact of appreciation of the US dollar, the overall economic value decreased by 5% as compared to the previous year. On the other hand, due to the significant growth in profits in 2021, ASEH's tax paid during 2022 increased by 52% as compared to the previous year.

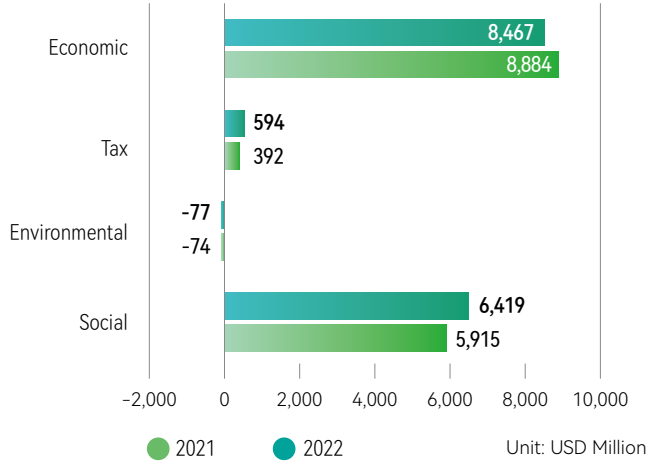
Environmental dimension: Two main sources of environmental impacts were water resource consumption during the production process and greenhouse gasses emitted from the use of electricity. Our renewable energy usage reached 19% of the total electricity consumption in 2022. On the other hand, we adopted the three major strategies of reduction, reuse, and recycling in the consumption of water resources. Investments were made in every plant to improve water recycling, thereby reducing environmental impacts caused by water consumption and increasing economic benefits. Negative effects of water consumption and wastewater pollution reduced by 31% compared to 2021, and the overall environmental impact of our operations decreased by 12% compared to 2021. In the future, we will actively invest in environmental protection and fulfill our pledge to use the proceeds raised through our green bonds to construct commercial used green facilities and establish water recycling plants, water treatment plants, and a real-time waste water monitoring system that would mitigate environmental impacts and promote human health.

Social dimension: The primary outcomes are the establishment of supplier partnerships, and employee development and support. The value of social impacts in 2022 increased by 9% compared to 2021. The difference in value stemmed from an increase in local procurement by 15% in 2022, which increased the assessed value of local employment and economic prosperity. The investment amount in social cohesion activities[1] decreased by 28% compared to the previous year due to a significant increase of 62% in funds transferred into environmental and vocational education training. We have been participating in social welfare through various ways to improve the well-being of the community and the people and maintain environmental resources.

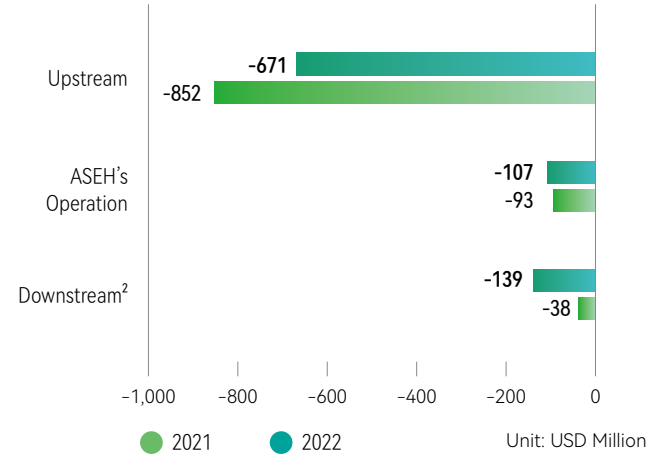
[1] In 2022, the impact of afforestation and biodiversity activities will be adjusted into the total environmental impact. Therefore, the impact of afforestation and biodiversity activities was also excluded from the base year 2021

[2] Greenhouse gas emissions from investments in the downstream value chain have been included in calculations since 2022, as the result the downstream negative impact increased significantly compared to 2021

2021-2022 ASEH Sustainable Values



2021-2022 Greenhouse Gas Value Chain Outcomes



Environmental Impact

In 2022, ASEH's overall environmental impact of US$-77 million is mainly attributed to resource consumption and environmental emissions from its business activities. We have paid close attention to the energy and resource efficiency of our facilities and put in place environmental programs to generate positive impacts and mitigate the external cost on the environment. Compared to 2021, the monetized value of the environment negative impact of our operations decreased by 12% in 2022. We recorded significant reductions in negative impacts from waste, and water pollution, further demonstrating our resolution and relative success in renewable energy usage, facilitating air pollution control, increasing water resource efficiency, and circular solutions in resource reduction. In 2022, 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 SDG15 Life 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 2022[1]

Input

As we progress into the digital era with the help of technology, ASEH continues to play a leading role in pushing the envelope of semiconductor innovations. In 2022, revenue increased by 17.7%, reaching a historic high. Our manufacturing operations are spread across 8 regions including Taiwan, China, Korea, Japan, Singapore, Malaysia, United States and Mexico. The energy resource demands for our manufacturing operations are as follows:

Resource Demand	2021	2022	
Water resource consumption (megaliters)	25,872	23,399	↘
Non-renewable energy (MWh)	3,255,018	3,571,744	↗
Renewable energy (MWh)	1,030,137	819,863	↘
Resource circulation investments (US$ million)	46.7	55.7	↗

Notes: ↘ decrease ↗ increase

Output

ASEH is committed to sustainable manufacturing by continuously increasing relevant investments in ecology and environment protection, and developing energy management mechanisms and pollution control plans. We aim to maximize energy efficiency and increase product values, while reducing impacts on the environment. The environmental impact of our operations is as follows:

Impact Items		2021	2022	
Greenhouse gas emissions	Scope 1 emissions (tCO_2e)	90,591	90,993	↗
	Scope 2 emissions (tCO_2e)	1,612,049	1,671,242	↗
	Scope 3 emissions (tCO_2e)	16,231,394	13,350,245	↘
Air pollutant emissions	Volatile organic compound, sulfur oxide, nitrogen oxide and particulate matter emissions (tons)	329	364	↗
Waste disposal	Hazardous waste disposal (tons)	10,305	6,893	↘
	Non-hazardous waste disposal (tons)	2,762	1,917	↘
Wastewater discharge[2]	Wastewater discharge (megaliters)	19,569	17,461	↘

External Impact

ASEH's overall environmental impact totaled US$-77 million. Assessed external impacts include employee and public health, property damage, financial losses, biodiversity, impacts to ecosystems, and natural capital losses and other impact pathways. The major 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$119 million, which is 20% lower than that of 2021. The increased amount of recycled process water and the significantly decreased number of pollutants in the wastewater indirectly diminish the benefits of water pollution abatement. Overall, the net positive benefits related to water resources have increased by 23%.
- The value of negative environmental impact amounts to 195 million USD, a 12% decrease compared to 2021. Through a green manufacturing process, we strive to reduce greenhouse gas emissions, waste, and water pollution. These measures resulted in positive contributions to the SDG 6, SDG 12, and SDG 13.
- Biodiversity conservation is a key focus at ASEH, and the company is taking long-term actions to protect marine habitats and species, and the terrestrial ecosystem through various conservation programs. The company has planted more than 202 thousand trees, creating a positive ecological impact value of 4.3 million dollars.
- The monetized value of the indirect environmental impact of value chain greenhouse gas emissions amounted to US$-810 million, a 9% decrease compared to 2021. The main sources of impact included product and service procurement, upstream transportation and distribution, and external influence of capital goods, in response to which we used the strategies of purchasing low-carbon raw materials and equipment, building low-carbon factories, and adopting green transportation to reduce impacts.

Unit: US$ million

Environmental Impact			2021	2022	
Negative	Greenhouse gas emissions	ASEH operations	-93.5	-106.9	↗
		Products and services	-890.0	-810.0	↘
	Air pollution		-1.4	-1.5	↗
	Waste		-3.1	-2.2	↘
	Water resource consumption		-76.4	-70.5	↘
	Water pollution		-47.3	-14.3	↘
Positive	Water recycling	Water conservation	99.2	106.5	↗
		Water Pollution Reduction	48.4	7.8	↘
	Ecological conservation	Afforestation	N/A	0.6	
		Biodiversity	N/A	3.7	

[1] For more information on ASEH's sustainable values, please refer to ASEH's Total Impact Measurement and Management Report 2022 at https://www.aseglobal.com/download/
[2] 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 2022, ASEH's overall social impact totaled US$6,419 million, with US$6,399 million directly resulting from the company's operations[1]. The value is mainly attributable to supplier partnerships and human capital development and support, and has resulted in positive impacts on quality education, decent work and economic growth, and responsible consumption and production.

Assessment of social impacts in 2022

Input	Output	External Impact
Direct operations: Inputs directly related to the operations of ASEH and its subsidiaries include: • ASEH hosts the Annual Sustainability Forum and develops various sustainable capacity-building projects in different areas, ESG sustainability workshops on different themes, and systematic educational training to enhance suppliers' ESG capabilities and strengthen partnerships • Sustainability audits of 187 raw materials suppliers[2] • Procurement of 50% 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$2.9 million in employee health checkups • Investment of approximately US$3.9 million in industry-academia occupational training	**Supplier partnerships:** • Supplier audit results showed that 31% were related to management systems, 23% of nonconformities were related to occupational health and safety, 28% were related to labor, 15% were related to environment, and 3% were related to ethics • A total of 5,733 attendees participated in supplier educational training • invested a total of 0.1 million USD into the Supplier Sustainability Award **Employee engagement and development:** • Employee engagement surveys showed an engagement rate of 79% with a response rate of 96% **Employee and contractor health and safety:** • 138 occupational injuries and 21 occupational diseases to employees and contractors • 51,895 employees participated in health checkups **Education:** • Conducted a total of 115 industry-academia projects on innovative semiconductor research and development	Social impact resulting directly from operations totaled US$6,399 million. • Supplier partnerships: We used the cost approach valuation and contingent valuation methods to assess that the value generated totaled US$6,069 million. Over 90% of our suppliers have shown improved competitiveness and business expansion through educational training. • 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$271 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, which were assessed at a value of US$42 million. Negative impacts included harm to employees' and contractors physical, mental, and spiritual well-being to occupational injury incidents, which were assessed at a value US$-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$17 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 activities and invested a total of approximately US$3.6 million in six categories: community development, community care, care for disadvantaged families, healthcare sponsorships, arts and culture sponsorships, and sports sponsorships. • Investment of US$1.1 million in education, including environmental education. Investment of US$0.4 million in other education	• A total of 135 outputs in social cohesion activities, including 16 in public development, 40 in community care, 48 in care for disadvantaged families, 4 in healthcare sponsorships, 23 in arts and culture sponsorships, and 4 in sports sponsorships • A total of 49 outputs in education, including 34 in environmental education and 15 in occupational education	• We used the value transfer method to assess the social value of public welfare activities that promote social cohesion, which totaled US$13.8 million. Of these activities, care for disadvantaged families accounted for the largest percentage at 58%, and arts and culture sponsorships accounts for 24%. The third is the care for community, which accounts for 11%. The three major outcomes were as follows: increased self-identity of disadvantaged children, enhanced learning performance of disadvantaged children, and improvement in public knowledge about art, which improved the well-being of neighboring residents and the general public on the whole. • We used the value transfer method to assess the social value of environmental education, which was estimated to be US$6.3 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 7.3 of this report (Sustainable Supply Chain Management)
[3] Please refer to Chapter 7.1 of this report (Supply Chain Overview)

2.4 Materiality Assessment and Stakeholder Communication

Materiality Assessment

ASEH has adopted GRI Universal Standards 2021, AA 1000 Stakeholder Engagement Standard (SES), Impact Valuation Methodology and Responsible Business Alliance's (RBA) Validated Audit Program (VAP) as to conduct materiality assessment every year. These standards allow the company to develop an impact-oriented materiality analysis framework to identify major sustainability issues. In addition, we have incorporated major sustainability topics with Enterprise Risk Management (ERM), that enables us to identify sustainability risks, and integrate them into the sustainability management process.

In addition to applying these principles to compile non-financial reports, they are also used as a basis for ASEH to formulate long-term sustainability objectives and strategies. For the 2022 Sustainability Report, we collected the feedback of 2,642 stakeholders to gain insight into their level of attention to our efforts in addressing sustainability issues. To measure the effects that sustainability issues have on our company operations, a 176-member team including subgroup CSC members led by ASEH senior executives in identifying the importance of each sustainability issue with regard to our company operations. We selected 16 major issues which are the same as the selected issues for last year to be prioritized in driving corporate sustainability and setting long-term sustainability targets.

Step 1 : Inclusiveness

To identify relevant and important issues, ASEH referenced international standards & regulations, sustainable investment ratings and industry peers as well as stakeholder communications. We collected and organized 20 issues that are related to ASEH's sustainability issues. Compared with the previous year, we added "Biodiversity" issue.

7 Economic Issues

7 Social Issues

6 Environmental Issues

- **International Standards and Regulations:** GRI Standards, SASB, SDGs, RBA.
- **Sustainability Investment Assessment:** DJSI, CDP, MSCI ESG Index, FTSE4Good Emerging Index.
- **Global Semiconductor Industry:** Benchmarking sustainability policies and practices from semiconductor companies listed on the DJSI index.
- **Stakeholder Engagement:** Analysis of online media reports and regular/occasional stakeholder communication to evaluate stakeholders' perception on sustainability issues.

Step 2 : Materiality

In line with global sustainability reporting standards, ASEH uses the step-by-step guidance provided in the GRI 3: Material Topics 2021, to determine material topics based on stakeholder concerns, organizational and operational impact, and economy, environment and people impacts. We consolidate and analyze stakeholder concerns through daily communication and surveys and seek out opinions from internal and external experts. On the organizational and operational impact, and economy, environment and people impacts, we adopt the double materiality concept from the Draft European Sustainability Reporting Standards to assess the impact of sustainability issues within and outside of the organization. The management and the team are invited to evaluate the impact of sustainability issues on the company's operations, focusing on the operational benefits linked to financial performance. On the economy, environment and people impacts, ASEH performs a comprehensive impact valuation assessment annually and references the results of the RBA VAP to determine the significance of external impacts and decide on the gravity of sustainability issues.

2,642 Stakeholders

The degree of concern from stakeholders is a key factor in determining the significance of a particular issue. ASEH has designed a questionnaire on sustainability that drew a total of 2,642 stakeholders' responses. Respondents include employees (1,473), customers (115), shareholders (30), suppliers/contractors (717), government (70), industry unions/associations (33), and community (incl. NGOs, Media) (204).

176 CSC Members

Integrating ESG (Environmental, Social and Governance) into the company's core operations is a key driver for ASEH's corporate sustainability. A 176-member team of senior management leaders and CSC members participate actively in evaluating the impact of each sustainability topic on the company's revenues, risks, customer satisfaction and employees' organizational identification, and ranking the level of each topic's importance according to the impact.

4 Impacts Economic, Environmental, Social and Tax

We adopt the Total Impact Measure and Management framework, Natural Capital Protocol and the Social Capital Protocol, to express top sustainability impacts in monetary values.

ASEH 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	491.1	Financial Performance
	Other Taxes	Positive	Operation	Society	Other Taxes	103.4	Financial Performance
Economic	Payroll	Positive	Operation	Internal Employees	Salary Benefits	3,511.1	Talent Attraction and Retention
	Profits	Positive	Operation	Internal Employees	Profit Distribution	2,102.8	Innovation Management and Sustainable Manufacturing
	Investment	Positive	Operation	Suppliers	Capital Expenditures	1,932.4	Innovation Management and Sustainable Manufacturing
	Intangibles	Positive	Operation	Supply Chain / Employees / Customers	R&D Activities and Intellectual Property Purchases	921.0	Innovation Management and Sustainable Manufacturing
Environmental	Greenhouse Gases	Negative	Operation	Environment	Greenhouse Gas Emissions	-106.9	Climate Change / Energy Management
	Other Air Emissions	Negative	Operation	Environment	Air Pollutant Emissions	-1.5	Air Pollution Prevention
	Waste	Negative	Operation	Environment	Hazardous and Non-hazardous Waste	-2.2	Waste and Circular
	Water Use	Negative	Operation	Environment	Water Use	-70.5	Water Resource Management
	Water Pollution	Negative	Operation	Environment	Controlled Pollutants and Nutrient Salt (Phosphorus)	-14.3	Water Resource Management
	Recycle Water	Positive	Operation	Environment	Recycle Water	114.3	Water Resource Management
Social	Employee Engagement and Development	Positive	Operation	Internal Employees	Result of Employee Engagement Survey	271.0	Talent Development
	Education	Positive	Operation	Society	Amount Invested in Educational Activities	23.3	Social Involvement
	Social Cohesion	Positive	Operation	Employees / Community	Amount Invested in Public Welfare Activities	13.8	Social Involvement
	Employee Health and Safety	Positive	Operation	Internal and External Employees	Disability Benefit Amount / Cost of Health Screening and Insurance	42.0	Occupational Health and Safety
	Partnership	Positive	Supply Chain	Society / External Employees	Procurement Amount / Educational Training for Suppliers	6,068.6	Sustainable Supply Chain

ASEH Sustainability Issues Assessment

<table>
<tr><th>Concern by Stakeholders (Level)</th><th>ESG Issues</th><th>Business Impact (Degree)</th><th>ESG Issues</th><th>Impacts on Environment, Economy and People (Degree)</th><th>ESG Issues</th></tr>
<tr><td rowspan="3">Very High</td><td>Occupational Health and Safety</td><td rowspan="2">Very High</td><td>Regulatory Compliance</td><td rowspan="3">Very High</td><td>Innovation Management and Sustainable Manufacturing</td></tr>
<tr><td>Innovation Management and Sustainable Manufacturing</td><td>Information Security Management</td><td>Financial Performance</td></tr>
<tr><td>Water Resource Management</td><td rowspan="4">High</td><td>Customer Relationship Management</td><td>Sustainable Supply Chain</td></tr>
<tr><td rowspan="10">High</td><td>Data and Privacy</td><td>Data and Privacy</td><td>Water Resource Management</td></tr>
<tr><td>Customer Relationship Management</td><td>Innovation Management and Sustainable Manufacturing</td><td rowspan="2">High</td><td>Talent Attraction and Retention</td></tr>
<tr><td>Energy Management</td><td>Occupational Health and Safety</td><td>Talent Development</td></tr>
<tr><td>Waste and Circular</td><td rowspan="8">Potential Impact</td><td>Business Ethics</td><td rowspan="8">Potential Impact</td><td>Social Involvement</td></tr>
<tr><td>Air Pollution Prevention</td><td>Sustainable Supply Chain</td><td>Occupational Health and Safety</td></tr>
<tr><td>Social Involvement</td><td>Talent Attraction and Retention</td><td>Energy Management</td></tr>
<tr><td>Sustainable Supply Chain</td><td>Talent Development</td><td>Climate Change</td></tr>
<tr><td>Business Ethics</td><td>Human Rights</td><td>Waste and Circular</td></tr>
<tr><td>Climate Change</td><td>Work from Home</td><td>Human Rights</td></tr>
<tr><td>Talent Attraction and Retention</td></tr>
<tr><td>Human Rights</td></tr>
<tr><td rowspan="3">Potential Concerns</td><td>Information Security Management</td></tr>
<tr><td>Diversity and Inclusion</td></tr>
<tr><td>Talent Development</td></tr>
</table>

ASEH Double Materiality

Material Issue Group		Financial Materiality				Impact Materiality			
		Company Revenue	Organization Risk	Customer Satisfaction	Employees' Organizational Identification	Economic Impact	Environmental Impact	Social Impact	Human Rights Impact
Economic	Regulatory Compliance	O	O	O	O				
	Innovation Management and Sustainable Manufacturing	O		O		O			
	Business Ethics		O	O	O				
	Sustainable Supply Chain	O	O	O		O			O
	Customer Relationship Management	O	O	O					
	Information Security Management	O	O	O					
Environmental	Water Resource Management		O				O		
	Energy Management	O		O			O		
	Climate Change			O			O		
	Waste and Circular						O		
Social	Diversity and Inclusion				O				
	Talent Attraction and Retention	O			O			O	
	Talent Development	O			O			O	
	Human Rights				O			O	O
	Occupational Health and Safety		O	O	O			O	
	Social Involvement				O				

ASEH Material Issues List

Material Issues	Ranking	Concern by Stakeholders	Business Impact	Impacts on Environment, Economy and People	Related Section
Innovation Management and Sustainable Manufacturing	1	●●●●	●●●	●●●●	4.1 R&D and Innovation/4.2 Sustainable Manufacturing
Water Resource Management	2	●●●●	●	●●●●	5.2 Water Resource
Occupational Health and Safety	2	●●●●	●●●	●●	6.3 Occupational Health and Safety
Sustainable Supply Chain	2	●●●	●●	●●●●	7.3 Supply Chain Sustainability Management
Talent Attraction and Retention	5	●●●	●●	●●●	6.1 Talent Attraction and Retention
Customer Relationship Management	6	●●●	●●●	●	4.3 Products and Services
Energy Management	6	●●●	●	●●	5.1 Climate Leadership
Talent Development	6	●●●	●●	●●●	6.2 Talent Cultivation and Development
Social Involvement	6	●●●	●	●●	8 Corporate Citizenship
Information Security Management	10	●●	●●●●	●	3.7 Information Security Management
Climate Change	10	●●●	●	●●	5.1 Climate Leadership
Waste and Circular	10	●●●	●	●●	5.3 Waste Management
Human Rights	10	●●●	●●	●	3.5 Human Rights Management
Business Ethics	14	●	●●●●	●	3.3 Business Ethics
Regulatory Compliance	14	●●●	●●	●	3.6 Regulatory Compliance
Diversity and Inclusion	16	●●	●	●	6.1 Talent Attraction and Retention

Step 3 : Responsiveness

According to our materiality analysis results, the use of GRI themes and indicators as a basis allowed us to determine our stakeholders' needs and disclosure preferences in regard to sustainability information. Additionally, we made efforts to enhance the transparency of sustainability issues (in relation to their policies, organization, practice, results and objectives, etc.) on different communication platforms (e.g., non-financial reports, annual reports, and websites).

16 Key Issues

The CSC initially identified 16 material issues that are of importance to stakeholders, of impact to the company's sustainable development and of impacts on the economy, environment and people. After further deliberation, the assessment ultimately yielded 16 issues of materiality and these issues were reported to the board of directors. Consequently, the material issues form the basis for the disclosures in the 2022 Sustainability Report and formulating internal sustainable management goals.

21 Sub-topics

A further 21 sub-topics (18 GRI-specific and 3 ASEH specific) for disclosures were derived from the 16 issues. Other topics of lower priority will also be concurrently disclosed in the report.

Step 4 : Impact

Commitment is key to demonstrating influence in corporate sustainability. As such, we have set long-term sustainability goals, and are monitoring and measuring the completion rates of such goals at regular intervals.

40 Long-term Goals

To elevate the impact of corporate sustainability, we have made commitments to various major issues and formulated 40 long-term sustainability goals for 2030. In addition, we have promoted and implemented various projects at our factories worldwide year by year.

4 Committees

Every year, the CSC assesses the progress of goal completion via the reports presented by colleagues from relevant business units. On a regular basis, our three major subsidiaries hold internal CSCs to manage and track the progress and sustainability trends.

ASEH Material Issues and Enterprise Risk Management

Material Issues		Risk Factors	Risk Level[1]	Mitigation Measures[2]
Economic	Regulatory Compliance	• Ineffective implementation and execution of legal compliance	Medium	Conducting regular evaluations and updates on prevailing regulations including legal compliance. Providing reports and improvement plans on abnormalities
	Innovation Management and Sustainable Manufacturing	• Failure to launch new products/technologies in time • Failure to meet international requirements for green products	Medium	Monitoring market trends, developing technology blueprints, and keeping track of global environmental regulations
	Business Ethics	• Inadequate resources to report fraudulent activities or ethical violations	Medium / Low	Establishing communication channels and internal audit systems for employee grievances and reporting unethical behavior
	Sustainable Supply Chain	• Supply chain disruptions due to geopolitical factors	Low	Building alternative supply sources to diversify risks and influencing suppliers to establish business continuity plans
	Customer Relationship Management	• Failure to meet customer and market demands in time	Low	Conducting regular review of operational policies and product strategies to win customer orders
	Information Security Management	• Ineffective information security management system	Medium	Implementing IT policies, performing regular data backups and enforcing information security audits
Environmental	Water Resource Management	• Reduction in water supply affecting water sources • Water quality at the source exceed regulatory limits with regard to water pollution control measures	Medium	Establishing a water management platform to handle emergency responses to water outages and obtain water supply
	Energy Management	• Abnormal power supply • Uncertainties in renewable energy procurement planning	Medium	Installation of solar panels, evaluating energy storage systems, and establishing long-term plans for procuring renewable energy
	Climate Change	• Risks associated with extreme weather conditions • Uncertainties in carbon-related regulations	Low	Developing emergency response procedures, and implementing policy compliance
	Waste and Circular	• Stringent waste regulations • Deficiencies at waste management facilities	Low	Conducting regular audits, promoting waste recycling projects and enhancing in-house waste treatment capabilities
Social	Talent Attraction and Retention	• Threat of key employee AI talent poaching • Labor crunch	High / Medium	Strengthening human resource management and enhancing incentive programs
	Human Rights	• Occupational risks from excessive workload • Labor disputes with contract staff	High / Low	Conducting suppliers audits and improving supplier performance
	Occupational Health and Safety	• Occupational injuries • Failure in epidemic control of emerging infectious diseases	Medium / High	Conducting regular workplace safety drills and establishing pandemic prevention taskforce

[1] High: the impact on the company's finance/business continuity management/reputation is high, and the probability of occurrence is likely
Medium: the impact on the company's finance/business continuity management/reputation is medium, and the probability of occurrence is possible
Low: the impact on the company's finance/business continuity management/reputation is low, and the probability of occurrence is unlikely

[2] For more information, please see relevant chapters and sections of this report

Material Issue, GRI Material Topic and Involvement with the Impact

Material Issue Group		GRI Material Topic	Where the Impact Occurs			Our Involvement with the Impacts		
			Procurement	Manufacturing Facilities	Communities	Direct	Indirect	Business
Economic	Regulatory Compliance	Compliance with Laws and Regulations	v	v		o		
	Innovation Management and Sustainable Manufacturing	Innovation Management and Sustainable Manufacturing*		v		o		
	Business Ethics	Anti-corruption, Anti-competitive Behavior	v	v		o		
	Sustainable Supply Chain	Procurement Practices, Supplier Environmental Assessment, Supplier Social Assessment	v					o
	Customer Relationship Management	Customer Privacy		v				o
	Information Security Management	Information Security Management*		v				
Environmental	Water Resource Management	Water and Effluents		v		o		
	Energy Management	Energy		v		o		
	Climate Change	Emissions, Indirect Economic Impacts		v	v	o		
	Waste and Circular	Waste		v		o		
Social	Diversity and Inclusion	Diversity and Equal Opportunity		v		o		
	Talent Attraction and Retention	Employment, Labor/Management Relations		v		o		
	Talent Development	Training and Education		v		o		
	Human Rights	Forced or Compulsory Labor, Supplier Social Assessment	v	v		o		o
	Occupational Health and Safety	Occupational Health and Safety		v		o		
	Social Involvement	Local Community*			v		o	

* Issues important to ASEH but not included under the GRI standards

Stakeholder Communication

We define stakeholders as a group or an organization that can affect or be affected by ASEH. Based on the 5 major principles (dependency, responsibility, influence, diverse perspective, tension) of the AA1000 Stakeholder Engagement Standard (SES), we have identified 7 major categories of stakeholders. They are categorized into two groups based on whether the impact is direct or indirect. Our direct stakeholders include shareholders, employees, customers, and suppliers/contractors; our indirect stakeholders include community (incl. NGOs, media), government and industry unions/associations.

We engage with our stakeholders through a variety of means, depending on the nature of the relationship. The methods of engagement will vary depending on the stakeholders, the issues of concern and the purpose of engagement. We regularly report the stakeholder communication status to the board of directors every year.

Stakeholder	Communication Mechanisms[1]	Responsible Units	2022 Issues of Concerns[2]	2022 Communication Key Outcome[3]
Customers	• Customer quarterly business review meeting • Customer audits • Customer service platform • Technical forums	• COO Office • Sales Offices	• Innovation Management and Sustainable Manufacturing • Sustainable Supply Chain • Information Security Management • Customer Relationship Management • Data and Privacy	• Satisfied customer percentage is 94% in 2022, which achieved our "90% satisfied customer" target.
Employees	• GM and plant manager's mailbox • Intranet web site, bulletin board and display wall • Seminars/employee forums • Employee engagement survey (every two years) • Service and complaint hotline	• CAO Office • HR Departments	• Occupational Health and Safety • Human Rights • Talent Attraction and Retention • Talent Development • Diversity and Inclusion	• In 2022, more than 2,000 seminars/employee forums were held, including 329 sessions for new employees, 595 sessions for foreign workers, and 1,220 sessions for regular employees. • The number of internal employee complaints amounted to 802 all of which have been closed satisfactorily. • In 2021, 96.1% of employees participated in the employee engagement survey, and the sustainability engagement survey result was 79%. The next survey will be conducted in 2023.
Shareholders	• Annual and quarterly financial reports • Quarterly earnings conference • Annual shareholders' meeting • Quarterly institutional investors' conference	• Company Spokesperson • Investor Relations Department, CFO Office	• Sustainable Supply Chain • Innovation Management and Sustainable Manufacturing • Climate Change • Waste and Circular • Occupational Health and Safety	• In 2022, we held an annual shareholders meeting, 4 quarterly earnings calls, and attended 15 institutional investor conferences to communicate economic, environmental, and social issues to our shareholders. • In 2022, our consolidated operating revenues were NT$ 670.9 billion, representing an increase of approximately NT$ 100.9 billion, or 17.7% as compared with 2021.

[1] We communicate with each stakeholder at irregular intervals unless otherwise indicated
[2] Issues of concerns were selected from the results of our survey and other forms of communication
[3] For more information, please see relevant chapters and sections of this report

Stakeholder	Communication Mechanisms[1]	Responsible Units	2022 Issues of Concerns[2]	2022 Communication Key Outcome[3]
Suppliers / Contractors	• Supplier questionnaire survey • Supplier on-site audits • Annual supplier forum and supplier sustainability awards • Supplier capacity-building activities • Supplier information security evaluation	• Corporate CSR Division • Group Procurement Department • IT Departments	• Occupational Health and Safety • Business Ethics • Sustainable Supply Chain • Data and Privacy • Customer Relationship Management • Information Security Management	• More than 700 suppliers completed the survey, while 187 suppliers have on-site audits/remote audits or RBA VAP. • More than 5,700 suppliers participated in sustainability forums and training workshops. • Completed a second annual on-site audit of the first year's ASEH Supplier Sustainability Award winners (3 suppliers). • Completed the written evaluation of 77 suppliers on information security.
Government	• Communication meetings, conferences, forums or seminars held by government authorities • Proactive dialogue with government authorities • Reporting through government portal	• Public Affairs Division, CFO Office • CAO Office	• Water Resource Management • Air Pollution Prevention • Business Ethics • Occupational Health and Safety • Social Involvement	• The Environmental Safety and Health (ESH) Committee – Assembly and Test Working Group was formed by ASEH together with industry peers to address industrial safety and environmental issues pertaining to the semiconductor industry in Taiwan. The group analyzes the development trends of international laws to provide references for government agencies to formulate policies and regulatory amendments related to the semiconductor assembly and testing industry, and for assisting competent authorities in formulating regulatory proposals that align with current and future industry developments.
Community (incl. NGOs, Media)	• Community perception surveys and needs assessments • Communication meetings, forums, seminars or workshops held by NGOs • Volunteer activity cooperation with NGOs • Press releases • Spokesperson interviews • Company's website	• Public Affairs Division, CFO Office • CAO Office • HR Departments	• Waste and Circular • Water Resource Management • Air Pollution Prevention • Climate Change • Social Involvement	• We held a press event for media and non-profit foundations, and organized forums and facility visits for concerned professionals to learn about the technologies behind semiconductor manufacturing and ASEH's achievements in environmental protection. • We contributed approximately US$ 1.17 million in support of environmental conservation programs, charitable activities and civic educational programs through collaboration with 30 NGOs.
Industry Unions / Associations	• Organizational member conference • Technology forums held by industry unions/ associations	• CAO Office • Subsidiaries	• Energy Management • Customer Relationship Management • Innovation Management and Sustainable Manufacturing • Occupational Health and Safety • Data and Privacy	• We engaged over 120 external organizations and contributed approximately US$ 0.62 million in public policy and industry development • ASE's executive serves as the vice chairman of the SEMI Global Board of Directors and the company is a founding member of the SEMI "Semiconductor Climate Consortium (SCC)" established in 2022.

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.

2022 Key Performance

ASEH 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 ASEH's corporate governance. In 2022, ASEH 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 2022, ASEH was again selected to be a constituent stock of the "TWSE Corporate Governance 100 Index (TWSE CG100 Index)" based on the 2021 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.

Continuous education for the Board members

90 hours[1]

CG100

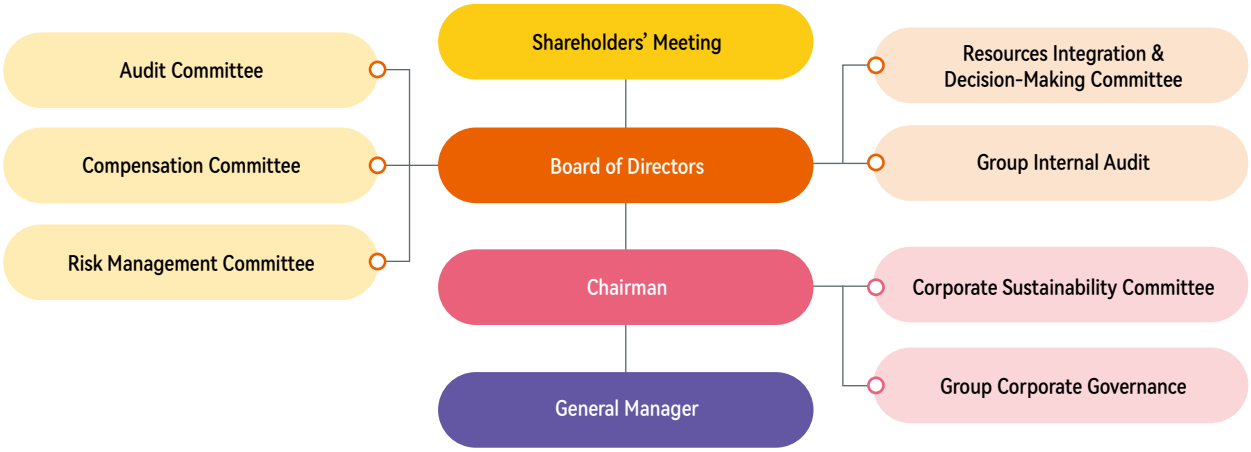
Continued listing on the TWSE Corporate Governance 100 Index (TWSE CG100 Index)

Performance Assessment of the Board and the Functional Committees

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

3.1 Board of Directors

The ASEH board of directors (the "Board") established the "Audit Committee", "Compensation Committee" and "Risk Management 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 and Risk Management Committee, please refer to our 2022 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 ASEH's company 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 ASEH's company website at https://ir.aseglobal.com/html/ir_corpor.php

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

[4] 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

[5] For further details on directors' attendance of meetings and information regarding conflict of interest, please refer to our 2022 Annual Report

Structure and Responsibilities of the Board of Directors

The Board is the highest governing body of ASEH. Jason Chang is the Chairman of Advanced Semiconductor Engineering Inc. ("ASE") since ASE's listing on the Taiwan Stock Exchange in 1989. He is also the Chairman of ASEH 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 third Board consists of thirteen members, each serving a three-year term. Three of the members are independent directors[4]. In addition to the scope of authorities and duties granted by or in accordance with the Taiwan's Company Act and ASEH's Articles of Incorporation on 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 2022, 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 96%. 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[5].

Diversity of the Board of Directors

ASEH'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. As a result of corporate risk assessments and observations of global trends, a series of executive workshops covering topics such as renewable energy, net zero and global crisis management have been organized for board members in 2022. From time to time, board members attend courses organized by external parties according to their needs. ASEH board members have continued to participate in continuous education on corporate governance and sustainability during their tenure, averaging more than the regulatory requirement of 6 hours per director per year[3].

Board Participation in Sustainability Governance

ASEH Board of Directors has direct oversight and management of the company's ESG performance, and the authority to make decisions. In 2022, the Board passed the following resolutions – a) donating NT$100 million to environmental causes in Taiwan[4], b) published the TCFD Report (approved at the Shareholders' Meeting), c) established the ASE Social Enterprise Co., Ltd., a wholly-owned subsidiary of ASEH, to maximize corporate synergy in sustainable and innovative business initiatives, and d) approved amendments to multiple policy documents pertaining to sustainable development, corporate governance and risk management. 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. Five out of the six committee members of the company's CSC are ASEH Board members (including the Chairman of the Board) and one is a subsidiary Board member. The committee presides over annual CSC meetings and oversees the risks and opportunities, development roadmaps, and outcomes of the company's ESG performance.

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. ASEH 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 2021, ASEH issued 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.

[1] For further details on the status of directors' diversity and management objectives and goals achieved, please refer to ASEH's company website at http://cms.ase.todayir.com.tw/html/client_tw/ase/attachment/20230807171128262122556_en.pdf
[2] For further details on the composition of the Board, and professional backgrounds and industry experiences of Board members, please refer to 2022 Annual Report "Ch. 3. Corporate Governance Report" or 2022 Form 20-F "Item 6"
[3] For more detail on continuous education for board members, please refer to 2022 Annual Report "Ch. 3.4 Corporate Governance"
[4] Since 2014, ASE has donated NT$100 million annually and the program continue after the establishment of ASEH
[5] 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 completed internal performance evaluations for the Board as a whole, and for individual directors and functional committees in 2022. 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 ASEH's shareholders; therefore, we formulated "Stock Ownership Guidelines". To enhance corporate governance and ensure the accountability of financial results, we also formulated "Clawback Policy" to reserve the right to cancel and require reimbursement of any variable compensation received by the CEO and CFO to the extent permitted by applicable laws. These two important documents were publicly disclosed in ASEH website[2].

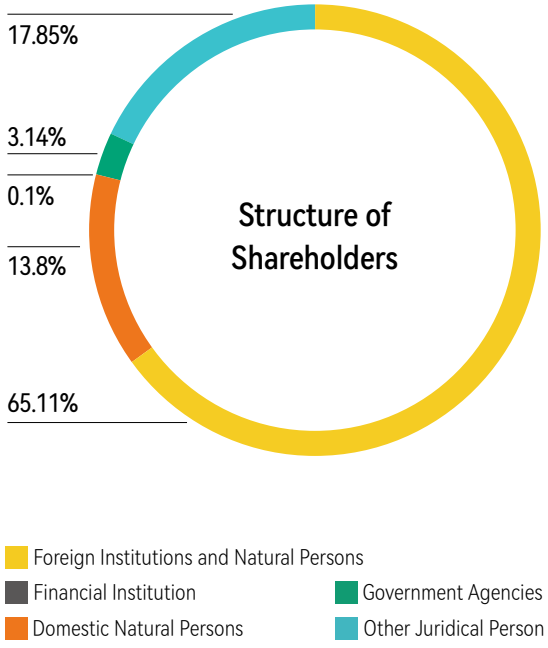
[1] For further details on 2022 Board Performance Evaluation Results, please refer to ASEH's company website at https://ir.aseglobal.com/html/ir_board.php
[2] For more important documents related to ASEH, please refer to ASEH's company website at https://ir.aseglobal.com/html/ir_doc.php

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.



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.

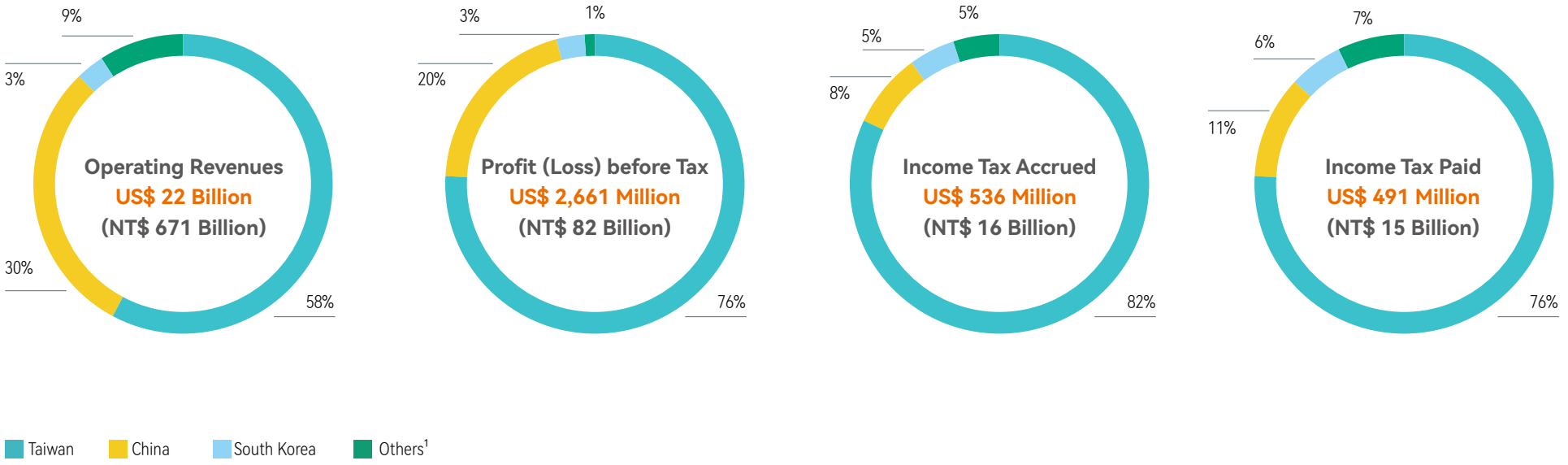
Our tax policy was reviewed and approved by our chief financial officer. The company's accounting department is responsible for income tax filing, and obtains approvals of the appropriate level of authorization before filing.

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 presence has spanned across Asia, Americas, Europe, and Africa, while ASEH's principal operating activities are conducted in Taiwan and China. In this regard, Taiwan and China contributed most of our operating revenues, profit before tax, income tax accrued for current year, and income tax paid. As for other individual countries in which we operate, most of them contributed not more than 5% of our operating revenues, profit before tax, income tax accrued for the current year, and income tax paid. Besides, as a result of the industry development variances between Taiwan and China, the proportion of profit before tax in China was not as robust as that of operating revenues in China.

Please refer to the chart below for 2022 operating revenue, profit (loss) before tax, income tax accrued, and income tax paid by the country.



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

Our effective tax rate of 21.0% was higher than the industry average tax rate of 15.9% based on SAM CSA Companion in "Semiconductors and Semiconductor Equipment" industry group. The statutory income tax rates in Taiwan and China are 20.0% and 25.0%, respectively, and the additional income tax rate on unappropriated earnings in Taiwan is 5.0%. Most of our China subsidiaries that qualify as "High and New technology enterprises" were entitled to a reduced income tax rate of 15.0% and eligible for super deduction for qualified research and development expenses. It resulted in lower tax contribution in China.

Our effective cash tax rate of 18.5% was higher than the industry average cash tax rate of 14.1%, but lower than our effective tax rate of 21.0%. This was because income tax relating to profits, which was contributed by our major profitable country, Taiwan, will be filed and paid in the following year.

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 CSC coordinates and supervises the establishment and implementation of the ethical corporate management policies and specifications. The CSC 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 CSC 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.

★ Ethical Related Regulations

- Code of Business Conduct and Ethics
- Corporate Governance Best Practice Principles
- Sustainable Development Best Practice Principles
- Ethical Corporate Management Best Practice Principles
- Procedure for Ethical Management and Guidelines for Conduct
- Administrative and Practice Procedures to Prevent Insider Trading
- Policy and Procedures for Complaints and Concerns Regarding Accounting, Internal Accounting Controls or Auditing Matters
- Fair Competition and Antitrust Laws Compliance Policy
- Guidance of Prevention of Corruption
- Procedures for Handling Whistleblowing Cases of Unethical Conduct
- Supplier Code of Conduct

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. In addition, we retained an independent third party to verify our compliance with business integrity related matters above mentioned and disclosed the report on our website[2].

We require all suppliers to abide by the ASEH 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 written in our procurement documents and announced on E-Hub, an electronic information exchange platform for suppliers, to ensure that all suppliers acknowledge the policies in all their transactions with ASEH. 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.

2022 Programs and Implementation

- **Education and training, advocacy and communication**

1. ASEH Insider Trading Policy was updated and approved by the Board of Directors on April 15, 2022, with detailed specifications on restrictions with regard to trading of shares by board members. Email reminders on policy and regulatory compliance will be sent out to board members prior to the Company's public release of its annual financial report, annual unaudited financial results and quarterly earnings.

2. ASEH Corporate Governance Officer has duly reported to the board on the company's current ethical management and work plans on June 16, 2022.

3. The company has promoted its business code of conduct and ethical compliance reporting mechanism on the group's audit management system platform, which is shared with our global business locations. The purpose is to help employees understand when and where to file a report or complaint. We also conduct in-person and online meetings with executives and employees at our business locations worldwide to inform them on the rules and procedures for handling reports of unethical conducts. We encourage employees to proactively report unethical behaviour. We are committed to investigate and handle every report in a fair and just manner, in accordance to 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 secret, avoidance insider trading, fair competition and antitrust, respect intellectual property, regulatory compliance, information security, RBA Code of Conduct, and employee code of conduct at all business locations (168,733 participants clocked a total of 75,386 hours on the course). In total, 63,207 employees attended the courses related to the company's Administrative and Practice Procedures to Prevent Insider Trading and on applicable laws and regulations, completing 20,135 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 ASEH, its subsidiaries and joint ventures
[2] For more detail, please refer to https://www.aseglobal.com/en/pdf/coc-agree-upon-procedures-report.pdf

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 34 complaints in 2022, of which 20 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 14 complaints related to unethical business behavior. Of which, 9 cases pertaining to harassment and discrimination were substantiated after thorough investigations were conducted. All necessary improvement measures have been taken[2].

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

Number of code of business conduct and ethics violation reports filed in 2022

Number of cases received: 34

Not accepted[3]	Not related to ethics matters[4]	Related to ethics matters
11	9	14

Item	Not Breach	Breach[5]
Corruption or Bribery	3	0
Conflict of Interest	1	0
Insider Trading	0	0
Money Laundering	0	0
Fair Competition and Antitrust	0	0
Secret Divulgence	1	0
Privacy and Personal Data Protection	0	0
Discrimination or Harassment	0	9
Total	5	9

Processing Procedures for Violation Reporting

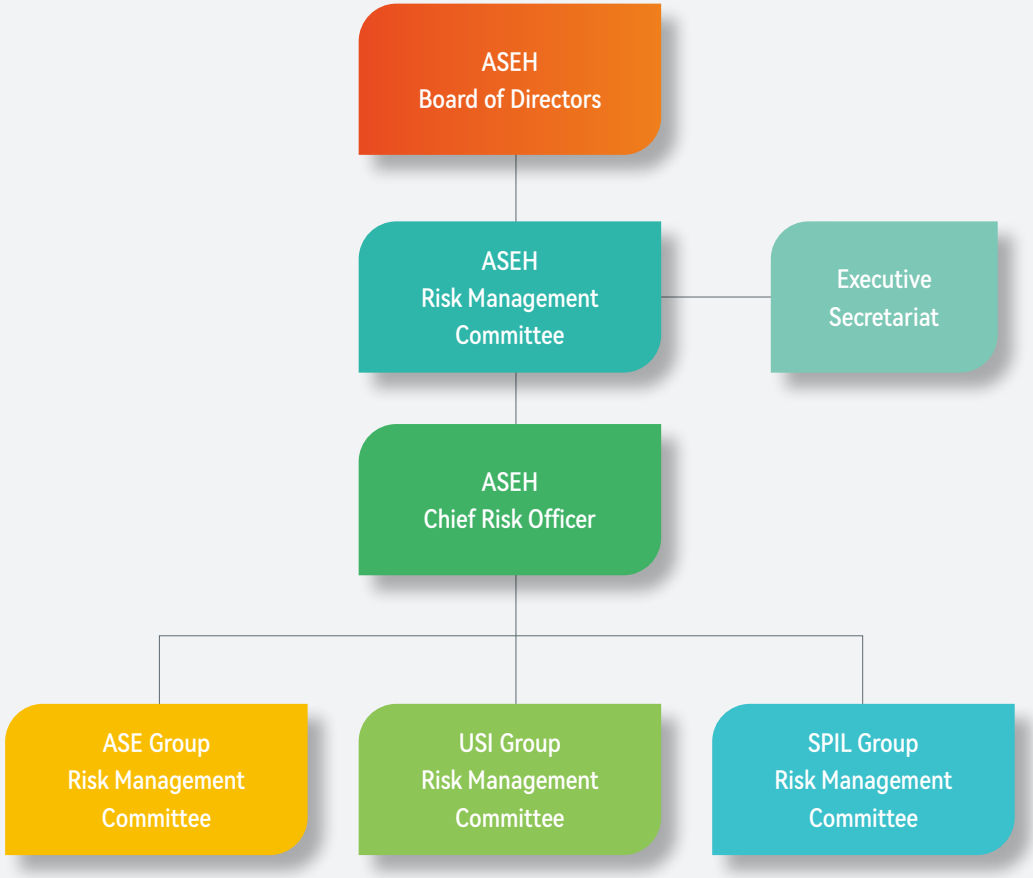
[1] For further details on internal and external report channels, please refer to ASEH's website https://www.aseglobal.com/csr/integrity-and-accountability/business-conduct-ethics/
[2] For more detail on improvement measures related to harassment and discrimination, please refer to 6.1 Talent Attraction 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

3.4 Risk Management

The ability to detect internal and external operational risks in advance, and to properly assess and process these risks, is important to effectively prevent and reduce loss exposures. In December 2019, ASEH's board of directors established a Risk Management Committee, and in accordance with its Charter, appointed two independent directors and one member to the committee for assisting the board of directors in risk management. The Committee shall manage the Company's overall risk management, implement the decisions of the board of directors in connection to risk management, coordinate and promote cross-organization risk management plans, supervise and manage overall risk control and remedial mechanisms of the Company and its subsidiaries, review and integrate all risk control reports. The committee submits an annual report to the board and updates them periodically on matters related to risk management implementation and recommendations for improvements. The board of directors is the highest level decision-making body for risk management and endorses major risk management decisions based on corporate strategies and changing business landscapes. ASEH's subsidiaries are also required to establish corporate risk management teams responsible for each subsidiary company's risk management and accountable to the board's risk management committee.

In light of recent emerging risk factors such as COVID-19, geopolitical crisis, renewable energy use, water shortage and energy conservation and talent shortage, Du-Tsuen Uang(Dtuang Wang), ASEH Chief Administration Officer, was appointed the Chief Risk Officer to synergize the subsidiary companies' risk management with the goals of the corporate Risk Management Committee to manage overall risks effectively. At the working level, the Risk Management Committee secretariat will work with each subsidiary company to implement risk management activities.

Organization Chart of Risk Management Committee



Risk Management Policies and Procedures

ASEH approved the 'Risk Management Policies and Procedures' in 2020 as the ultimate guiding principle of risk management. ASEH shall possess the awareness in risk management forms an integral part of ASEH management, and incorporate the risk management into the company's business strategies and organizational cultures. ASEH conducts risk assessments on an annual basis. For major risks, ASEH formulates and implements completely specific management plans which mainly cover management goals, organizational structures and divisions of authority and responsibility, and risk management procedures. The implementation of the risk management plans enables ASEH to recognize, examine, monitor and control various risk exposures effectively. Hence, risks that arise from the company's business activities shall be controlled accordingly within an acceptable range.

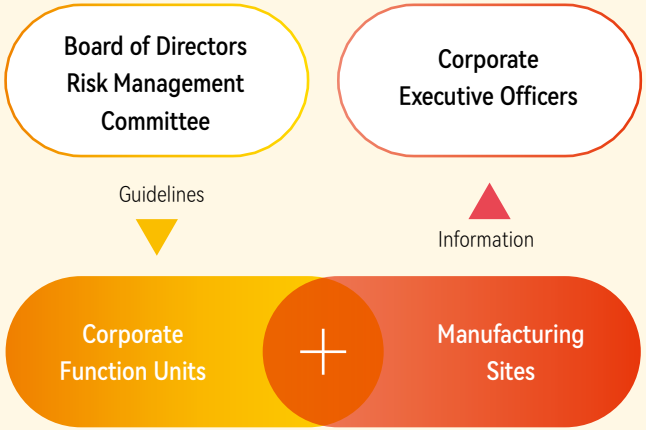
We manage risks through designated departments and functions ("risk functions") across all of our organizations. In addition, we have Enterprise Risk Management ("ERM") programs implemented in our major manufacturing sites (i.e., Kaohsiung, Chungli, Shanghai (Material), Real Estate Group as well as the USI Group). Risks or events that might have an influence on our business objectives are identified and evaluated, in order to decide on appropriate responses. In addition, the identification and management of long-term emerging risks[1] are embedded into our ERM program. We have established the mechanism of prevention, early warning, emergency response, crisis management and business continuity plans that mitigate, transfer or avoid risks. We are confident that by having a sound management program, ASEH has effectively kept the respective risk scenarios under control.

We had introduced a top-down ERM approach to connect the top management with the rest of the organization on risk matters and ensure sound management of corporate-wide risks. Specifically, our top managements are invited to identify key risks that are "top of mind" for the company. Meanwhile, each subsidiary identifies the risks at the enterprise and operation level through the bottom-up risk inventory mechanism, and records the identified risks in the Risk Register. These top-down identified risks are then reviewed through our current ERM process, enhancing the efficiency and effectiveness of the decision-making process across the organization.

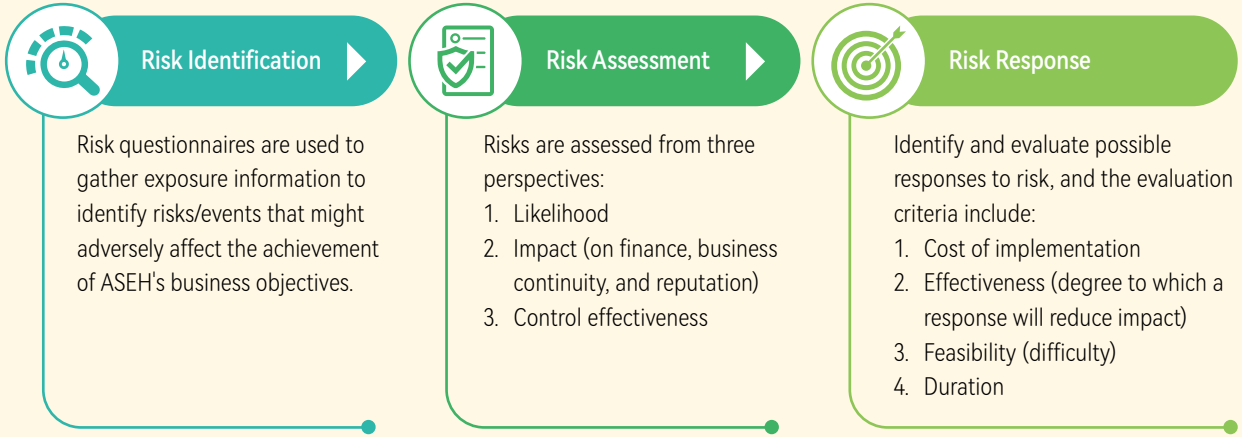
Furthermore, the identified risks are assessed in terms of likelihood and impact to determine their risk level, and then mapped onto a Risk Map according to their risk level and control effectiveness. Further risk mitigation plans are defined to reduce the residual risk if judged necessary. Major risks, together with suitable risk response plans, were reported to top management and the progress will be monitored periodically.

[1] We identify and analyze possible risks for our business, operation, and provide corresponding monitoring measures and control mechanisms for those risks that are of high impact.

Risk Management Organization Scheme



Risk Management Process



Implementation

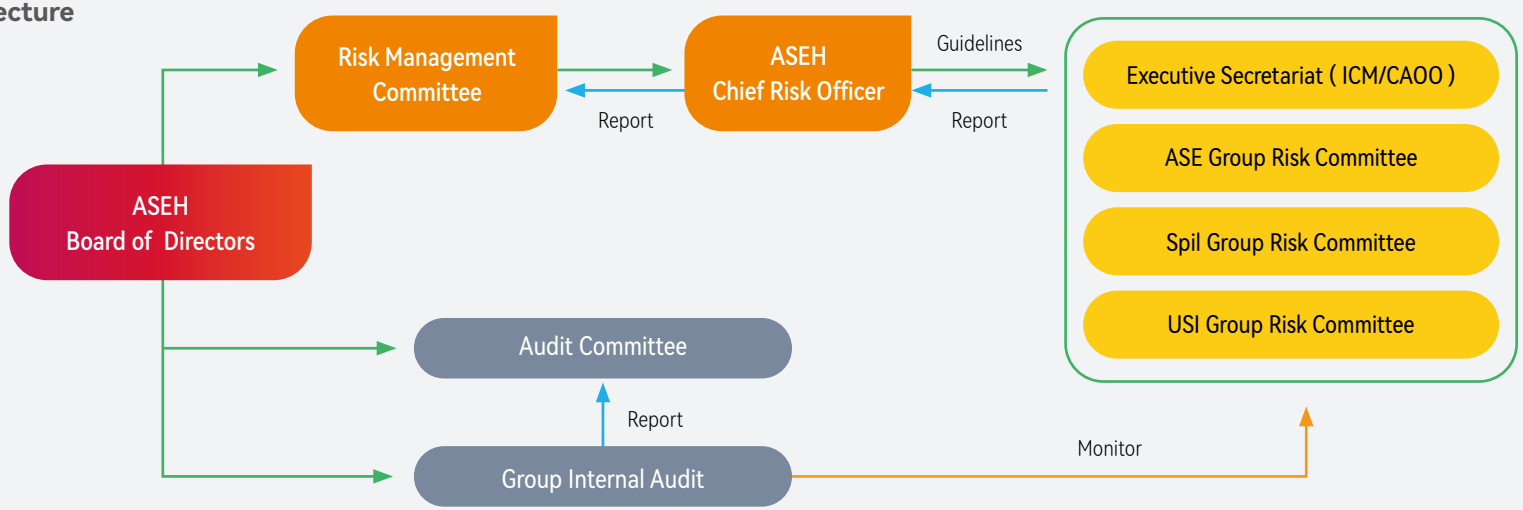
ASEH adopts a rigorous risk management mechanism and reports the progress to the Board of Directors on a yearly basis. Our activities in 2022 include the following:

- On July 14, 2022, the second Risk Management Committee convened its second meeting. The committee secretariat and representatives of the company's subsidiaries presented 2021 risk reports and 2022 work plans.
- On September 29, 2022, submitted a report on the operation of risk management in 2022 to the Board of Directors.
- On December 15, 2022, in accordance with the "Risk Management Best Practice Principles for TWSE/GTSM Listed Companies" issued by the Taiwan Stock Exchange, the company's "Risk Management Policies and Procedures" were revised partially and accordingly before submitting to the Board of Directors for approval.
- On December 20, 2022, the second Risk Management Committee convened its third meeting to present the 2022 report on major risks including the management of geopolitics and COVID-19. The committee also discussed emerging risks for 2022 including renewable energy resources, cybersecurity, geopolitics and talent retention.

Risk Management Integrated with Internal Controls and Internal Audits

We view internal controls as an important part of ERM. ERM is more effective with internal controls that cover risk responses and other ERM processes in place. We identify and document all of our major risks together with related controls. The effectiveness of controls are reviewed in the annual Control Self Assessment. In addition, we redesigned our risk assessment system and linked our current internal control activities to corresponding risk scenarios such that a complete list of internal control measures can be pre-defined in the system to help our risk functions to more accurately assess the effectiveness of risk control. Finally, our internal audit system carries out independent appraisals of the implementation of key risk mitigation plans by our risk functions thereby ensuring that risks are properly managed.

Risk Management Architecture



Long-Term Emerging Risks

Monitoring measures and control mechanisms for major risks that have been identified and analyzed are as follows:

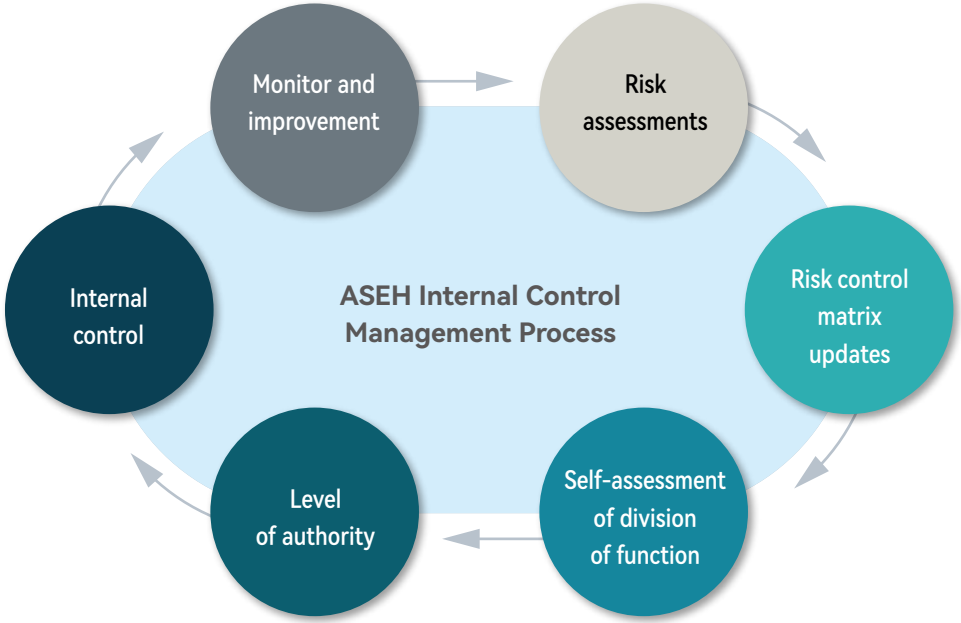
Emerging Risks	Description	Potential Impacts	Response Strategies
Geopolitical risks	The global economic landscape continues to be affected by the tensions arising from the geopolitics and the Russo-Ukrainian War. While the United States continued to expand the Entity List to thwart the rise of China, the Chinese has retaliated by including some American enterprises into its Unreliable Entity List. In parallel, the United States and many other countries continue to impose export controls and other regulations on Russia in response to its aggression against Ukraine. The situation in the Taiwan Strait is also a focal point of concern.	1. Geopolitical tensions impact the economic and investment climate of countries, and have the potential to affect customer orders. 2. Customers may demand the company to seek new suppliers, relocate or expand production locations to mitigate their supply risks. Additional costs may be incurred due to uncertainties in managing the supply chain and establishing new production locations. 3. Geopolitical risks generate a massive influence on interest rates and exchange rates, and thus exposing our business operations to these risks.	1. We continue to divest our investments globally, while strengthening the management and operation at our existing production locations to facilitate customer preferences and reduce our costs. 2. **Interest rate fluctuations:** In addition to issuing fixed-rate corporate bonds and borrowing fixed-rate loans, we obtain the majority of our funding through floating-rate loans. This exposes us to interest rate risks, as changes in market interest rates can impact the effective interest rates on our borrowings, leading to fluctuations in future cash flows. We will utilize financing instruments with low interest rates and favorable terms to maintain low financing costs and ensure adequate and flexible financing capacity, thereby mitigating potential interest rate risks in our operations. 3. **Exchange rate fluctuations:** ASEH is primarily exposed to currency risk from the fluctuation of USD and JPY exchange rates against the TWD, RMB or EUR. We entered into a variety of derivative financial instruments to hedge foreign currency exchange rate risk to minimize the fluctuations of assets and liabilities denominated in foreign currencies. **Hedge accounting** Our hedging strategy was to lift borrowings denominated in foreign currencies to avoid exchange rate exposure from its investments in equity instruments denominated in foreign currencies and net investment in foreign subsidiary, which has EUR as its functional currency. Those transactions were designated as fair value hedges and a hedge of net investment in foreign operation, respectively. Hedge adjustments were made to totally offset the foreign exchange gains or losses from those equity instruments denominated in foreign currencies and foreign operations when they were evaluated based on the exchange rates on each balance sheet date. The source of hedge ineffectiveness in these hedging relationships arose from the material difference between the notional amounts of borrowings denominated in foreign currencies and the fair value of investments in equity instruments denominated in foreign currencies and net investment in foreign operations. No other sources of ineffectiveness is expected to emerge from these hedging relationships.
Cybersecurity risks	Cyberattacks are becoming more frequent and sophisticated. The hackers are often anonymous and are able to get away undetected. ASEH employs a strong cybersecurity system to protect confidential business information and customer data. However, cyberattacks can still occur and expose the company, our customers, and suppliers to substantial risks.	1. Cybersecurity incidents can severely disrupt business operations. A data breach will potentially damage our reputation and weaken our competitive advantage, leading to adverse impacts on our financial and business performance. 2. Cybersecurity loopholes may lead to third party litigation, regulatory oversight, and increased costs from additional security measures.	1. The company and the subsidiaries have established a corporate cybersecurity platform to strengthen the cybersecurity incident classification and reporting systems as well as to integrate and enhance the cybersecurity defenses of each subsidiary. 2. Engaging cybersecurity experts to conduct regular cybersecurity health checks. 3. In 2022, we purchased cybersecurity insurance to cover all the subsidiaries. In the event of a cyberattack, the coverage helps to reduce the financial burden of the company, and allows the company to promptly respond and manage the impacts to our customers and suppliers.
Renewable energy risks	Globally, many countries are setting climate targets and revising regulations to achieve Net Zero. For example, Taiwan introduced the Major Electricity User clause, and many customers are requiring ASEH to increase the proportion of renewable energy in the company's energy portfolio. However, there is a shortage of renewable energy in Taiwan and its cost is relatively higher than conventional electricity.	1. Fulfillment of customer orders may be impacted if we incur penalties under the 'Major Electricity User' clause due to the short fall in renewable energy usage. 2. The higher costs incurred in procuring green materials and renewable energy to meet our customer obligations and Net Zero commitment may potentially impact our bottom line. 3. Changes in environmental regulations, such as in the use of perfluorinated compounds (PFC), may increase our production costs, and potentially impacting our operational and financial performance.	1. Aside from requiring a number of our subsidiaries to install solar power, we are also actively procuring renewable energy in Taiwan and acquiring renewable energy certificates from overseas regions. 2. We are actively exploring the procurement of offshore wind power and other types of renewable energy in Taiwan to further increase the proportion of renewable energy in our energy portfolio, so as to comply with the Major Electricity User clause, meet specific customer demands, and fulfill our Net Zero commitments. 3. We continue to pursue developments in low-cost green products and materials to reduce cost pressures.
Key talent risks	The global importance of semiconductors driven by rapid advances in new technologies and applications such as AI, is generating a high demand for skilled and experienced talent. On top of a global talent shortage, many international semiconductor companies are recruiting from Taiwan, leading to a severe talent drain. Falling birth rates and a decreasing pool of graduates exacerbate the talent crunch.	1. We face fierce competition from foreign and domestic companies offering high salaries for our semiconductor talents, impacting the strength of our talent pool. 2. Foreign workers in Taiwan are now allowed to switch jobs freely. Foreign white-collar and blue-collar employees are the company's crucial source of manpower. Failure to retain talented personnel in a timely manner will impact our productivity. 3. To accommodate our continuous expansion, we may need to significantly increase the number of employees. The semiconductor industry faces intense competition in recruiting and hiring, which may make retaining existing personnel or attracting the necessary qualified individuals challenging. This may negatively impact expansion plans.	1. To retain key talents, the company has established a key talent database and maintain an effective management mechanism to continuously strengthen talent retention and recruitment. It mitigates attrition risks through providing effective incentives and managing employee rotation. In addition, the company continues to enhance talent retention by offering employment terms above and beyond regulatory requirements. 2. We are strengthening industry-academia collaboration, establishing educational partnerships, and providing scholarships to attract students to join ASEH after graduation. 3. We collaborated with industry partners to establish a semiconductor academy. Internally, we created an AI academy, increased the number of automated processes, introduced RPA software and AI in our business processes. The application of technologies in our operation will help to reduce our manpower needs, while allowing our employees to work on higher value job roles that require critical thinking and improve their technical skills. 4. Establishing professional development programs to train operators and facilitate their transition to professional engineers.

Internal Control and Auditing

Internal Control

Our internal control policies are based on the Regulations Governing Establishment of Internal Control Systems by Public Companies established by the FSC and relevant regulations established by the U.S.A. Securities and Exchange Commission. The policies take into account our actual operational activities, are designed and approved by our managers and the board, and are implemented and managed by our managers, the board, and other employees. The policies include Entity level and Activity level; the objectives of these policies are to define the scope and standards of the internal control system for our business units and subsidiaries, ensure the effectiveness of internal control design and implementation, facilitate sound company operations, and achieve the following goals:

- Operational effectiveness and efficiency
- Reliable, timely, transparent reports in compliance with relevant regulations
- Compliance with relevant laws and regulations



Every year, all of our subsidiaries conduct internal control self-assessments. The scope of the assessments covers the design and implementation of the company's internal control systems (e.g., Segregation of Duties Assessment, system authority management, chart of Authority Management, and Sarbanes-Oxley internal control assessment). The purpose is to implement a self-supervisory mechanism that allows a rapid response to environmental changes, based on which we can adjust the design and implementation of internal control systems, and improve the quality and efficiency of internal control. In order to strengthen the supervision and management of ASEH subsidiaries, the Group's internal control standardization design structure was extended to all major subsidiaries of the group, including ASE[1] Group, USI[2] Group and SPIL[3] Group, and its internal control document structure was effectively linked with the organizational structure design and operation process.

We conduct regular internal control education and training for our subsidiaries, and develop risk radar charts from self-assessment results, internal and external audit feedback; to be used as indicators for internal control improvement. We have also set up an e-platform for employees to gain access to information on internal control processes, management methods, legal policies, education and training and organization, that will help strengthen their awareness of internal control. Senior management from our subsidiaries were often invited to engage in indepth discussions on areas of concern for tone at the Top and, determine the key to communicating and implementing effective internal control.

With the advent of Industry 4.0, in a highly information-based environment, the trading system models are becoming increasingly complex, and operating activities are constantly changing. In order to strengthen the risk control and management benefits, promote the establishment of key risk intelligent dashboards and utilize the digital tool technology to analyse big data that quickly emphasize the key risks and promptly report deviating abnormal behaviours or transactions to the superior of the operating unit for evaluation, and expeditiously review the effectiveness of internal control design through a continuous monitoring mechanism to reduce the occurrence and expansion of potential risks.

[1] Including Taiwan and China facilities of ASE
[2] Including Taiwan and China facilities of USI
[3] Including Taiwan and China facilities of SPIL

Internal Audit

The Group Internal Audit ("GIA") was established under the board of directors to assist the board of directors and management in inspecting and evaluating the effectiveness of the internal control system, assessing the effectiveness and efficiency of the company's operations; the reliability, timeliness and transparency of reports; and the compliance with applicable laws and regulations, as well as making timely recommendations for improvements to reasonably ensure the continuous operating effectiveness of the internal control system and to serve as the basis to review and revise the internal control system.

GIA comprises an internal audit officer and appropriate number of qualified, dedicated internal auditors, as required by business scale, business condition, management needs, and the provisions of other applicable laws and regulations to provide independent, objective assurance activities. The competencies of internal auditor comply with the provisions stipulated by the competent authorities. Internal auditors are required to improve internal audit quality and to enhance their competencies through continuing professional education on an annual basis. In order to improve internal audit efficiency and effectiveness, we dedicated to continuously improve audit programs, procedures and techniques through the use of computer-assisted audit techniques.

GIA establishes a risk-based internal audit approach and performs internal audit activities in accordance with the annual audit plan approved by the board of directors, and the scope of internal audit includes internal control systems of the company and its subsidiaries. Via linking the audit activities with the enterprise risk management strategies and practices, GIA conducts audits on risk management related businesses and management processes at least once a year to verify whether risk identifications are complete, risk evaluations are accurate, and risk responses are implemented thoroughly, so as to ensure that all risks are kept within acceptable thresholds, thus providing reasonable assurance that the company's objectives will be achieved. In terms of sustainability, GIA conducts an independent and objective assessment in a systematic way on the identification, evaluation and response, control and treatment, as well as communication and monitoring of risks related to ESG-related agenda, which covers waste and recycling, energy saving and carbon reduction, human rights management, information security management, business ethics, sustainable supply chain, occupational safety and health, and compliance with relevant laws and regulations on Labor Standards Act, Personal Data Protection Act, public information disclosure and prevention of insider trading, etc.

The internal control self-assessment reports, prepared by the company and its subsidiaries and reviewed by GIA on an annual basis, along with audit reports on findings of internal control system identified by GIA 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.

GIA submitted the audit reports and audit follow-up reports by e-mail to the independent directors on a monthly basis. The internal audit officer presented and communicated the audit results to the audit committee in the closed meetings at least once a quarter, as well as quarterly reported internal audit activity report to the board of directors. The internal audit officer will immediately report via mobile phone or e-mail to the independent directors any material matters as necessary; and there were no aforementioned material matters during 2022. The communication channel between the independent directors and the internal audit officer functioned well. In addition, GIA continuously followed up on the requirements and recommendations on internal audit raised by the independent directors and audit committee as well as the board of directors, and completed the requirements and recommendations and reported to them within the specified time limit.

In order to increase the value and enhance the results of internal audit, throughout 2022, we have been dedicated to

(1) Accelerating the digital transformation of processes: Completing the system planning and main development of the audit client feedback questionnaire and group data summary report, the full launch of the SOX Control Self-Assessment system, and the systematization of audit resource management, personnel education and training, and annual audit plan preparation; introducing RPA to assist in implementation of certain routine audit work; and continuously optimizing the Group Audit Management System so as to conduct remote audit of overseas subsidiaries under the influence of COVID-19. (2) Improving data analysis ability: Conducting data analysis course training and software and hardware upgrading, as well as setting up dedicated personnel to assist in the use of data analysis tools to strengthen data analysis ability of internal auditors. (3) Ensuring audit quality: Continuously implementing internal assessment of internal audit project level to ensure the quality of audit reporting and working papers and continuous improvement. (4) Enhancing the utilization of internal audit resources of the group: Developing an assurance map of subsidiaries to reduce repeated audit work, focus on key risks and strengthen the depth of auditing. (5) Raising internal control and risk awareness: Sharing internal control tips for potential risks and common audit findings with the company and its subsidiaries on a regular basis.

Internal Audit Management Process

Promote and Enhance Risk Culture Measures

To build a corporate culture that is conducive to risk management, the ASE Group has added risk management indicators to its general management performance goals, and has also formulated financial incentives related to risk management; for example, the Company's Board of Directors resolved in May 2021 to add ESG risk management standards to the conditions for issuing restricted stock units. We also provide internal training that focuses on key aspects of risk management. We organize ERM and BCM work forums to strengthen risk awareness at the management level as well as courses for all employees that promote the importance of risk management. These courses have achieved full participation from all employees. The Company has also established organization-wide measures that enable individual employees to proactively identify and report potential risks. Employees are encouraged to participate in a structured feedback process to continuously improve risk management practices. Risk criteria are incorporated into product development or approval processes, extending risk measurement across the organization.

3.5 Human Rights Management

Human Rights Policy

ASEH and its subsidiaries are 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's approach is designed in support of the United Nations Universal Declaration of Human Rights, the UN Global Compact, the UN Guiding Principles on Business and Human Rights and the International Labor Organization's Declaration on Fundamental Principles and Rights at Work. 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.

Commitment

- **Protection and Respect:** ASEH is committed to protecting and respecting human rights and creating an environment conducive to human rights protection.
- **Appeal and Remedy Process:** To prevent infringement of human rights, protect ASEH employees and value chain partners, and mitigate any adverse human rights impacts, ASEH has put in place formal processes for appeal and remedy.
- **Management and Investigation:** ASEH seeks to continuously improve human rights governance with education and training and human rights due diligence and feedback mechanism and keep in lockstep with business development trends.

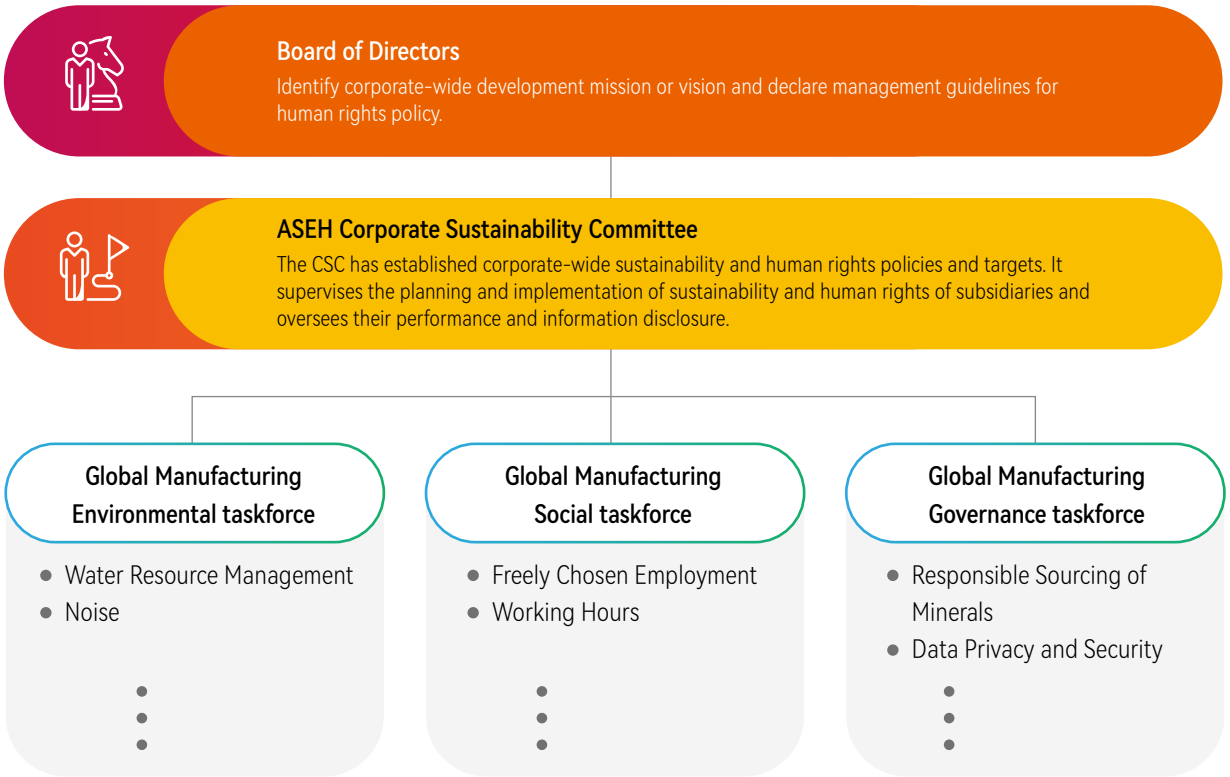
Management Organization

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 CSC 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, local communities, and customers, performing due diligence with each group and providing whistle-blowing channels to prevent any human rights violations.

Human Rights Management



ASEH as a/an	Target	Human Rights Issues	Policy	Responsible	Management Mechanism	Complaint Mechanism
• **Employer** • **Value Chain Partners (Joint Venture, Mergers)**	• All Employees • Foreign Employees • Female Employees • Young Workers	Freely Chosen Employment, Working Hours, Wages and Benefits, Non-Discrimination, Sexual Harassment, Occupational Safety, Emergency Preparedness, Young Workers, Data Privacy and Security	Corporation Human Rights Policy Statement	Subsidiaries' "Employee Care and Development Taskforce"	RBA SAQ, RBA VAP, and qualified internal audit	1. Internal whistle-blowing channels: the internal whistle-blowing channels of subsidiary companies/value chain partners 2. External reporting channel: Code of Conduct Compliance Reporting System https://www.aseglobal.com/antifraud/en.asp
Purchaser	• All Suppliers/ Contractors	Freely Chosen Employment, Young Workers, Working Hours, Wages and Benefits, Occupational Safety, Emergency Preparedness, Responsible Sourcing of Minerals	Supplier Code of Conduct	Subsidiaries' "Supply Chain Management Taskforce"	Supplier sustainability questionnaires/RBA SAQ, on-site audits, RBA VAP, and qualified internal audit	
Contributor to Community Development	• Local Communities	Water Resource, Noise, Air Pollution	Sustainable Development Best Practice Principles	Each facility	Monitoring of noise, effluent, and emissions sources at ASEH facilities	
Service Provider	• Customers	Data Privacy and Security	Policy on the Protection of Privacy and Personal Data	Each facility	Annual risk assessments, qualified internal audit, and independent third parties	

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.

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

Due Diligence

ASEH has conducted regular human rights due diligence to assess and identify human rights risks and potential impacts. If risks, potential impacts, or violations are discovered during the human rights due diligence, ASEH shall take immediate actions to mitigate or remediate. Risks, potential impacts or violations assessed and identified through human rights due diligence process and their status will be reviewed and be the basis for adjusting ASEH human rights policy and human rights management regulations and management procedures to strengthen ASEH's human rights protection.

Due Diligence Procedure

1. **Discover human rights risks and potential impacts**
   Use RBA SAQ and RBA VAP to assess human rights risks and impacts
2. **Identify potential human rights risk issues**
   Identify human rights risks and impacts in operations
3. **Set up tasks for improvement**
   Set up improvement tasks for vulnerable human right risks issues according to the results of investigations
4. **Carry out continuous improvement**
   Adopt mitigation and corrective measures according to the improvement tasks
5. **Monitor implementation progress and performance**
   Monitor implementation progress and performance continuously
6. **Communicate with stakeholders**
   Disclose the details on human rights management publicly on the company website

Implementation and Outcome

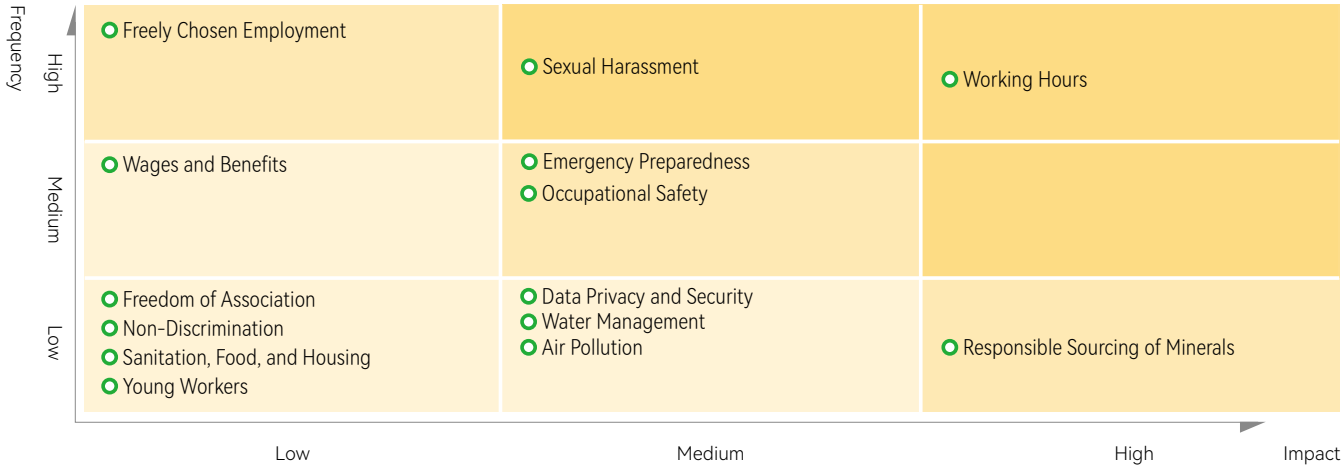
Internal

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 2022, potential human rights risk issues include working hours, sexual harassment, freely chosen employment, emergency preparedness, and occupational safety. 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 Chapter 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 2022, ASEH identified working hours, freely chosen employment, responsible mineral sourcing, occupational safety, 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.

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 2022 are as follows[1] :

Target	Risk Issues		Mitigation Measures	Remediation Measures
Employees	Labor	• Freely Chosen Employment • Working Hours • Sexual Harassment	• **Systems** - ASEH's approach is designed in support of the United Nations Universal Declaration of Human Rights, the UN Global Compact, the UN Guiding Principles on Business and Human Rights and the International Labor Organization's Declaration on Fundamental Principles and Rights at Work. 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. - **Sexual Harassment:** 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. - **Sexual Harassment:** 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. - **Sexual Harassment:** 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** - **Sexual Harassment:** 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** - **Sexual Harassment:** 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
	Health and Safety	• Occupational Safety • 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 Safety 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 Safety:** 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 Safety:** (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	• Freely Chosen Employment • 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 Safety • Emergency Preparedness		
Suppliers/ Contractors	Labor	• Freely Chosen Employment • 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 Safety • 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 (https://www.aseglobal.com/en/pdf/privacy-policy-en-2022.pdf) 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.

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 2022, 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 2022, 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

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

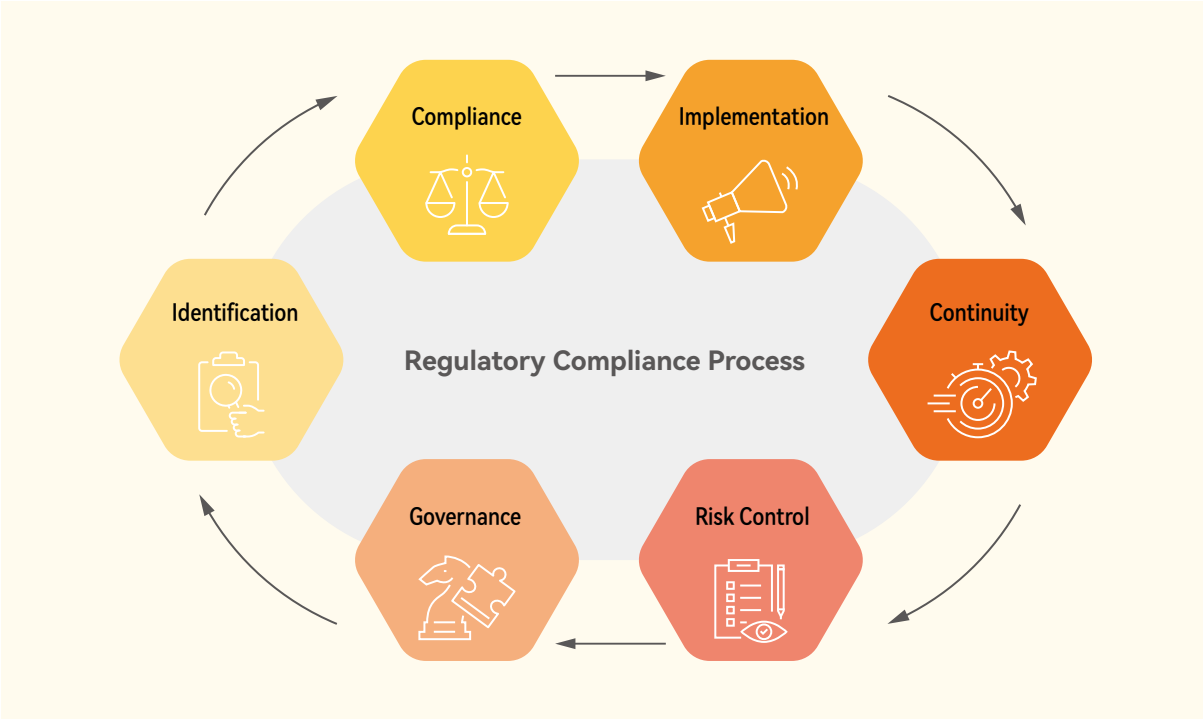
3.6 Regulatory Compliance

We conduct all our business activities in strict compliance with applicable laws and regulations. To ensure legal compliance, ASEH maintains regular updates on domestic and foreign laws and policies that affect its operations, and prioritizes regulatory compliance at all of its business locations.

The company's Corporate Governance Officer and Regulatory Compliance Department assist board directors with overall regulatory compliance and supervise activities at our subsidiaries to ensure compliance with relevant laws and regulations. The steps we take to ensure compliance include staying on track with current laws and regulations, identifying changes, and reviewing legal compliance on a regular basis. The company also applies risk control mechanisms to assess potential legal risk exposures across all our operations. Our subsidiary companies are required to report all incidences of non-compliance that resulted in penalties, without delay. The responsible subsidiary shall propose immediate improvement plans and both the regulatory compliance department and audit department shall supervise and ensure that corrective actions are taken and completed.

The company has continued to conduct regular corporate audits on compliance throughout 2022 and, enhanced audits on subsidiaries that are exposed to higher levels of environmental and workplace safety risks. These actions were taken to strengthen the regulatory compliance mechanisms at all subsidiaries. The impact to the technology sector from the United States' Export Administration Regulations (EAR), is of particular significance to ASEH, and thus classified as a key focus area in our regulatory compliance. Within Taiwan, we focus primarily on Taiwan's Securities and Exchange Act, Labor Standards Act, Occupational Safety and Health Act, Waste Disposal Act, Air Pollution Control Act, National Security Act and Act Governing Relations between the People of the Taiwan Area and the Mainland Area. 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.

In 2022, ASEH recorded a total of 14 cases involving financial penalties of approximately US$48,342 imposed by authorities in the respective regions we operate in. Specifically, we recorded a major case where the penalty exceeded US$10,000. The infringement was related to a violation of investment regulations and the fine imposed was approximately US$27,000. 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. We have provided a 2022 status report on the management of regulatory compliance to the board of directors in February 2023, that provided them an overview of the corrective actions and the performance of all subsidiary companies.

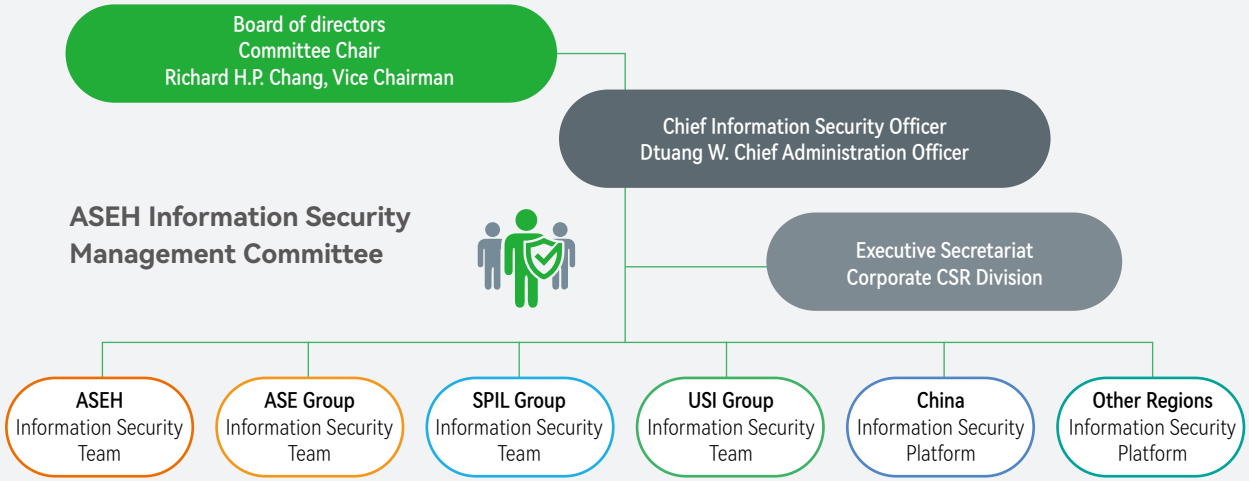


3.7 Information Security Management

Information Security Policy, Organization and Targets

Rapid adoption of digital technologies at ASEH is driving an increased need to strengthen the protection of information assets. To that end, ASEH's Information Security Policy is designed to safeguard the confidentiality and maintain the integrity and availability of all information assets in accordance with applicable laws and regulations that will result in increasing customer confidence, raising the company's competitiveness and preventing operational disruptions. Information security risks are assessed in accordance with applicable laws and regulations, and operational objectives, and reported to senior management and the Board of Directors on a regular basis to help set guidelines, strategies and targets.

The Information Security Management Committee, was established by the CSC to develop strategic plans, establish benchmarks for information security maturity assessments and coordinate all internal and external technical resources and information. Richard H.P. Chang, Vice Chairman of ASEH has been appointed the chair of the committee. The CAO and Corporate Governance Officer of ASEH is appointed the Chief Information Security Officer (CISO) of the committee, and assumes responsibility for the establishment of the information security management framework that includes regular reviews with all ASEH subsidiaries 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 Corporate CSR unit 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 hold quarterly Information Security Management Committee meetings to report and discuss the progress of our information security work, and invite external experts to share information security trends and topics of concerns.



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.

For more details on ASEH Information Security Policy, please refer to the link below: https://www.aseglobal.com/en/pdf/2020_aseth_ismp_en.pdf

Information Security Certification and Maturity

Information Security Certification

To build corporate resilience and protect company assets, ASEH adopts internationally recognized information security standards that allow the company to improve network protection, establish effective management and control mechanisms for smart manufacturing and enhance our competitiveness.

The first company in the Taiwan semiconductor industry to receive IEC 62443-2-1 certification.

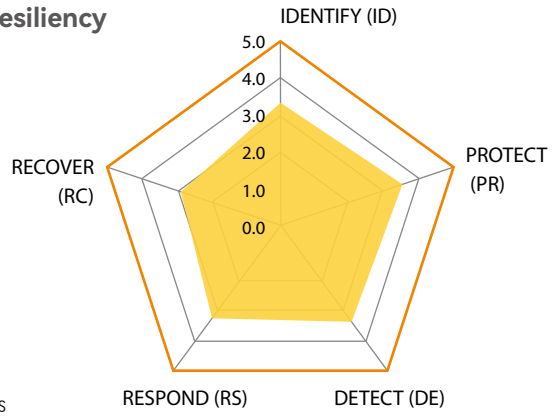
International information security certification

ISO 27001	ASE Kaohsiung, ASE Chungli, ASE Shanghai (Material), SPIL, and USI adopted the ISO information security management standard to strengthen risk management associated with information security threats, including policies, procedures and staff training.
ISO 22301	ASE Kaohsiung, SPIL and USI have received ISO22301 certification to strengthen internal capabilities to protect against, reduce the likelihood of, and ensure prompt recovery from disruptive incidents.
ISO 15408	ASE Kaohsiung and Chungli have received ISO15408 EAL6 certification, the highest level of certification for security chip products. The certification provides assurance to customers that ASE has in place the highest security standard of information protection and information security control across its manufacturing facilities.
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 certified by TUV NORD of Germany.
IEC 62443-2-1	ASE Kaohsiung successfully completed the German TUV NORD's professional evaluation and obtained the IEC 62443-2-1 certification, becoming the very first company in the Taiwan semiconductor industry to receive the certification.
GSMA	ASE Kaohsiung received the GSMA certification for meeting mobile communication security standards. The ASE Kaohsiung manufacturing site is now an accredited Universal Integrated Circuit Card (UICC) production (SAS-UP) supplier site.

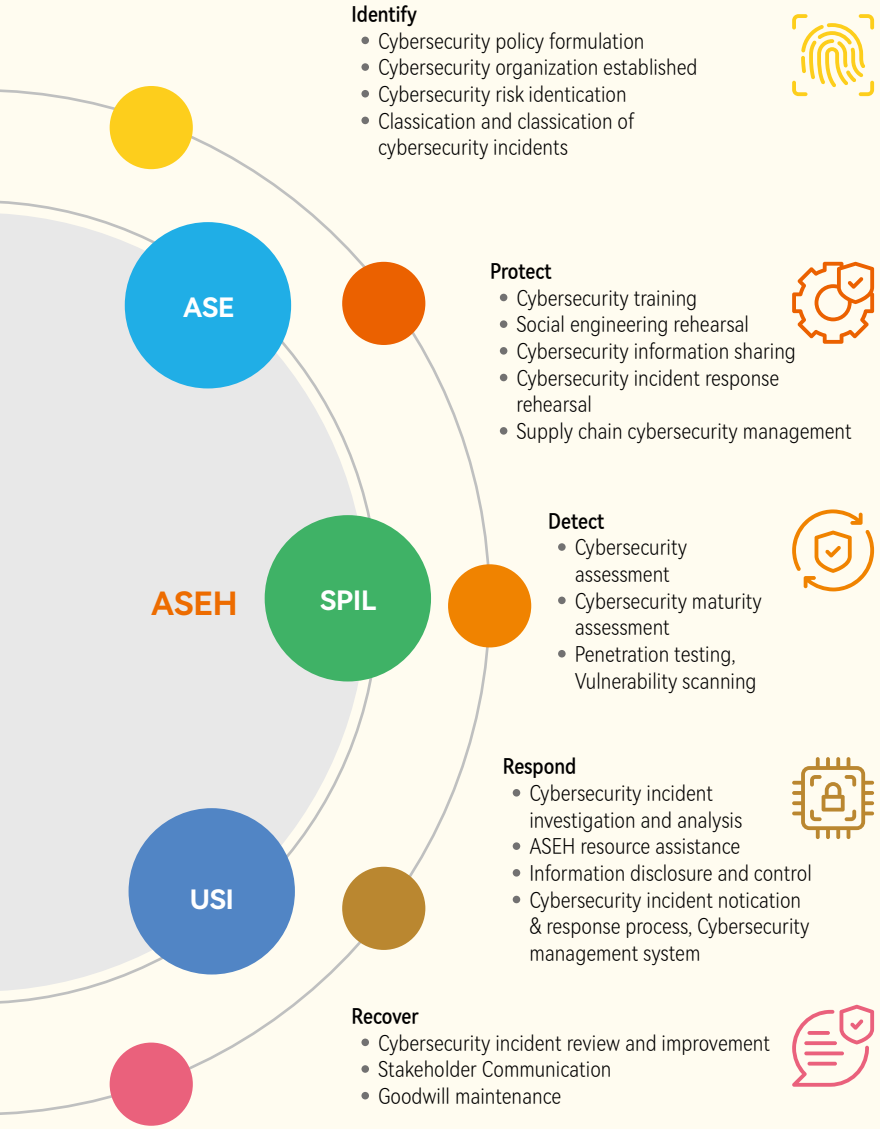
Cybersecurity Maturity

To further strengthen ASEH's cybersecurity and bolster the defences at all ASEH sites, we began the phase of adopting the NIST Cybersecurity Framework (CSF) in 2019. The framework categorizes all cybersecurity capabilities, projects, processes, daily activities into 5 core functions - Identify, Protect, Detect, Respond, and Recover. Each factory site can undertake individualized cybersecurity enhancements based on their own maturity assessment results and recommendations for improvement. We constantly benchmark ourselves against the semiconductor industry to better understand our own cyber maturity level. We assess the risks that impact each subsidiary in different cybersecurity areas, countries, or operations and consolidate resources to provide better guidance and support. We continued the maturity level assessment in 2022 and focused on consolidating the cybersecurity management status, progress, strategy updates etc from all subsidiaries based on the NIST CSF's five core functions. Driven by digital transformation trends, ASEH is cognizant of the convergence between IT and OT. In particular, the breadth of horizontal implementation is extended from IT to OT, aiming to bring the maturity level of OT closer to that of IT. With that, we are adopting a strategic approach that will gradually enhance the cybersecurity defense capabilities of critical operational systems throughout the company.

Cyber Security Resiliency



Cyber Resilience Collaborating Mechanism



Identify
- Cybersecurity policy formulation
- Cybersecurity organization established
- 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

Information Security Implementation and Safeguards

Cybersecurity risk identification and management

On an annual basis, ASEH commissions a third-party company to conduct regular cybersecurity audit and assessments such as external audit, vulnerability scanning, and penetration testing to ensure that our information systems and the network comply with safety standards. We strictly enforce cybersecurity policies and implement customer privacy protection measures to avoid the unauthorized disclosure of the company's confidential business information and customer data. In the event of unforeseen cyberattacks, the cybersecurity team will convene immediate technical exchanges and tactical meetings to analyze and review relevant responses and defense measures, constructing a comprehensive and synchronized defense network.

In addition to continuous improvement in our IT management, we are also gradually transferring our IT cybersecurity experiences to operational technology and initiating phased planning and implementation of cybersecurity assessments in the OT domain. Through assessments and testing conducted by external experts, potential cybersecurity threats and risks in the OT environment can be reduced. OT cybersecurity assessments were completed at 4 four facility sites in 2022.

In addition to managing operational risks from the perspective of corporate governance, we try to increase employees' cybersecurity awareness and enhance organizational operational capabilities. All employees at ASEH must receive PIP cybersecurity educational training, including cybersecurity policy, cybersecurity management framework, cybersecurity control measures, etc. In 2022, a total of 53,991 individuals completed 40,019 hours of training courses. Additionally, occasional social engineering email drills were conducted to enhance employees' awareness of social engineering attacks through emails. We will gradually introduce systematic management mechanisms to incorporate participation in cybersecurity meetings, educational trainings, incident management, confidential file labeling, antivirus/software security, and other cybersecurity-related projects in a systematic manner. Monitoring and audits are conducted as an extension of our scope of management, and compliance is integrated into employee KPI to avoid penalties and legal liabilities, and impacts on business operations.

Increasing Cyber Resilience

There were no serious cybersecurity incidents in ASEH in the past three years. In addition to constructing a cybersecurity incident classification system and reporting/response procedures, we also conduct a cybersecurity incident drill annually to ensure fast responses in the event of incidents, reduce risks, and minimize the scope of damage. We also established the ASEH Information Security Management System incorporating cybersecurity information and cybersecurity incident reporting, to facilitate real-time acquisition, dissemination of cybersecurity

information, and efficient handling of incident reporting. Our goal is to gain a comprehensive understanding of the risk landscape, enhance the response and defense capabilities, and establish a cross-functional collaborative defense mechanism. ASEH has also purchased cybersecurity insurance as a backup, enabling us to take immediate measures, reduce potential losses to the company, customers, and suppliers and restore normal business operations quickly.

We conduct an incident recovery drill every six months. The drill covers the organizational structure, scope, duration, critical information systems, participating units, participating personnel and their assigned tasks, backup personnel, implementation steps and processes of the drill, required resources, 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, and ensure uninterrupted operation 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.

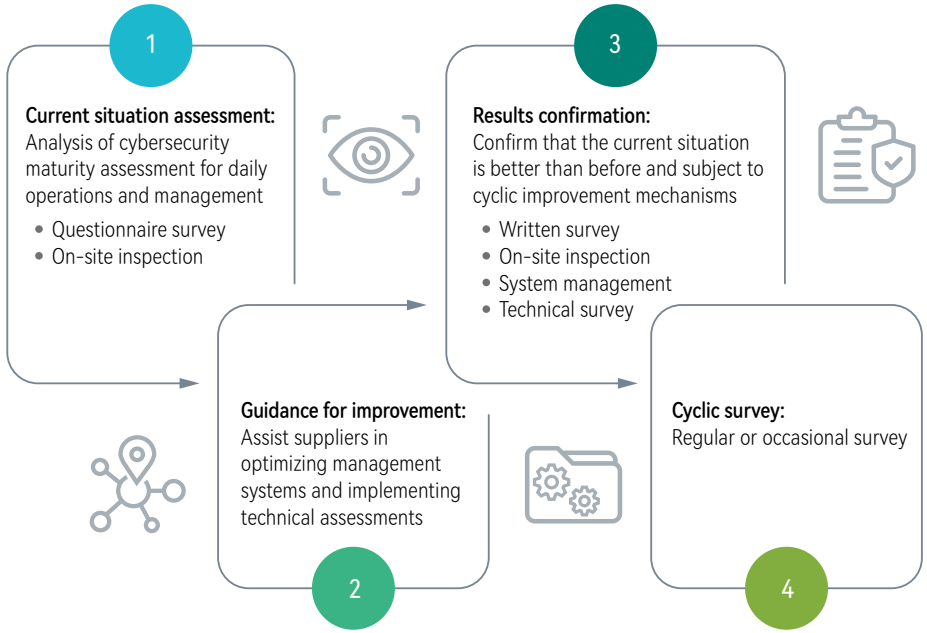
Information Security Information Exchange

ASEH maintains close communication with government authorities, domestic and international information security organizations and platforms. We have also contributed significantly to the drafting of SEMI E187 - Specification for Cybersecurity of Fab Equipment, Taiwan's first semiconductor wafer equipment information security standard. As we advance into industry 4.0, our competitive edge is built upon a robust and effective information security management framework that will safeguard the company's interests and that of our business partners and stakeholders.

Supply Chain Cybersecurity Management

The digitization of the supply chain and the exchange of large volumes of data, have increased cybersecurity risks along the supply chain. In 2022, ASEH established the Supplier Cybersecurity Assessment System, which primarily focuses on critical suppliers and follows a four-step process –current situation, guidance for improvement, results confirmation, and follow-up evaluation. A total of 77 supplier cybersecurity assessments were conducted in the year, following. The scope of assessments will be gradually expanded and follow-up evaluations conducted every three years. We aim to construct a comprehensive cybersecurity management mechanism that provides stability for business operations, strengthens cybersecurity resilience, and raises the cybersecurity standards of the semiconductor industry.

Procedures for supply chain cybersecurity assessment



Outcomes of cybersecurity measures in 2022

Cybersecurity policies, organizations, and goals	• Zero material cybersecurity incidents • Formulated three cybersecurity goals for 2025 • Convened four ASEH cybersecurity team meetings
Cybersecurity certification and maturity	• 9 sites obtained the ISMS ISO 27001 certification • One site obtained the IEC 62443-2-1 certification • Conducted the NIST cybersecurity maturity assessment at 19 sites
Cybersecurity measures and protection	• Implementation of one ASEH Information Security Management System • OT cybersecurity assessment at four sites • Two cybersecurity incident drills • Providing cybersecurity educational training to 53,991 individuals • Accumulating 40,019 hours of cybersecurity educational training • Ongoing cybersecurity insurance coverage • Conducting cybersecurity assessments for 77 suppliers

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

ASEH continuously invests in advanced semiconductor packaging technology research and development ("R&D") and cultivates experienced and skilled engineering teams to meet customers' needs for product performance enhancement and cost reduction. By identifying key R&D directions based on future industry needs as well as technology trends, we have developed a strategic technology roadmap for the next 10 years to grasp business opportunities, build patent portfolios and implement sustainable development. Our R&D expense increased 15.8% to NT$24,369.9 million in 2022, compared to NT$21,053.6 million in 2021, accounting for 3.7% of operating revenues in 2020 and 2021, respectively. As of December 31, 2022, we had a research and development team of 11,033 employees, an increase of 11.1% compared with 9,928 R&D employees at the end of 2021.

Driven by 5G mobile communications, the technologies of high-speed transmission, low latency, HPC, AI, the Internet of Things, autonomous driving, smart manufacturing, etc., will enter a new milestone, and the development of electronic terminal products is oriented towards multifunctions, high performance, and high integration. The semiconductor industry chain strives to move towards a higher value system integration level, and this will accelerate functional integration enhancement and scale-down technology to go hand in hand to create a more efficient smart networking environment and devices which will facilitate human intelligence life more convenient. Therefore, this also emphasized and proved the importance of heterogeneous chip packaging in system integration innovation.

Key products and technologies successfully developed in 2022 are as follows:(1) Flip Chip Packaging (FCP): IC Flip Chip Bond on High CTE Substrate by LAB; (2) Wire-bond packaging: Hybrid Wire-bonding and Flip Chip of high pin count advanced QFN; (3) Wafer Level Packaging: ASIC Integrated with Capacitor, RF Device Integrated by 300mm Thick Cu FOSiP; (4) Advanced packaging and modulation: Advanced Double-Side-Mold (DSM) Technology for High Density Components integration, New Silicon Photonics Chip to Wafer Bonding Technology Mixed Wirebond and S-Trench Assembly; (5) Panel Level Packaging: Supper efficiency coating process application of panel-level advanced packaging technology, Panel Level Embedded Power Integration High Density Fan Out Package Technology; (6) SiP Package: IC and Passive Component Integrated by Double Substrate POP; (7) OEP: High accuracy LD bonding technology, laser beam quality measurement technology, PCB crease defect inspection technology, etc.

Our research and development teams work closely with our supply chain partners including material and equipment suppliers to maximize scale and efficiency in technology development. We also work closely with key customers on new product and manufacturing collaborations. 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. In 2022, we held 93 seminars with research institutions, 120 workshops with suppliers and equipment manufacturers, and 96 technology blueprint alignment meetings with customers.

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. As of 2022, a total of 18 manufacturing sites and more than 6,700 employees had registered on the KM platform. The platform featured five categories, namely: e-OJT, Technology Board, BKM (Best Known Method), Green Innovation/Climate Change, and Customers/ Competitors/Suppliers/ External Consultants/Seminar Materials; and contained more than 9,000 technology related data records that had been viewed more than 45,000 times. 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

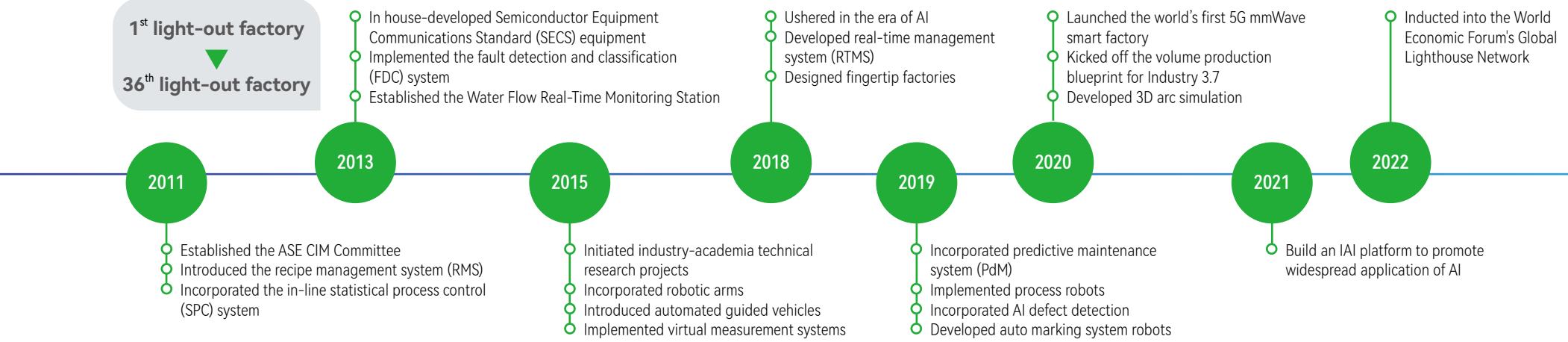
Aiming to drive greater efficiency and improvements in our manufacturing process that will in turn deliver higher customer satisfaction in quality and delivery, ASEH began to invest in automated, lights-out factories in 2015. At ASEH, we are accelerating digital transformation in smart manufacturing 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 2022, the company has established 36 lights-out factories, trained more than 700 automation engineers, and developed over 45 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).

ASEH's smart factories release manpower from low-skilled jobs by smart manufacturing, improves employees' skills through technical training, and allows the released manpower to be promoted to high-skilled positions. At the same time, it also improves employee engagement and creates sustainable value.

Innovative and Breakthrough Methods Adopted in the Creation of Smart Factories

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 are 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 qualified to manage the automation process.	• 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. • Created Intelligent Engineering training modules to provide training on statistical analysis and equipment monitoring, and to teach students how to apply digital technology in manufacturing. So far, more than 2,000 personnel have received training. • Created Digital Application training modules to provide courses on RPA, Qlick View, Doc.Bee, co-know, etc for administrative and support staff. The training helps accelerate our digital transformation and improves employee productivity. So far, more than 4,000 personnel have undergone digital training.

1st light-out factory
▼
36th 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).

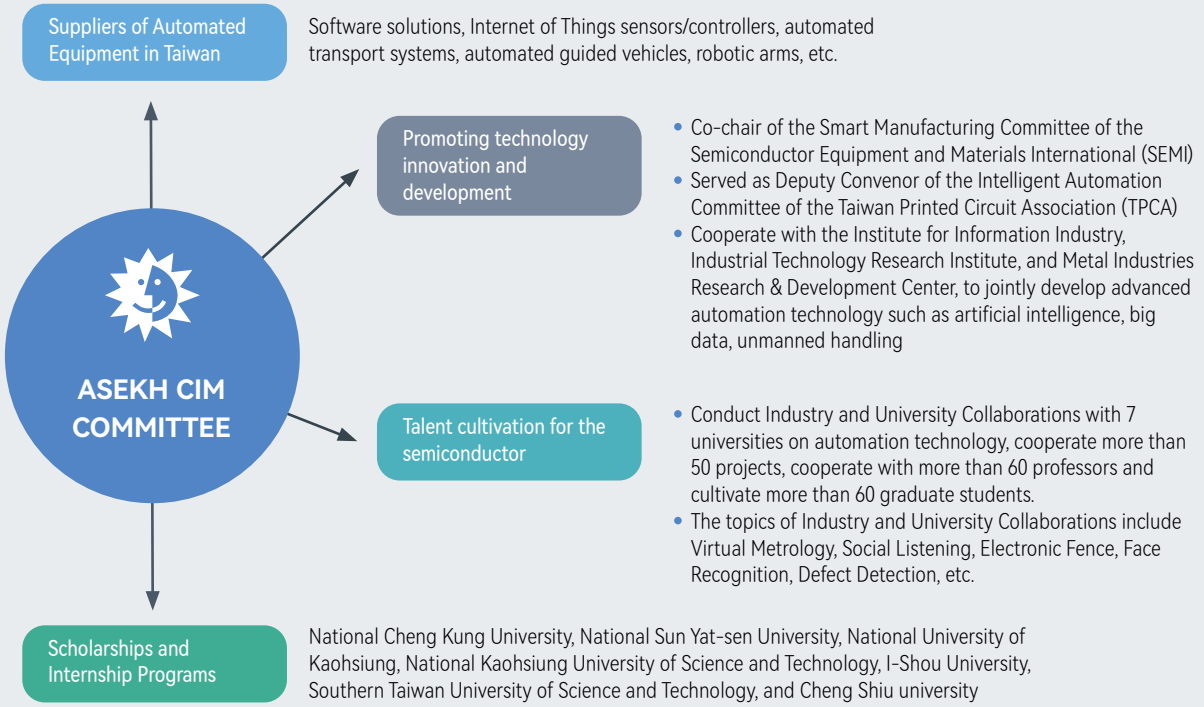
ASE gains world-class recognition with the addition of its facility into the Global Lighthouse Network

In early 2023, ASE's Bumping Factory in Kaohsiung was inducted into the WEF Global Lighthouse Network (GLN, in recognition of our successful adoption of Fourth Industrial Revolution (4IR) technologies across the facility. In the bumping operation, there are more than 100 process steps compared with traditional IC packaging operations. To streamline the manufacturing processes and optimize production, ASE strategically planned and deployed 4IR technologies across its operations. In particular, AI enabled processes helped ASE to improve manufacturing yields and accuracy, resulting in an increase in output by 67% and a reduction of order lead time by 39%. As a premier semiconductor industry player, ASE is taking the lead to craft a smart manufacturing blueprint that optimizes 4IR technologies including AI, 3D-printing and big data analytics. The company aims to inspire more industry players to contribute to building a resilient global smart manufacturing ecosystem, accelerate digital transformation and environmental sustainability.

The Global Lighthouse Network is a World Economic Forum initiative developed in collaboration with McKinsey & Company in 2018. It aims to identify leading factories that use 4IR technology to improve operational efficiency and profitability, generate positive benefits for the environment, and accelerate the digital transformation of the global manufacturing industry. As of 2023, 132 Lighthouse companies have made the list including 4 in Taiwan. GLN companies demonstrate leadership in the use of 4IR technologies to transform factories, value chains and business models that will generate healthy financial and operational returns.

Sustainable Impact of Smart Factories

Our smart factory concept began with a strong foundation in automation, and the heterogeneous integration of customers, suppliers and production processes, to drive the semiconductor industry onto a higher value chain and accelerate technology advancements. Smart factories represent the next leap for the semiconductor packaging and test industry to play an enabling role beyond More than More.



Procurement

7 billion in Local Procurement

- Promoted economic development through local procurement, generating nearly NT$2.3 billion of output value in equipment supplier and facilitating NT$7 billion[1] in local procurement

900 Indirect Job Opportunities

- Cultivated approximately 38 local automation suppliers, creating 933 jobs in the supply chain

Manufacturing

580 million Social Cost Reduction

- Accelerated ASEH's digital transformation in manufacturing, lowered employee overtime, resulting in a reduction of social costs by approximately NT$580 million[2]

700 AI Talents

- Increased the value of our human capital through upskilling in automation and AI for more than 700 employees

Customer Service

10 billion output value

- Enabled customers to obtain market opportunities and develop innovative product applications, creating an output value of more than NT$10 billion

36 lights-out factories

- Completed 36 lights-out factories to improve product yields shorten time to market, and helping customers develop new markets

[1] The amount of revenue generated and the number of jobs created in the supply chain were calculated using input-output analysis (IOA). In our calculation, we used the data from the OECD Input-Output Tables and the EXIOBASE 2 database as references and assumed that all suppliers are based in Taiwan

[2] Employee overtime was calculated using accumulated data since the adoption of digital transformation. We referenced data from the Eco-costs database to analyze the reduction in risks to health damage due to a reduction in overtime and work hours from the implementation of factory automation. The data was converted into monetary value according to OECD (Organization for Economic Co-operation and Development, 2012) guidelines

Automation technologies introduced in 2022:

<table>
<tr><th>Technology</th><th colspan="2">Solutions and Achievements</th></tr>
<tr><td>Applying Augmented Reality inside Smart Factories</td><td>Customers can immerse themselves in a virtual factory tour through the use of AR glasses and VR handheld devices. The tour allows them to discover ASE's use of robotics, command centers, automated transport vehicles and much more.</td><td>    </td></tr>
<tr><td>Enabling a pervasive AI platform</td><td>The rapid development of AI is transforming the future of businesses. The application of AI technology in the manufacturing environment (Industrial AI) will accelerate AI learning and knowledge transfer, and encourage the embrace of AI as part of the corporate culture. Large amounts of data can be collected to derive applicable predictive models that optimize production capacity, quality, and processes.</td><td>2022 Achiements
The number of AI Project is 221 (6.7 times that of the previous year)
The number of Models is 1,731 (21 times that of the previous year)
The number of deployments is 298 (3.9 times that of the previous year)
The cumulative number of people who passed the verification is 3,089
<table><tr><th></th><th></th><th>Image Recognition</th><th>Numerical Analysis</th><th>Abnormal Detection</th></tr><tr><td>Multi-objective</td><td>Difficulty: 70~100
Professor Level Data Scientist
AI maintenance and management</td><td>AI Project: Ball Bridge IMPV parameter optimization</td><td>AI Project: Key parameters & yield analysis/predictive maintenance/AI knowledge map</td><td>AI Project: Gap analysis between different machines</td></tr><tr><td>No-Code</td><td>Difficulty: 0~70
Amateur Level Data Scientist
No Code</td><td>Self-developed: CV Platform</td><td>Rent first and self-develop later: No-code AI Platform</td><td>Self-developed: AD Platform</td></tr></table></td></tr>
<tr><td>AIoT For ESG</td><td>We use AIoT (Artificial Intelligence of Things) to develop energy management and industrial safety early warning systems. These solutions assist managers in maximizing energy conservation and ensuring employee safety.</td><td>• Energy Management EnMS 2.0: Systematic inventory, energy consumption analysis and control
• Chiller Energy Optimization: Smart chilled water systems respond efficiently to weather conditions.
• Industrial Safety AI Early Warning@Factory Management: systematic reduction of industrial safety/eco risks through data collection, monitoring, early warning, tracking, and analysis.</td></tr>
</table>

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.

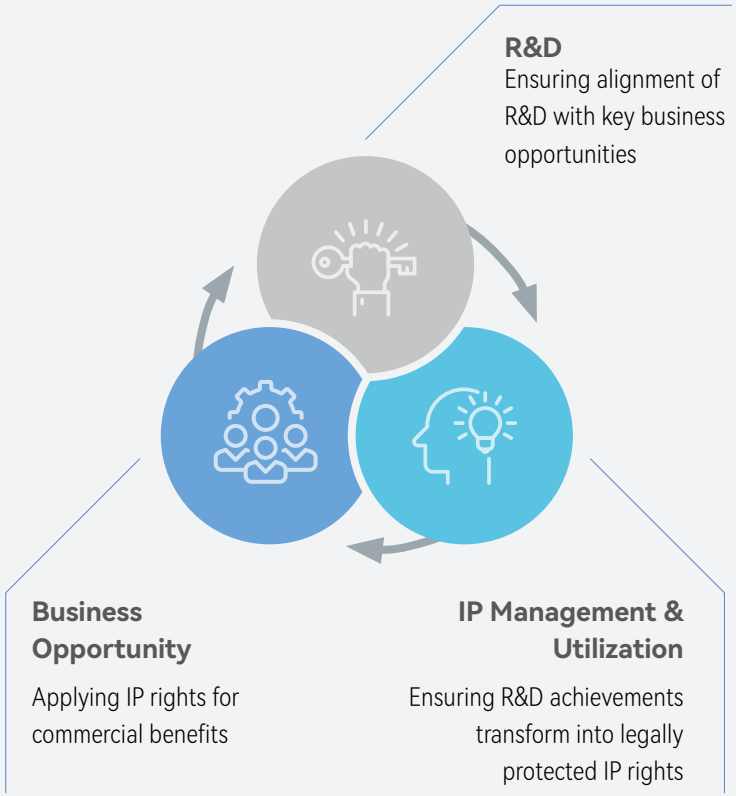
ASEH's IP management is tightly embedded into the company's business operation blueprint, forming a continuous innovation cycle that encompasses business opportunities and R&D, to IP management and utilization that includes the following three phases:

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.

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. 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.

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.

ASEH Intellectual Property Management



On September 29th, 2022, Advanced Semiconductor Engineering, Inc., the subsidiary of ASEH, filed with Certification Body – the Institute for Information Industry - an application for the renewal of Taiwan Intellectual Property Management System (TIPS) (A Class) certification first issued by the Industrial Development Bureau of the Ministry of Economic Affairs in 2021 and successfully accomplished the recertification process. The renewal of TIPS certification (A Class) was issued to ASE on November 4, 2022 and is valid for another 2-year-term until December 31,2024. 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, 2023, ASEH owned 6,099 patents, primarily in various assembly and testing technologies as well as electronic manufacturing services technologies, including 2,284 patents in Taiwan, 1,914 patents in the U.S., 1,858 patents in the People's Republic of China, 13 patents in Europe and 30 patents in other countries.

Three phases to generating patent value

Value-Added Revitalization

Promoting the patent value and strengthening the patent portfolio to revitalize patents and increase their value

Patent Valuation

As market conditions and patent functions become clearer, re-assess the quality and value of patents in the portfolio

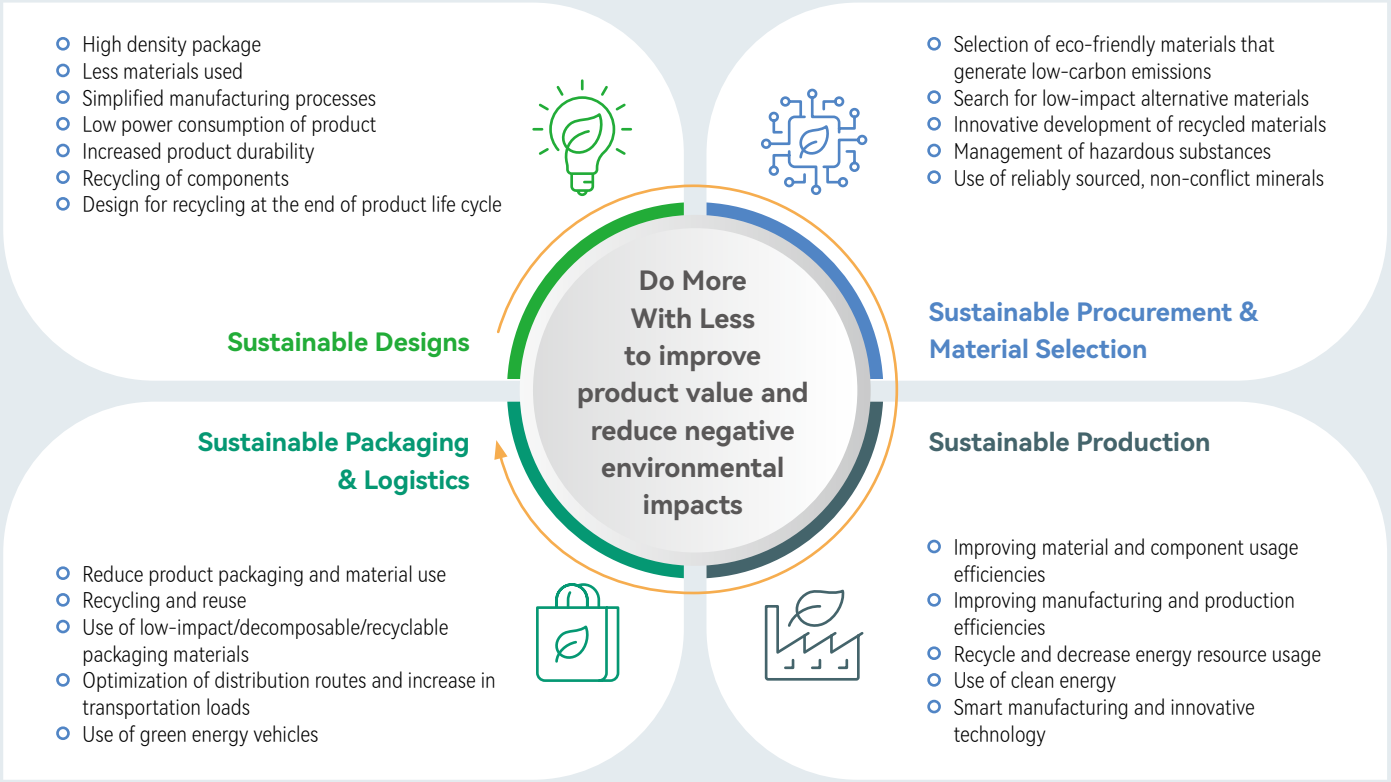
Comprehensive Portfolio

Early and indepth deployment of patents according to market and technology developments

4.2 Sustainable Manufacturing

Sustainable Manufacturing Concepts and Principles

As a manufacturing service provider, ASEH embraces the concept of "doing more with less" and committed to four sustainable manufacturing principles, namely 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:

- Compliance 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

In 2022, 65.95% of our products revenue provide resource efficiency benefits by saving energy during use phase to avoid emission of 1,393,990 metric tons CO_2e, having smaller form factors thereby enabling reduced material consumptions in terms of compliant with EU's WEEE directive.

Management of Hazardous Substances and Chemicals

To achieve sustainable manufacturing, effective management of hazardous substances is crucial. At ASE, we have formulated a comprehensive framework that includes optimizing the green product management system (GPMS), establishing a database of all substances, and ensuring compliance with customer requirements, the EU RoHS Directive, REACH regulations, Energy Star and the Energy-related Products (ErP) directives. Our policies for the management of hazardous substances are designed to be much stricter than regulatory procedures and governing trends.

We have expanded our control measures for chemicals that cause health hazards and increase environmental risks, including bioaccumulation, persistent pollutants, and materials that affects fertility, are carcinogenic or mutagenic. In addition to managing the chemical content in our products, any newly introduced chemicals that fall within the scope of customer restrictions or the EU REACH Restricted Substances List, during the manufacturing process will be prohibited for use and replaced with another qualified substance. Our policies are aimed at providing employees with a safe and healthy environment that allows them to work with a peace of mind, and advancing towards the goal of a green industry.

We 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 controlled by below targets:

- MOAH consisting of 1 to 7 aromatic rings < 10000ppm by 2023/1/1
- 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

Green Laboratory

The ASEH green laboratory conducts R&D and indepth analysis of green materials right from the source. The lab is part of ASEH'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 and server systems.

Category	Product Series	Carbon Footprint	Eco-efficiency Assessment/ Environmental Footprint	Improvement Strategies and Actions
Assembly	BGA	Done	Done	**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	Done	Done	
	CSP	Updated	Updated	
	Flip Chip	Done	Done	
	Bumping	Updated	Updated	
	SiP Technology	Done	Done	
Substrate		Done	Done	
Test		Done	Done	
Electronic Manufacturing Services,EMS	4G dual frequency communication module	Done	Done	
	XnBay smart storage server	Done	Done	
	Printer head	Done	Done	
	LCD Drive Board Series	New	New	
	Industrial tablet	Ongoing	Ongoing	
	Clickshare button	Ongoing	Ongoing	

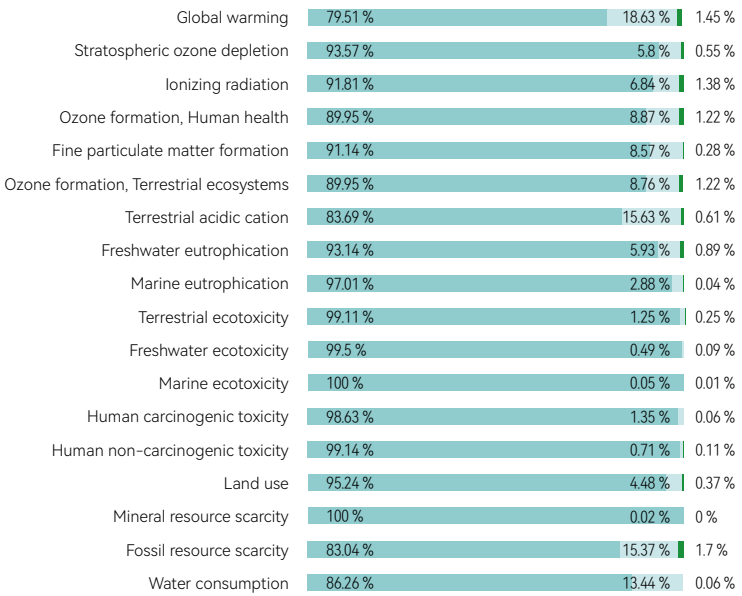
In addition to conducting product lifecycle assessments, we also form collaborations with experts to incorporate the use of assessment software such as SimaPro and the ReCiPe 2016 Midpoint(H) methodology that measures the impacts from 18 different environmental aspects. The methodologies were applied to our Flip Chip Packaging process, where we analyzed the environmental impact based on the different types of wires used in the bonding process. Through the study, it was discovered that gold wire bonding produced the greatest impact. As such, we began gradually replacing gold wires with copper wires. We have also been developing packaging technologies that do not require wire bonding, and advanced packaging solutions that help reduce the impact to the environment.

Life Cycle Assessment Results

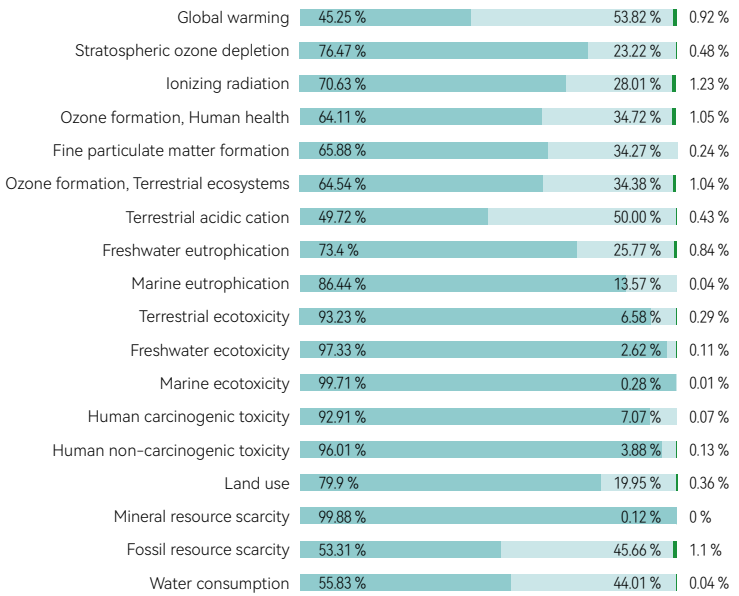
The results from the product life cycle analysis of the LCD Control Board and the LCD Source Board, indicated that the major environmental impact comes from the formation of particulate matter, and climate change and carcinogens that affect human health.

Raw materials
Manufacturing/Waste
Transportation

Environmental impact of LCD Control Board



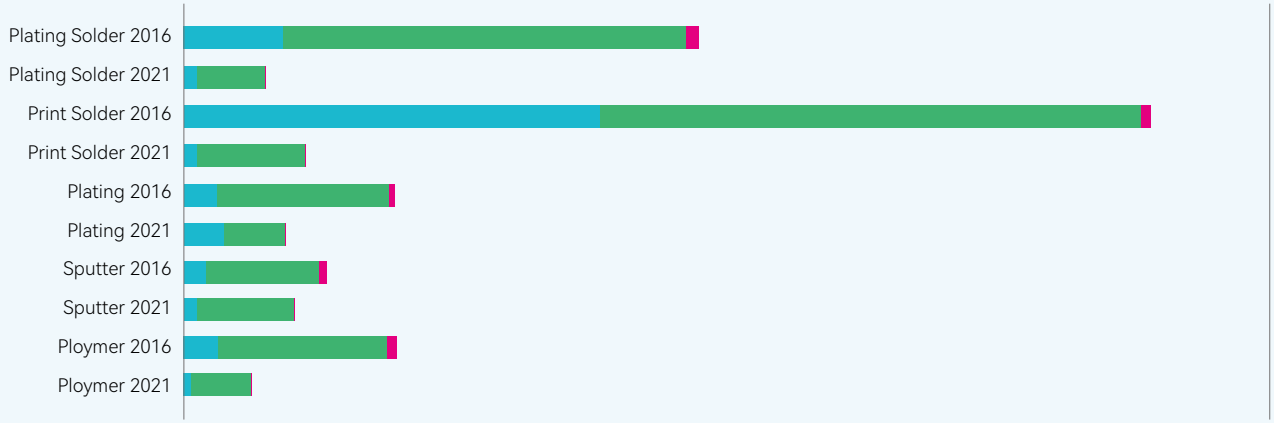
Environmental impact of LCD Source Board



In 2022, an update on the product life cycle assessment of our bumping processes revealed that the environmental impact ranges between 12% and 77% of the analysis results from 2017. This clearly demonstrated that our strategies and improvement actions had effectively reduced the impact on the environment and ecology.

Raw materials
Manufacturing
Waste

Environmental impact of Bumping process



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.

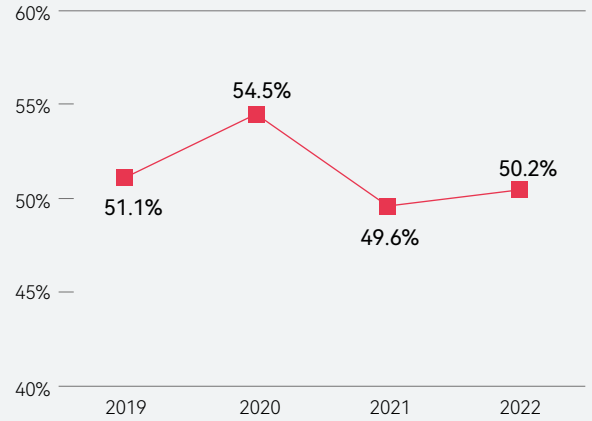
Customer Service

Our key customers typically operate in the semiconductor and electronics industries. In 2022, Our five largest customers together accounted for approximately 50.15% of our operating revenues. To achieve total customer satisfaction, we uphold world-class quality and reliability for our products and services through thoughtfully defined quality assurance methodologies. Our quality assurance systems impose strict process controls, statistical in-line monitors, supplier control, data review and management, quality controls and corrective action systems. There were no product recalls (arising from health or safety concerns) issued by customers in 2022.

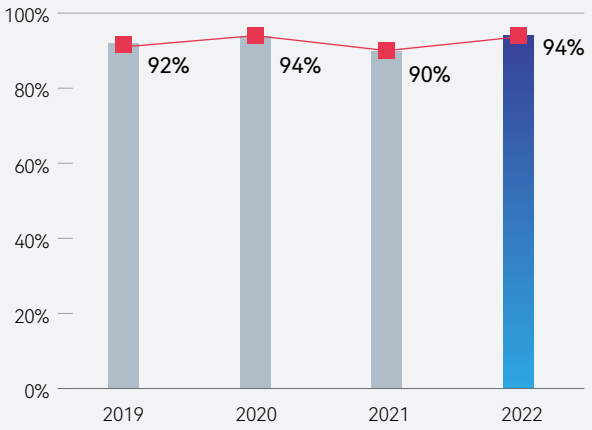
To ensure that customer suggestions are properly processed, we have a dedicated team in place for reporting feedback and managing customer communication. We have designed multiple communication channels with customers which include technical forums, and regular email updates on significant events, milestones 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.

Top 5 Largest Customers Together Operating Revenues Accounted (%)



Key Customers[1] Satisfaction Trend



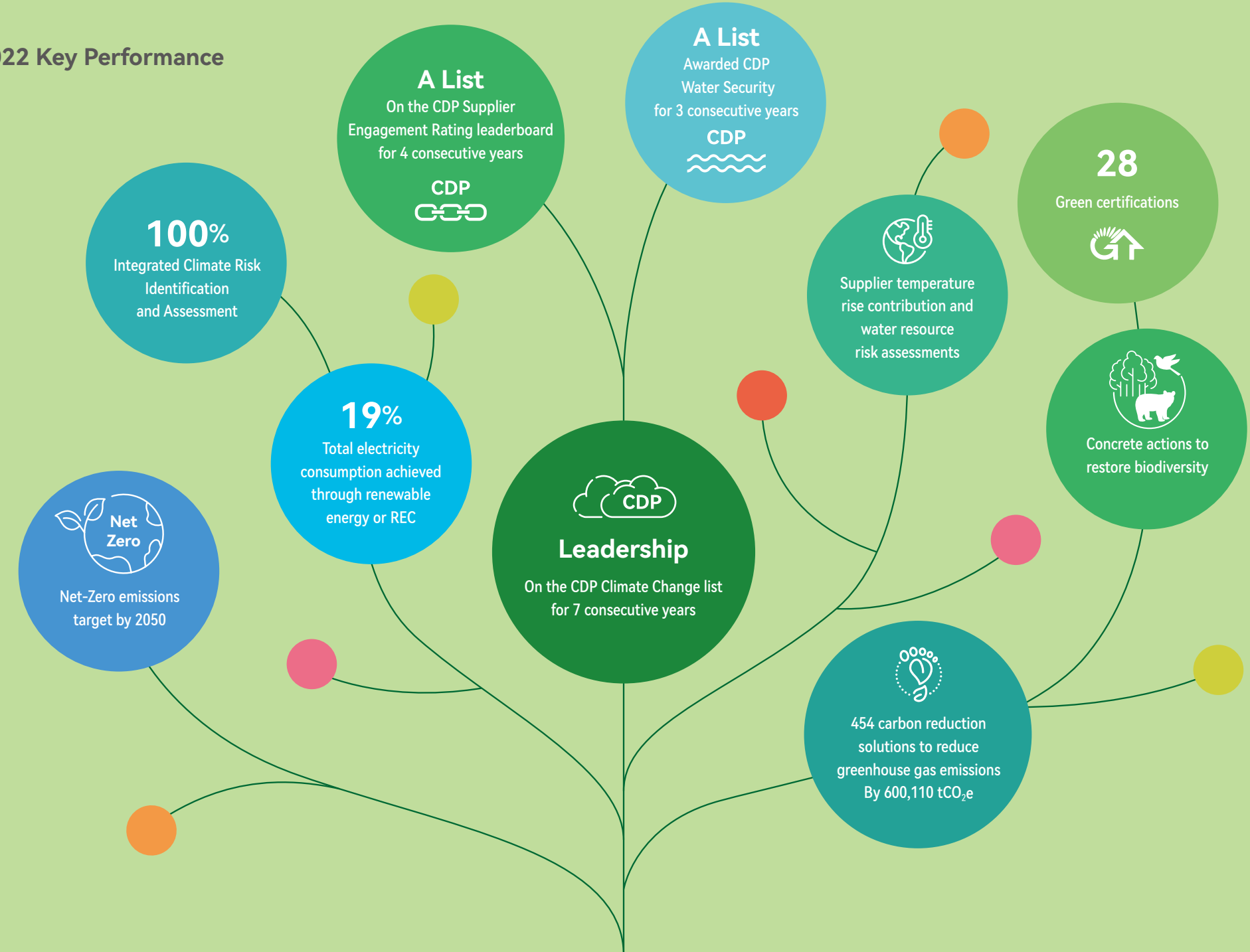
[1] Key customer: ASEH's top 100 customers (In 2022, account for > 90% of the company's revenues)

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.

2022 Key Performance



SDGs	Business Actions and Contributions	2022 Key Aspects	KPI	2022 Target	Status	2022 Performance	2023 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)	7% reduction compared to 2015	Achieved	49% reduction compared to 2015	8% reduction compared to 2015	15% reduction compared to 2015
			Days of production shutdown caused by phase 3 water rationing in Taiwan (water supply reduced by 30%)	0 days	Achieved	0 days	0 days	0 days
	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 2022	Achieved	Equivalent to 2.7% of the electricity demand in 2022	Equivalent to 2% of the electricity demand in 2023	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[1] ratio	Renewable energy consumption accounts for 18% of total electricity consumption	Achieved	Renewable energy consumption accounts for 19% of total electricity consumption	Renewable energy consumption accounts for 21% of total 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 produce less waste	Waste and Recycling	Non-hazardous waste recycling rate	90%	Achieved	96%	90%	90%
			Hazardous-waste intensity (hazardous waste output/ revenue)	6% reduction compared to 2015	Achieved	55% reduction compared to 2015	8% reduction compared to 2015	15% reduction compared to 2015
	Align with science-based climate targets to substantially reduce emissions associated with our business and supply chain operations	Climate Change	GHGs intensity (Scope 1 & 2 emission/revenue)	7% reduction compared to 2015	Achieved	51% reduction compared to 2015	8% reduction compared to 2015	15% reduction compared to 2015
			Absolute GHGs reduction (Scope 1 and 2)	15% reduction compared to 2016	Not Achieved	0.1% reduction compared to 2016	17.5% reduction compared to 2016	35% reduction compared to 2016
			Absolute GHGs reduction (Scope 3)	3% reduction compared to 2020	Achieved	32% reduction compared to 2020	4.5% reduction compared to 2020	15% reduction compared to 2020

[1] Renewable energy or REC

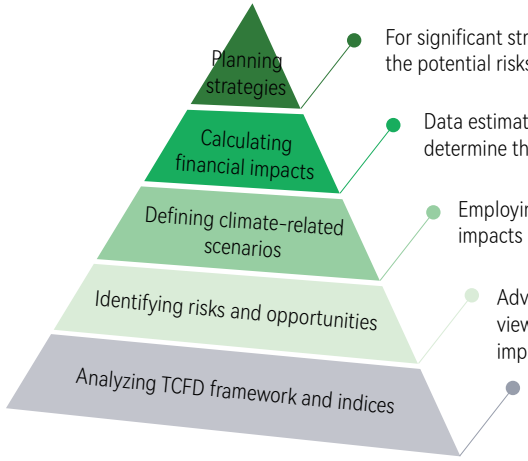
5.1 Climate Leadership

Transitioning towards Low-Carbon Resilience

In order to transition towards a low-carbon and resilient future, ASEH has established 4 major milestones that includes the formulation of low-carbon strategies, a comprehensive management framework, socially responsible actions and performance-oriented results. By adopting global management standards and taking socially responsible actions, our approach has allowed us to review our performance, measure results and create green value across the value chain. In 2022, we published our first Task Force on Climate-related Financial Disclosures (TCFD) report[1], that outlines our net zero emission plans, targets, and climate strategies. To encourage employee action on climate change mitigation, we have included greenhouse gas intensity targets (measured as greenhouse gas emissions per unit of revenue) and water intensity targets (measured as water consumption per unit of revenue) as part of the KPI[2] for specific employees (including senior executives)[3] from 2021 to 2023. Each year, a third-party organization is appointed to verify the achievement of these targets, and employees who meet the goals are eligible for restricted stock as incentives.[4]

Climate change and energy resource management pose both challenges and opportunities to ASEH. As a business operation, government policy, new technology research and development, market decarbonization and extreme natural disasters can have significant impacts to ASEH. In spite of these challenges, ASEH is determined to seek out opportunities by exploring and developing solutions that can be shared across the entire industry.

[1] The TCFD report is available for download from our website https://www.aseglobal.com/en/pdf/2021-tcfd-report-en.pdf
[2] Key employees that are involved in long-term business strategy and future developments, influence business operations, and core technical talents
[3] A continuous reduction of 1% in intensity per year with 2015 as the baseline year
[4] New shares will be issued to employees at no cost, with a total issuance amount of NTD 150 million

Four Major Milestones	Principal Methodology
1 Low-carbon strategies	• **Low-carbon energy resource diversification:** energy saving, green energy and energy storage. • **Smart green factories:** green buildings, smart manufacturing and smart resource management. • **Innovative technology and investments:** investing in renewable energy or carbon capture and storage technologies to lower environmental and external social costs. • **Climate solutions:** providing the global market with feasible low-carbon solutions. • **Sustainable lifestyle:** fostering a low-carbon culture internally and contributing low-carbon solutions externally.
2 Comprehensive management framework	Managing ASE's climate risks and opportunities in line with the company's enterprise risk management (ERM) by adopting the recommendations issued by the Task Force on Climate-related Financial Disclosures (TCFD, formed by the Financial Stability Board). Through the combination of scenario analysis, possible outcomes can be simulated from various uncertainties in climate change to help control risks within acceptable parameters, and consequently protecting and advancing the company's overall interests.
3 Socially responsible actions	 For significant strategic and financial impacts, concrete response measures and financial planning were devised according to the potential risks and business opportunities identified by ASEH's top management. Data estimation methods were selected according to the parameters defined through scenario analysis to calculate and determine the actual scale of the risks and opportunities, and financial impacts. Employing a climate change scenario analysis methodology to determine the probability of operational and financial impacts by simulating the changes of various parameters in future timelines and at different geographic locations. Advocating climate risk and opportunity topics based on global trends and industry characteristics. Incorporating views from both internal and external stakeholders to identify the risks and opportunities that have a significant impact on ASEH's operations. Analyzing the indicators of the TCFD framework to strengthen short, medium and long-term response strategies.
4 Performance-oriented results	Adaptation: ✓ Maintaining 100% oversight of the risk analysis and adaptation planning of facilities worldwide. ✓ Deploying a Business Continuity Management (BCM) plan to strengthen the analysis of potential risks and emergency response measures. ✓ Adopting smart grid technologies to facilitate deployment of electricity and optimize power consumption to prevent disruptions caused by power shortage. ✓ Conducting risk assessments, green procurement and material recycling through sustainable supply chain management. 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 (ISO14064 and ISO14067) management. Strategic and Financial Planning: ✓ Evaluating the financial impacts of climate risks and opportunities, publishing climate-related financial reports, and participating in DJSI and CDP surveys. ✓ To achieve Net Zero targets, we have identified 5 key areas of focus – carbon credit investments, renewable energy usage, low-carbon transportation, low-carbon manufacturing, and supply chain engagements. ✓ Launching two green bonds totaling US$600 million and sustainability-linked loans with proceeds used on green projects. ✓ Establishing a long-term value chain partnership blueprint

Task Force on Climate-Related Financial Disclosures (TCFD) Framework

Governance

a. The ASEH Risk Management Policies and Procedures was formally adopted in 2020 to serve as the guiding principles for risk management. To ensure the effective management of sustainability-related risks and opportunities, the Corporate Sustainability Committee (CSC)[1] has been designated as the highest governing body with oversight and supervisory responsibilities. The ASEH Corporate Sustainability Committee is composed entirely of board members from the parent company and its subsidiaries.

b. A member of the CSC is appointed the Chief Risk Officer to supervise the overall risk management of the company. The CSC reviews periodically the execution of ASEH's sustainability strategies, monitors external changes closely and analyzes any potential sustainability-related opportunities. It is responsible for reporting quarterly risk strategies and progress status to the Board of Directors and the Risk Management Committee, providing them a consolidated overview of ASEH and the subsidiary companies' overall ESG performance.

Strategy

a. According to our internal goal management timeline, short-term is defined as less than three years; mid-term three to five years; and long-term more than five years. Short-term or immediate risks arise from energy efficiency, raw material costs, climate and product-related regulations and extreme weather events, including extreme temperature changes, tropical cyclones, droughts etc. Mid-term risks include voluntary agreements, GHG emission costs, low-carbon technology transitions, changes in customer preferences, and low-carbon and green facilities. Lastly, carbon taxes, low-carbon energy or market demands, and incremental changes in climate parameters, including average temperature or rainfall changes, high ecosystem vulnerability, and land use, etc., are classified as long-term risks.

b. Impacts on operations include products, services, supply chain, customers, research and development, and adaptation and mitigation measures. Impacts on strategy include using limited resources and searching for strategic sustainability partners to create optimum semiconductor industry value. Financial impacts include revenues, management costs, capital acquisitions, and assets and liabilities.

Risk Management

a. At least twice a year, ASEH conducts an assessment of significant climate and water security risks and opportunities at the business locations of all our subsidiaries to determine the scale, scope, and financial impacts.

b. The Risk Management Committee conducts biannual climate risk and green energy adoption reviews and works with each subsidiary's risk management committee to formulate management guidelines for major risk factors. A number of methods may be adopted to address risks, including risk reduction, transfer, assumption, or control. The Committee is also required to submit quarterly risk monitoring reports to the Board of Directors.

c. Climate risk simulation and analysis based on the transformational changes and real-life scenarios described in IPCC AR6 (please refer to the Climate Change Scenario Analysis section in this chapter).

Metrics and Objectives

a. Calculating greenhouse gas emissions, energy sources used, and waste produced per unit of revenue generated to help the company assess risks and impacts, the feasibility of using internal carbon pricing to evaluate the cost of reduction.

b. Direct energy emission risks come from regulatory fees and taxes imposed on fossil fuels. Indirect energy emission risks come from the cost incurred from the proportional increase in renewable energy usage. For other indirect upstream/downstream emission risks, existing controls limit the ability to reduce emissions, thus making it difficult to reduce the carbon footprint of products.

c. Formulating reduction targets in greenhouse gas emissions, energy sources, water resources and waste, increasing renewable energy use and designing higher-efficiency products to achieve a low-carbon economy.

[1] Five out of the six members of the company's CSC are ASEH Board members (including the Chairman of the Board) and one is subsidiary Board member

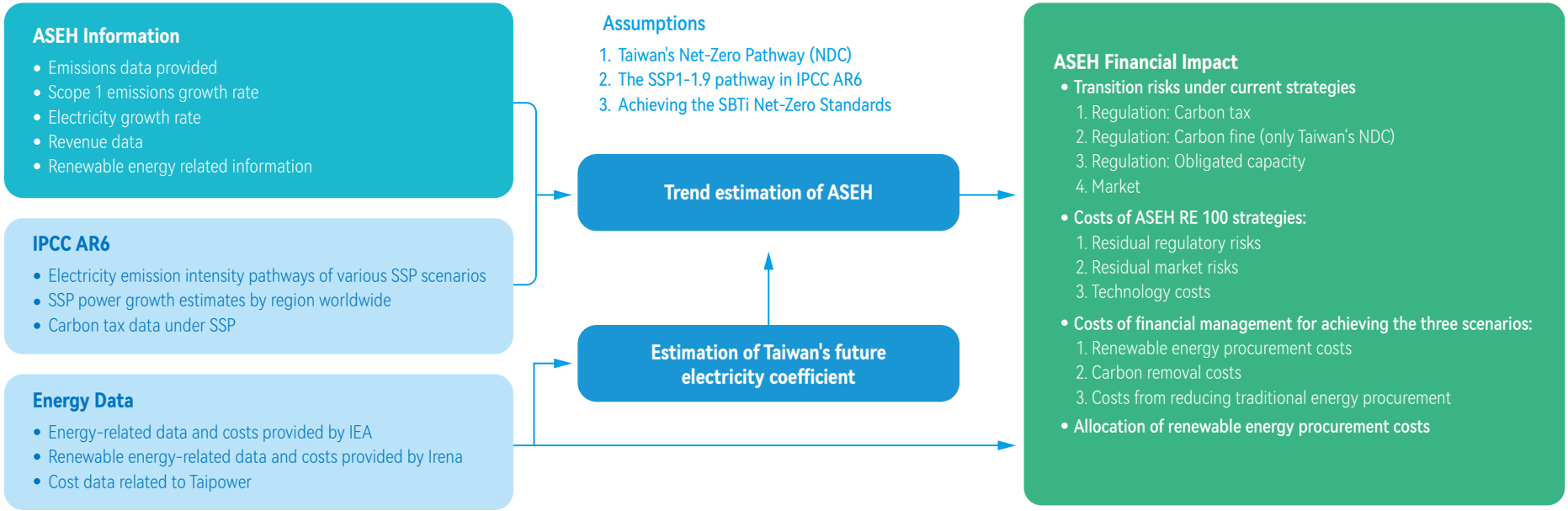
Material Climate Risks and Opportunities

In accordance with ASEH's ERM process, we identify climate risks and opportunities annually by applying the recommendations in the TCFD framework. The identified risk factors include transition risks such as current regulations, emerging regulations, technology, market, reputation, and litigation. Physical risks are categorized into acute and chronic risks. The scope of analysis covers parts of the value chain, including upstream, internal organization, and downstream. The time frame of each risk is divided into three different categories: short-term (within 3 years), medium-term (3-5 years), and long-term (5 years or more).

Major risks and opportunities arising from climate change			Potential impact on operations or finances	Management approach
Risks	1	Renewable energy regulations	• Increased direct costs • Litigation or fines • Restricted growth	• Manage and centralize the procurement of renewable energy to meet regulatory requirements and reduce costs through the establishment of a renewable energy procurement platform for ASEH's three major subsidiaries. (ASE Inc., Spil, and USI) • Establish the management targets for Taiwan facilities to comply with the 2023 major electricity consumer clause in advance. • Establish a global renewable energy target with plans for renewable energy usage to account for 42% of total electricity consumption by 2030.
	2	Voluntary agreements	• Increased indirect costs • Increased capital expenditure • Increased R&D costs	• Establish carbon reduction targets and obtain SBTi validation. Publicly disclose carbon reduction progress and achievements for public scrutiny. • Adjust KPI on a rolling basis in response to short/medium/long term reduction targets and net-zero emission pathways according to the availability of viable technology and international carbon market system. • Establish a net-zero carbon reduction management platform to control the renewable energy use rate and carbon reduction achievement rate of facilities. • Establish GHG emission intensity targets (GHG emissions per unit of revenue generated) and incorporate these targets into the executive performance-based incentive scheme, ensuring cohesive actions from the top and across the organization to reduce carbon emissions.
	3	Carbon tax	• Increased indirect costs • Restricted growth	• Introduce internal carbon pricing in stages to facilitate internal carbon reduction actions and reduce external carbon costs. • When supply chains are subject to carbon taxes, the cost incurred may be passed through to customers increasing procurement costs. ASEH requires suppliers to integrate cost management into set carbon reduction targets.
Opportunities	1	Production process/ low-carbon products or services	• Increased competitiveness • Recovery of technology investment • Value chain cooperation	• Increase demand for sustainable products and cooperate with the value chain for low-carbon product R&D and production. • Introduce resource recycling and material flow management to reduce carbon emissions along the production chain. • Expand the low-carbon market by investing in technology from the perspective of product and service life cycles. • In 2022, ASEH's low-carbon products accounted for 65.95% of total revenue, and our low carbon research and development spend was USD793 million. We will continue to improve the energy efficiency of all products and support customer development in reducing power consumption for end products. If the demand for sustainable products increases by 10% in the future, we believe we can generate an additional USD1.44 billion revenue for the company.
	2	Energy saving buildings	• Decreased carbon pricing costs • Carbon asset management • Climate change adaptation	• Build low-carbon and green facilities and introduce clean production to reduce carbon emissions of capital goods and carbon operating costs. • Strengthen the resilience of climate disaster adaptation to sustain operations and reduce disaster losses.
	3	Low-carbon energy	• Increased brand value • Decreased carbon pricing costs • Increased market demand	• Increase low-carbon energy use rate, or use clean energy to produce low carbon footprint products. • Reduce reliance on traditional fossil fuel power plants and pursue the decoupling of economic development from carbon emissions.

Major risks and opportunities arising from water safety			Potential impact on operations or finances	Management approach
Risks	1	Mandatory water efficiency, water conservation, recycling, or process standards	• Increased direct costs • Brand damage	• Establish water withdrawal intensity targets (water withdrawals per unit of revenue generated) and incorporate these targets into the executive performance-based incentive scheme ensuring cohesive actions from the top and across the organization to enhance water resource use efficiency. • Implement water recycling during production or build large-scale water recycling plants. • Establish a monitoring and reporting system to track compliance immediately or periodically.
	2	Occurrence of droughts	• Reduced production capacity • Water supply interruption	• Establish emergency response management at all facilities to initiate emergency response actions according to different levels of water supply conditions. • Implement internal water allocation to reduce non-essential water use within facilities. • Build large-scale water storage tanks or provide regional water supply support, re-direct production capacity when necessary. • Build a large-scale water recycling plant in key facilities to extend and stabilize the water supply during production.
	3	Low-impact technologies and products	• Restricted growth • Increased R&D costs	• Develop or source sustainable materials that consume less water and cause less pollution. • Introduce low water consumption manufacturing processes or technologies.
Opportunities	1	Production process	• Increased market demand • Increased brand value • Increased competitiveness	• Improve the water recovery rate during production and use materials or processes that consume less water to reduce water scarcity.
	2	Water use efficiency	• Climate change adaptation • Improved operating efficiency	• Improve water use efficiency and minimize water supply interruptions caused by droughts or heavy rains. • Reduce regional water withdrawal pressure by recycling water.
	3	Wastewater recovery	• Return on technology investment • Community relations	• Introduce water recycling technology together with environmental education to enhance social capital based on sustainability education. • Reduce withdrawal of raw water and explore other potential sources of renewable water.

Scenario Analysis Assessment



Climate Scenario Analyses

For a better understanding of the effects from transition risks, we analyze the potential financial impacts and cost estimations under various scenarios, perform potential cost estimations and gap analysis for the strategies we implemented or plan to execute by using the IPCC AR6 SSP and international energy parameters as climate scenarios. We also analyze the financial impacts of key operational costs and capital expenditure items associated with regulatory risks, estimate the revenue losses associated with market risks, and perform a simulated estimation on the management costs associated with transition strategies. The analysis and estimation are based on three scenarios: meeting local governments' net-zero pathway in key manufacturing sites, meeting the SSP1-1.9 pathway in IPCC AR6 for all sites around the world, and meeting the SBT net-zero criteria.

Scenario		Metric	Scope
Business-as-Usual (BAU)		• Regulatory risk • Market risk • Reputational risk (qualitative)	• Scope1 • Scope2
Phased transition to 100% renewable energy by 2050 (RE100)[1]		• Regulatory risk • Residual market risk • Strategic technological costs	
Three external transition scenarios	• Taiwan's Net-Zero Pathway (NDC)	• Regulatory risk • Market risk • Technical risk	
	• SSP1-1.9 pathway in IPCC AR6		
	• Scenario estimation for achieving the SBT Net-Zero Standard (SBT-NZ)		

[1] The cost analysis of ASEH's renewable energy strategy is calculated from the base year of 2016, at an annual growth rate of 3% and the target to achieve 100% renewable energy by 2050

Simulation Parameters for Scenarios

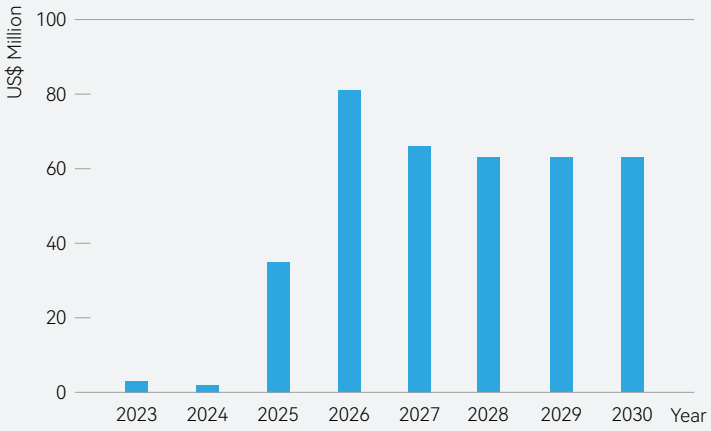
<table>
<tr><th colspan="2">Risk</th><th>Description</th><th>Category</th></tr>
<tr><td rowspan="2">Regulation</td><td>Carbon tax</td><td>Corporate carbon tax is calculated based on different scenarios, and a high level of uncertainty exists due to significant differences in tax regulations. Our assessment takes the following into consideration:
1. Government's Net-Zero Pathway: Carbon tax of 300 NTD/tCO2e (approximately 10 USD/tCO_2e).
2. SSP1-1.9 and SBT-NZ: Carbon price under SSP1-1.9 (around 650 USD/tCO_2e by 2050).</td><td rowspan="2">Operational costs</td></tr>
<tr><td>Caps and carbon penalties</td><td>Currently, international regulations and trends lean towards implementing carbon taxes rather than relying on caps or penalties. Therefore, additional consideration of the carbon penalty will be factored into the Government's Net-Zero Pathway (not exceeding the regulatory limit of 1,500 NTD/tCO_2e).</td></tr>
<tr><td rowspan="5">Technology</td><td>Cost of facilitating renewable energy</td><td>The cost of facilitating renewable energy in-house is a capital expenditure and is fully accounted for in the respective fiscal year. The specific cost can be obtained from the IRENA Renewable Energy Report 2022.</td><td>Capital expenditure</td></tr>
<tr><td>Cost of operation for renewable energy</td><td>The cost of operating renewable energy facilities can be obtained from the IRENA Renewable Energy Report 2022.</td><td rowspan="3">Operational costs</td></tr>
<tr><td>Cost of procuring renewable energy</td><td>The cost of renewable energy procurement in Taiwan is the sum of Taipower's current average selling price of renewable energy and the public electricity fees (from Taipower).
<table>
<tr><th>Type of renewable energy</th><th>Cost of procurement(NTD/kWh)</th></tr>
<tr><td>Solar energy</td><td>5</td></tr>
<tr><td>Offshore wind energy</td><td>4.5</td></tr>
<tr><td>Onshore wind energy <30kW</td><td>3.6</td></tr>
<tr><td>Onshore wind energy >30kW</td><td>3.6</td></tr>
</table></td></tr>
<tr><td>Cost of energy procurement from Taipower</td><td>The cost and benefits of procurement from Taipower, calculated at a rate of 2.55 NTD/kWh for industrial high-voltage electricity.</td></tr>
<tr><td>Carbon removal cost</td><td>According to data from IEA, the cost of CCUS varies according to circumstances. Since this analysis considers carbon removal as the ultimate means to achieve net-zero, the most expensive technology of direct air capture is adopted, with costs ranging from 85 to 345 USD/tCO_2e. The analysis is based on the following three scenarios:
Immature technology: 340 USD/tCO_2e
Average price: 235 USD/tCO_2e
Mature technology: 130 USD/tCO_2e</td><td>-</td></tr>
<tr><td>Market</td><td>Risk of market share loss</td><td>Assumption Parameter 1
The calculation of market risks is based on the potential loss of market share due to company's failure to achieve its transition goals, which are of importance to certain customers.
1. Taiwan's Net-Zero Target (NDC): 1% of revenue loss
2. SSP1-1.9 and SBT-NZ: 25% of revenue loss
Assumption Parameter 2
This analysis assumes that 50% of the revenue is associated with low-carbon products.</td><td>Expected revenue</td></tr>
</table>

Estimated Financial Impacts

(1) Cost analysis of regulatory compliance for ASEH's Taiwan facilities

In accordance with the Renewable Energy Development Act, ASEH's Taiwan facilities are required to perform an assessment of renewable energy procurement or facilitating plans through 2030. Included in the assessment is the cost of purchasing renewable energy and the cost of reduced Taipower usage. Results from the cost analysis indicated that it would require an estimated expenditure of USD63-81 million to fulfill the procurement of renewable energy volume targets by 2030. In addition, the estimated emission differences between the SSP1-1.9 and SBT-NZ transition scenarios indicate a gap that primarily stems from Scope 1 emissions. Therefore, as part of ASEH's commitment to RE100, significant reductions in Scope 1 emissions would be crucial to achieve SSP1-1.9 and SBT-NZ, particularly after 2040.

Cost Analysis for Meeting the Obliged Capacity



(2) Global Scenario Impact Analysis

ASEH internal scenario	External transition scenario	Parameter	2050 Financial impact (US$)
Business-as-Usual (BAU)	Taiwan's Net-Zero Pathway (NDC)	• Scope 1 emissions: Annual increase of 2%. • Facilities in Taiwan: (1) Electricity consumption growth rate: Annual increase of 11%. (2) Carbon emission factors for electricity and steam from 2019 to 2050 are calculated in accordance with government energy policies. • Overseas facilities: The growth rate of electricity consumption and carbon emission factors for electricity is calculated based on SSP1-1.9 global growth rate estimates and estimated changes in electricity carbon intensity paths.	1.2 billion
	SSP1-1.9 pathway in IPCC AR6		10 billion
Phased transition to 100% renewable energy by 2050 (RE100)	Taiwan's Net-Zero Pathway (NDC)		72 million
	SSP1-1.9 pathway in IPCC AR6		993 million
	Scenario estimation for achieving SBT Net-Zero criteria (SBT-NZ)		1.084 billion

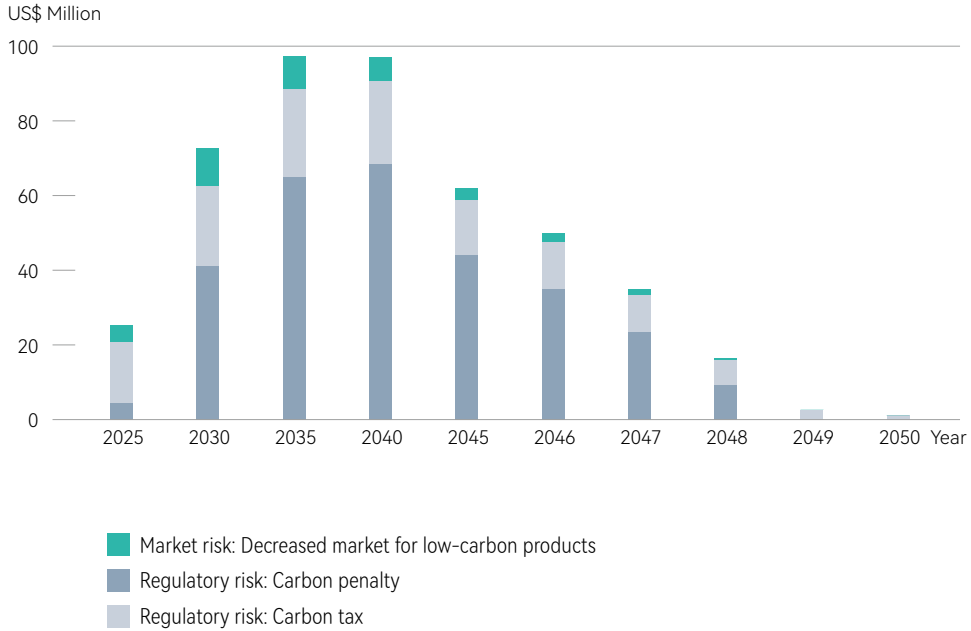
In accordance with ASEH's RE100 strategy, the financial impact analysis of Taiwan's Net Zero policy demonstrates that

- The greatest financial impact will occur between 2035-2040, primarily due to carbon penalties arising from the significant gap between the remaining emissions and the government's net zero target.
- Market risk decreases as the RE100 target is approached, leading to lower financial risks.

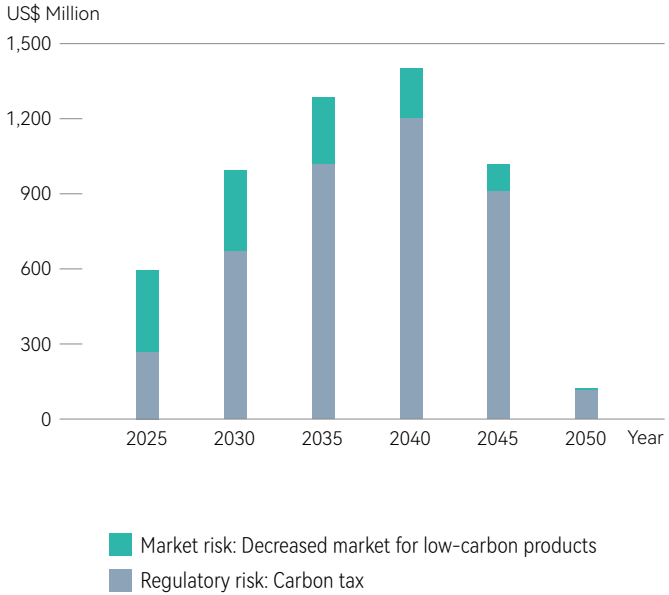
In accordance with ASEH's RE100 strategy, the analysis of the residual financial costs for SSP1-1.9 demonstrates that

- The highest residual financial risk amounts to approximately USD1.4 billion in 2040, with USD1.2 billion attributed to carbon taxes and USD200 million to market risk.
- The residual financial costs decrease as RE100 approaches the SSP1-1.9 target.

Taiwan's Net-Zero Pathway(NDC)



SSP1-1.9



(3) ASEH's Management Costs for Achieving Target Scenarios

Analysis of the Management Costs associated with meeting Taiwan's Net-Zero Target in accordance with ASEH's RE100 Strategy

In order to meet Taiwan's carbon emission goal, ASEH will continue to incur additional costs for renewable energy procurement but pay lower carbon taxes until 2048. Once the Net-Zero targets have been achieved in 2048, additional renewable energy purchases nor payment of carbon taxes will be necessary.

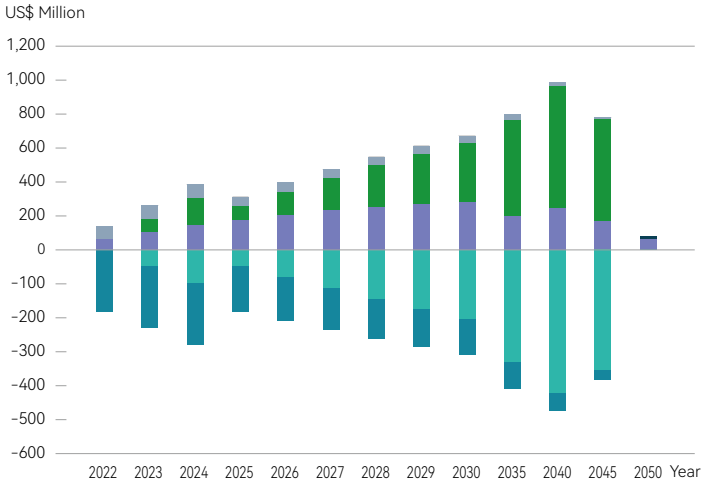
RE100 - Achieving Taiwan's Net-Zero Target (NDC)

Analysis of Management Costs associated with meeting SPP1-1.9 in accordance with ASEH's RE100 Strategy

The costs are primarily composed of carbon tax and the purchase of renewable energy. Upon achieving RE100 by 2050, our methodology for reducing Scope 1 emissions to meet SSP1-1.9 can only be achieved through carbon removal.

- Regulatory cost-Carbon tax
- RE procurement(Overseas)
- Reduced cost from non-renewable energy procurement(Taiwan)
- RE procurement(Taiwan)
- Carbon removal cost (for scope 1)
- Reduced cost from non-renewable energy procurement(Overseas)

RE100 - Achieving the SSP1-1.9 Carbon Reduction Target

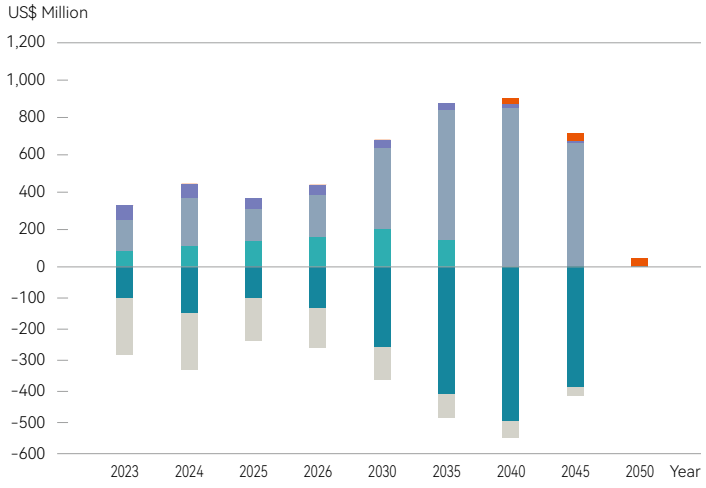


Analysis of ASEH's Management Costs associated with meeting SBT-NZ in accordance with the RE100 strategy.

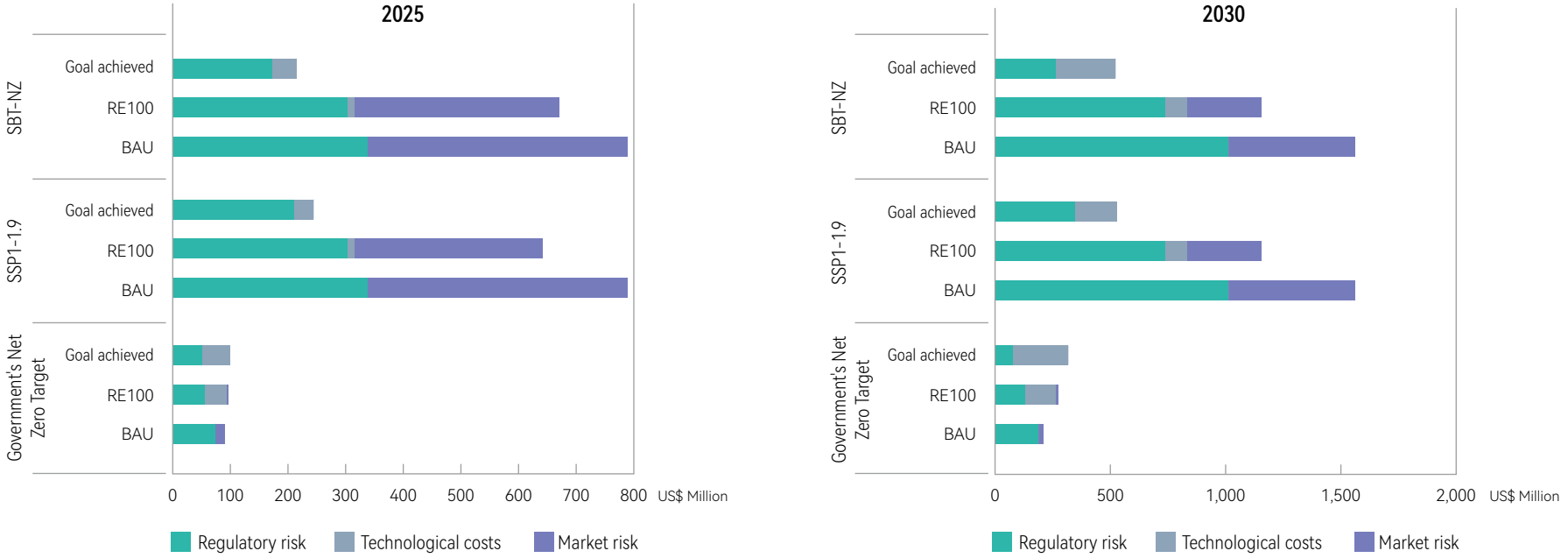
After 2040, ASEH is not expected to incur any carbon taxes and other regulatory costs, but will be bearing additional costs on renewable energy purchases and carbon removal.

- Regulatory cost-Carbon tax
- RE procurement(Overseas)
- Reduced cost from non-renewable energy procurement(Taiwan)
- Carbon removal cost (for scope 1)
- RE procurement(Taiwan)
- Reduced cost from non-renewable energy procurement(Overseas)

Managment Costs of Achieving SBT-NZ



(4) Recent External Scenario Cost Analysis



Physical Risk Adjustment

To ensure critical-mission business operations remain uninterrupted amidst global challenges such as climate risks, ASEH required all its business entities and key manufacturing sites to adopt corporate risk management and business continuity management (BCM). This include the development of business continuity plans and a series of drills that ensures effective operational risk management. In addition, ASEH continues to invest in and expand green facilities, with ample consideration of potential risks of heavy rain/ flooding during the construction phase, setting up preventive infrastructure (eg. installing flood barriers), constructing permeable pedestrian pathways, establishing water support systems for neighboring facilities, and promoting biodiversity conservation and restoration actions.

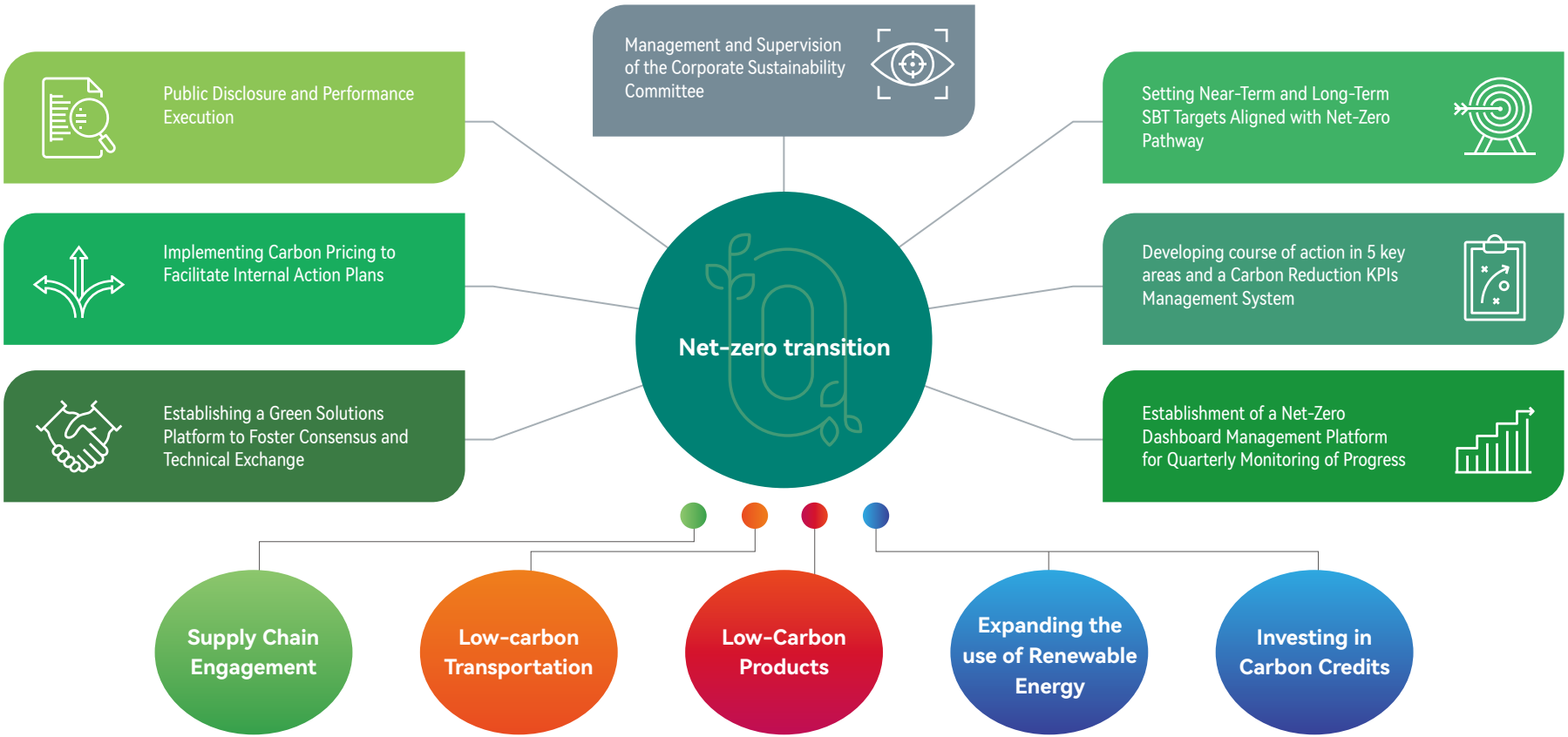
Over a short timeframe of 5 years, we have achieved the following developments:

- Installation of water storage facilities at our manufacturing sites
- Installation of a network to support emergency water supply in the local community.
- Increase the efficiency of water recycling in our manufacturing processes.
- Increase the capacity of wastewater treatment capacity and recycling rate.
- Installation of a rainwater harvesting system.

Towards Net-Zero Emissions

In 2021, ASEH completed the validation of its near-term reduction targets, through the Science Based Targets initiative (SBTi) which included targets to achieve verification of a 35% absolute reduction in Scope 1 and Scope 2 emissions from the baseline year of 2016 to 2030; and a target of 15% absolute reduction from the baseline year of 2020 to 2030 for Scope 3 emissions. In response to global efforts to the 1.5℃ pathway, ASEH revised its near-term targets and Net Zero 2050 targets, and submitted them to SBTi for review in 2023.

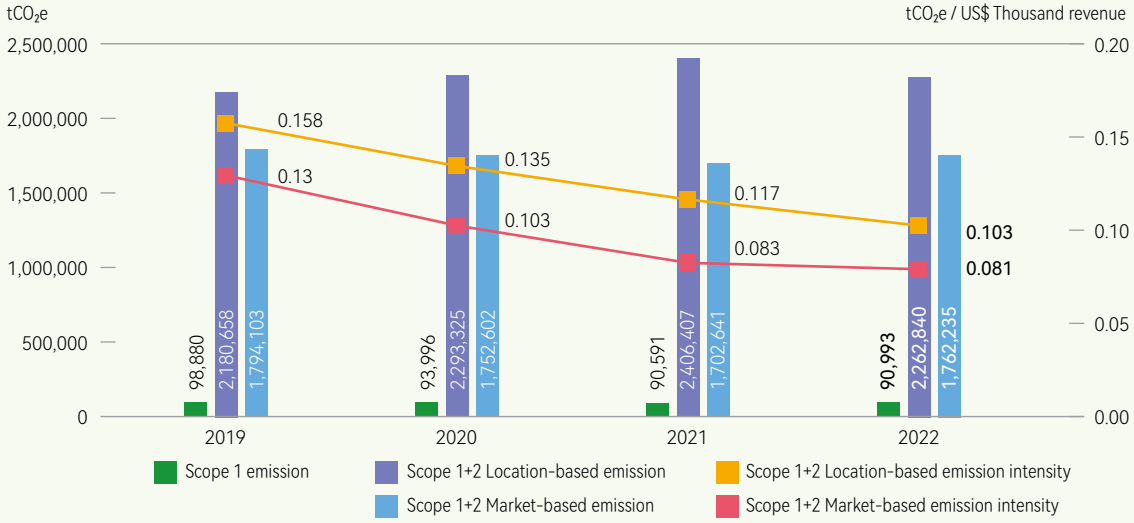
ASEH has established clear short-term, medium-term, and long-term carbon reduction targets; setting GHGs limits for subsidiary companies and manufacturing facilities, and implementing internal carbon pricing in stages based on the operating characteristics of each subsidiary. Our approach helps to encourage greater action from the organization to reduce carbon emissions while boosting our resilience to external policy changes. During 2022, ASEH's Kaohsiung and Shanghai sites successfully took the lead towards achieving the set targets, with plans to expand coverage by at least 80% by 2025. In addition, we take strategic action in 5 key areas namely; investing in carbon credits, expanding the use of renewable energy and low-carbon transportation, developing low-carbon products, and supply chain engagement. We are committed to continuously revise and update our targets, track and monitor the target progress.



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 2022, the Scope 1 and Scope 2[1] emissions, calculated based on market-based approaches, amounted to approximately 1.76 million[2] tCO_2e , with a 51% 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 2022, 14 sites obtained the ISO 50001 certification, covering 61% of the total sites. Additionally, a phased approach has been adopted for the procurement of renewable energy or certificates, gradually increasing the proportion of renewable energy usage based on market maturity in various operating locations worldwide. The major emission category in Scope 3, accounting for 69% of the total emissions, is procurement of goods and services. In response to this, 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.

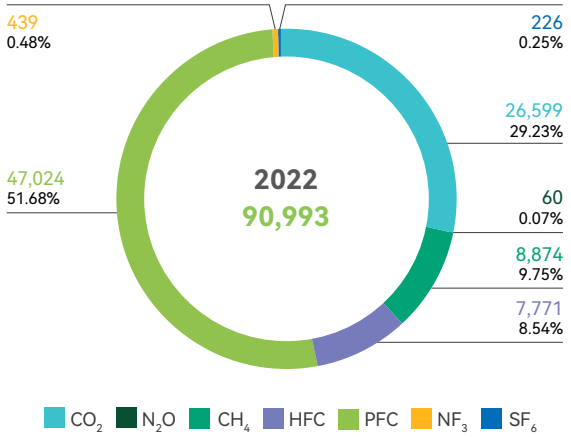
Greenhouse Gas Emissions and Intensities



[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

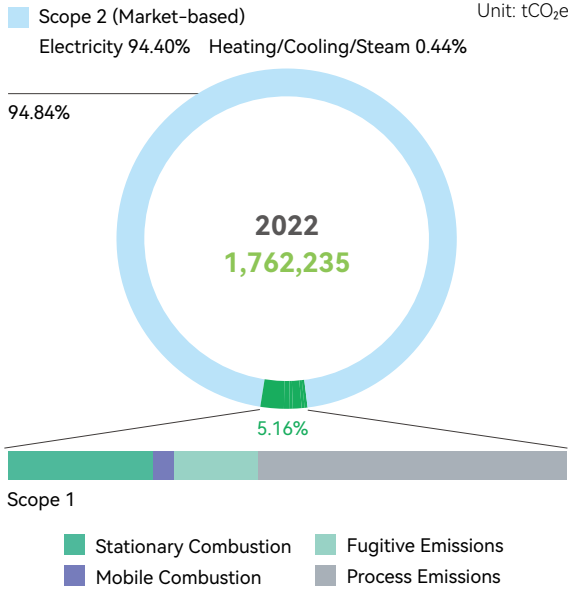
Scope 1 Emission Ratio

Unit: tCO_2e



Scope 1 & 2 Emission Category and Ratio

Unit: tCO_2e



2022 Scope 3 Emissions

Emission Source	Emission(tCO_2e)	Emission factor	Reduction Courses of Action
Purchased goods and services	9,156,134	Ecoinvent3.5 / Supplier information	Prioritize the purchase of low-carbon materials Encourage the use of renewable energy
Capital goods	1,292,157	Ecoinvent3.5 / Supplier information	Prioritize the purchase of low-carbon equipment and build low carbon facilities
Fuel- and energy-related activities	375,474	Carbon footprint information platform	Progressively increase the use of clean energies and renewable energies
Upstream transportation and distribution	170,773	Ecoinvent3.5	Implement green distribution and simplify logistics packaging Initiating Plans and Discussions on Low Carbon
Downstream transportation and distribution	93,501		
Waste generated in operations	20,457	Carbon footprint information platform	Promote circular economy and increase the resource recycling rate
Business travel	725	Carbon Footprints of Local Public Transportation	Rationalize business travels Encouraging the Use of Low Carbon Transport
Employee commuting	32,800	Carbon footprint information platform	Promote public transportation Encouraging the Use of Low-Carbon Transportation Vehicles
Upstream leased assets	3,926	Swiss Input Output Database	Improve energy efficiency
Downstream leased assets	28,140	EXIOBASED	
Investments	2,176,158	EXIOBASED	Providing Guidance on Greenhouse Gas Inventory and Promoting Emission Reduction
Total	**13,350,245**		

Energy Saving and Carbon Reduction Projects

ASEH adopts 3 key approaches in its carbon reduction management, namely, reducing carbon in the manufacturing processes, in buildings and developing low-carbon energy projects. 454 projects were carried out in 2022, resulting in an emission reduction of 600,110 tCO_2e. Our factories apply innovative solutions such as the smart energy management systems to increase energy efficiency, and we encourage internal energy reduction measures through technology sharing and competitions. At the same time, we continue to develop plans for the upgrade of existing buildings, and construction of new green buildings to mitigate the carbon footprint of our business operation.

Category	Energy Saving (MWh)	Energy Saving (GJ)	Carbon Reduction (tco_2e)	Reduction Scope Scope
Process[1]	64,473	232,101	37,657	Scope1+2
Building[2]	53,903	194,052	27,984	Scope2
Low-carbon energy[3]			534,469	Scope2

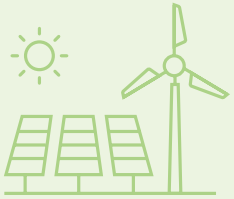
[1] Process carbon reduction includes enhanced performance and decarbonization in the manufacturing process
[2] Building carbon reduction includes saving in lighting, air conditioning, pneumatic, preventive equipment, pure/wastewater and electric power systems
[3] Low-carbon energy includes Self-generated renewable energy, purchasing renewable energy and purchasing renewable energy certificates

Scope1 Carbon reduction project

Decarbonization in the manufacturing process

3,454	Carbon Reduction (tCO_2e/year)

- Low-carbon alternatives
- Installation of point-of-use abatement systems for processes using Fluorinated GHG
- Low-carbon manufacturing: substituting CF_4 with O_2 in descum



Scope2 Carbon reduction project

Lighting System

1,273 MWh	665 tCO_2e

- Implement smart control
- Use high-efficiency LED

Enhanced Performance

64,473 MWh	34,203 tCO_2e

- Integrate processes
- Optimize parameters
- Use high-efficiency equipment
- Heat- recovery equipment

Preventive Equipment

333 MWh	170 tCO_2e

- Optimize control
- Reduce pressure loss and raise efficiency

Air conditioning System

37,143 MWh	19,250 tCO_2e

- Implement smart control and adjust parameters
- Replace low-efficiency equipment

Electric Power System

158 MWh	80 tCO_2e

- Install high-efficiency systems

Pneumatic System

14,421 MWh	7,527 tCO_2e

- Prevent leakage
- Replace low-efficiency equipment

Pure/waste Water Systems

574 MWh	292 tCO_2e

- Process improvement

Low-carbon manufacturing: substituting CF_4 with O_2 in descum

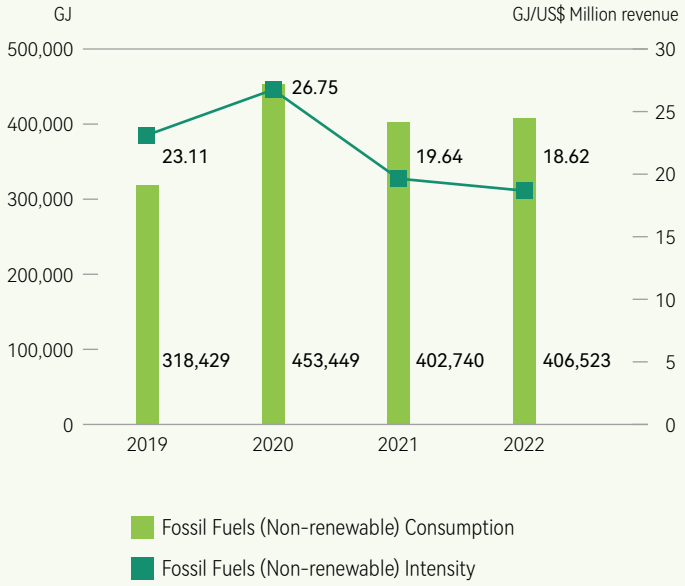
ASEH is committed to reducing the use of perfluoro compounds (PFCs) in its manufacturing process through point-of-use abatement as well as the introduction of alternative gases. In 2022, we successfully substituted CF_4, one of the worst global warming gases with O_2. This has not only enabled us to effectively remove GHG emissions from the manufacturing process but also lowered our manufacturing costs. In parallel, we are also examining substitute gases for similar manufacturing processes. When developing new products, our first consideration will always be the use of eco-friendly materials that allow us to provide our customers a more diverse and sustainable manufacturing service.

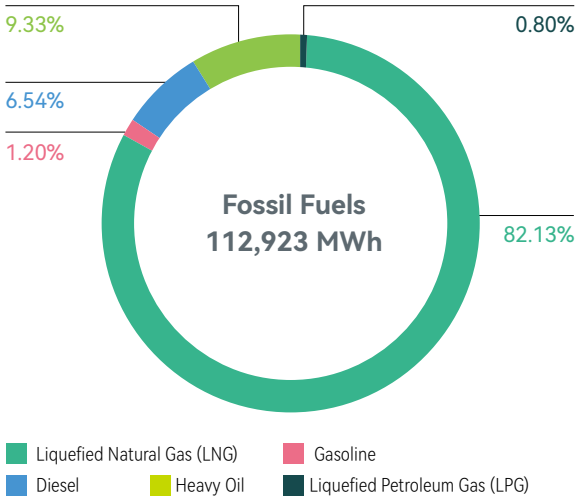
Energy Resource Management[1]

Fossil Fuels (Non-renewable)

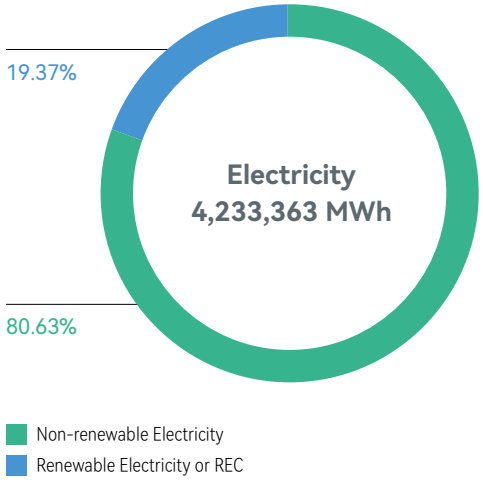
Petroleum gas, natural gas, gasoline, diesel, and heavy oil are the main fossil fuels used[2] at ASEH, accounting for a total consumption of 406,523 GJ[3] in 2022. Among them, gasoline used in stackers and emergency power generators accounted for the highest proportion of 82.13%. In recent years, dependency on fossil fuels has been reduced through the gradual introduction of electric stackers and the use of substitute fuels and clean energies.

Fossil Fuels (Non-renewable) Consumption and Intensity





Petrochemicals (Non-renewable fuels)	GJ	MWh
Liquefied Petroleum Gas (LPG)	3,253	904
Liquefied Natural Gas(LNG)	333,904	92,751
Gasoline	4,863	1,351
Diesel	26,586	7,385
Heavy Oil	37,917	10,532



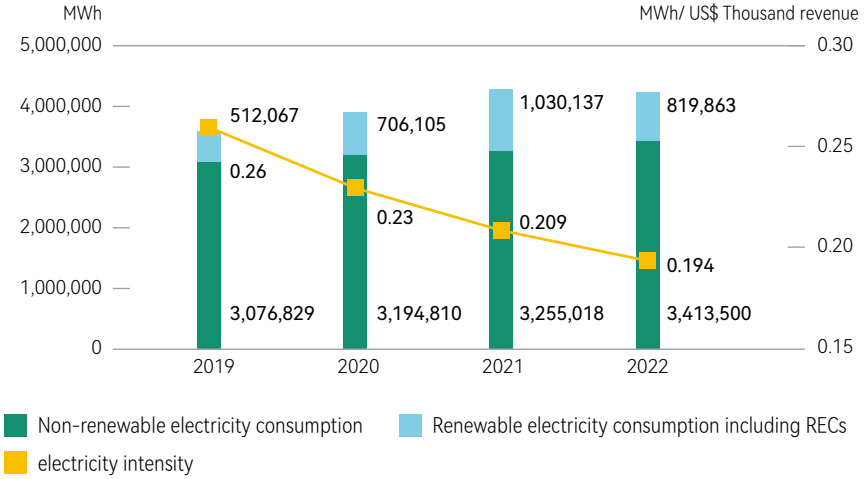
Electricity	MWh
Electricity Consumption	4,233,363
Non-renewable Electricity	3,413,500
Renewable Electricity or REC	819,863

[1] Total energy consumption within the organization = (non-renewable fuel/electricity consumption) + (renewable fuel (electricity) consumption)+(purchased electricity, heating, cooling and steam)
[2] Fossil (Non-renewable Energy) are used in: (a) Facilities: Emergency power generators, furnaces, (b) Distribution: Stackers, company vehicles, (c) Air pollution preventive equipment
[3] The calorific value of fuel refers to the unit calorific value table of energy products

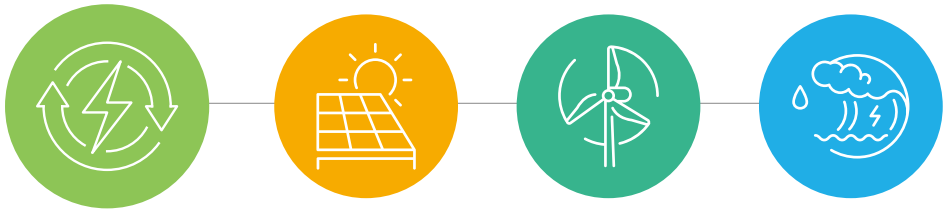
Electricity and Renewable Energy Consumption

ASEH is increasing the use of renewable energy and developing a diversified power supply portfolio to strengthen its climate resilience. In 2021, 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 2022, our total electricity consumption to talled 4,233,363 MWh, while electricity consumption decreased by 1% compared with 2021. Although, we sold four facilities in 2022, we had also added new facilities and continued the expansion of production capacity at existing facilities. As a result, the overall electricity consumption remained relatively unchanged compared to the previous year. The electricity intensity per unit of revenue recorded a decrease of approximately 7% due to improved production efficiency. 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. 87% of our global facilities used electricity from renewable sources including RECs. Our renewable electricity usage totaled 819,863 MWh and accounted for 19.37% 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 rate



	Solar power	Wind power	Hydroelectric power
19.37%	4.04%	6.73%	8.60%

Renewable energy	Self-generated Renewable Electricity	Purchasing Renewable Electricity	Purchasing Renewable Electricity
Solar power	447 MWh	1,192 MWh	169,354 MWh
Wind power	-	20,922 MWh	264,018 MWh
Hydroelectric power	-	-	363,930 MWh
Total	447 MWh	22,114 MWh	797,302 MWh

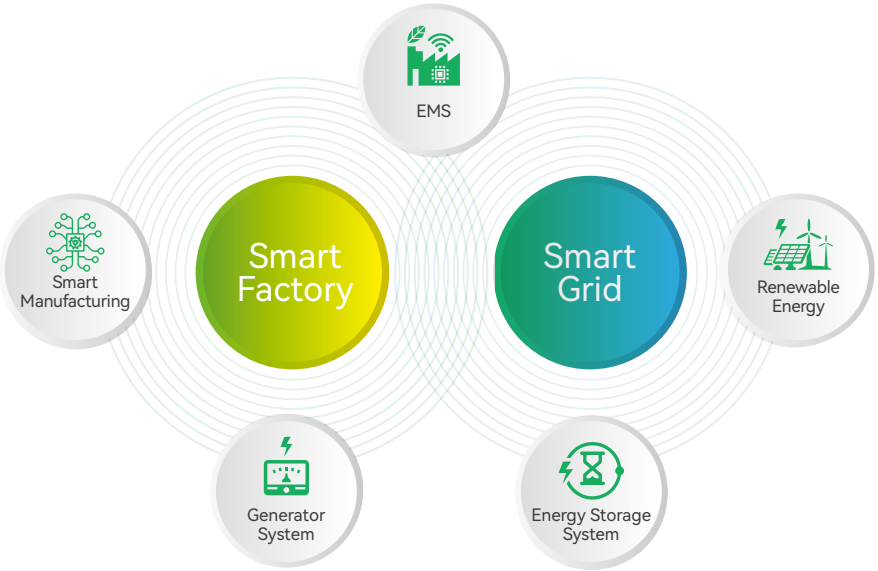
[1] 100% of electricity from renewable energy sources including RECs: (1)ASE:SH(M), WX, ISE Labs, JP, M (2)USI: ZJ, KS, JQ, HZ (3) SPIL: SZ

Smart Energy Monitoring and Management

To better manage our energy efficiency, we establish a minimum threshold of 2% electricity savings relative to the annual power demand at our manufacturing facilities. We also monitor the intensity of energy usage at our facilities, in particular, the usage of non-renewable energy, with a goal to reduce energy usage.

In recent years, we have actively expanded our smart energy monitoring and management with the adoption of the International Performance Measurement & Verification Protocol (IPMVP) at ASE Kaohsiung in 2022. We have developed a smart management platform that applies AI and big data from the power monitoring systems to instantly track, and regulate air conditioning chiller units to minimize energy consumption, and to fully control air compression systems through the use of boxplot analysis. At the same time, the smart platform enables us to analyze energy-intensive machines and implement improvements. By employing smart management and expanding the use of renewable energy, ASE is able to drive low-carbon manufacturing that supports customers' push for green production and allows us to progress towards our net-zero goals.

- **Real-time energy management platform:** Sets control values for total and individual power consumption with daily, monthly, and annual checks
- **Smart control system:** Determines optimal logic and timing with real-time computing, analysis, and modules for automated, real-time energy-saving benefits.



5.2 Water Resource

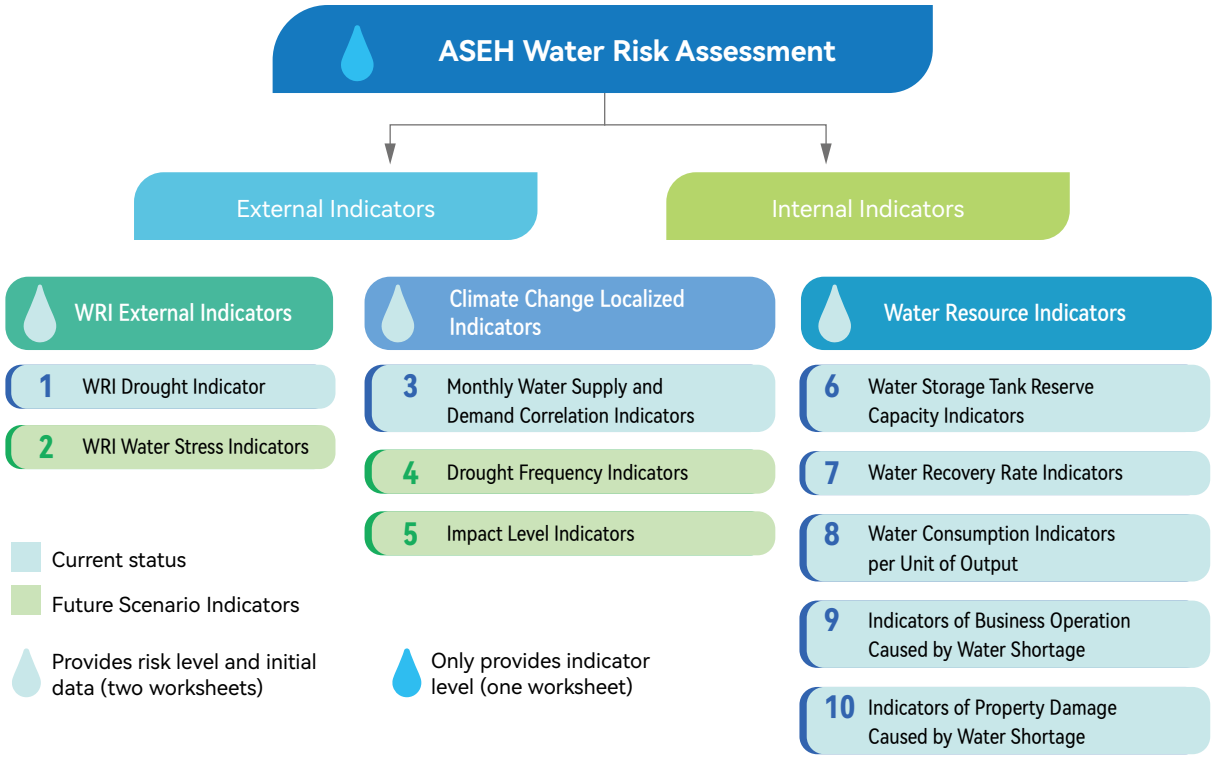
Water Resource Management

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 planss. ASE Kaohsiung became the first semiconductor assembling and testing facility in Taiwan to obtain the ISO 46001 certification in 2021, followed by ASE Chungli in 2022. The various ASE sites have also developed action plans for certification in the future.

Water Resource Management Framework

Risk Management

Effective water resource management starts with risk identification. To assess water resource risks across our global facilities accurately, ASEH has collaborated with a consulting team to develop risk assessment and analysis tools that incorporated the WRI (World Resources Institute) Aqueduct tools. We apply publicly available databases from the Aqueduct suite of tools to identify baseline water stress levels of our facilities and perform comprehensive water resource risk analyses. We have also referenced domestic data published by Taiwan's authorities together with global climate change information from NASA to provide a more accurate insight into our water resource risks. Besides taking reference from multiple official databases, ASEH's water resource risk assessment and analysis tool development also integrated actual water usage information from each facility and considers the vulnerability of each facility when evaluating water scarcity risks. Connecting the regional risks with the operational risks faced by each facility allowed us to develop an integrated water supply and demand risk framework based on the "water risk of areas affected by climate change" and "water vulnerability of a facility."



During scenario selection, ASEH follows the recommended approach by the TCFD and incorporates both favorable and unfavorable future water risk scenarios in assessments.[1] In accordance with the climate risk definition provided by the IPCC, we assess the degree of hazards, exposure, and vulnerability to determine the regional water stress index and facility-based water usage index for our facilities. These indices are categorized into five grades, where a sum greater than 8 indicates a high-risk area, 7 to 6 represents a medium-risk area, and a sum of 5 with one index at grade 2 implies a medium-risk area. All other scenarios are considered low-risk areas. Consequently, we evaluate both physical risks and transition risks associated with each facility.

Each year, we utilize the results from the risk assessment and analysis to understand risks associated with local water supply and demand, and the tolerance levels of critical facilities. When necessary, each facility formulates risk adaptation measures and resilience enhancement plans to continuously improve water supply allocation and water resource utilization.

In 2022, most of our facilities were in medium to low-risk areas. For facilities in high-risk areas, we implemented tangible adaptation strategies to address the challenges. These strategies include increasing the recycling rate of process water,

[1] Please visit the ASEH website at https://www.aseglobal.com/csr/green-transformation/water-resource-management/

implementing water reclamation management systems, enhancing backup water capacity, and reducing reliance on groundwater sources. These measures mitigate the physical risks associated with potential droughts. To enhance our resilience to transition risks, ASEH adheres to a higher standard of water resource compliance. We proactively disclose water resource-related indicators and goals, track progress within specified timeframes, and assess the financial implications under different scenarios. These management systems are integrated into our overall risk management framework to instill confidence in investors.

In addition, ASEH integrates the managing of potential financial impacts to the organization from different scenarios, into the company's risk management systems. We adopt the methodologies used by financial institutions to evaluate the company as references to determine the financial value of water risks. Furthermore, we undergo external assurance processes to increase the trust and effectiveness of communication with stakeholders. In terms of water resource management within the supply chain, we enforce the Supplier Code of Conduct which requires suppliers to implement water resource management plans. These plans involve documenting and monitoring water usage and discharge, actively conserve water, and complying with regulatory requirements to control pollution channels. In the current year, we performed a comprehensive water risk analysis on our Tier 1 suppliers using the WRI Water Risk Tool where we assessed the risk levels associated with their respective locations. The identified water risk outcomes are then integrated into our supply chain management to strengthen water sustainability within the supply chain.

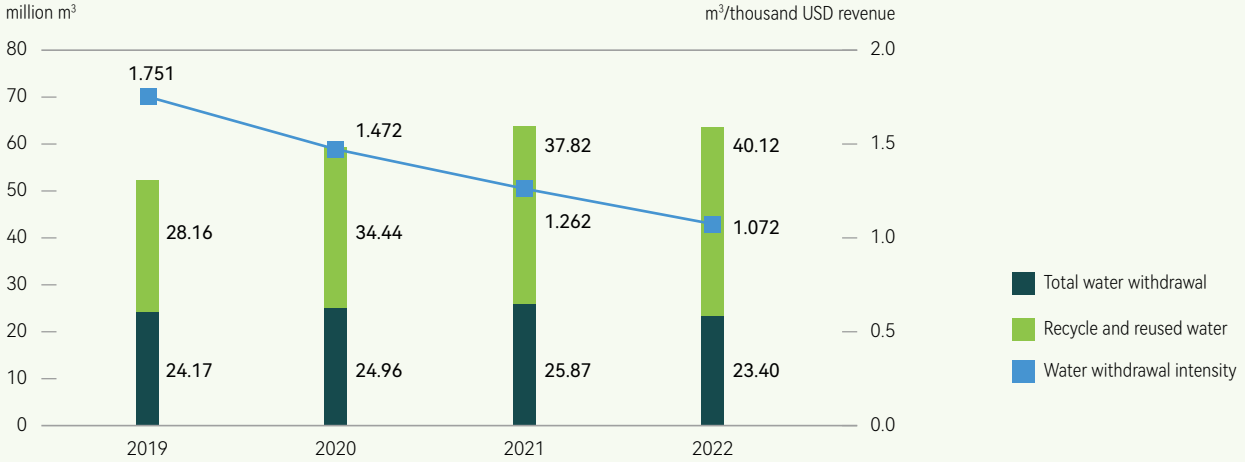
Water Withdrawal and Reuse

ASEH adopts three water use strategies: reduce, reuse, and recycle. The main source of water-use is tap water. Total water withdrawals in 2022 amounted to 23,398,956 tons[1], while water withdrawal decreased by 10% compared to the previous year. The water use intensity per unit revenue (including rainwater) decreased by 15% compared to the previous year, reaching our goal of a 49% decrease compared to the baseline 2015.

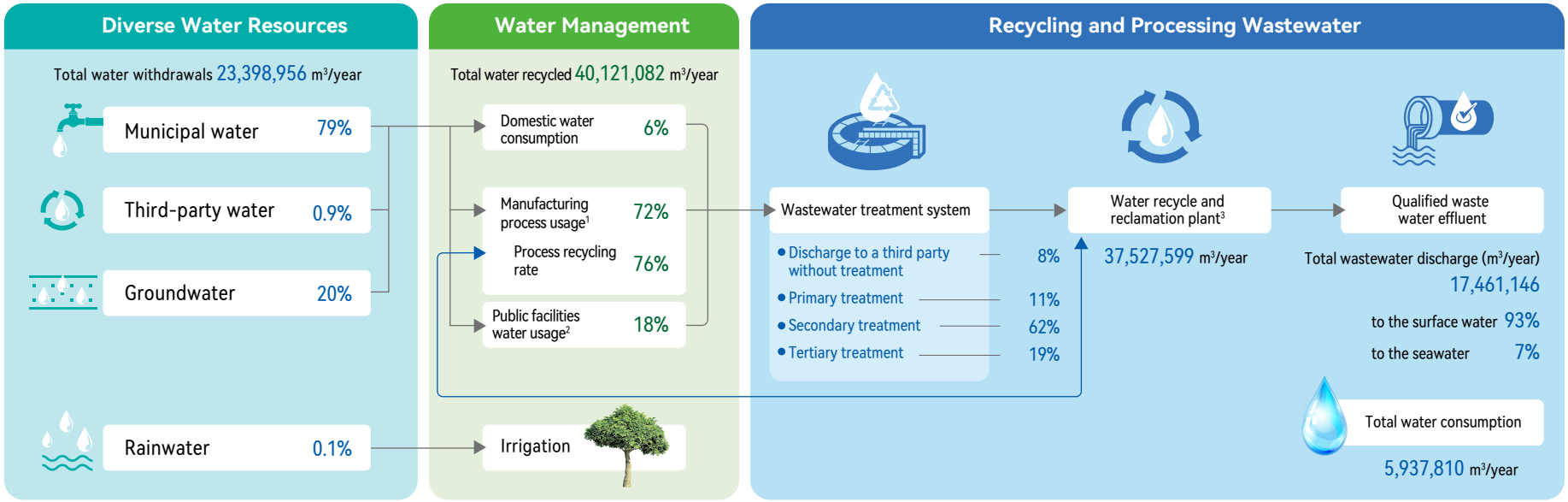
The wastewater reclamation recycling systems were established in ASE Kaohsiung, Chungli, and Malaysia[2] facilities to support wastewater treatment that meets local regulations. The wastewater reclamation recycling rate of ASE Kaohsiung and Chungli are 70% and ASE Malaysia is 50%. The robust recycling methodology at the facility result in a 11% reduction in effluent discharge, and significantly alleviated the manufacturing sites' pressure on water consumption and wastewater discharge.

In 2022, our successful launch of 10 conservation projects involved 6.38 million USD in capital expenditures and operating expenses, which saved a remarkable 13.14 million tons per year. Incentive mechanisms were implemented to encourage employees to propose feasible solutions to save water that resulted in, an increase of 4% year-on-year recycling rate to 76%. We remain committed to promoting and investing in water management capabilities taking concrete actions to advance circular economic benefits derived from sustainable water use.

Water Resource and Water Withdrawal Intensity



[1] The data includes that of all ASEH facilities that offer assembly, testing, and material services and electronics manufacturing services
[2] ASE Malaysia established a wastewater reclamation recycling system in September of 2021, and operating in 2022



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.

Wastewater Management

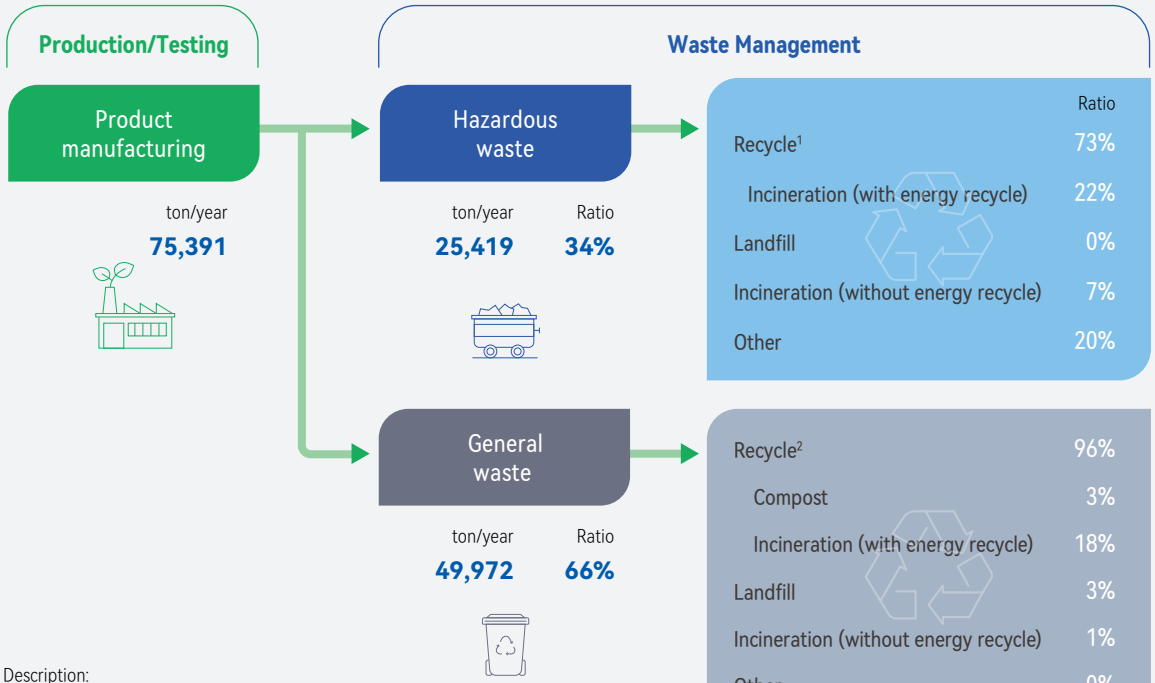
In 2022, 17,461 million tons[4] of effluent was discharged, while the total water consumption was 5.94 million tons. Our effluent management system is more stringent than that stipulated by law, and we regularly and continuously monitor effluent water quality. In addition to internal water quality tests, we also outsource offline sampling and water quality analysis to ensure that the ecology of the aquatic environment is under strict management. Currently, there are 15 facilities that collect and classify process chemicals by channel and treat each independently based on effluent characteristics, increasing the efficiency of effluent treatment processes. In order to provide employees with clean water and proper sanitation across our operations, we adopted the WASH (Water, Sanitation, and Hygiene) approach to safety manage water. Besides establishing wastewater treatment facilities at our facilities, we conduct regular health and environmental education to further enhance employees' awareness of water security.

[4] Three electronic manufacturing services facilities (USI Kunshan, Shenzhen, 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

5.3 Waste Management

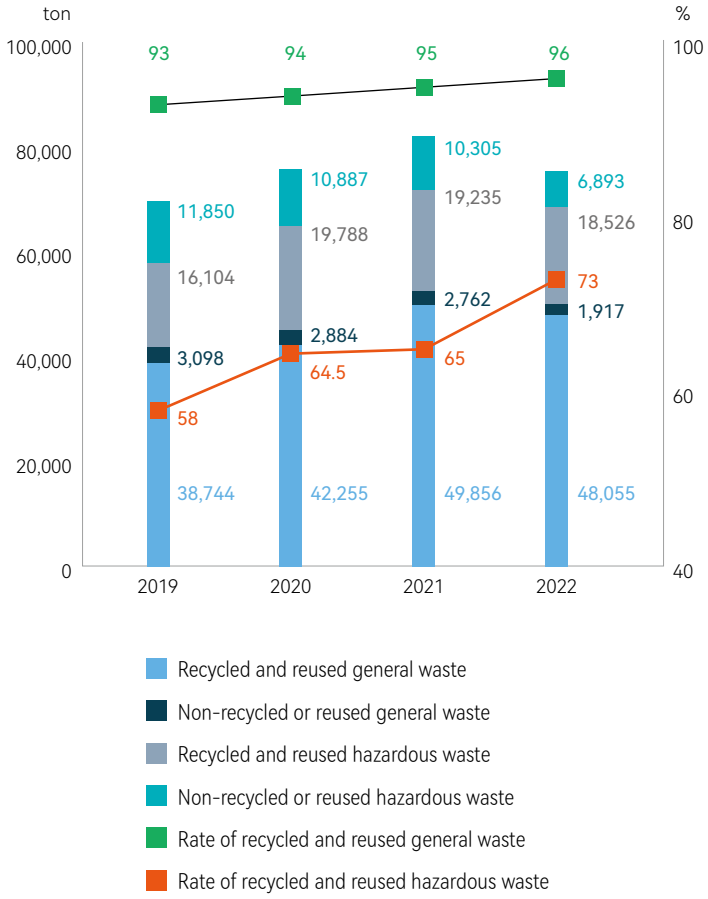
Waste Generation and Recycling

ASEH adopts source reduction measures and prioritizes the use of eco-friendly materials to minimize waste generation and reduce environmental pollution. At the same time, we request all facilities to acquire ISO14001 certificates, and collect and track environmental-related data through the Environmental Taskforce of each subsidiary. If the facilities have not achieved the target, they shall propose improvement plans in order to improve the waste output and recycling volume. In 2022, we generated 75,391 tons of waste and achieved a 100% recycling and processing rate by commissioning qualified local firms to process waste within borders. To ensure strict with environmental regulations and ASE's policies, each facility regularly conducts online/paper/on-site audits, and unannounced audits on their waste disposal vendors. We have also adopted the circular economy approach to increase the rate of recycling, resulting in a waste recycling rate of 88%, year-on-year increase of 4.2%.



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

Waste Output and Recovery Rate

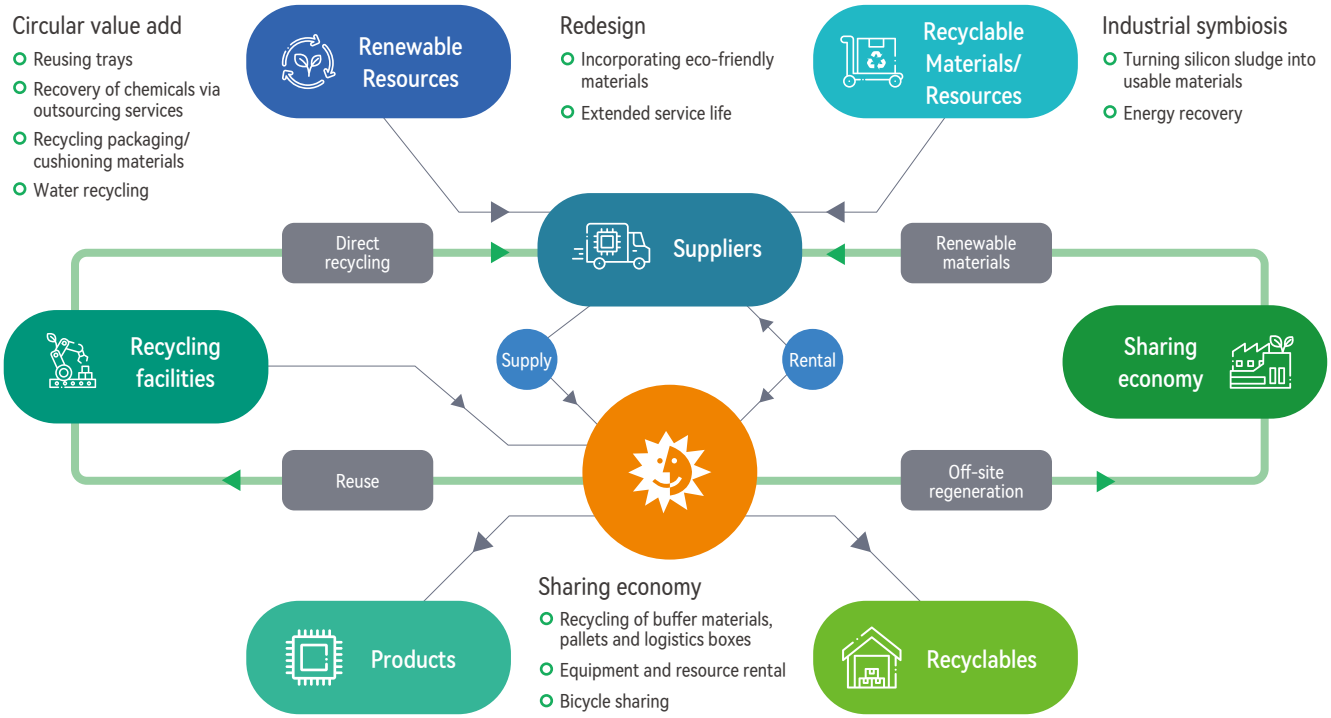


Description:
(1) Rate of recycled general waste reached 96% > target recycling rate (90%)
(2) Rate of recycled hazardous waste in 2022 (73%) was 8% higher than the previous year (65%)
(3) Rate of recycling of hazardous waste (excluding incineration with recycled energy) was 27%

Striving Toward a Circular Economy

Issues concerning circular economy have garnered worldwide attention in recent years. The increasing depletion of natural resources has shifted the focus of resource recycling and reuse topics to using natural resources more efficiently. Specialized technologies and economic benefits will be the main factors considered in the application and implementation of circular economy to promote active participation in circular economic activities. ASEH continued to implement circular economy projects, which revolve around five key elements: direct recycling, reuse, off-site regeneration, renewable materials, and supply and leasing. With ASEH at the core, we collaborated with suppliers and business partners in the industry chain to build a circular economy in the semiconductor industry. The circular economy features the following activities: redesign, circular value addition, recycling and recovery, shared economy, circular agriculture, and industrial symbiosis. In practice, ASEH has formed alliances with industry peers and other sectors to examine the life cycle and process of resource usage and subsequently identify areas where resources can be reduced, recycled, and reused to prolong their lifespan and maximize resource efficiency.

Circular Economy Promotion Blueprint



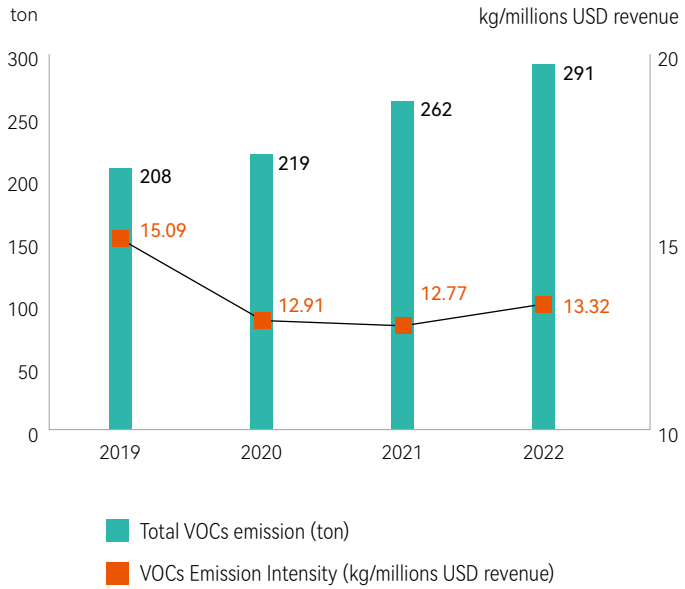
ASE Kaohsiung – Green Plastic Center

Plastic poses a major threat to the environment and is one of the top priorities at ASEH. In line with the resolution of the United Nations Environment Programme (UNEP) to formulate the Global Plastics Treaty, ASEH is taking the action to manage plastic waste by recycling and reuse that will reduce the amount of waste disposed, and contribute to a circular economy. In 2022, ASE Kaohsiung established a 'Green Plastic Center' to collect waste plastics and analyze their reusable value according to different material characteristics and types. These waste plastics are then distributed to recyclers for processing to make recycled plastic products, such as recycled plastic garbage bags, recycled plastic pellets, recycled fuel rods (SRF), etc. The Green Plastic Center will continue to optimize the value of waste plastics and improve the efficiency of resource recycling. The initiative will also help us save approximately USD 185,000 in disposal costs, and reduce the use of plastic raw materials by about 870 tons. ASE Kaohsiung plans to achieve 100% plastic waste resources recycling and zero incineration by 2025.

5.4 Air Emissions Control

Air pollutants emitted in 2022 include VOCs[5], SOx[6], NOx[7], and particulate pollutants[8]. 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. Due to production expansions in recent years, our VOCs emissions have increased in 2022. As the company continues to grow and expand, we will strengthen our emission management to focus on source emissions and facility upgrades to reduce the environmental impact caused by the concentration of air pollution emissions.

VOCs Emission and Intensity



Operational Manufacturing

Source Management

- Replace existing high VOC concentration materials with clean, low/no VOC content materials
- Strengthen sealed negative-pressure environments
- Academic collaborations to optimize treatment efficiency

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

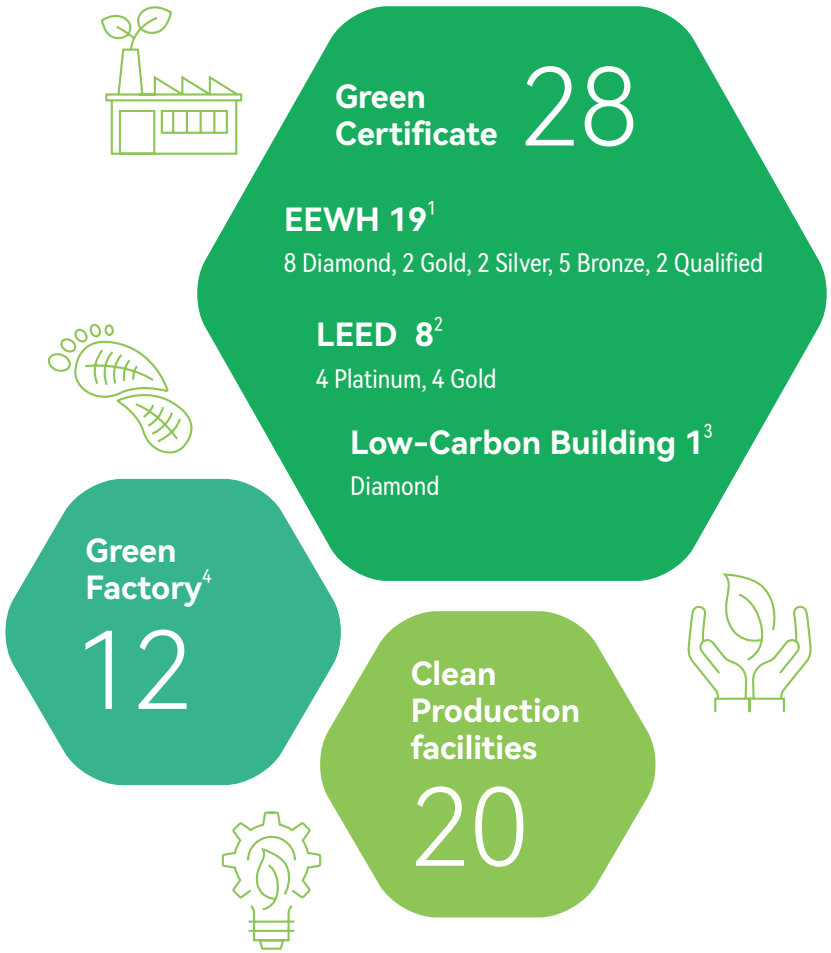
VOCs	291 tons
SO_x	15 tons
NO_x	47 tons
PM_{10} / $PM_{2.5}$	13 tons
Ozone depleting substances	0 tons

[5] VOC_s are calculated using public coefficients, and are either directly measured or calculated using mass balance
[6] SO_x are calculated using public coefficients or converted through the concentration ratio
[7] NO_x are calculated using public coefficients or directly measured
[8] Particulate pollutants are calculated using public coefficients or directly measured

5.5 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 promote and work towards obtaining certification for 100% of our new facilities for realizing the determination of green transition.



Green Building (EEWH)[5]

Energy Saving (MWh/year)	Carbon Reduction (tCO_2e/year)	Water Reuse(t/year)
246,453	131,173	3,829,880

Clean Production[6]

Energy Saving(MWh/year)	Carbon Reduction (tCO_2e/year)	Water Reuse(t/year)
92,768	47,227	8,093,252

[1] 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
[2] LEED Certification: K12/K21/K22/K26/CL-K&L/ K23/CN-HQ/CN-SH
[3] Low-Carbon Building Diamond Grade: K24
[4] Green Factory: K3/K5/K7/K11/K12/K15/K21/K22/CL-A/CL-K&L/CL-B/SPIL Zhong
[5] The energy saving performance of green buildings only takes Taiwan EEWH into account, and it is calculated based on the energy saving efficiency assessed by each facility when applying for the green building label
[6] The energy saving performance of clean production is calculated based on the energy saving efficiency assessed by each facility when applying for clean production certification

5.6 Biodiversity

Towards the Future of Living in Harmony with Nature

Biodiversity is fundamental to protecting the ecosystem, promoting the well-being of humans, safeguarding our planet, and maintaining economic prosperity. In June 2023, the Board of Directors endorsed the incorporation of the "Biodiversity and No Deforestation Policy" to actively engage with stakeholders and promote biodiversity and responsible environmental activities. We are committed to meeting the established targets of No Net Loss (NNL) and achieving Net Positive Impact (NPI) on biodiversity and No Deforestation by 2030. We endeavor to collaborate across our value chain to achieve the UN Convention on Biological Diversity's vision of "a world that is living in harmony with nature." ASEH is committed to the following:

- Ensure that our business operations and value chain activities are not located in globally or nationally designated biodiversity hotspots, or near the surroundings of hotspots and ecotones, to prevent negative impacts on protected species.
- If any of our business operations or value chain activities produce any negative impacts on the biodiversity or ecosystems, we will apply the mitigation hierarchy of Avoidance, Minimization, Restoration and Offsetting to mitigate the impacts and work towards the No Net Loss (NNL) target.
- Adopt an approach with regional characteristics to periodically assess the dependency and impact on the provision, regulation, support and cultural services of the ecosystems. Regularly monitor and disclose the biodiversity and ecosystem risks from our business operations and activities. Establish strategies for corresponding actions, targets and goals, and regularly publish reports on the progress and achievements.
- Ensure that no deforestation is part of our business operations and activities across the value chain by establishing a system to monitor and strictly comply with international and national forest conservation regulations. Engage actively with suppliers and/or partners on future reforestation to compensate current forest loss (no net deforestation) and work towards the target of ending all deforestation (no gross deforestation) by 2030.

To comply with our biodiversity and No Deforestation policy, and in line with the Taskforce on Nature-related Financial Disclosures (TNFD), ASEH collaborated with external partners in 2023 to create a risk assessment mechanism for evaluating the effects of business operations on biodiversity by applying the TNFD-LEAP approach. Beginning with our facilities in Taiwan, we will conduct assessments on our dependencies and the impacts on nature, identify corresponding risks and opportunities, and establish strategies and performance indicators. The assessment approach will be gradually rolled out at our overseas sites and included in our TNFD report to be published in the future.

Guided by the global targets adopted at the 15th Conference of the Parties to the United Nations Convention on Biological Diversity, specifically, the effective conservation and management of at least 30% of the world's lands, ASEH required its subsidiary, Siliconware Precision Industries (SPIL), to not only comply with regulations in the construction of new buildings at the CTSP Huwei Park, but go a step further and assume responsibility for the ecological restoration of nearby parklands. ASEH and SPIL initiated the parkland restoration plan in 2023, focusing on growing native vegetation. In addition, by applying food forest concepts, we are aiming to build a model industry park that demonstrates leadership in ecological restoration, environmental education, and local community engagement.

In addition to the aforementioned plans, ASEH has also achieved significant milestones in biodiversity and environmental conservation, described below:

Chinese Box Turtle Conservation & Restoration Project

The Chinese box turtle, which is a terrestrial freshwater turtle, is the only species of its kind in Taiwan. Due to long-term poaching and threats to its habitat, it was listed as an endangered species on the IUCN Red List of Threatened Species. ASEH has been contributing to the restoration and conservation efforts of the Chinese Box Turtle Conservation Team from the National Chung Hsing University. The conservation efforts range from the establishment of a sanctuary in Nantou County, to understanding the nature of the surrounding community, to working together with local residents. Our ongoing efforts in conservation have not only protected the Chinese box turtle population, but also other wildlife species including the critically endangered leopard cat.

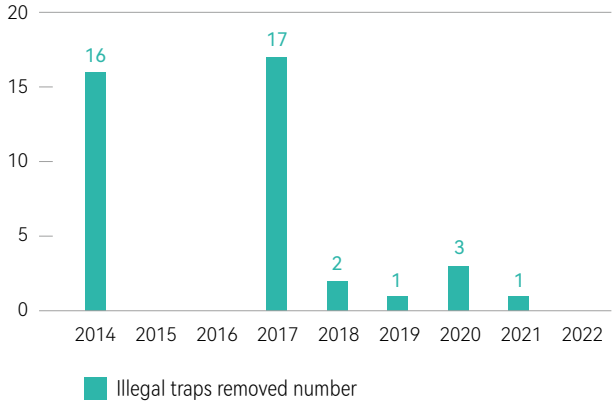
The university conservation team continues to venture deep into forested hills in search of the Chinese box turtle's habitats and conduct field surveys to monitor and track the movement and growth of the turtles. Field activities include setting up infrared cameras, collecting and identifying invertebrates, classifying plants, RFID tracking and installing camera traps to observe the turtles and collect various physiological data. In 2021, the team began to collate and incorporate the research data into teaching materials to educate elementary students about the importance of biodiversity.

In 2022, we began studying and documenting the genetic lineages and establishing a genetic cluster database that serves as valuable background information for future conservation efforts through wildlife or captive breeding. The study also provides important benchmarks for potential translocation efforts in the future.

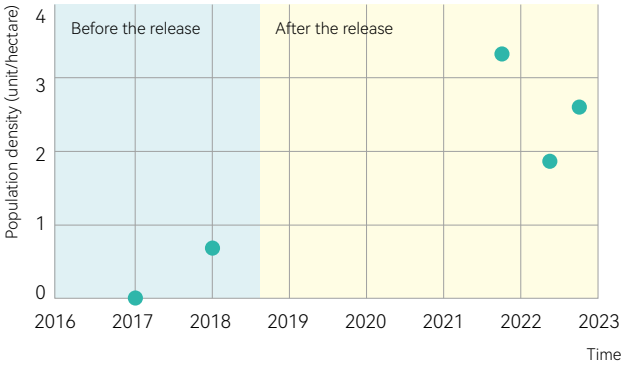
1085 turtles were released during the project period, and a noticeable increase in population density of nearly 2-3 times can be observed before and after the release. It is evident that the population of the Chinese box turtle has grown significantly and remained stable in the carefully selected release site, achieving the desired outcome of the conservation efforts.

We continue to promote Chinese box turtle conservation and awareness through various education programs with a total of 137 activities in Taiwan during the project period that attracted participation from of over 29,060 individuals. According to the field surveys, there has been a significant decrease in the number of illegal traps found and removed. Turtle poaching and illegal trading have also dropped significantly; statistics revealed that the peak in poaching incidents occurred in 2015 with 23 cases involving a total of 8,046 turtles traded illegally. However, in 2022, there was only one incident involving one traded turtle. These statistics demonstrated that the success of our awareness campaigns for the protection of the Chinese box turtle resulting in a significant reduction in poaching activities.

The number of illegal traps removed of Chinese box turtle



The change in population density of the Chinese box turtle
(before and after the release)



The number of poaching and illegal trading of Chinese box turtle

National Afforestation Project

To promote the restoration of Taiwan's forests and environmental resources, ASEH works closely with the Forestry Bureau of the Council of Agriculture. We have adopted national forests and planted tree seedlings in various locations including Kaohsiung, Hualien, New Taipei City, Pingtung, Luodong, Nantou, Hsinchu and Taitung. The selection of tree species for reforestation must be suitable for the specific land conditions. Many nectar-producing tree species have now grown into tall and thriving trees, supplementing the shortage of nectar-producing plants in Taiwan that help attract bees and butterflies. In addition to native tree species, special consideration has been given to selecting endangered species and air-purifying plants. Our primary goals are to promote sustainable timber production, improve environmental quality, and conserve water and soil resources. Trees and plants help absorb carbon dioxide, which in turn mitigate greenhouse effects and purify the air. In years to come, the forests will create a favorable habitat for wildlife, preserve water sources, slow down climate change and improve biodiversity.

Marine Conservation Project

To protect Taiwan's marine environment, ASEH engages with local governments to develop coastal clean-up activities. We have also established the ASEH Green Diving Team in Taiwan to advance ocean sustainability. The team joins forces with diving shops in the Northeast Coast, Green Island, and Xiao Liuqiu to host coastal clean-up activities. We have also partnered with the Taoyuan City Government to execute a marine debris removal program to clean up coastal and ocean litter.

We plan to expand our activites to other major diving spots in all of the outlying islands as well as the main island. We hope to inspire actions from more companies, and the general public to help restore Taiwan's beautiful coastlines and marine environment, allowing marine ecosystems to recover and prosper. In 2023, we initiated coral reef restoration and reef cleaning in Penghu by partnering with local businesses and the Penghu County Agriculture and Fisheries Bureau Aquatic Seedling Breeding Farm to propagate coral through the fragmentation method.

5.7 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 2022 amounted to US$146.01 million, with capital expenditure and expense accounting for 42% and 58% respectively.

Unit:US$ million

Category		Description	2019		2020		2021		2022	
			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.	29.7	13.5	43.0	14.6	33.5	18.9	41.7	22
	Resource Circulation Cost	Efficient utilization of resources, waste reducing, recycling, and disposal, etc.	10.6	15.5	7.7	25.5	7.0	41.8	16.2	39.5
Upstream/Downstream Cost		Green procurement, recycling of used products, etc.	0.7	3.6	0.1	3.0	0.7	5.7	3.4	7.1
Administration Cost		Manpower engaged in environmental improvement activities and environmental education, acquisition of external environment licenses/certification, government environmental fees, etc.	0.5	9.7	0.1	10.2	0.1	11.2	0.5	11.5
Social Activity Cost		Donations to, and support for, environmental groups or activities, etc.	0.1	3.4	-	4.0	-	3.7	-	4.0
Environmental Remediation Cost		Fines, recovery of the environmental degradation, degradation suits, and insurance fees, etc.	-	0.05[1]	-	0.01[1]	-	0.01[1]	-	0.0002[1]
Others		Global environmental conservation cost and cost to develop products to curtail environmental impact at the product manufacturing stage, etc.	0.02	0.1	-	0.04	0.01	0.04	-	0.1
Total			41.6	45.8	50.9	57.3	41.3	81.4	61.8	84.2

[1] We were not subjected to any major non-financial penalty or litigation that results in facility shutdown. For more details on major (greater than US$10,000) environmental-related fines or penalties, please refer to Appendix: Environmental Data- D. Environmental Violations.2022

Environmental Benefits

ASEH records environmental benefits generated from activities that reduce impacts on the environment. Our total environmental benefits for 2022 amounted to US$82.9 million. Our estimated environmental capital expenditures for 2023 will be approximately US$27.3 million. The board of directors has resolved in 2022 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 2023.

Unit:US$ million

Category	Description	2019		2020		2021		2022	
		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	599,833 MWh*	52.0	787,095 MWh*	71.1	1,107,145 MWh*	62.8	938,236 MWh*	50.1
	Reduction in water costs due to water saving projects	28,158,345 metric tons	11.5	34,437,950 metric tons	11.0	37,817,390 metric tons	16.7	45,880,154 metric tons	19.3
	Reduction in waste disposal costs due to waste recycling	54,847 metric tons	7.9	62,043 metric tons	16.2	69,091 metric tons	18.7	52,207 metric tons	13.5
Total		-	71.4	-	98.3	-	98.2	-	82.9

* The reduction in electricity by using renewable energy and purchasing I-REC is included

Sustainable Finance

At ASEH, sustainable financing is a strategic approach for us to advance our low carbon commitment and drive business transformation to mitigate climate change. To demonstrate our ambition, we have issued two Green Bonds since 2014 with UOP of increasing renewable energy usage, energy related technology development, increasing energy efficiency, promoting energy conservation, reducing greenhouse gas emissions, recycling and reusing waste materials, and water conservation/purification/recycling. In 2021, we structured Sustainability-Linked Loans that incorporatevariable interest rates linked to the achievement of pre-set ESG targets. This forms an additional incentive for the company to strengthen our developments in GHG emission reductions, renewable energy usage, waste processing, as well as to achieve a listing on the Dow Jones Sustainability Indices.

- **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 (type A)and 5 year (type B) terms respectively at a total value of US$300 million.
- **2021 to present:** ASEH in contract Sustainability-linked Loans with multiple banks.

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.

2022 Key Performance

Employees Bonus[1] (US$)
665 Million

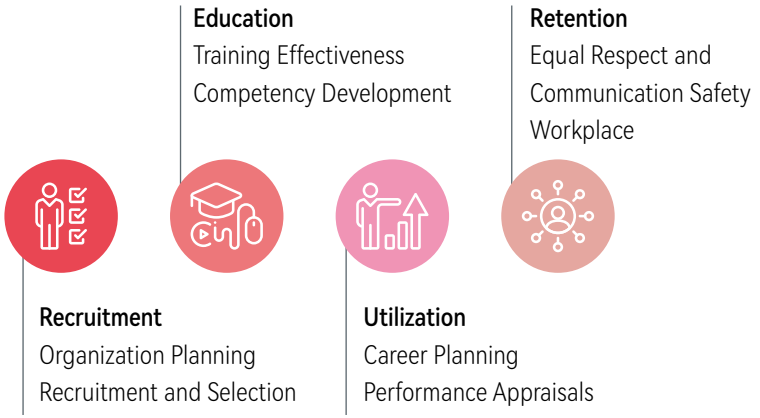
Percentage of Females in Management Positions
28.8%

Percentage of Females in Top Management Positions
14.4%

New Hires
22,505

Regular Employees in Labor Unions
30,598

ASEH Human Capital Development



SDGs	Business Actions	2022 Material Aspects	KPI	2022 Target	Status	2023 Performance	2023 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[2] Coverage (%)	>85%	Achieved	96.1%	>85%	>95%
			Turnover Rate (%)	<20%	Achieved	15.8%	<20%	<20%
		Diversity and Inclusion	Female Employee in Top Management Positions (%)	13.8%	Achieved	14.4%	14.2%	>15%
		Human Resource Development	Management Positions through Internal Promotions (%)	>75%	Achieved	78.3%	>75%	>75%
			Rate of Open Positions Filled by Internal Candidates (%)	>50%	Achieved	54.2%	>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[3] and Occupational Disease	0	Not Achieved	Major Injury: 0 Occupational Disease: 21	0	0
			Disabling Injury Frequency Rate (FR)	<0.5	Not Achieved	0.66	<0.5	<0.5
			Disabling Injury Severity Rate (SR)	<9	Not Achieved	11.73	<9	<9
			Employee Absenteeism Rate[4] (%)	<2.3%	Achieved	2.1%	<2.3%	<2.3%

[1] Employee Bonus includes: Monthly Incentive Bonuses + Annual Profit-sharing Bonuses
[2] The Employee Engagement Survey is conducted once every two years and the next survey will be in 2023
[3] The definition of major Injury: occupational fatality
[4] The new target in 2022

6.1 Talent Attraction and Retention

Diversity in Human Resources

ASEH has over 86,000 employees worldwide[1], of which 98.6% are regular employees and 1.4% are contract employees. There are 39,968 employees in management, engineering and administration positions, and 46,379 employees in technical positions on the production line. With an average employee age and tenure of 35 years old and 7 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 (over 60%) and technical positions on the production line (over 60%). More than 6,000 female employees at ASEH hold STEM-related positions, accounting for approximately 17.4% and the proportion of female employees who hold management positions is near 29%.

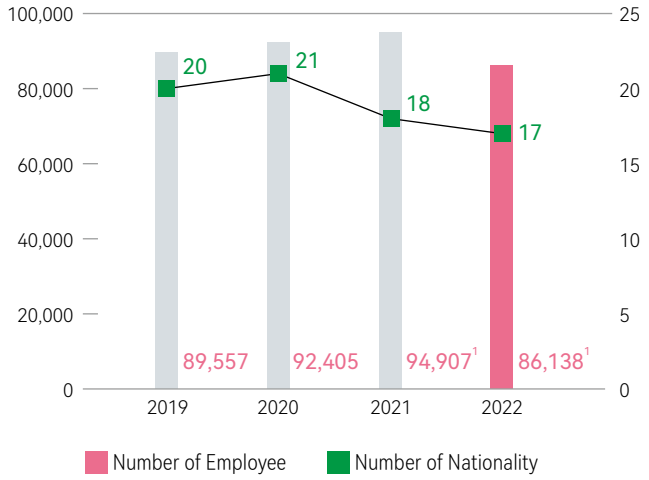
We understand that a diverse and inclusive workplace environment that maximizes the unique and different traits of employees facilitate the organization's operational efficiency. Globally, ASEH has established 23 operating locations in eight countries and hired employees of 17 different nationalities. More than 97% of our employees are from Taiwan, China, Philippines, Malaysia, Mexico and South Korea. Over 60% 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. Since 2017, we have gradually increased the hiring of persons with disabilities – achieving 598 persons in 2022. This number exceeds the hiring percentage stipulated by local governments.

[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

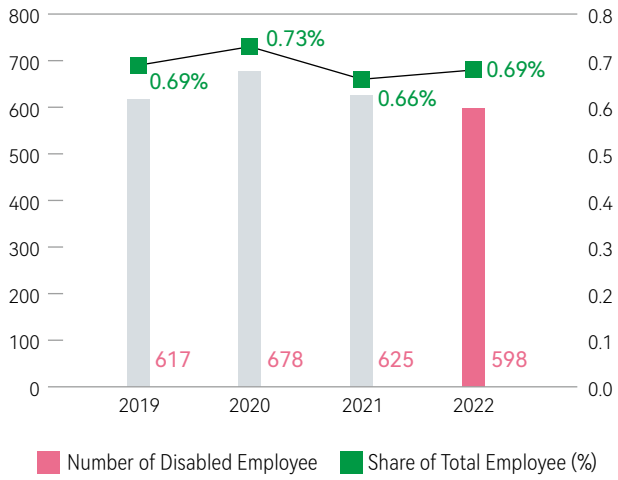
Global Workforce Structure

Category	Group	Number	Percentage of Total Employee (%)
Employment Type	Regular	85,142	98.6%
	Contract	1,205	1.4%
Gender	Male	45,086	52.2%
	Female	41,261	47.8%
Location	Taiwan	61,439	71.2%
	China	15,215	17.6%
	Rest of Asia	6,880	8.0%
	Americas	2,813	3.3%
Disabled Employee	Male	355	0.4%
	Female	243	0.3%
Position	Management	6,063	7.0%
	Engineering	28,187	32.6%
	Administration	5,718	6.6%
	Skill Job	46,379	53.7%
Age	<30	24,580	28.5%
	30-50	56,167	65.0%
	>50	5,600	6.5%
Education	Ph.D	164	0.2%
	Master	7,331	8.5%
	Bachelor	32,685	37.8%
	Other Higher Education/ High School and Below	46,167	53.5%
Total		**86,347**	

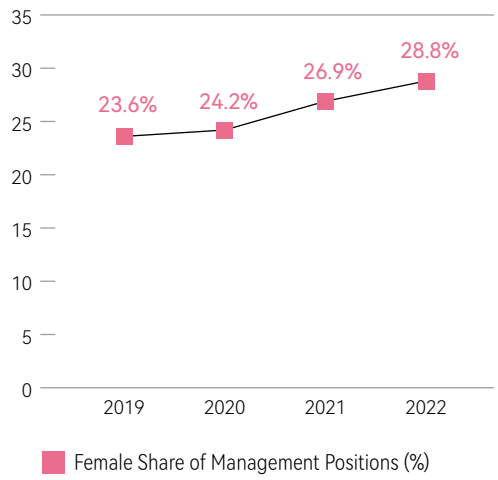
Total Employee and Nationality



Disabled Employee



Females in Management Positions

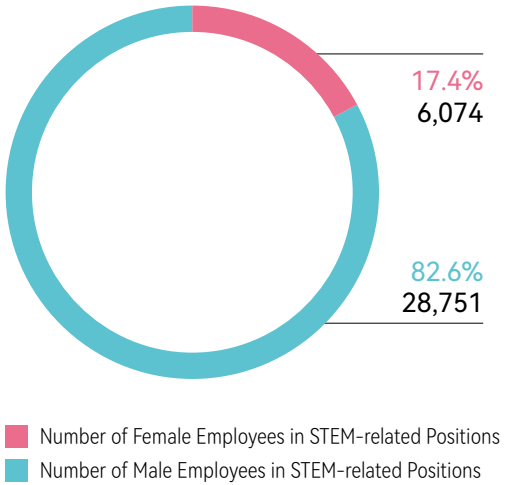


Male/Female Salary and Compensation Ratio

Category	Group	2019		2020		2021		2022	
		Male	Female	Male	Female	Male	Female	Male	Female
Executive Level	Salary	1	0.99	1	0.96	1	0.96	1	1.03
	Compensation	- [2]		1	0.76	1	0.88	1	1.02
Management	Salary	1	0.83	1	0.89	1	0.94	1	0.96
	Compensation	1	0.82	1	0.88	1	0.96	1	0.96
Non-management	Salary	1	0.947	1	0.996	1	0.989	1	0.989
Engineering	Salary	1	0.97	1	1.02	1	1.01	1	0.98
Administration	Salary	1	0.91	1	0.96	1	0.97	1	0.99
Skill Job	Salary	1	0.96	1	1.004	1	0.99	1	0.99

[1] The number of employee by nationality do not include ISE Labs
[2] There is no relevant statistical information for 2019

2022 STEM-related Positions Employee



Talent Recruitment

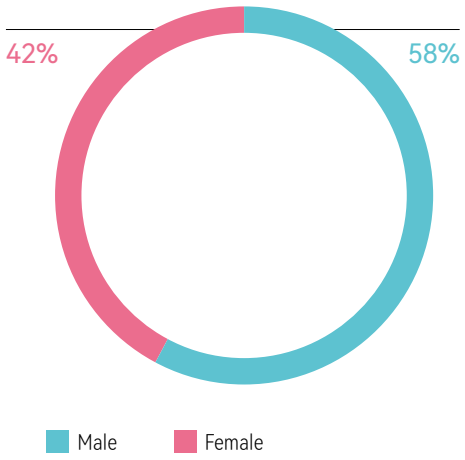
ASEH and its subsidiaries employ a diverse, equality and inclusive recruitment policy that prohibits discrimination against any employee or job applicant on the basis of gender, age, race, nationality, religion, political affiliation or sexual orientation. The company is committed to complying with local 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 2022, ASEH recruited over 20,000 employees, of which 23.4% are engineering positions, and 14% of female engineering employees, 70.1% are skilled technical positions on the production lines. ASEH has also hired 160 persons with disabilities.

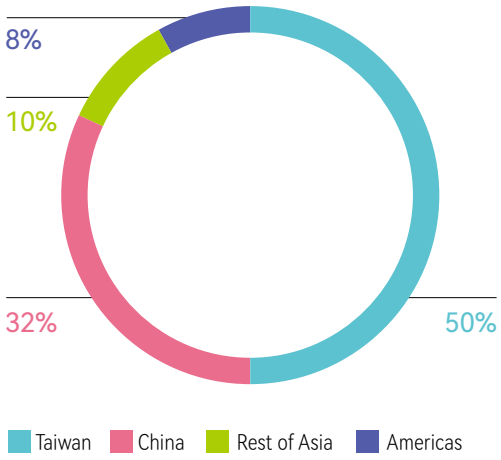
As a global enterprise, we recruit a diverse pool of high-quality talents from all over the world. Helping foreign employees adapt and retaining talent at the workplace are our top priorities. In 2022, we hired over 3,500 new foreign employees. Our subsidiaries provide new hires with interpreter service 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.

In 2022, our recruitment costs increased significantly due to the COVID-19 pandemic. The associated costs include self-health management accommodation fees and PCR (Polymerase Chain Reaction) testing fees. The average cost of recruiting an employee increased by 54% to US$1,283 compared with US$645 in 2021.

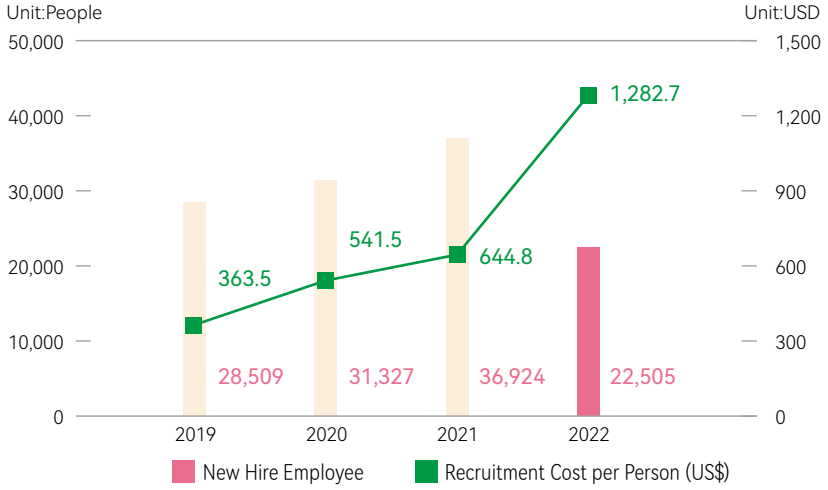
New Hires(by Gender)



New Hires(by Location)



New Hires and Recruitment Cost



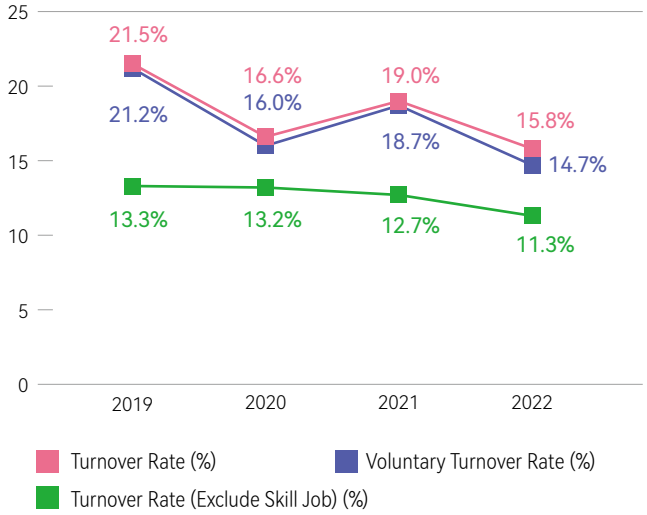
Employee Turnover[1]

Employee turnover at ASEH was 15.8 % in 2022, a 3.2 % decrease from the previous year. The turnover at our facilities in Taiwan was lower than 10%. The employee turnover rate at ASEH broken down into 54% male vs 46% female. In terms of job types, production line skill job position form the majority with 66.8%, while management, engineering and administrative positions formed the remaining 33.2%. 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.

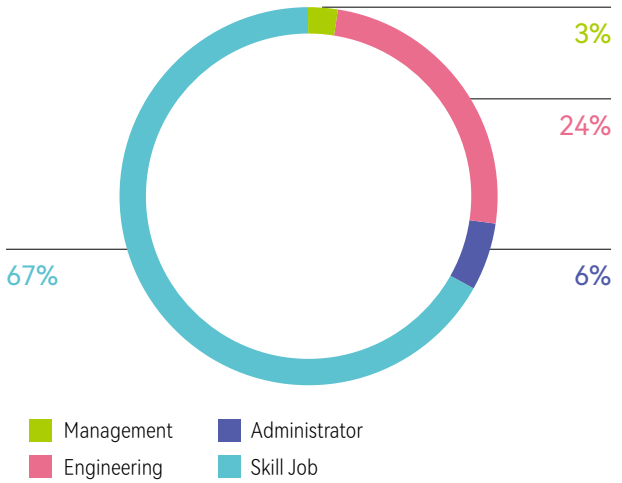
Reason for Resignation	Improvement Measures
Salary and Benefits	• Periodically adjust salary and benefit packages based on industry standards to maintain the Company's competitiveness • Issue stock options and cash bonuses to employees that display outstanding performance
Career Advancement	• Build a 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



2022 Turnover Employees (By Position)



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

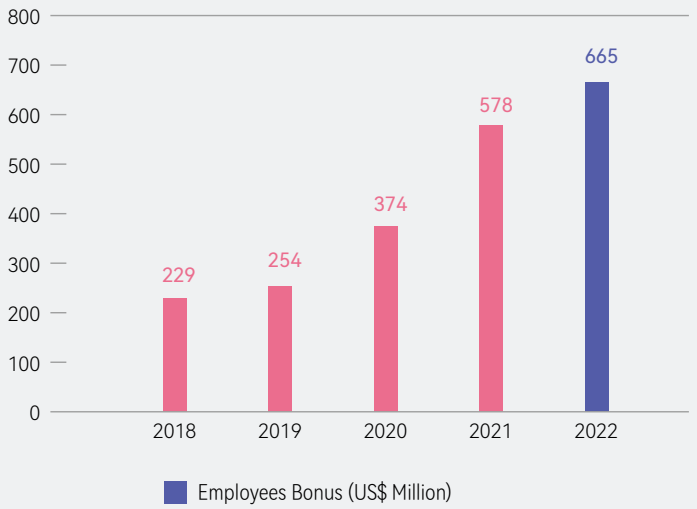
d. A Multi-faceted Employee Engagement Survey

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 2022, ASEH's employee bonuses amounted to US$665 million (including monthly incentive and annual profit-sharing bonuses), with the accumulated total from 2017 to the end of 2022 reaching US$2,281 million. In addition, employees with outstanding performance are awarded company stock options. The employee stock option program, which has a ten-year validity period from the date of issue, is aimed at retaining outstanding employees.

The accumulated total of employee bonuses for the period amounted to US$1,616 million. In addition, employees with outstanding performance are awarded company stock options. The employee stock option program, which has a ten-year validity period from the date of issue, is aimed at retaining outstanding employees.

Employees Bonus



Key Highlight: Bottom-up Profit Sharing Scheme

At ASEH, we value the unique importance of each employee, and maximizing their potential to play key roles within the company is the primary motivation behind the inception of our profit sharing concept. Against a backdrop of an industry downturn in 2005, ASEH continued to make meaningful investments in its people and resources, including the roll out of a bottom-up profit sharing scheme. On a monthly basis, the company formulates a bonus payout, that is determined by the achievement rate of operational goals set by the management team with participation from employees. Since the launch of the scheme in 2005, ASEH has grown steadily in terms of revenue, profitability and output efficiency, and is now a reputable leader in the packaging and test industry.

We believe that the effectiveness of an incentive lies in its ability to improve employee morale and strengthen organizational identification through a system that optimizes leadership, ownership and provides instant gratification with transparency. ASEH continues to build on the value of employee skills, fostering their dedication and commitment at work, and shaping the development of mutual trust between employees and supervisors. When employees are aligned with the company's strategic goals, they exert a positive influence across various levels in the organization resulting in a stimulating, dynamic, growth-focused and agile team.

Principles and Features of the Bottom-up Profit Sharing Scheme

Principle	Feature	Description
Real-time	Monthly Evaluation Mechanism	The scheme is designed to provide a monthly bonus payout based on performance evaluations tied to the achievement of operational goals. The monthly evaluations ensure regular communication between managers and employees. Ground level communication allows the monitoring of organizational productivity that reflect real-time performance of departments and employees as well as the identification of new ways to enhance output efficiency.
Potential	System Transparency	Outstanding junior employees get the opportunity to become star employee of the month which further stimulate their passion for their work. The system also encourages development of high potential employees, improving the cohesion of organizational dynamics.
Efficiency	Frontline Priority	We believe that frontline employees have the strongest ties to improving productivity and efficiency in production output. Therefore, we adopted a bottom up approach for bonus distribution with priority given to junior engineers and the management level given the last consideration. At the same time, we take into consideration the performance and special contributions created by the organization and the team, and formulate strategies for different levels of competitive bonus distribution. Rewarding from the bottom up sets the company on a positive cycle of achieving higher levels of efficiency with a motivated workforce.

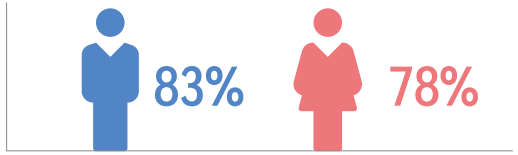
Maternity Benefits and Parental Care

Pregnancy-friendly Workplace

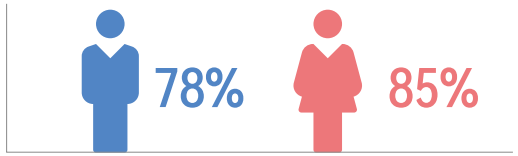
A total of 5,568 ASEH employees were on parental leave in 2022, including 954 on unpaid leave. Among the 816 workers expected to return to work, 650 actually returned, equivalent to a 80 percent return rate and a 83 percent retention rate. The number of newborn children at all facilities in 2022 was 1,684. Of the total number, 1,207 were from the Taiwan sites, accounting for 0.87 percent 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.

To encourage child birth, foster future generations, and address an aging population, subsidiaries of ASEH established policies additional policies on top of the mandated 7 days paternity leave and prenatal care leave, to encourage child birth while supporting the career and family needs of our employees. We are proud that much of our policies and incentives surpass those regulated by the government.

Return Rate



Retention Rate



Maternity Benefits	**Paid Maternity Leave** • **ASE:** ASE Kaohsiung and ASE Chungli extended paid maternity leave, from 8 weeks to 10 weeks Childbirth Subsidies **Childbirth Subsidies** • **ASE:** ASE Kaohsiung and ASE Chungli offer a child birth subsidy of NT$10,000 per child; ASE Malaysia offers a one-day congratulatory paid leave a day after an employee's new born 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 (NT10,000 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, with unrestricted access during normal 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


ASE Chungli's Kindergarten

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

With proximity to nature and lush greenery in the surrounding areas, ASE was able to integrate food and farming education, green building design, art and aesthetic experiences, multi-learning areas, a library and high quality teaching equipment into the teaching curriculum. Our aim is to provide an innovative educational environment to let children develop their abilities through real life experiences and achieve a balanced physical and psychological development.

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. ASE subsidizes the operating cost of the facility including utilities, cleaning and disinfection, general maintenance, fire safety measures, meal plans designed by dietitians and outdoor learning activities. The subsidy helps to lower the tuition fees and alleviate our employees' financial burden, while allowing the children to benefit from high-quality childcare and learning environments. 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 Korea's Kindergarten


ASE Kaohsiung'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 positions.

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.

Performance Appraisal

Evaluation	Type	Object	Frequency	Approaches
Management by Objectives	• Performance Evaluation • Management Level Evaluation	• All Employees • Employees at the Deputy Manager Level and Above	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	• Employees at the Deputy Manager Level and Above • Management, Engineering and Administration Position Employees	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.
Agile Conversations	• Monthly Evaluation	• Management, Engineering and Administration Position Employees	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.

Key Highlight: Creating the Best Team

To unleash the potential of our employees and foster an understanding of the importance of teamwork, our company places a strong emphasis on the concept of 'team'. We not only recognize individual achievements but also invest significant effort in building trust and synergy within teams, and encouraging them to achieve shared goals. While an outstanding individual may have secured a significant project for the company, it is a strong and synergized team that can help the organization maintain its lead in the industry. At ASE Kaohsiung, team building is fundamental to the organization and is implemented through various internal competitions that emphasize teamwork. These competitions include the Annual Best Team Award, CIM Technology Competition, Safety Committee Project Competition, Engineering Committee Annual Competition, Quality Committee Presentation Competition, Energy Saving and Carbon Reduction Action Competition, and Machine Safety Competition. Through these team competitions, we strive for improved quality and efficiency, enhanced automation and safety, and technological advancements. By setting clear team objectives and fostering collaboration, these competitions promote collective brainstorming, specialized task allocation, mutual learning, observation, and competition among teams. Team building is one of the many integrated approaches that help to drive the company's growth and achieve its sustainability goals.

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	Communications
• 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	• 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

ASEH and its subsidiaries received a total of 802 employee complaints in 2022. Amicable resolutions were reached for all cases after communicating and clarifying the facts with complainants. Among the complaint cases, 18 pertained to labor disputes, all of which were resolved amicably after clarifying the facts and giving proper care to complainants; and another 9 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. Additionally, all of our employees (184,588 person-times) completed a total of 168,04 hours of compulsory human rights training which covered the topics of RBA management, labor rights, gender equality and sexual harassment awareness.

Item	2022	2021
Training Content	RBA management, Labor Rights, Gender Equality and Sexual Harassment Awareness	
Target Audience	All Employees (including New Employees)	
Training Hour (hour)	168,044	179,775
Training Person-times	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.

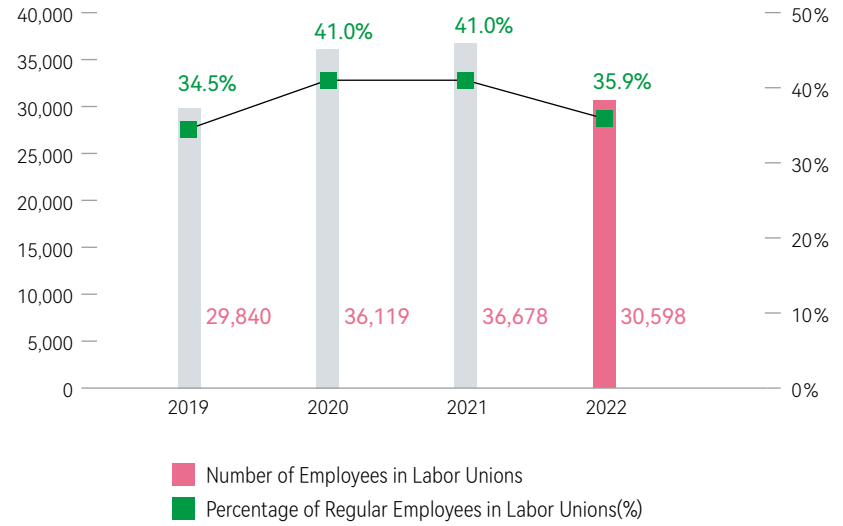
Remediation

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 2022, the total number of union members was 30,598, accounting for around 35.9% of all ASEH regular employees. Among the three ASEH subsidiaries, 16 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, Kunshan and Mexico. Of these 7 facilities, the labor unions of 8 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; SPIL's Suzhou facility; and USI's Zhangjiang, Kunshan and Mexico facilities. The total number of employees in the collective agreement account for 14.4% 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. 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

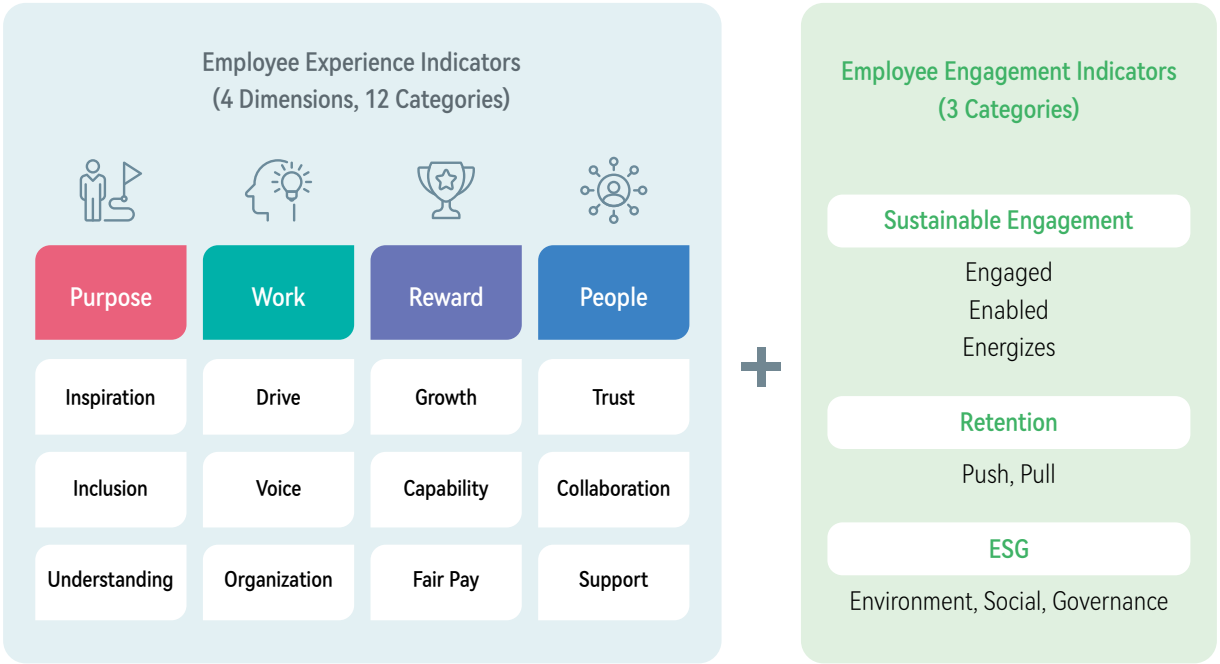
Employees are ASEH's most valuable asset and strategic to the company's sustainability development and competitiveness. Maximizing the potential of our human capital to create value forms a key pillar of ASEH's sustainable development strategy. We began conducting the Employee Engagement Survey every 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. The content of the 2021 survey includes employee experience indicators and employee engagement indicators, and the survey is conducted amongst direct and indirect employees across different job scopes.

In 2021, the scope of the engagement survey is now expanded to all three major subsidiaries covering direct and indirect employees at 26 facilities in 8 countries, accounting for 96.1 percent (81,479) of total employees surveyed. Overall, the 2021 sustainability engagement survey recorded a score of 79%, exceeding the company's target of >75%. The next Employee Sustainability Engagement Survey will be administered in 2023.

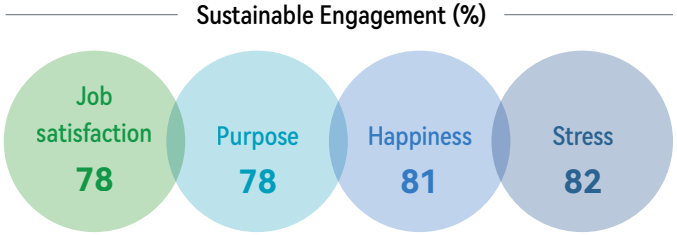
Employee Engagement Surveys Results

Category \ Year	2019 - 2020		2021 - 2022		2023 Target
	Target	Result	Target	Result	
Engagement (%)	73	83	>75	79	>75
Coverage[1] (%)	80	82.1	>85	96.1	>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 Center: 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.



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 2022, more than 8.94 million training hours in total were completed, with each employee completing 94.1 hours of training on average. The total spent on training exceeded US$11.8 million, averaging around US$137 per employee and more than 5,000 internal lectureship. 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 2022, a total of 116 employees received a workrelated certification.

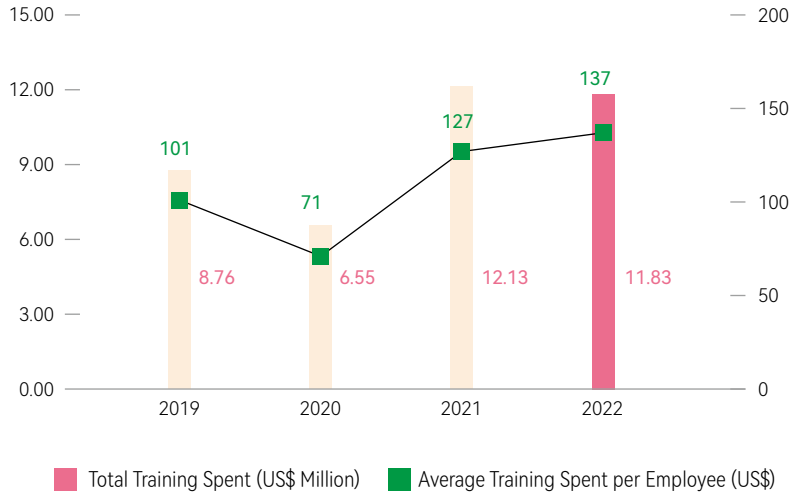
To foster an outstanding workforce, we are focused on building a pool of future talent that will turbocharge the company’s growth engines. Through a systematic talent development mechanism, we provide comprehensive training for employees and encourage internal jobs rotation and transfers that add diverse values to their career planning.

In 2022, 54% of the available job vacancies were fulfilled internally. We also focus on grooming employees for middle and senior management roles. Approximately 78% 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.

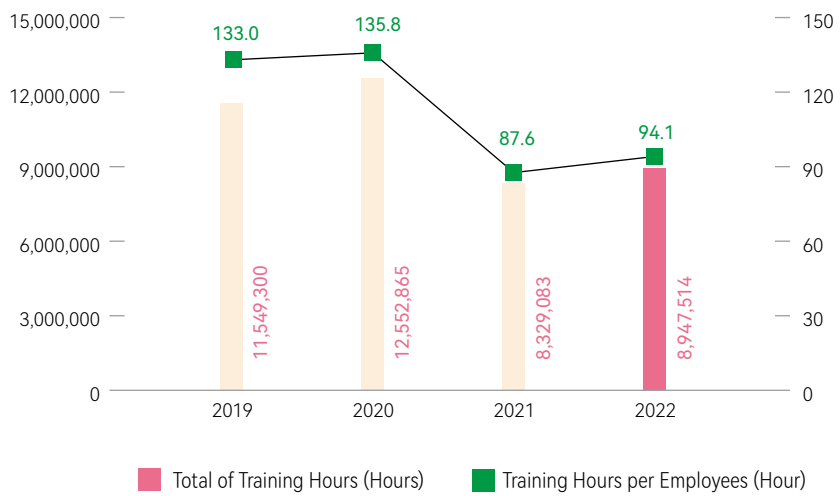
Training Index

Category	Group		Number	Training Hours per Employee
Training Hours (Hour)	Gender	Male	4,804,053	106.6
		Female	4,143,461	100.4
	Position	Management	494,207	81.5
		Engineering	3,272,652	116.1
		Administration	331,553	58.0
		Skill Job	4,849,102	104.6
Total			**8,947,514**	**94.1**

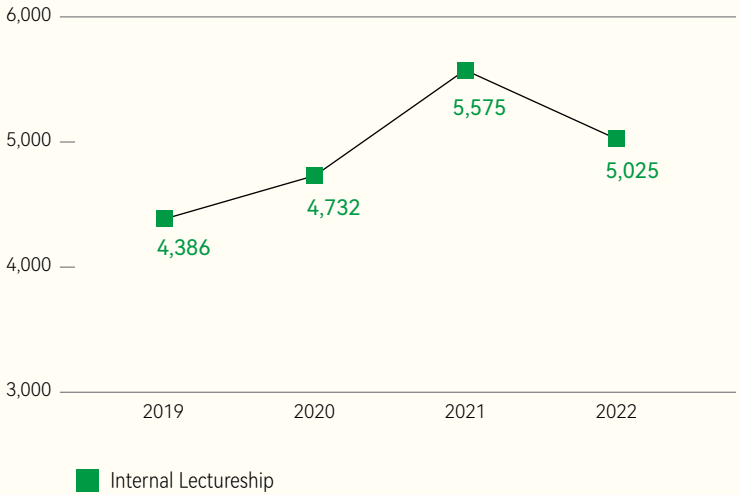
Training Spent



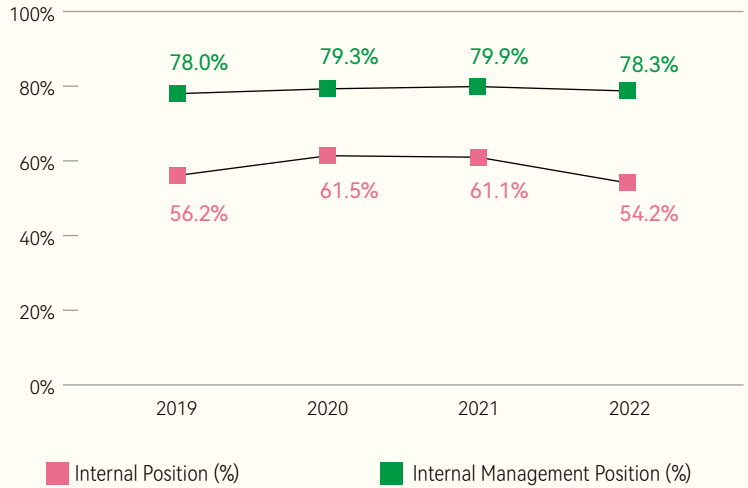
Training Hours



Internal Lectureship

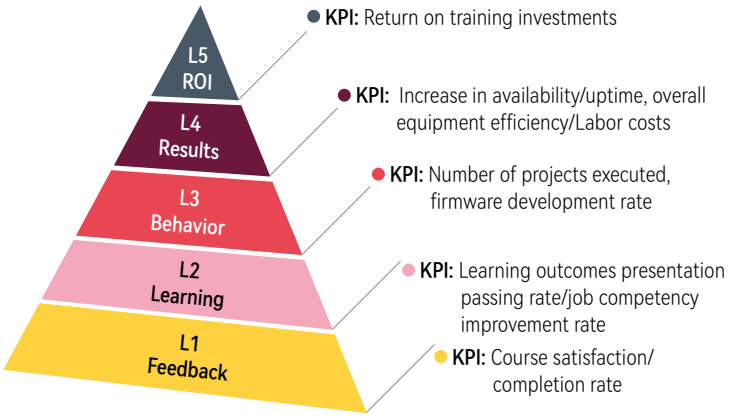


Internal Position and Internal Management Position(%)



School of Smart Manufacturing

Training Program Efficiency Index



Program Title Smart Manufacturing and Digital Transformation

Course Outline

(1) Research, develop, and launch AI platforms to cultivate different levels of AI talents with differentiated learning content, and progressive learning.

(2) Build smart factories to improve operational productivity through exploring digital applications, developing 4IR robotic arms and automated material handling systems. Initiate special project presentations that integrate classroom theories with actual factory operations.

(3) Integrate factory operations to improve efficiencies and build a smart factory with automated rule-based business processes developed through software technologies, combined with hands-on practices after classes.

Post-training satisfaction rate: **4.29-4.51**
Course test passing rate: **85%-100%**
Self-developed robot programs: **3,050**
Digital and AI projects: **49**
Accuracy of defective product identification: **> 80%**
Efficiency improvement: **Reduce >9 million USD**
Smart Factory: **36**

Target Audience

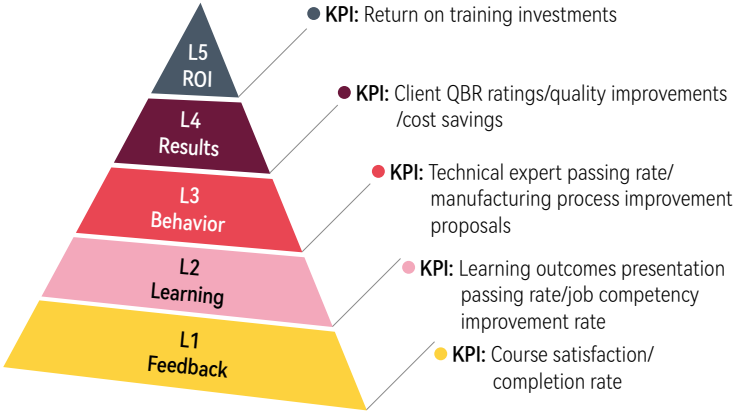
R&D, manufacturing process, and equipment engineers

Operational Benefits

- Reduce external software purchasing costs
- Increase machinery availability/uptime
- Cut down on machinery inspection time
- Increase product yield
- Improve overall equipment efficiency

School of Engineering Experts

Training Program Efficiency Index



Program Title Six Sigma Green Belt and Engineering Experts

Course Outline

(1) Improve analytical and problem solving skills through the 8D (Eight Disciplines Problem Solving) model. The model establishes corrective solutions based on the identification and statistical analysis of the root causes of abnormalities. The objective of the course is to help engineers improve product quality and yield, and avoid unnecessary waste.

(2) The Six Sigma green belt program seeks to improve customer experience and problem-solving of engineering anomalies. The training provides a thorough understanding of improvement initiatives in the manufacturing process, service delivery, on-time delivery and production efficiency. The course is aimed at enhancing overall teamwork and customer satisfaction.

(3) Ensure the integrity of problem analyses and solution evaluations with a 8D model to formulate and verify response measures in preventing the recurrence of similar problems.

(4) Examine the current situation with the IS/IS-NOT analysis and identify the root cause of technical and system anomalies with the 3x5 why technique to propose corresponding action plans for improvement.

Post-training satisfaction rate: **4.75**
Process abnormality rate: **0% (offset occurrence rate, process failure rate)**
Average number of anomalies per month: **Reduce 61%**
Customer audit passing rate: **100%**

Target Audience

Manufacturing process and equipment engineers

Operational Benefits

- Manufacturing process improvement proposals
- Technical experts
- Increase in process capability index (CPK)
- Quality improvements
- Increase in production capacity
- Cost savings
- Better ratings in customer quarterly business reviews (QBRs)

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 System[1] 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.

[1] ISO 45001: ASE (Kaohsiung, Chungli, Shanghai (Material), Wuxi, Korea and Singapore), SPIL (Da Fong, Chung Shan, Zhong Ke, Hsinchu, Changhua, Zhong Gong and Suzhou), USI (Taiwan, Zhangjiang, Kunshan, Jinqiao, Shenzhen and Mexio), 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 2022, a total of 314,250 hours of safety training were provided, reaching 304,073 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.
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 2022, all sites conduced a total of 302 internal audits and identified 468 deficiencies in areas including fire safety, facility security and emergency response. All of the deficiencies were rectified within the specified timeframe to enhance workplace 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 2022, we completed 500 drills for earthquakes, fire and chemical disasters.

Key Highlight:
White Paper on Assembly and Testing Equipment Safety

As a people-centric organization, ASEH strives to provide its employees a safe, secure and healthy workplace environment and is actively building a workplace safety culture. Data have shown that workplace accidents in the manufacturing industry are most frequently associated with equipment operations. As such, ASE Kaohsiung, ASE Chung Li and SPIL initiated the creation of a white paper on semiconductor assembly and testing equipment safety with the local government, academia and industry peers. The effort was made to highlight the importance of equipment operation and safety, and provide recommendations and solutions for companies to enhance their management responses and measures to prevent accidents. The white paper is a concerted effort of the industry to collaborate on workplace safety and health, and promote a common industry standard for the semiconductor assembly and test industry to adopt.

The white paper emphasizes source management and incorporates three aspects: man, machine, environment. Highlighting prevention, early warning and responses, the white paper introduces the fundamental safety design of the equipment, details the prevention of human-induced accidents, and identifies and analyzes factors that might contribute to the occurrence of accidents. The scope of preventative measures covers equipment operation and setup, disaster prevention, source design, usage guidelines, securing machinery source management and ensuring operators' safety and health. Regulators, the academia and industry partners are invited to jointly review the content to ensure compliance with the applicable common and foundational standards for the semiconductor assembly and testing industry. The white paper is scheduled to be finalized and officially published in 2023.

We will incorporate equipment safety standards as part of our procurement specifications to be reviewed before purchasing. The delivered equipment will then undergo a safety acceptance process before it is being cleared for use in the production line. Stepping up the standards of equipment safety will help ensure a high quality, safe and healthy workplace for everyone in the company.

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 127 incidents of occupational injuries in 2022, amounting to 3,216 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 21 cases of occupational disease, which occurred at ASE Malaysia. For more information, please refer to the 「Appendix- M. Workers Occupational Health and Safety」

Occupational Disease

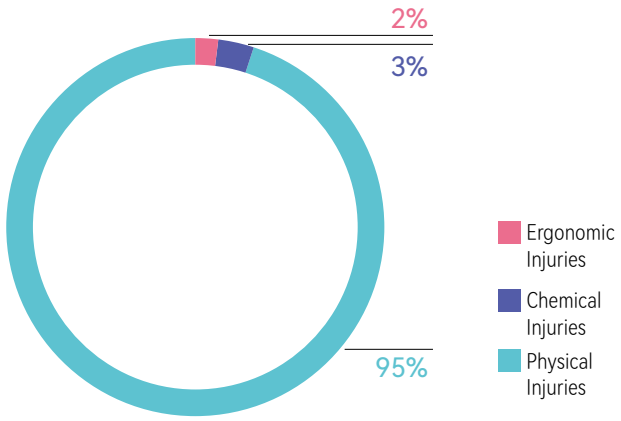
A total of 21 occupational disease incidents involving hearing loss caused by machine operation, occurred were reported at ASE Malaysia. Immediate actions were taken to redeploy the affected workers and follow up on their health condition regularly. Sound proofing systems were also installed in the machines to further reduce the noise levels.

Occupational Injury Statistics

Category	2022	
	Male	Female
Number of Occupational Injury Accidents	65	62
Injury Rate[1]	0.13	0.13
Disabling Injury Frequency Rate (FR)[2]	0.65	0.66
Disabling Injury Severity Rate (SR)[3]	7.88	15.85

[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 x 1,000,000) / total hours worked
[3] Disabling Injury Severity Rate (SR) = (disabling injury work loss days x 1,000,000) / total hours worked

2022 Occupational Injury Category



Occupational Injuries and Improvement Measures

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

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

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

Accident Reporting and Investigation Process

Accident Occurrence	Reporting	Investigation	Improvement	Prevention of Recurrence
	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

Employee Health and Safety Protection

Since the onset of the Covid-19 outbreak in 2020, ASEH has proactively responded with robust measures to protect the health of its employees. All employees are required to wear medical masks before entering ASEH facilities. To ensure adequate access to masks, we have constructed a Class 100K cleanroom to produce medical grade masks that meet regulatory health standards. The cleanroom is equipped with particle measuring systems (PMS) to maintain a clean production environment. Our production line is fully automated and uses less packaging materials allowing us to be more efficient and sustainable. For the safety of employees on the production floor, we have retrofitted our machines with a safety device and modified the dust collector to reduce noise and vibration. Our mask line was granted a medical device license from the Ministry of Health and Welfare. Since the beginning of mass production in 2020, we have been providing a variety of high quality masks to nearly 60,000 ASEH employees, and will continue to produce enough free masks for the needs of every employee. ASEH's mask production is a part of our comprehensive employee care plan andpandemic preventive measures to counter the adversity of the prolonged epidemic.

In addition to producing medical masks inhouse, we have also made an investment in Ainos Inc., a manufacturer of rapid COVID-19 detection kits. In our continued fight against Covid-19 and the protection of our employees and their families, ASEH has procured Ainos rapid detection kits to be distributed free of charge to employees.

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.

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	Ratio	Major Health Workshops in 2022
Level 1	Provide doctors' recommendations from health checkups and encourage regular self-tracking.	• Manage work hours • Encourage participation in health promotion activities	52.9%	• Smoking cessation workshops • Weight loss courses
Level 2				
Level 3	Occupational nurses conduct consultations based on the level of care, and decide if specialist referrals or work adjustments are necessary.		33.4%	
Level 4			13.5%	

Health Screening – **51,895** people;

Expenditure of **8.83** million NTD

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

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 Group Courses – **1,500** engagements Social Clubs – **24** clcubs

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 factory has a foreign employee club

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. We have completed 3 sessions of the seeding program, training a total of 95 employees and supporting more than 400 colleagues.
- Stress-relieve center. Employees can access the center with complete privacy to seek professional counselling.

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

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

RESPONSIBLE PROCUREMENT

We maintain a mutually supportive relationship with our supply partners. It is our responsibility to ensure that our supply chain conducts business in an environmentally responsible and ethical manner, and that workers are treated with respect and dignity, and provided safe working conditions.

ASEH is actively involved in the development of a sustainable and resilient supply chain that is diverse and provide value across the industry. Our developments ensure that suppliers and contractors provide high-quality products and services in a sustainable, ethical and responsible fashion.

2022 Key Performance :

Supplier Sustainability Physical Assessment
187 Suppliers

Non-tier 1 Suppliers Management
Over 850 Suppliers

Conflict Minerals Suppliers' Survey
369 Suppliers

Conflict Minerals Compliant Assessment
155 Suppliers

DRC Conflict-Free Products
100%

SDGs	Business Actions	2022 Material Aspects	KPI	2022 Target	Status	2022 Performance	2023 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 Physical Assessment [1]	100	Achieved	187	100	100
			Critical Material Suppliers Completing RBA SAQ (%)	88%	Not Achieved	77.9%	90%	100%
			Non-tier 1 Suppliers Conduct Risk Assessment (by tier-1 procurement amount) (%)	>50%	Achieved	53.4%	>50%	>50%
13 CLIMATE ACTION	Substantially reduce emissions from our supply chain and our operations, in alignment with climate science.		Critical Suppliers[2] Obtaining ISO 14064-1 Certification (%)	75%	Not Achieved	61%	78%	100%

[1] Physical Assessment includes remote audit, on-site audit, RBA VAP and independent 3rd-party audit
[2] The definition of critical supplier as follow: (1) Top 85% of direct material purchasing amount, (2) Indirect material suppliers refer to those with a purchase spending of over US$2 million with ATM; purchase spending of over US$1 million with EMS, (3) Single source or non-substitutable suppliers. In 2022, there are a total of 174 critical suppliers

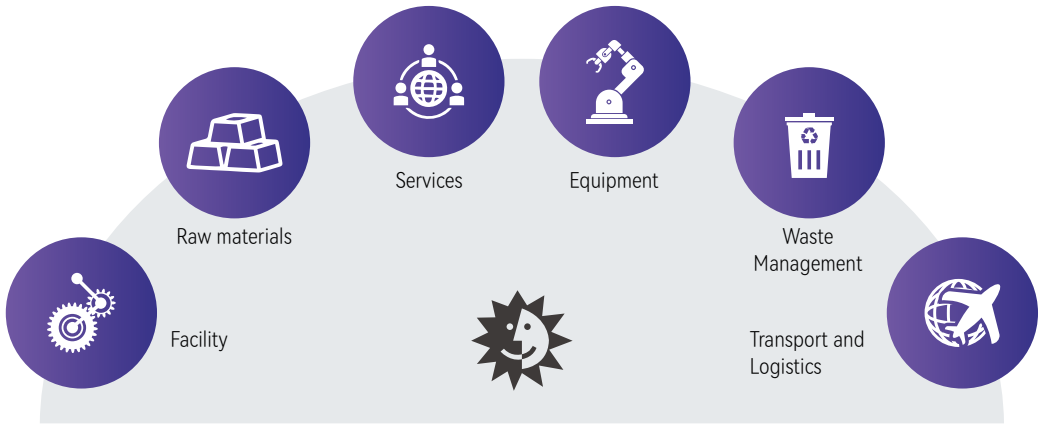
7.1 Supply Chain Overview

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, 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 supply of raw materials 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 ensure efficient resource allocation, we place a high level of focus on raw material suppliers that we conduct business with on a regular basis. As such, we classify suppliers where our annual procurement spend is in excess of a certain value and continuous engagement as tier-1 suppliers[1] , and subject them to more extensive management supervision. We also subject suppliers with major infractions or significant incidences that impact operations to a closer level of management supervision and guidance and identify as significant suppliers[2] . Our scope of risk management was also expanded to non-tier 1 suppliers[3] . There are currently over 850 non-tier 1 suppliers which accounted for 53.4%% 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. Together with the analysis of the business relationship with tier-1 suppliers, major incident records, and potential risk impacts, 289 critical non-tier 1 suppliers were identified. ASEH shall continue to monitor our suppliers' performance closely, and pursue greater risk control measures.



Type of Suppliers

[1] The definition of tier-1 supplier as follow: Annual procurement spend of over US$0.2 million with 2 consecutive years of business with ASEH. In 2022, there are a total of 898 tier-1 suppliers

[2] The definition of significant supplier as follow: Includes critical supplier (1) top 85% of direct material purchasing amount, (2) Indirect material suppliers refer to those with a purchasing spending over US$2 million with ATM; purchasing spending over US$1 million with EMS, (3) Single source or non-substitutable suppliers or high-risk suppliers (1) Major incidents or violations, (2) Potential ESG risk impacts. In 2022, there are a total of 273 significant suppliers which accounted for 87.4% of total purchasing amount in ASEH

[3] The definition of non-tier 1 significant supplier as follow: (1) Supply to tier-1 significant suppliers, (2) Supply to tier 1 direct materials suppliers who ASE spend over 10 million USD/year, (3) Major incidents or violations, (4) Potential ESG risk impacts. In 2022, there are a total of non-tier 1 289 significant suppliers

Tier-1 Significant Supplier

Critical Supplier

(1) Top 85% of direct material purchasing amount

(2) Indirect material suppliers refer to those with a purchasing spending over US$2 million with ATM; purchasing spending over US$1 million with EMS

(3) Single source or non-substitutable suppliers.

+

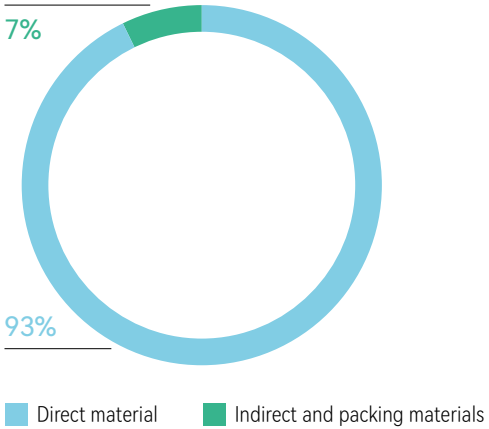
High-Risk Supplier

(1) Major incidents or violation record

(2) Potential ESG risk impacts (Environmental: hazardous substance management; Social: child labor, forced labor; Governance: corruption, bribery or supply disruption risk)

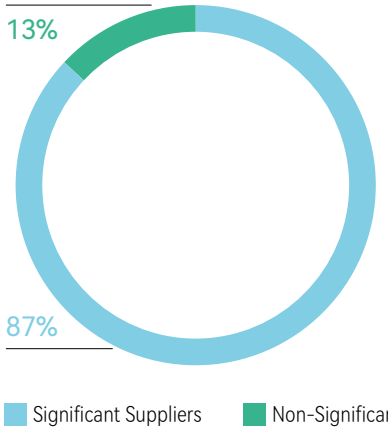
2022 Raw Materials Supplier Category

(Per annual procurement amount)



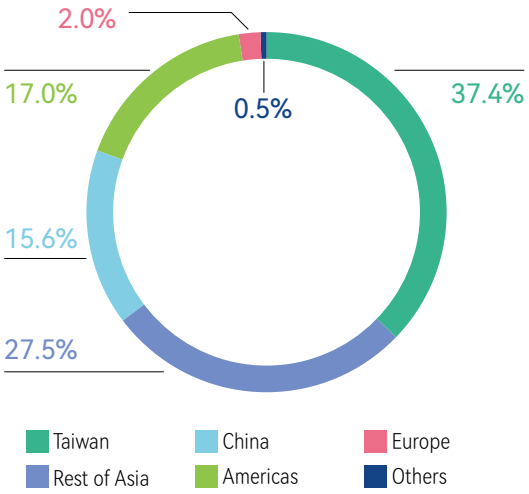
2022 Significant and Non-Significant Supplier Distribution

(Per annual procurement amount)



2022 Raw Material Supplier Distribution Area

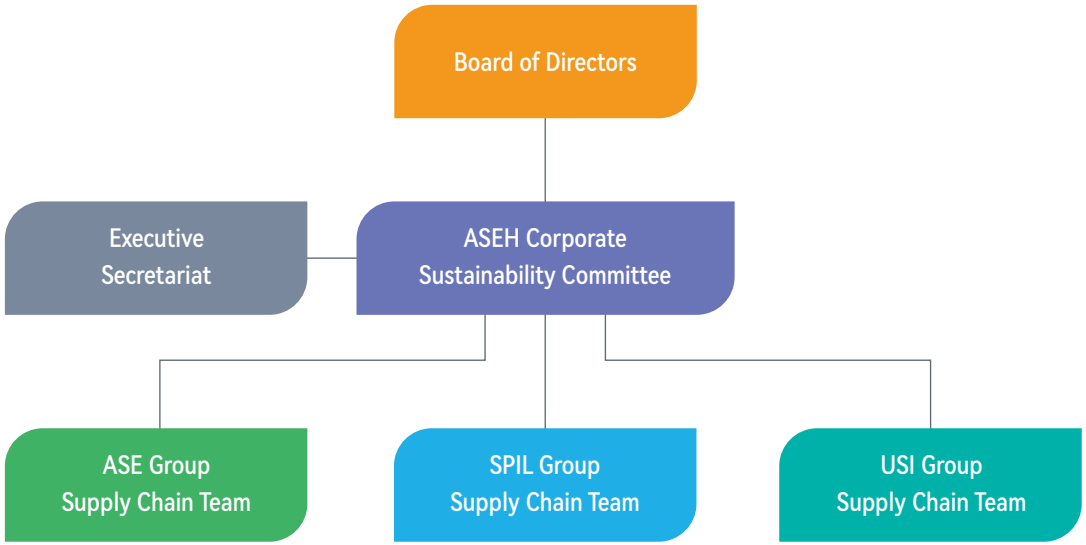
(Per annual procurement amount)



7.2 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 Committee was established to plan and supervise the company's sustainability management, submit progress and status reports to the board of directors, and coordinate the sustainability management policies and goals of the three subsidiaries. Each of the three major subsidiaries under ASEH has a Supply Chain Management Team that formulates supply chain sustainability management strategies, set medium- to long-term management goals and action plans, assess ESG issues and risks related to supply chain management, and provide necessary support, advocacy, and training as part of the team's day to day management.

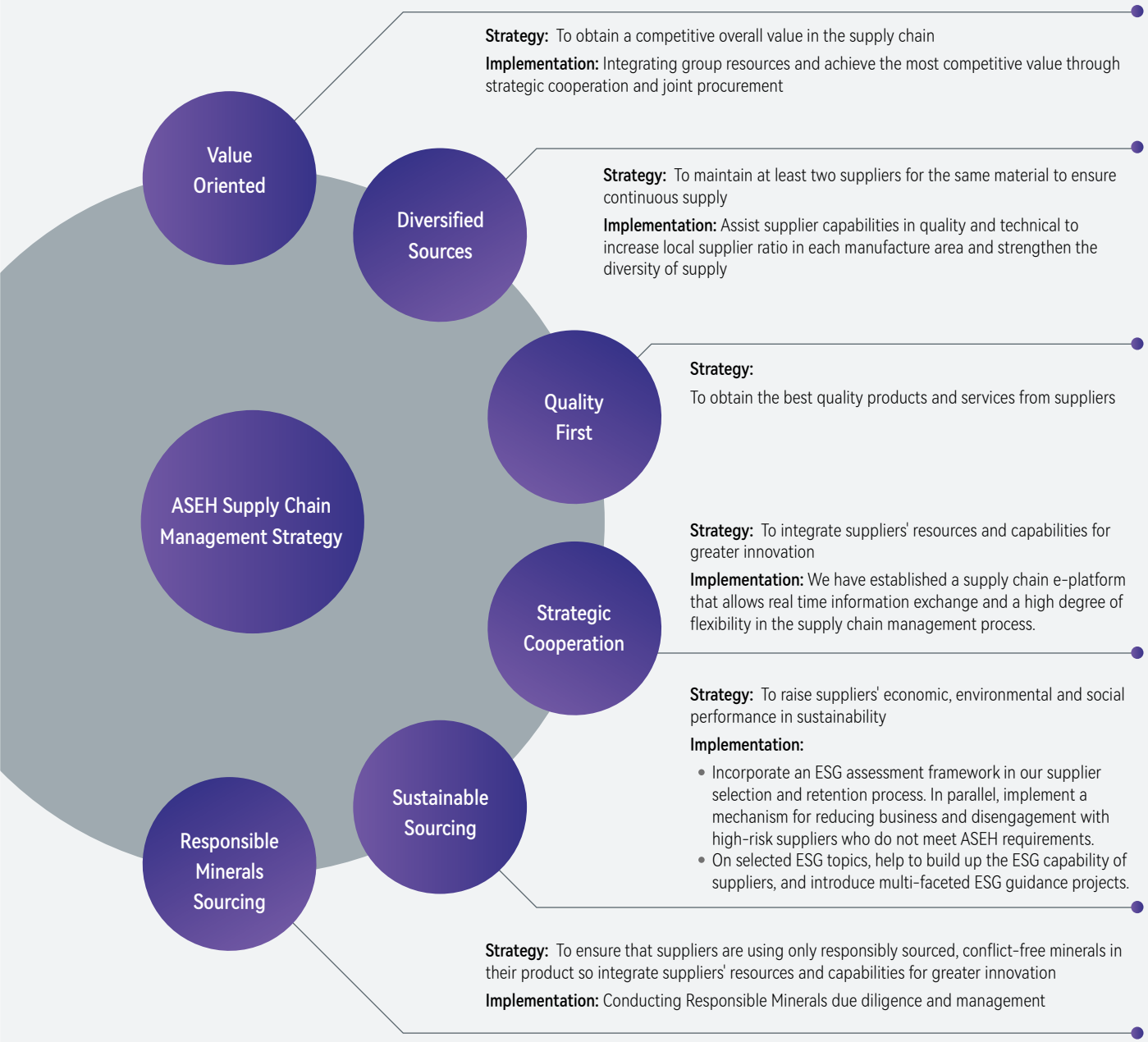


Purchasing and Supply Chain Development Policy

We publish the ASEH Purchasing and Supply Chain Development Policy on the company website to communicate the company's expectations on supplier sustainability development. We endeavor to positively influence the global electronic supply chain and advocate the establishment of a more sustainable supply chain with our suppliers. To that end, our commitment to socially responsible procurement and technological innovation will elevate our capability to provide responsible and quality services to our customers. Please visit: https://www.aseglobal.com/en/pdf/2019_aseth_purchasingandsupplychaindevelopmentpolicy.pdf

Supply Chain Management Strategy

Supply chain sustainability is a key factor influencing our day-to-day procurement besides cost and quality, and enables our long-term growth with suppliers. Our supply chain management strategy integrates action plans, and applies dynamic risk and opportunity assessments across our supply chain to create a winning ecosystem.



Enhancing Sustainability in Procurement through Education and Training

To increase the sustainability awareness of procurement personnel in subsidiaries and implement ASEH's procurement and supply chain development policy and management strategies, we communicate the company's annual supplier management objectives and focused projects through organizing educational training for procurement personnel. By doing so, we establish a platform for communication between procurement personnel in subsidiaries and enable them to develop a more comprehensive understanding about sustainability management and apply it in daily procurement management tasks.

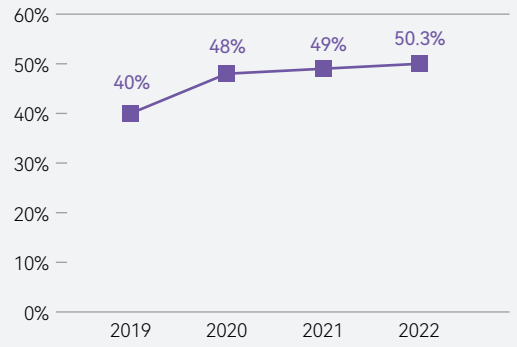
2022 procurement education and training focus:

- Sustainable supply chain management: management procedure
- Sustainable supply chain management: objectives and performance
- ASEH's net-zero commitment and supply chain engagement strategy
- Conflict minerals management system

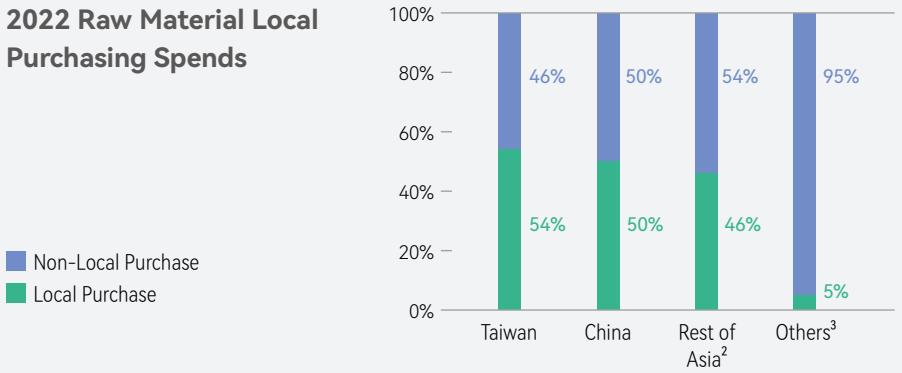
Supporting Local Suppliers[1]

In 2022, procurement from local suppliers is accounted for approximately 50% of our total procurement amount while local procurement is account for 54% 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 (%)



2022 Raw Material 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
[2] Rest of Asia: Japan, Korea, Malaysia and Singapore
[3] Others: America and Mexico

7.3 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. ASEH adopts the RBA Code of Conduct 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.

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 2022. Please visit: https://www.aseglobal.com/en/pdf/aseh-supplier-coc-en.pdf

Supplier Sustainability Management Approach

As part of the ASEH Procurement and Supply Chain Development Policy and Commitment, we established a four-stage sustainability supply 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 and Evaluation

Suppliers are required to comply with ASEH's Supplier Code of Conduct and sign the ASEH Supplier Code of Conduct Commitment Letter.

ESG Risk Survey

(1) **Active Survey:** Conduct preliminary assessment and grade risk level according to type of supplier business relationship, category of product, location and potential ESG risk.

(2) **Self-Assessment:** Identify high-risk suppliers by the result of "Supplier Sustainability Assessment Questionnaire" and further analysis by our procurement and sustainability team.

[Qualified Suppliers]

Qualified suppliers are required to sign Supplier Code of Conduct Commitment Letter and pass our environmental and social risk assessment.

Sustainability Assessment and Validation

(1) **Desk:** Complete desk assessment through reviewing relevant supporting information in "supplier sustainability assessment questionnaire".

(2) **Physical:** 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 .

(3) **Sustainability:** Incorporate ESG evaluation framework into key material and significant suppliers business review, to ensure supplier's ESG performance besides product quality, cost, lead time and technical service.

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.

Supplier Sustainability Standards and Evaluation

We require all suppliers to abide by the ASEH Supplier 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 Social SA8000. 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 purchase orders and supplier e-platforms, to ensure full compliance. Compliance with the Code of Conduct is key to our procurement decision with any supplier. In parallel, we require approved suppliers to acquire certifications in ISO 9001, IATF 16949, ISO14001, ISO 45001, while major suppliers are encouraged to acquire ISO 14064-1 and ISO 14067 certifications for continuous sustainability improvements and raising their competitiveness.

Supplier ESG Risk Screening

To better manage supplier risks, we established a 2-phase screening process that 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 Assessment – All suppliers

Base on type of business relation between ASEH and supplier, and the procurement value. 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 risk by designing different types of sustainability assessment questionnaires focusing on specific risk topics
Commodity-specific	Screen key materials containing heavy metals or hazardous substances by material properties.

Phase II: Sustainability Self-Assessment Questionnaire (SAQ) – Tier-1 suppliers

To cater for a diverse and complex supplier base, we have customized our SAQs according to the type of industry, and ESG risk assessments for different categories of suppliers.

Supplier Category and Sustainability Assessment Aspects

- **Raw Material Supplier:** Labor, Health and Safety, Environmental Protection, Sustainable Governance and Risk Management, and Supply Chain Management
- **Facility, Equipment 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

2022 Supplier Sustainability Risk Gap

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 Emergency response and improvement plans for related risk management 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	Lack of regular internal/external information security audits and employee education and training
	Supplier Sustainability Management	Procedures for managing sustainability risks in the supply chain and regular sustainability audit mechanisms have yet to be established.
Environment	Climate Change and Carbon Management	Procedure for climate risk evaluation, and mitigation and adaptation measures have yet to be established
		Mechanisms to measure GHG inventory and reduction targets have yet to be established
	Water Management	Reduction targets and recycling mechanisms in water resource 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
		Procedures for assessing labor-related risks and impacts have yet to be established

Supplier Assessment and Evaluation

Phase I: Desk Assessment – Tier-1 supplier

We've conducted sustainability assessment questionnaire to all tier-1 material suppliers. Suppliers are required to self-assess risk but also provide corresponding supporting document in accordance with the requirements of 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 83% in 2022 with a number of 749 suppliers.

Facility, equipment, waste management suppliers and service contractors are required to carry out sustainability risk assessment according to its procurement amount and business initiative. In addition, ASEH continues to take responsibility to international trends and norms. We adjust the questions of ASEH sustainability risk assessment questionnaire every year. In 2022, we target on raw material suppliers and bring in the issue of biodiversity and Science Based Targets (SBT) so as to stay on top of supplier sustainability implementation and ensure supply chain resilience.

Phase II: Physical Assessment[1] – Significant supplier

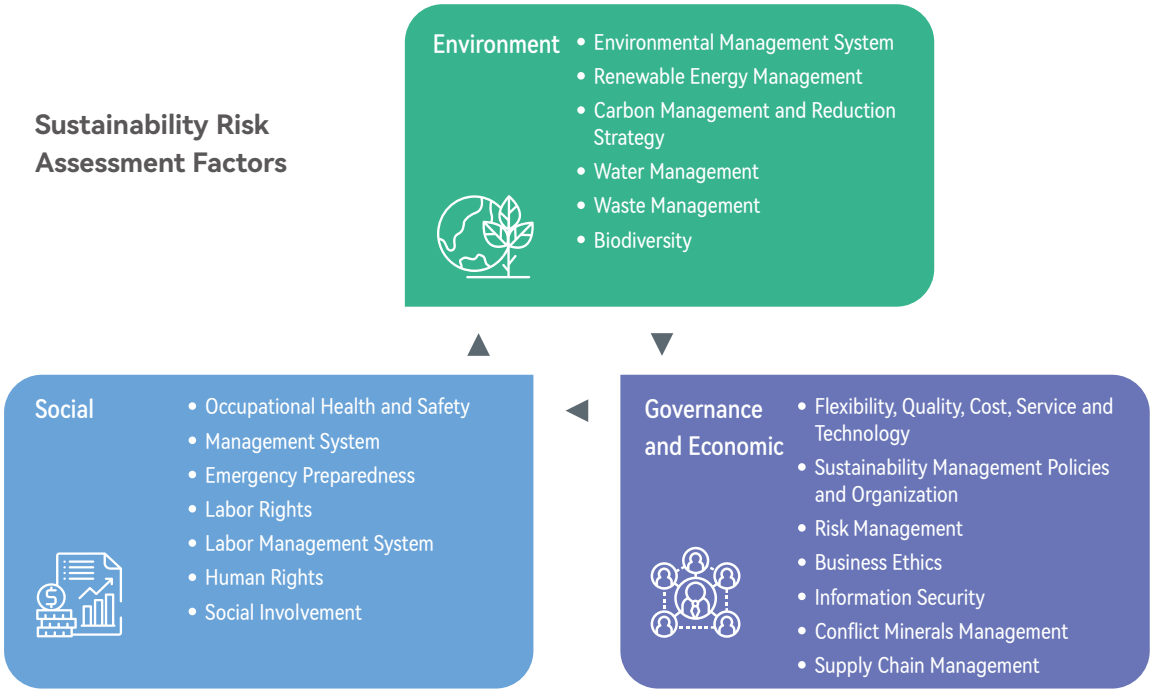
We define significant suppliers by high-risk supplier that identified by SAQ survey result and its business closeness with ASEH. Then we conduct physical assessment and provide counselling to ensure supplier's risk circumstance and continually reduce risk level. In 2022, we conducted sustainability assessments (on-site or remote, RBA VAP, and independent third-party) on 187 suppliers, including 124 suppliers with potential ESG risks as identified by the risk assessment.

[1] Physical Assessment: 2nd and 3rd party assessment and Supplier assessments with industry initiative

Supplier Sustainability Risk Assessment Targets and Procedures

RA1: Active Risk Assessment Targets: All suppliers	Conduct preliminary risk assessments on the procurement spending, type of business relationship, type of industry, and ESG performance of all suppliers
RA2: Sustainability Assessment Questionnaire (SAQ) Targets: All tier-1 suppliers	Identify significant suppliers based on supplier location, commodity-specific risks and SAQ result
RA3: Counseling and Physical Assessment Targets: Significant suppliers	Conduct physical audit and counseling for significant suppliers to continuously mitigate risks

Sustainability Risk Assessment Factors



Sustainability Assessment

For our key raw material and critical suppliers, we include ESG metrics on top of other indices such as quality, costs, delivery, service and technology, as performance measurements at quarterly business reviews (QBR). 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 process.

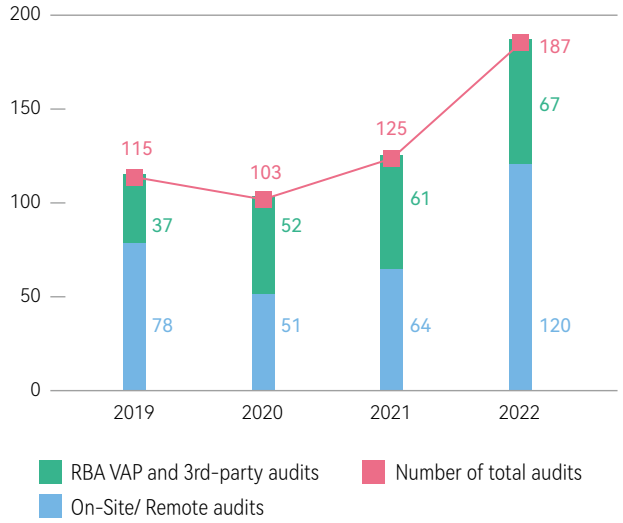
Supplier Performance Improvement Program[1]

ASEH has implemented on- site or remote support to help suppliers develop actionable plans on completion of correction and improvements within a specified timeframe. We will follow up with a second audit to track the progress of corrective actions and to determine if all identified deficiencies have been effectively addressed and resolved. For suppliers who continue to fall short of compliance despite counselling, we will still offer guidance in the first year and potentially reduce our procurement volume with them. To maintain the company's standard of service and quality, suppliers will be removed from our approved supplier list if they fail to meet expectations in the second year, and all dealings with them will be suspended. In 2022, all of the audited suppliers have taken corrective actions and completed supplier improvements. No supplier was terminated for non-compliance.

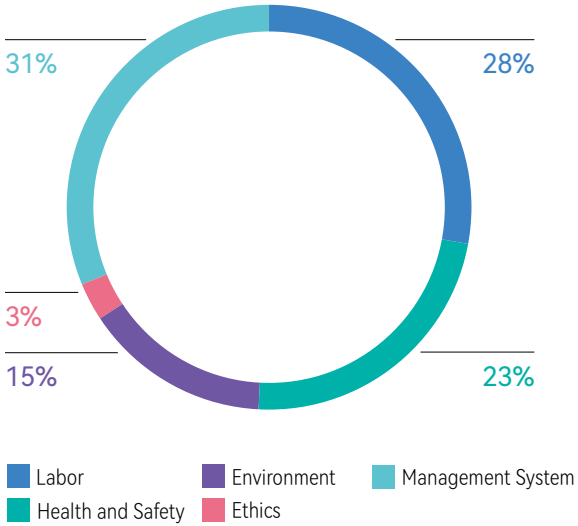
To further reduce supply chain risks, we also conduct risk assessment questionnaires and audits for non-tier 1 suppliers. In 2022, 20% of our non-tier 1 suppliers completed sustainability questionnaires, and 9% of the non-tier 1 suppliers completed onsite audits, remote audits and RBA VAP. We shall continue to perform sustainability risk assessment on non-tier 1 suppliers to better manage risks to our supply chain.

[1] 2022 supplier corrective action target is 100% completion of implementation by audited significant suppliers

Suppliers Audits



Supplier Sustainability Audit Findings by Category in 2022



Supplier Audit Results and Corrective Actions in 2022

Category	RBA Classification	Major Deficiencies Found	Improvement Measures
Labor	Working hours	• Working hours exceeding 60 hours a week • Working seven days consecutively • Ineffective management of employee attendance system	• Recruit additional staff to meet capacity requirements and avoid understaffing or excessive overtime • Mandate 1 rest day a week, establish a system that manages and tracks overtime, and escalate the notification to a higher level of management
	Freedom of choice of occupation	• Employment contracts not provided to foreign employees	• Requesting the signing of labor contracts and providing foreign employees with a copy of the original contract
Health and Safety	Emergency preparedness	• Incomplete establishment of internal emergency management procedures • Discrepancies between evacuation drills and internal procedure manuals	• Review local regulations and revise management procedure documents • Ensure accurate records of drill plans and participants, and revise drill plans based on risk assessments • Regular inspections to ensure the effectiveness of fire safety equipment and unobstructed evacuation routes
	Occupational safety	• Improper storage of chemicals	• Strengthen safety awareness training for personnel and establish a chemical storage management system
Environment	Hazardous materials	• Chemical Safety Data Sheets (SDS) not kept up to date	• Require suppliers to provide the latest version of SDS reports
Ethics	Integrity in business operations	• Incomplete creation of internal documents (lack of regulations related to gift-giving)	• Revise internal management documents to clearly define gift-giving limits
Management Systems	Training	• Lack of regular RBA training for employees	• Incorporate RBA training into the annual training plan for new and existing employees
	Responsibilities of Suppliers	• Failure to establish supplier risk assessment procedures and audits • Failure to conduct RBA guideline audits on downstream suppliers	• Identify key suppliers and establish risk assessment procedures and audit systems

Sustainable Supply Chain Development Program

ASEH recognizes active participation in supplier development and capability improvement is crucial to ensure sustainable supply chain development. Through the Annual Sustainability Forum, we hold sustainability capacity building projects, workshops, and educational training to strengthen the collaboration between suppliers and ASEH and enhance suppliers' capability in addressing sustainability issues to respond the fast-changing trends in sustainability.

Annual Sustainability Forum

In 2022, ASE Kaohsiung and USI both hosted the Annual Sustainability Forum, bringing in a total number of 750 participants from suppliers.

ASE - ASE Kaohsiung	• Share corporate risk management trends and successful implementation cases in the industry • Communicate requirements for sustainability risk management in the supply chain, the corresponding strategies, and objectives
USI	• Communicate USI Corporation's requirements for supplier sustainability risk management and future objectives • Promote USI Corporation's green products, conflict minerals policy and management requirements, and explain its main focuses in the annual audits of green products and conflict minerals • Share experiences in implementing USI Corporation's Environmental Footprint/Impact Assessment

Sustainable Capacity Building Program

Greenhouse Gas Inventory Guidance Program	
Target: **Raw material and Equipment supplier**	To align with ASEH's Net Zero Emissions pathway, we have conducted carbon inventories for the Scope 3 emissions sources (the largest emission contributors) within our supply chain. We have allocated resources to provide guidance and support to our suppliers in establishing greenhouse gas and product carbon footprint management systems that comply with regulatory requirements. Starting from 2022, we began collaborating with external consulting units to initiate a medium- to long-term supply chain carbon inventory guidance project. Through offering on-site and online guidance, we help suppliers develop greenhouse gas and product carbon footprint inventory capabilities and obtain external certification such as the ISO 14064-1:2018 and ISO 14067. During the guidance process, we identify carbon hotspots within suppliers' operational processes and execute relevant emission reduction plans. By expanding the scope of engagement with our supply chain, we work with suppliers to enhance their carbon management capabilities and leverage ASEH's influence in the industry.
Renewable Energy Development Project	
Target: **Raw material and Logistics supplier**	To address the challenges posed by climate change, SPIL joined forces with clients to develop a two-year Sustainability Cooperation Project, promoting renewable energy development in the supply chain. SPIL initiated multiple objectives such as renewable energy installation and circular benefits in collaboration with 10 suppliers, including materials and logistics suppliers. By providing technology, assistance, and guidance through the project, we actively assist suppliers in overcoming barriers encountered in developing renewable energy, working together to develop renewable energy and deploy advanced initiatives to facilitate carbon reduction and energy transition across the supply chain.
Carbon Reduction and Water Conservation Guidance Project	
Target: **Raw material supplier**	To reduce resource waste and increase green sustainability awareness, starting from 2021, ASE Kaohsiung has provided guidance to 22 suppliers to establish their own reduction goals and assist them in implementing reduction plans with a target of reducing greenhouse gas emissions and water consumption by 1%. As a result, the greenhouse gas emissions in the supply chain were reduced by 7,260 tons of CO_2e, achieving an annual reduction rate of 1.35%. Water consumption was reduced by 148,075 tons, achieving an annual reduction rate of 2.02%. The achievements in reduction exceeded the set target of 1% and collectively contribute to minimizing the environmental impact of and integrating sustainability values into suppliers' core business operations.

ESG Workshops and Educational Training

To promote ASEH's concept of sustainable supply chain among suppliers and communicate our requirements for corporate sustainability systems and ESG performance to suppliers, we hold the Annual Sustainability Forum and developed the long-term Sustainable Capability Building Project. We also provide workshops and educational training on specific sustainability issues, continuously promoting collaboration in sustainability strategies with suppliers and establishing a bilateral communication mechanism.

ESG Workshops – Specific Sustainability Issues	Number of total participants: 68
SPIL **Target: Raw material supplier**	• Share international trends in climate issues and future regulatory requirements • Share experiences of suppliers with excellent greenhouse gas management • Require suppliers to obtain ISO-14064-1 certification for greenhouse gases

Regular Educational Training	Number of total participants: 4,915
ASE – Kaohsiung, Chungli, ASE Shanghai (Material), Wuxi and Korea site **USI** **Target: Raw material supplier, Facility and Waste management contractor, Recruitment agency and Service contractor**	• Promote health and safety, food safety, and environmental health and safety policies • Disseminate knowledge on fire management, fire rescue, and emergency evacuation procedures • Conduct annual evacuation drills and emergency response exercises for vehicle accidents

ASEH Supplier Sustainability Awards

As part of our strategic efforts to build a stable and more sustainable supply chain, we established the Supplier Sustainability Awards in 2017, which recognizes suppliers with outstanding performance in sustainability. In 2020, the award program was jointly organized by all three ASEH subsidiaries. In addition, a new supplier incentive program focusing on the company's Low Carbon and Circular strategies was launched, and the number of participating suppliers expanded. The program encourages suppliers to submit sustainability partnership projects of between 1-3 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.

We are constantly refining our approaches to building a resilient supply chain and strengthening the bond between ASEH and our supply partners. We believe that a creative model with built-in incentives could accelerate the achievement of a circular economy and a low-carbon transition that allows ASEH to increase value and capture business opportunities. Recognizing the efforts of our suppliers through the awards will boost their commitment to sustainable development and encourage more suppliers to be proactive in advancing a sustainable future for the semiconductor industry. Going forward, every two years, we will select and fund unique sustainability projects that have the potential to demonstrate a high degree of positive influence and produce beneficial results.

In 2020, one supplier from "Low Carbon" strategy and two suppliers from "Circular" strategy were selected in the First Supplier Sustainability Awards. Our company have conducted independent third-party on-site audits on the awarded suppliers to verify their proposed project performance and progress in 2021 and 2022. Sponsorship funds were provided to the suppliers based on the completion progress. In addition to conducting on-site audits in 2023, our company is also planning for the Second Supplier Sustainability Awards, for which the collaborating suppliers are scheduled to be selected in 2024.

Sustainability Strategies	Selected Supplier	Partnership Project	Expected Outcomes and Benefits	Progress in 2022
Low Carbon	Air Liquide Far Eastern Ltd	Optimizing gas supplies for manufacturing	• Reduce the energy intensiveness of manufacturing and the carbon emissions from transporting gas materials • Minimize transport mileage and labor hours	• All suppliers submitted sustainability partnership projects of between 1-3 year duration, including project description, project schedule, executive team, expected financial and non-financial benefits, future monitoring plans, etc. • An independent third party conducted on-site audit of the three suppliers. • The ASE Environmental Protection and Sustainability Foundation provided funds to three suppliers in accordance with the contracts and the actual progress in 2022.
Circular	Hsiang Tai Water Electricity Co., Ltd.	Water supply circular regeneration technology	• Reduce water waste • Minimize loss due to equipment downtime or plant construction	
	Hwa Shu Enterprise Co., Ltd	Circular reuse of packaging materials	• Reduce carbon emissions • Reduce demand for pulp raw materials and minimize waste	

7.4 Responsible Minerals Compliance

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

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.

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	Reasonable Country of Origin Inquiry (RCOI)	Due Diligence (DD)	Independent Private Sector Audit (IPSA)	Public Disclosure (CM Report)
▶ Comply with ASEH Corporate Policy for Sourcing	▶ Conflict Minerals Reporting Template (CMRT) ▶ Conflict Minerals Representation Letters ▶ On-site/paper audit	▶ Comply with the OECD Guidance	▶ Conduct IPSA	▶ Public Conflict Minerals Report on company website

Reasonable Country of Origin Inquiry (RCOI)

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.

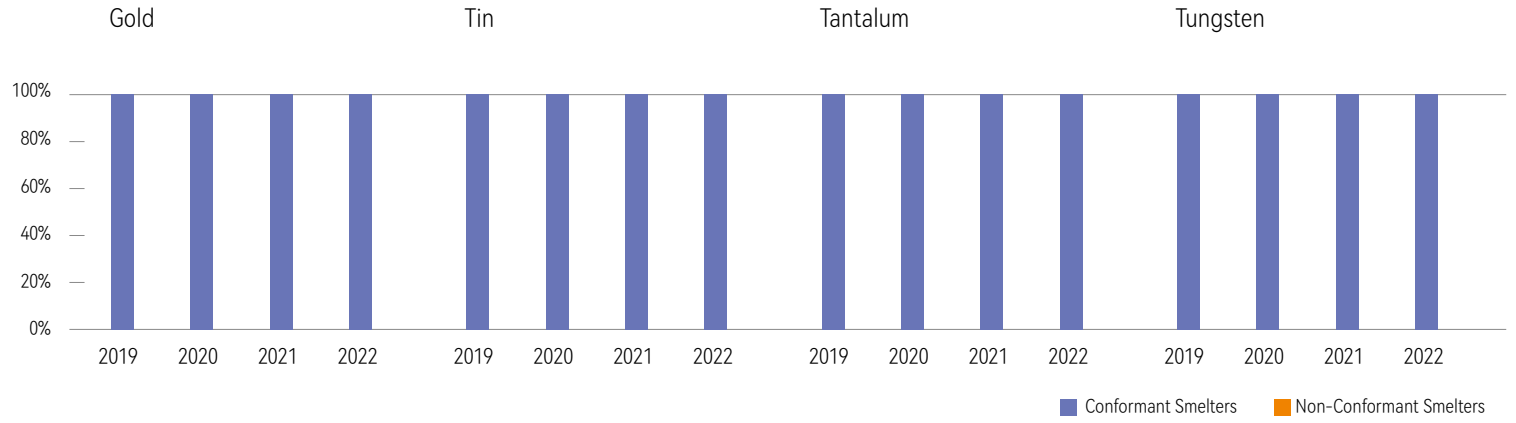
Our RCOI includes two steps:

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.

Since 2011, we have conducted the supply chain survey to identify the source of SoRs that are used in the processes of our packaging and material services, electronic manufacturing services and products. We identified the minerals and the source of smelters through CMRT. In 2022, we have identified 250 SoRs from more than 369 suppliers. According to the supplier survey we conducted in 2022, 100% of our suppliers are compliant with ASEH's requirement for sourcing DRC conflict-free minerals.

In addition to 3TG, we have expanded the scope of the investigation by conducting proactively the supply chain survey for Cobalt and Mica since 2018 and 2021 respectively, and disclosed the source of smelters to our customers. In 2022, 164 suppliers used cobalt from 84 smelters, and no suppliers used mica.

[1] ASE took the initiative to join the RMI in 2015 and has continued its participation as ASEH to this day



2017~2022 Conflict Minerals Compliant Suppliers

100%

Due Diligence (DD)

ASEH 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.

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 publicly[1]. Based on our RCOI analysis and DD measures in 2022, 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.

Continuous Improvements

Going forward, we will continue to improve in four aspects:

- **Management Mechanism:** be aware of regulatory changes and adjust our policy in a timely manner, improve our validation process and requirements to new suppliers and existing suppliers, optimize internal management systems, etc.
- **Due Diligence:** improve the accuracy and completeness of data, assess suppliers' due diligence processes through on-site audits so as to assist suppliers to build up internal management systems, etc.
- **Communication:** hold supplier seminars, actively participate in the RMI and other key industry associations' initiatives, etc.
- **Conflict-Free Label:** evaluate to build up conflict-free label mechanism

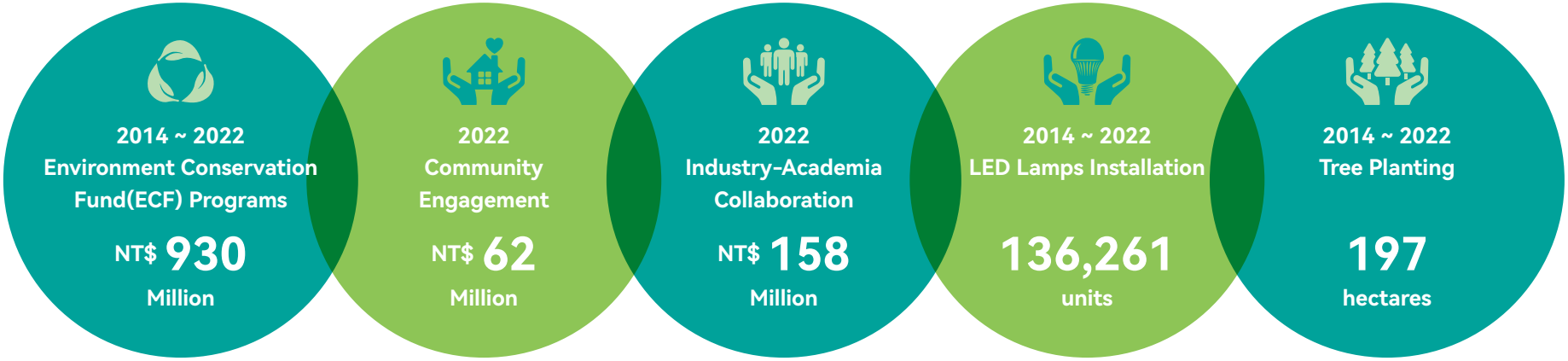
[1] For complete file of ASEH SEC Conflict Minerals Filing, please visit our website at https://www.aseglobal.com/csr/responsible-procurement/conflict-minerals-compliance/ or SEC's website at https://www.sec.gov/Archives/edgar/data/1122411/000095010323008127/dp193728_ex0101.htm

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.

2022 Key Performance



SDGs	Business Actions	2022 Material Aspects	KPI	2022 Target	Status	2022 Performance	2023 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 • Number of energy-saving LED tube lights installed and number of schools with LED tube lights installed • Total area planted with trees (global)	• 10 industry-academia collaboration projects on environmental technology • 10,000 LED light tubes installed at 10 schools • 10 hectares planted with trees	Achieved	• 19 industry-academia collaboration projects on environmental technology • 27,360 LED light tubes installed at 21 schools • 31.79 hectares planted with trees	• 10 industry-academia collaboration projects on environmental technology • 10,000 LED light tubes installed at 10 schools • 10 hectares planted with trees	• Over 150 industry-academia collaboration projects on environmental technology • LED light tubes installed at 170 schools • 250 hectares planted with trees
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 • Number of disadvantaged students attending after school program	• 100 students attending semiconductor courses • 100 disadvantaged students in the community attending after school program	Achieved	• 209 students attended semiconductor courses • 263 disadvantaged students in the community attended after school program	• 100 students attending semiconductor courses • 100 disadvantaged students in the community attending after school program	• 2,000 students attending semiconductor courses • 2,000 disadvantaged students in the community attending after school program
8 DECENT WORK AND ECONOMIC GROWTH	Drive economic growth and productivity by investing in R&D, upgrading skills, and supporting growing businesses, in a way that is compatible with sustainable development		• Number of innovative industry-academia collaboration projects • Number of legislative or sustainability initiatives	• 30 innovative industry-academia collaboration projects • 2 legislative initiatives for issues related to the semiconductor industry	Achieved	• 74 innovative industry-academia collaboration projects • 5 legislative initiatives for issues related to the semiconductor industry	• 30 innovative industry-academia collaboration projects • 2 legal initiatives for issues related to the semiconductor industry	• 450 innovative industry-academia collaboration projects • 25 legal initiatives for issues related to the semiconductor industry

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 **2030 Targets:** • Over 150 collaborative academic research projects on environmental technology • US$6.5 million reduction in outsourced waste management costs	**Improvements to environmental technology R&D and production efficiency in 2022:** • 19 research projects on environmental technology in collaboration with academic, research institutes and suppliers • Conducted a study on the low-carbon potential of recycling products from waste materials to help formulate recycling strategies for the semiconductor industry, and establishing carbon coefficients for recycled products as a step towards carbon neutrality • Recycling of highly concentrated cyclopentanone (CPN) through separation methods allow for product reuse, and results in savings of approximately US$1,464,000 in treatment costs • Applying suitable methodology to recycle organic solvents into fuel substitutes have helped reduce approximately 77 tons of CO_2e emissions per year, resulting in savings of approximately US$1,473,000 in waste processing costs • Applying suitable methodology to recycle metal-ion from waste sludge (nickel, gold, copper) contributes to an annual reduction of 490 tons of hazardous waste liquids, resulting in savings of approximately US$16,000 in waste processing costs **2015-2022** • 91 research projects on environmental technology in collaboration with academic, research institutes and suppliers; resulted in a total cost reduction of US$10.07 million * More information refer to appendix(Social Data - O. Social Involvement Key Performance)	**Reducing environmental impact, improving quality of life, and raising environmental awareness in 2022:** • 27,360 LED light tubes installed at 21 schools reduced energy use by approximately 591,000 kWh and carbon emissions by approximately 301 tons CO_2e • We estimated a reduction of approximately 470 tons of CO_2e per year as the forest grows from the planting of 31.79 hectares of trees • Organized 85 coastal and beach cleaning events with a total of 1,164 participants, resulting in the removal of 347 tons of garbage • Providing maintenance support of the Da-Gang Elementary School's green energy aquaponics farm. The farm, which is also open to the public, serves as a center to promote sustainable agricultural education. Recorded visits from over 10 social groups • Implemented 1,348 environmental education courses; 26,010 students participated; 59 promotional videos on environmental education were produced • Transferring environmental research projects from industry-academia cooperation to 14 other semiconductor businesses **2015-2022** • Replacing and installing 136,261 energy-saving LED tube lights in 130 schools, saving approximately 13,052,500 kWh in electricity and reducing about 6,725 tons of CO_2e over the years • We estimated a reduction of approximately 2,930 tons of CO_2e per year as the forest grows from the planting of 197.26 hectares of trees * 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:** 40 OSAT (outsourced semiconductor assembly and test) industry peers have improved their manufacturing eco-efficiency by drawing upon the experience of our industry-academia collaboration on environmental research projects.

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 **2030 Targets** • Participate in over 450 collaborative academic projects on semiconductor materials and advanced technologies • Recruit over 6,000 interns	**Fostering semiconductor talents to promote technological innovation and development in the semiconductor industry in 2022:** • Recorded 74 industry-academia collaboration research projects that cover advanced packaging technology, optical module applications, industrial Internet of Things (IIoT) applications, and AI analytics • 209 students participated in the semiconductor courses **2015-2022** • Participated in 335 industry-academia projects involving semiconductor assembly, advanced materials, manufacturing automation technologies, etc. • 2,085 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 2022:** • Recruited 410 interns • 185 students participated in collaborative academic research projects • Awarded scholarships to 134 students • Collaborated with over 74 schools **2015-2022** • Recruited 4,804 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 **2030 Targets** • Reach 30,000 volunteers • Afterschool care for over 2,000 students from disadvantaged households • Providing over 95,000 subsidies to students from disadvantaged households	**Improving the centripetal force to the company through employees' participation in public welfare activities in 2022:** • 12,560 volunteer service hours • 4,700 volunteers **2015-2022** • 71,360 volunteer service hours • 20,670 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 2022:** • Participated in afterschool care for 263 students from disadvantaged households • Provided support for 46 charities • Provided financial aid for 9,281 students from disadvantaged households **2015-2022** • Participated in afterschool care for 1,509 students from disadvantaged households • Provided financial aid for 62,523 students from disadvantaged households * More information refer to 8.4 Community Engagement	• **Facilitating quality of life for the elderly:** The Smart Mobile Clinic continues to travel to remote areas, providing medical care services for the elderly and individuals with limited mobility. Conducting educational courses to promote physical and mental health for the elderly in the surrounding communities. Course topics range from health, technology, environmental protection, to arts and crafts. • **Improving the learning and living environments of underprivileged children:** ASEH is a long-term supporter of after-school care programs for disadvantaged students in rural areas. By providing financial support to and improving learning and living environments of the children, ASEH shines a ray of hope on the children's future.

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 **2030 Targets** • 25 sustainability initiatives	**Driving innovation and development in semiconductor and electronic technologies and improving ASEH's leadership status in sustainable development** **2022** • 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 - Vice 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 **2015-2022** • Collaborated with 479 external organizations in areas related to core business	**Initiating and driving impactful sustainability agendas to advance the semiconductor industry** **2022** • Collaborated with 79 external organizations in sustainable development • Driving the development of standards and regulations in 5 areas: Net-zero Emissions, DEIR, SEMI E187 & E188 Cybersecurity Standard, Air Pollution Prevention and Control, and Waste Management **2015-2022** • 26 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. • **Improve the sustainable development and environment of the semiconductor industry:** By participating in relevant initiatives, we improve the sustainable development and environment of the semiconductor industry, and pursue technological progress and economic benefits while maintaining the sustainable development of the earth.

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 Committee (CSC) 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 CSC 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.

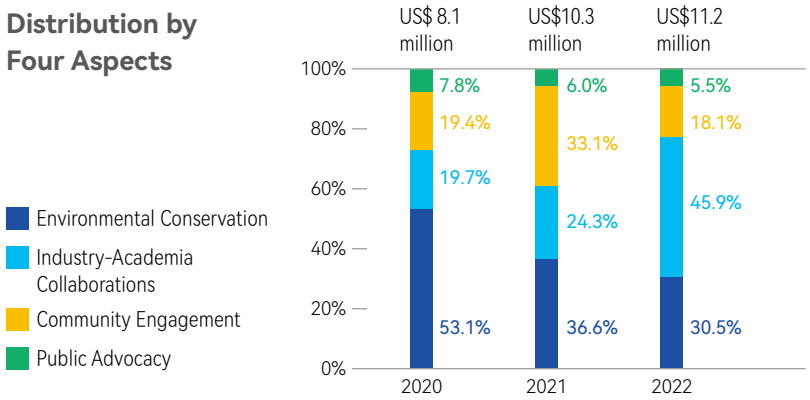
ASEH adopts the LBG (London Benchmarking Group) framework and SROI (Social Return on Investment) model to measure the input, output and impact of social involvement activities, and conducts biannual performance reviews and reporting. For ASEH's social engagement programs (conducted by the ASE Cultural and Education Foundation and 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 2022, we spent US$11.2 million on social involvement activities, accounting for 0.42[2] percent of the group's pre-tax net profit. Compared with 2021, our highest investment proportion relates to industry-academia collaboration for the promotion of innovative technology research and development. The next major investment is in environmental conservation. We recorded over 12,560 hours of voluntary service performed by over 4,700 volunteers.

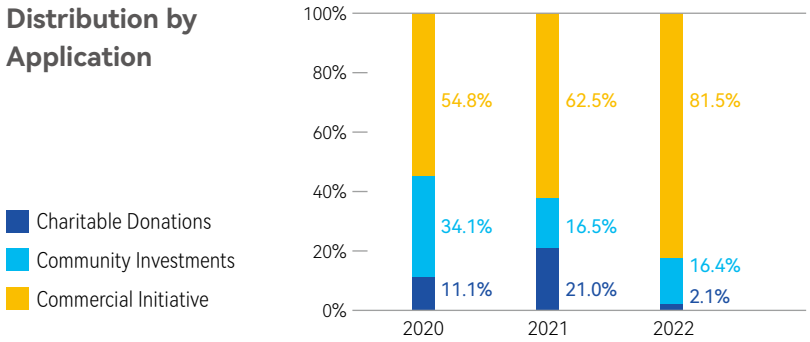
The Social Investment Performance Evaluation System

[1] ASEH Public Affairs Engagement Policy (https://www.aseglobal.com/en/pdf/aseh_public_affairs_policy.pdf)
[2] The 2022 pre-tax net profit was NT$81,763.6 million (for more information, please refer to ASEH Form 20-F)

Distribution by Four Aspects



Distribution by Application



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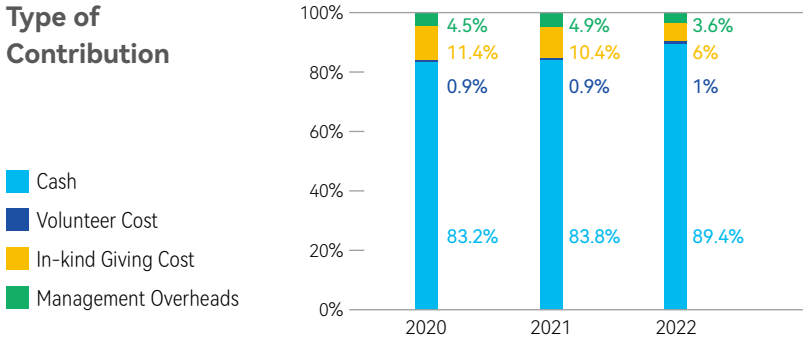


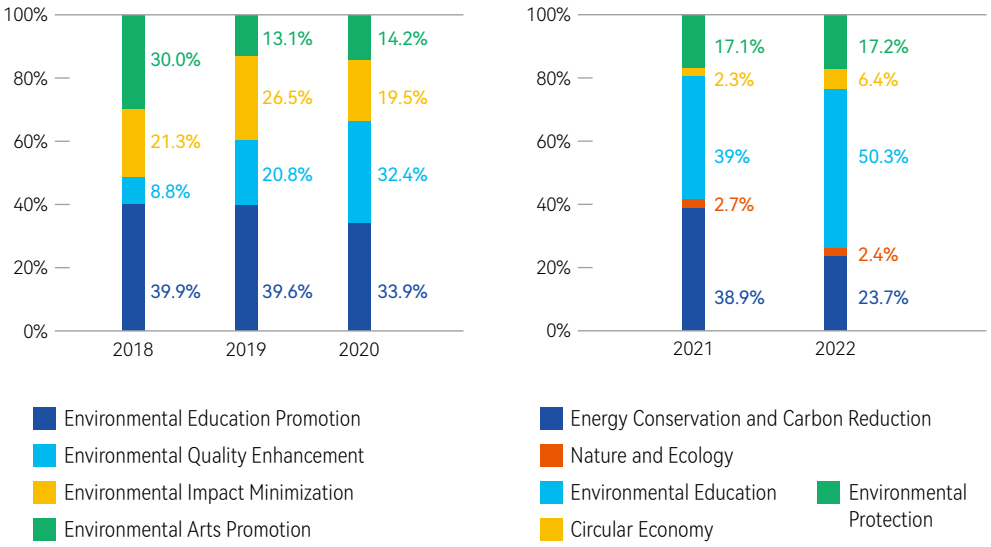
8.2 Environmental Conservation

ASEH's public welfare policy is driven by our determination to mitigate the impact of extreme climate and economic development on the environment. We remain committed to our 30-year plan (established in 2014) of donating NT$ 100 million and more per year towards environmental initiatives in Taiwan, to achieve our vision of a sustainable environment for planet earth.

In 2022, 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 30 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



2022 Accomplishments of ECF Programs

Programs	Major Projects
Energy Conservation and Carbon Reduction	• Forest Reforestation • Campus LED installation projects • Environmental education at Junyi School
Environmental Education	• Guardians of the mountains and forest – challenge camp • Adoption of nature trails and mountain clean up • Providing maintenance support of the Da-Gang Elementary School's green energy aquaponics farm • Funding for master's theses and doctoral dissertations on environmental protection issues • Proposal selection for the 'Smile Taiwan' creative teaching project • SDGs x Green living for all – Selection plan for teachers passionate in sustainability education • 'Paradise' Project on the development of age-friendly sustainable environment education in Taoyuan • Promotion of environmental education through the exemplary model of the ASEH Recycling Facility, Nanzih Industrial Park • Academic research projects on environment-related technologies
Environmental Protection	• ASE guardians of the seas • Coastal or river conservation and restoration • Design and development of Nanzih green parks • Installation of solar-powered flashing lights for road safety in communities near Kaohsiung Nanzih Technology Industrial Park
Nature & Ecology	• Conservation of endangered native species in Taiwan - chinese box turtle, harpist brown frog
Circular Economy	• Supplier Sustainability Award

Forest Reforestation

In response to global warming and conserving biodiversity, and to ensure the protection, restoration, and proper utilization of terrestrial ecosystems, ASEH developed long term plans for tree planting and reforestation. Since 2013, our subsidiary, USI, has collaborated with the Shanghai Roots and Shoots Youth Center in the 'Million Tree Planting Project' targeted at reducing land desertification in Inner Mongolia and Ningxia. In 2022, a total of 22,381 trees were planted in Inner Mongolia and Ningxia, covering an area of 9.65 hectares. Through the collective efforts of the local government and the project over the years, significant changes have been observed in the local ecological environment, with a gradual return of greenery to the land.

In 2017, the ASE Cultural and Educational Foundation initiated a forest adoption and reforestation project on state-owned forestland. In 2021, this project was transferred to the ASE Environmental Protection and Sustainability Foundation. From 2022 to 2024, in collaboration with the Nantou, Hsinchu, and Taitung Forestry Bureau, we adopted a total of nine forest lands located in the Shuili, Zhongliao and Xinyi Townships of Nantou County, Daxi District in Taoyuan City, as well as the Haiduan and Yanping Townships of Taitung County. Collectively, these areas encompass 18.23 hectares of state-owned forest land. A total of 32,505 seedlings were planted. On Earth Day, April 22, 2022, we organized a tree planting event with the Nantou Forestry Bureau, inviting 30 teachers and students from Shuili Elementary School to participate. The planting activity is a step towards greening our planet and instilling in children the concept of sustainability.

As of 2022, the ASEH tree planting and reforestation project has successfully planted over 200,000 seedlings, covering a total area of 197.26 hectares. Going forward, we plan to commission third-party professional accrediting organizations to monitor and evaluate the effectiveness of our reforestation efforts. We are also actively collaborating with academic institutions to research and develop methodologies for forest carbon sequestration, with the goal of enhancing the value of forestland and promoting the dual benefits of carbon neutrality and reduction.

▲ The Million Tree Planting project

▼ State-owned forest land afforestation project

ASE Guardians of the Seas

ASEH is committed to UN SDG 14: life below water, to conserve and sustainably use the oceans, seas, and marine resources, and address the problem of the degradation of the marine environment. Beginning in 2021, the ASE EPSF collaborated with the Taoyuan City Government to execute a coastal and marine environment conservation project, aiming to remove 500 metric tons of marine litter between 2021 and 2023. In 2021, we successfully removed 308 metric tons of litter, and in 2022, we cleared 342 metric tons, exceeding our targets.

In 2022, the project was expanded further to the Northeast Coast, Green Island, and Xiao Liuqiu, where we collaborated with local diving shops, community members and volunteers in a year-round coastal cleanup activities. Throughout 2022, a total of 54 undersea cleanup events and 31 beach cleanup events were successfully held, engaging 1,164 participants and resulting in the removal of 5 metric tons of coastal and marine litter. We also encourage ASE employees and diving enthusiasts to join the ASE Environmental Scuba Dive Team and participate in ocean and coastal clean-up activities. We have since recruited and trained 45 new dive team members. In 2023, we will expand our coverage for marine protection and the preservation of biodiversity, to include Penghu, Orchid Island and Kenting.

ASE Guardians of the Seas

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 nine years ago, we have installed 136,261 LED tube lights in 130 schools in the Nantou and Kaohsiung areas. Over the years, the LED projects have helped schools to save 13,052,500 kWh of electricity and reduce 6,725 tons of CO_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.

Campus LED installation projects

	School	LED Lamps	Electricity saved annually (kWh)
2019	17	14,050	303,480
2020	25	15,360	331,776
2021	17	17,260	372,816
2022	21	27,360	590,976

8.3 Industry-Academia Collaborations

ASEH is strategically engaged in long-term industry-academia collaboration with reputable universities and colleges that aim to leverage the combined strengths, and drive the development of advanced semiconductor technologies. Through the collaboration, a wide range of industry-specific programs, courses, and internship opportunities were developed for students to foster an enriching learning experience. ASEH seeks to cultivate a new generation of professionals equipped with both theoretical knowledge and practical skills, that enhance their employability. ASEH is committed to investing in high tech talent that will help bolster the competitiveness of the semiconductor industry, and equip the workforce to meet the rapid growth of emerging technologies.

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 2022, ASEH continued its collaborations with local schools, contributing over US$5.1 million, including US$1.8 million towards 74 technology research collaborations and US$1.1 million for scholarships. We also recruited 410 interns and enrolled 209 students in the semiconductor courses. Nearly 70 schools and research institutions in Taiwan, China, Singapore, Malaysia, South Korea, Japan, etc. were involved in these collaborations.

	2019	2020	2021	2022
Number of interns	1,183	638	224	410
Number of people participated in the semiconductor courses	230	169	862	209
Number of technological research collaboration projects	38	74	66	74
Investments in technological research collaboration projects	US$1.2 million	US$1.4 million	US$1.8 million	US$1.8 million
Scholarships	US$0.1 million	US$0.06 million	US$0.3 million	US$1.1 million
Total invested in industry-academia collaborations	US$1.5 million	US$1.6 million	US$2.5 million	US$5.1 million

2022 Accomplishments of Industry-Academia Collaboration Programs

Programs	Projects	Stakeholders	Achievements
• Cooperative education and internships • Academic research collaborations • Scholarships	• 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	• University Students • Academic Institutions and Research Institutes • Semiconductor Industry	• Improving Career Prospects and Competitiveness of Students • Improving Academic R&D Capabilities • Cultivating Talented Personnel for the Semiconductor Industry

NSYSU College of Semiconductor and Advanced Technology Research

In response to the decreasing birth rate and the rising demand for advanced technology talent, Taiwan's Executive Yuan proposed a National Key Fields Industry-University Cooperation and Skilled Personnel Training Regulation in 2020. Following the proposed act, approval was given to the National Sun Yat-sen University (NSYSU) to establish the College of Semiconductor and Advanced Technology Research in 2022. NYSU is a premier university in Taiwan for key science and technology talents, and the semiconductor college will offer courses from the Institute of Advanced Semiconductor Packaging and Testing and the Institute of Precision Electronic Components. As a leading semiconductor packaging and testing player, ASE is proud to have played a significant role together with other industry peers on the establishment of the NSYSU college. ASE and the industry partners are committed to collaborate closely and invest generously to the building of semiconductor talent in Taiwan over the next decade.

The NSYSU College of Semiconductor and Advanced Technology Research is projected to accept 120 students every year - 80 students for the Institute of Advanced Semiconductor Packaging and Testing and 40 students for the Institute of Precision Electronic Components. The student enrolment will create about 960 trained personnel to meet industry needs in the following decade. In 2022, ASE invested a total of US$0.89 million to support the NSYSU College. ASE sponsored a significant portion of students in the Institute of Advanced Semiconductor Packaging and Testing - 65 out of the 80 students. The curriculum is designed with an innovative approach to talent development that comprises one year of academic studies at the university and two years of practical internships at companies. Every student who completes the three-year program is eligible to receive a scholarship of US$33,000.

The faculty of the NSYSU College of Semiconductor and Advanced Technology Research is formed by both university lecturers and industry experts from ASE. They collaborate in the development of the course curriculum and focused research topics that align with industry and technology needs. The NSYSU College is an innovative educational model for workforce development in the semiconductor industry that integrates a high level of industry participation and the strength of NSYSU teaching standards. Students in the program have a direct path to a career in their field of knowledge within the semiconductor industry. During their course of study, they are provided with the latest tools and access to cutting edge industry know-how which they can apply immediately after graduation. The industry-academia led program is an overall win-win for all stakeholders in that it nurtures growth in the southern Taiwan semiconductor cluster, creates job opportunities for graduates, satisfies the needs for industry talent, and ensures Taiwan's competitiveness in the international semiconductor industry.

NSYSU College of Semiconductor and Advanced Technology Research

Accelerating towards Industry 4.0 through industry-academia research on Automation

ASE Kaohsiung continues to be at the forefront of OSAT smart manufacturing and is unlocking new business opportunities by harnessing the power of Industrial Internet of Things (IIoT). Back in 2015, ASE Kaohsiung begun collaborating with universities on research projects in automation technologies and has since recorded a total of 44 projects. In 2022, we identified 3 key projects to partner with National Cheng Kung University, National Sun Yat-sen University and National Kaohsiung University of Science and Technology that can help nurture the practical skills and train semiconductor talent in automation. The synergy generated through such joint research programs will further strengthen technology exchanges and accelerate digital transformation in business.

1. Optimization of IIoT database middleware. The high-performance database middleware plays a crucial role in processing massive volumes of data, reducing the data integration cycle by 60% and increasing data processing capacity by at least five times. It enables swift identification of key factors impacting production line yield and efficiency.
2. Voiceprint recognition technology for detecting equipment anomaly. The voiceprint recognition technology, developed through AI learning techniques, functions as a predictive system that utilizes voiceprints to forecast maintenance schedules, enhance equipment operation efficiency, reduce energy consumption, and detect otherwise elusive equipment anomalies, ensuring real-time notifications.
3. Intelligent image search and retrieval system. The intelligent image search and retrieval system leverages real-time analysis of image files as an auxiliary monitoring tool. By employing AI to identify objects and utilizing neural language planning (NLP), this system replaces labor-intensive retrieval methods, facilitating rapid searches of target objects within vast datasets. Early warning notifications are generated, enabling timely response measures.

ASE Kaohsiung has successfully launched an industrial AI platform with the objective of fostering AI learning environments and offering relevant certification courses across our facility. The company not only accelerates the integration of intelligent technologies within the organization and maximizes work efficiency through the utilization of AI models, but also establishes a vital link between academic AI research advancements and practical industrial applications. ASE Kaohsiung is dedicated to nurturing and developing key talents who are crucial for driving digital transformation, enhancing competitive capabilities in the realm of intelligent solutions, and spearheading industry-wide transformation and growth.

Automation Technology Forum

Assembly Technology Forum

Semiconductor packaging technology research – a decade in the making

To enhance Taiwan's competitiveness in semiconductor packaging and cultivate talent in advanced manufacturing processes, ASE Kaohsiung initiated a research program with National Cheng Kung University and National Sun Yat-sen University in 2012. Over the past decade, a total of 131 research projects have been carried out, resulting in the expanded scope of the semiconductor applications and commercialization of research outcomes. In 2022, we marked the achievements of the industry-academia collaboration at the 10th Packaging Technology Industry-academia Conference, recognizing the university professors' dedication to research and talent cultivation. The event also showcased the results of 14 projects and, awards were presented for outstanding contributions.

2022 projects. Advanced packaging; an optimized circuit layout design enhances multi-functional integration, low power consumption, and miniaturization. 5G mmWave packaging; Automotive radar sensors, especially in autonomous vehicles, refine sensing distances and improve accuracy in detection, leading to better warning systems and road safety. Research on absorption and diffusion materials for optoelectronic sensing modules; applying advanced packaging technologies to enhance the detection of light signals. ASEH's work with universities demonstrate the infinite possibilities that can be created to meet rising demands in the digital economy and new business opportunities from big data, cloud computing to high-speed and remote network applications.

Over the past 10 years, ASE Kaohsiung has invested almost NT$100 million in university collaborations, attracting over 500 students, teachers and experts to participate in the program. Our primary focus had been on boosting product quality and optimizing production, where we directed efforts into the development of advanced processes and materials, key technology investments, and penetrating advanced fan-out packaging, optical modules, 5G mmWave packaging, and substrate design and testing business segments. We're playing a leading role that is geared towards strengthening Taiwan's semiconductor industry in the next decade by cultivating future generations of talent with diverse global perspectives.

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 nine 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 2022, a total of 156 students participated in the University Corporate Mentors program, accumulating 1,131 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.

Another development in SPIL's talent development was the Semiconductor Assembly Materials and Processes course established in 2016 together with the National Chung Hsing University and with Feng Chia University in 2022. In addition to co-developing the course subjects, SPIL also sends experienced employees to conduct classes, providing students with the latest information on semiconductor processes and actual industry practices. In 2022, a total of 133 students participated in these courses, accumulating 7,275 hours of participation. SPIL is committed to the practical application training platform to provide students with diverse learning channels that will bridge the gap between theoretical knowledge from textbooks and practical field knowledge.

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 is aimed at providing opportunities for college students to engage with the job market and interact with industry professionals. The university models courses that apply DISC Personality Assessments, and align with industry-academia experiences, talent selection, corporate competitiveness and career-planning. In 2022, USI University shared a total of 16 courses, with a cumulative duration of 932 hours, contributing to the enhancement of youth employability.

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 2022, a total of 72 students participated in on-site internships. In addition to providing internship opportunities, USI's Nantou facility collaborated with Yang Ming Chiao Tung University and Taipei University of Technology on research projects focusing on Cross-Component Short Circuit and Insufficient Solder Defect Detection, as well as Reliability Testing for Module Miniaturization. In 2022, a total of 660 students benefited from the industry-academia internship cooperation, accumulating a total of 54,616 hours of participation.

USI University

8.4 Community Engagement

ASEH is committed to caring for society and aims to facilitate social integration through its four main pillars: Community Development, Charitable Care, Emergency Assistance, and Cultural Development. These pillars promote community building by establishing a two-way communication platform for the local community and the public. Our goal is to ensure uninterrupted communication, enhance community cohesion, create a healthier and better community, and promote sustainable social development.

We partner closely with the ASE Charity Foundation, the ASE Cultural and Educational Foundation, and the Chang Yao Hong-Ying Social Welfare and Charity Foundation, to promote community welfare projects that demonstrate respect for social diversity, and support for vulnerable groups. In 2022, we contributed over US$2 million for community engagement activities. We provided afterschool care for 263 students and financial assistance to 9,281 students from disadvantaged families, and made donations to 46 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.

	2019	2020	2021	2022
Community Engagement	US$1.1 million	US$1.6 million	US$3.4 million	US$2 million
Beneficiaries	About 7,900	About 8,200	About 9,200	About 9,500
No. of students from disadvantaged households receiving afterschool care	143	316	254	263
No. of students from disadvantaged households receiving financial aid	7,718	7,879	8,963	9,281

SPIL Helps to Read with Ears

SPIL Helps to Read with Ears

During the pandemic, SPIL mobilized approximately 300 volunteers from the SPIL Volunteer Club to participate in the creation of the SPIL Story Castle, an initiative to help the blind. They completed the recording of nearly 100 audiobooks and the publishing of braille books, as well as created an online library for the Huei Ming School for Blind Children. SPIL was awarded the 2022 National Sustainable Development Award (Education category) for this initiative.

After receiving training, the volunteers began to record reading materials, narrating new horizons and the world to the blind and people with reading disabilities. This initiative not only helps children develop their listening skills and expand their vocabulary, but also enhances their focus and imagination. Additionally, the initiative addressed the long-standing shortage of braille books in the market by helping with the conversion of braille books. Under the guidance of club advisor Mr. Lu, a skilled storyteller, and in collaboration with the school, books were meticulously selected, graded for recording, typesetting and proofreading. In September 2022, the braille books were successfully included in the teaching curriculum of Huei Ming School. On November 15th, the SPIL Story Castle Audio Book and Braille Book Ceremony was held. The entire project spanned six months and received recognition and positive feedback from the school.

Women's Sustainable Innovation Talent Cultivation Competition and Dream Building Project

To raise the profile of women and to encourage entrepreneurship and sustainable innovation, we established the Women's Sustainable Innovation Talent Cultivation Competition and Dream Building Project. The project focused on supporting business proposals that are forward looking, and centered on technology, sustainability, and inclusivity. Women entrepreneurs are encouraged to develop innovative technologies to address existing social problems, and promote environmental sustainability. The competition offers a total prize of NT$10 million, drawing a total of 195 teams. After two stages of reviews, evaluations and extensive discussions, 10 teams emerged as winners. The top three teams will receive entrepreneurial subsidies of NT$3 million, NT$2 million, and NT$1 million, respectively. In addition to subsidies, ASEH partnered with Ming Chuan University to establish a "startup incubator" that incorporates the industry-academia resources of both parties. In the next year, ASEH will plan a series of visits to provide guidance and consultation for the winning projects. These follow up activities will provide further support to ensure that the winning teams realize their entrepreneurial dreams to the fullest extent.

Women's Sustainable Innovation Talent Cultivation Competition and Dream Building Project

Women's Sustainable Innovation Talent Cultivation Competition and Dream Building Project

Women's Sustainable Innovation Talent Cultivation Competition Winners

Prize	Project Director	Project Name
1st Place - NT$3 million	Lin Tsuei-E	Utilizing AI to Create an online service portal for Dementia Prevention
2nd Place - NT$2 million	Liao Ti-Han	Creating a Circularity in the Mushroom Growing Industry – the Recycling of Agricultural Waste
3rd Place - NT$1 million	Lin Yi-Ying	Transforming Long-Term Care - ALL IN ONE Homecare Service Promotion Project
Honorable Mention[1]	Chang Yu-chi	Development of Edible Straw Products
Honorable Mention	Tseng Hui-Hsin	The New Green Gold: Application of Innovative Carbon Recycling Membrane Separation Technology in Precision Agriculture
Honorable Mention	Chen Hui-Li	Circular Economy and Net Zero Carbon Emission Business Model Innovation for Organic Waste Materials
Honorable Mention	Hung Ho-Ching	Miss Eco: Net Zero and Sustainable Everyday Life Starts with Preventive Medicine and Circular Economy
Honorable Mention	Yuan Ching	Carbon Membrane Filtration - High-Value Utilization of Carbon Waste Materials Research
Honorable Mention	Li Yi-Shan	Agricultural Waste Regenerated Sustainable Material PANEX Vegan Leather
Honorable Mention	Lin Chiao-Chen	ReFine LAB Creative Art Experimentation Studio - Sustainable Accessories from Urban Mines

[1] Honorable Mention prizes range from NT$200,000 to NT$900,000

The Rural Technology Education Project

The Rural Technology Education Project

The United Nations believes that increased digital literacy is necessary to alleviate social exclusion in the digital era. Recognizing the technology gap in rural areas, USI launched a new program called Rural Technology Education Project. Since 2018, we have been utilizing technologies to support rural education by donating computer classrooms to rural schools. This initiative aims to improve the teaching environment, enrich teaching resources, and create better educational opportunities for rural students. Through this project, we have built computer classrooms in three schools in Gansu Province and two schools in Qinghai Province.

In 2022, we further constructed three computer classrooms in Henan and Gansu, and donated 197 computers. The upgraded and optimized facilities and equipment also helped cultivate teaching staff and technology talents in the rural areas. We assisted school teachers in leveraging technology to develop instructional videos and related materials on technology applications, and organize fun competitions to reinforce learning outcomes and improve students' technological literacy. In 2022, a total of 1,573 students benefited from this program, with a cumulative number of beneficiaries reaching 2,444 individuals.

2022 Taiwan Cultural Development Support Project Summary

Project	Content	Supported Unit	Amount (US$)
2022 Kaohsiung New Year's Concert	Concert sponsorship. Live broadcast of performances brought joy to people celebrating New Year's Eve together	ASE. ASE Cultural and Educational Foundation	**162,707**
Chai-Yuan Art and Cultural Foundation performances	"Sound and Image: Moments in Motion" performances organized by the Chai-Yuan Art and Cultural Foundation held on October 16th at the Taipei Zhongshan Hall and on November 16th at the New Taipei City Art Center, attracting 1,000 participants	ASE. ASE Cultural and Educational Foundation	**3,254**
'Focus on the World' by Eastern Media Group	Sponsored the production of two environmental episodes, "Searching for Hsiao-Hsiang" and "Deep Blue Melancholy," which were aired on Eastern News Channel in May 2022	ASE. ASE Environmental Protection and Sustainability Foundation	**65,083**
Family fun with kids at the Cinema	Organized an outdoor movie event on October 16th, 29th, and 30th, with games and entertainment to promote environmental education and raise environmental awareness amongst children	ASE. ASE Environmental Protection and Sustainability Foundation	**15,034**
Cultural Activities by Changhua City Government	July 24th: Taiwan Sound and Image Sketch - 2022 Changhua City Chinese Orchestra Concert (Changhua Performance Hall), benefiting 650 people August 9th: "Taiwan Sound and Image - 2022 Changhua City Chinese Orchestra Concert" (National Taichung Theater), benefiting 855 people September 24th: Music Grace in Summer: 2022 Changhua City Symphony Orchestra Concert, benefiting 700 people August 28th: Changhua City Mayor's Cup Senior Citizens Singing Contest	SPIL	**32,541**
Title Sponsorship of the USI Go League	Sponsoring the USI Go team (4 members) at Go competitions	USI	**45,581**
Taiwan Reading Culture Foundation - Love Library Activities and the construction of Co-reading Spaces	Promote reading culture by organizing events such as Author Encounters and Parent-Child Co-reading and Fun Magic of Physics and sponsoring the construction of co-reading spaces, benefiting 816 people	USI	**49,300**
Cloud Gate Dance Theatre's Annual Performance and 50th Anniversary Events	Sponsored Cloud Gate Dance Theatre's *Send in a Cloud* Taiwan tour and related events, with a total participation of 9,520 people	USI	**65,083**
40th Global Chinese Literary Prize for Youths	Sponsored the event to encourage more students to engage in Chinese literature writing	USI	**9,762**
USI Art Gallery	Collaborated with the Chiu-Chiu Fine Arts Association in Caotun Township, Nantou County, to showcase solo and joint exhibitions by artists in the facility corridors, enrich the artistic culture in the facility, and provide a platform for art creators	USI	**1,562**
Ming Hwa Yuan's Public Performances	Organized public performances by the Ming Hwa Yuan at Zhongshan Park in Caotun, with a total participation of 2,100 people	USI	**31,196**
Collection of Individual Artworks for the Nantou County Yushan Art Award	Supported arts and culture by collecting artworks from local artists, including *Promise of the Mountain City* by Li Mengchu, *Strolling in Colorful Venice* by Dai Liying, and *Rhythm of the Cello* by Chang Chin Chung, displayed in USI meeting rooms for all to enjoy	USI	**5,532**
Total			**486,637**

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 Committee (CSC) annually. The CSC 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 CSC 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 2022, ASEH contributed US$0.62 million and was active in over 120 external organizations, allowing ASEH to share our value system with industry peers and supply chain partners, and extend a broader social impact.

Participation in Major Trade Associations in 2022:

Association	Major Activities	Resources invested (US$)
Semiconductor Equipment and Materials International (SEMI)	SEMI is a global electronic manufacturing supply chain industry association, with over 2,500 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 vice chairman of the International Board of Directors' Executive Committees, chair of SEMI Taiwan Packaging and Testing Committee and SEMI FlexTech 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, Test Committee, Semiconductor Cybersecurity Committee, and Sustainable Manufacturing Committee. The key SEMI initiatives of 2022 are as follows: 1. In November 2022, ASE joined the SEMI Semiconductor Climate Consortium as a founding member. The SCC is the first global consortium formed by companies across the semiconductor value chain to accelerate the ecosystem's reduction of greenhouse gas emissions. Although the industry has made significant progress in reducing emissions, opportunities remain for better collaboration to address common challenges facing our industry value chain. ASE and our suppliers believe that contributing and supporting the goals of the SCC through collaboration, transparency and ambition can help drive the semiconductor industry towards progressive climate actions. 2. Promotion to diversity, equality, inclusion and respect (DEIR). DEIR topics are rising in greater importance at the work place and representation of women in particular stands out. As a SEMI board member, ASE has pushed for the development of robust actions to promote and strengthen women in management and leadership roles across the industry. We also joined SEMI Foundation which is aimed to provide support for workforce development and diversity, equity and inclusion in the semiconductor industry. ASE was elected as a member of SEMI Foundation's Board of Trustees in 2022. We will continue to promote DEIR at the work place and solve workforce challenges and support economic equity. 3. Contribution to SEMI standards. SEMI E187 - Specification for Cybersecurity of Fab Equipment This Standard defines overarching and fundamental cybersecurity requirements as a baseline to secure semiconductor fab equipment by design and support security protection in operation and maintenance. This Standard provides fundamental requirements in the following aspects: operating system (OS) support, network security, endpoint protection, and security monitoring. SEMI E188 - Specification for Malware Free Equipment Integration This Standard provides a framework for how to mitigate the propagation of malware to manufacturing facilities during capital equipment delivery and support activities. This Standard addresses the required measures for information security in manufacturing equipment delivery, installation, and support activities over the course of the manufacturing equipment life cycle within semiconductor manufacturing facilities. 4. ASEH has always been involved in the annual SEMICON Taiwan event. SEMICON Taiwan 2022 was a record breaking event with attendance from over 700 companies, 2,450 exhibiting booths, and 45,000 visitors. During the 3-day event, SEMI held 22 international forums that focused on advanced manufacturing, heterogeneous integration, compound semiconductors, automotive chips, smart manufacturing, sustainability, cybersecurity and workforce development. ASE presented its advanced technologies at the automotive forum and its green solutions at the sustainability forum.	118,000

Association	Major Activities	Resources invested (US$)
Taiwan Semiconductor Industry Association (TSIA)	ASE Inc. is a founding member and board director of TSIA (Taiwan Semiconductor Industry Association), 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 2022 are as follows: 1. Engagement in policy discussions to promote positive impacts for the OSAT industry. Participated in the discussion on pollution control and emissions standards; established an action plan for GHG emissions control at manufacturing plants that use fluorine gases; participated in the drafting and reviewing of industrial waste disposal policy. 2. GHG verification. Received a written statement for the completion of a joint-GHG verification based on CNS 14064-1, meeting customer requirements and government regulations; contributed to a GHG report on the GHG emissions data by the semiconductor industry in Taiwan, demonstrating TSIA's commitment to managing and reducing emissions. 3. Semiconductor Packaging and Test Industry – waste management. Established a 'task force for the evaluation of waste management vendors' to conduct systematic assessments of waste disposal industry players. Together with users of these services, ASE helped to establish a robust waste management and tracking system that reduces environmental impacts and raises Taiwan's waste management standards. In 2022, the team visited 9 waste disposal facilities supporting the technology sector and provided ratings and feedback from the visit.	111,000
Taiwan Net Zero Emissions Association (TNZEA)	ASEH is a founding member and executive director on the board of the Taiwan Net Zero Emissions Association (TNZEA). Established in 2021, TNZEA encourages industries to commit and contribute to the Pathway to Net-Zero Emissions through negotiation, education, action and involvement to help the government meet Taiwan's 2050 carbon neutrality goals. TNZEA pays careful attention to domestic and international Net Zero trends and actively promotes the sharing of experiences amongst the industry, government, and academia by holding forums and expert-led seminars. The key initiatives and programs promulgated by TNZEA in 2022 are as follows: 1. 2022 Asia Pacific Forum for Sustainability: CCUS & Hydrogen. Industry and academia participants from Australia, Japan and Taiwan came together to present and share practical experiences. During the session on CCUS, participants discussed Taiwan's Net Zero pathway through removal technologies targeting 40.2 Mt of emissions. The second session featured developments in Australia's green hydrogen, Taiwan's hydrogen plants and industries using hydrogen. The TNZEA forums placed Taiwan on the international area, fostering greater technological collaborations and enabling the advancement of CCUS and hydrogen technologies in Taiwan. 2. A CCUS and hydrogen forum was held by TNZEA and the US Electric Power Research Institute (EPRI) to learn about US developments in CCUS and hydrogen, and to explore global solutions in support of Taiwan's pathway to Net Zero 2050. 3. TNZEA organized a visit to the Tomakomai CCS Demonstration project site in Hokkaido, Japan, as part of an exchange program to learn about CCUS. The visit provided members indepth knowledge on methodologies and solutions that will help accelerate Taiwan's Net Zero transition.	78,000
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 October 2022, RBA announced a partnership with Optera to scale Greenhouse Gas Management for RBA members and suppliers. The new capabilities developed with Optera, will support the calculation of RBA members' scope 1, 2, and 3 emissions, and help to advance sustainability efforts, simplify GHG management, and bolster the capabilities of companies.	70,000
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 2022 are as follows: 1. Forum on Taiwan's Net Zero Policies and Developments. Promoting dialogue to advance Net Zero goals. 2. The 8th International Conference on Trends of Sustainability 2022 was organized in collaboration with CSRone, PwC, and the National Chengchi University Sinyi School. The 'Taiwan and Asia Pacific Sustainability Report', an authoritative study on sustainability developments and future trends, was formally launched at the event. The event was a successful platform for Taiwan to benchmark with key players in the Asia Pacific region and exchange key sustainability experiences. 3. The 2022 Asia-Pacific Forum and Exposition for Sustainability. 5 key tracks were featured at the event – AP Sustainability Action Exhibition, AP Sustainability Action Summit, AP Sustainability Action Forum, AP and Taiwan Sustainability Action Awards, and Road to Net Zero. The Exhibition was attended by more than 20,000 visitors from different sectors including government agencies, corporations, financial institutions, universities, social enterprises, NGOs, media, and strategic partners. At the event, ASEH showcased the company's contribution to a circular economy, and developments in low-carbon transition, smart manufacturing, and environmental protection.	60,000

Lobbying and Participation in Trade Associations on Climate Alignment

Addressing climate change is a top priority for ASEH. To that end, we have formulated the Corporate Sustainability and Citizenship Policy[1], to help the company meet its climate goals, improve and protect the environment. We will adopt climate mitigation and adaptation strategies, expand the reuse of resources and reduce GHGs emissions, wastewater, waste, and the use of chemicals. We have established clear Net Zero targets and pathways in alignment with the Paris Agreement. In 2021, our targets of well below 2℃ for scope 1 and 2, and below 2℃ for scope 3 by 2030, were submitted and validated by SBTi. Our next plan is to meet the 1.5℃ target and achieve SBTi's recommendation of Net Zero 2050.

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 Committee for final approval.
3. The Social Involvement Task Force is responsible for tracking progress, and updating the progress and outcome to the CSC.
   (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 CSC is obligated to report the status regularly to the board of directors.

[1] ASEH Corporate Sustainability and Citizenship Policy (https://www.aseglobal.com/en/pdf/2022_aseth_corporatesustainabilityandcitizenshippolicy.pdf)

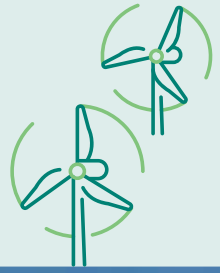
Trade Associations

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.



2022 Evaluation Results

Direct Lobbying

ASEH did not conduct any direct lobbying in 2022.

Trade Associations

In 2022, ASEH recorded participation in 123 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 123 associations, 12% or 15 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: 15

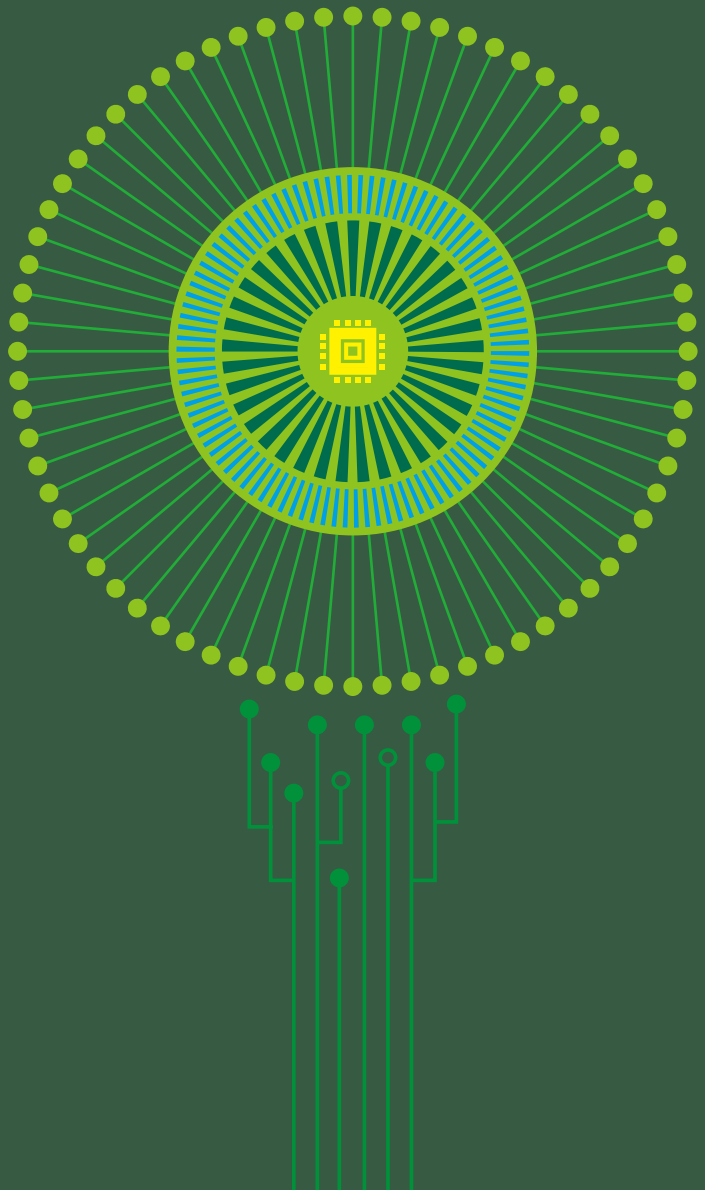
	Name	Remarks on Assessment
1	The American Society of Mechanical Engineers	Recognizes climate risks, supports the Paris Agreement, and initiates topics and activities related to climate change.
2	Institute of Electrical and Electronics Engineers	Recognizes climate risks, supports the Paris Agreement, and proposes climate solutions.
3	Responsible Business Alliance	Recognizes climate risks, proposes responsible environmental initiatives (such as decarbonization), utilizes emissions management tools, and supports members' GHGs reduction goals.
4	Semiconductor Equipment and Materials International	Recognizes climate risks, supports the Paris Agreement, established the Semiconductor Climate Consortium, and promotes the pathway to Net Zero through conferences and public advocacy.
5	Taiwan Alliance for Sustainable Supply	Recognizes climate risks, supports the development of a sustainable supply chain, and promotes the pathway to Net Zero through conferences.
6	Taiwan Semiconductor Industry Association	Recognizes climate risks, supports net zero goals, supports members' sustainability programs, and promotes the pathway to Net Zero through conferences.
7	Taiwan Electrical and Electronic Manufacturers' Association	Recognizes climate risks, supports net zero goals, provides recommendations for government policies on net zero and energy, and promotes the pathway to Net Zero through conferences.
8	Taiwan Institute for Sustainable Energy	Recognizes climate risks, supports the Paris Agreement, established the Taiwan Alliance for Net Zero Emission, conducts initiatives and promotes the pathway to Net Zero through conferences.
9	Taiwan Net Zero Emissions Association	Recognizes climate risks, pledges to help Taiwan achieve net zero, conducts initiatives and promotes the pathway to Net Zero through conferences.
10	Taiwan Carbon Capture Storage and Utilization Association	Recognizes climate risks, pledges to help the industry reduce carbon emissions and mitigate the greenhouse effect through carbon-capturing technologies, and promotes CCUS through conferences.
11	Taiwan Panel & Solution Association	Recognizes climate risks, supports the goal of reaching net zero/carbon neutrality by 2050, drafted the TPSA Guide for Best Control Technologies for GHG Emissions Reduction, conducts initiatives and promotes pathway to Net Zero through conferences.
12	Chinese National Association of Industry and Commerce	Recognizes climate risks, supports the Paris Agreement, and conducts initiatives and promotes pathway to Net Zero through conferences.
13	The Business Council for Sustainable Development of the Republic of China	Recognizes climate risks, supports net zero goals, conducts initiatives and promotes pathway to Net Zero through conferences.
14	Taiwan Printed Circuit Association	Recognizes climate risks, supports net zero goals, supports the PCB industry's low-carbon transition through initiatives and conferences.
15	CommonWealth Sustainability League	Recognizes climate risks, supports net zero goals, promotes corporate sustainability development, conducts initiatives and promotes 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

Category	Environmental Performance Index	Unit	2019	2020	2021	2022[1]
Waste	Total general and hazardous waste	ton	69,795	75,814	82,158	75,391
	General waste production	ton	41,841	45,139	52,618	49,972
	Recycled and reused (without energy recovery)	ton	30.066	33,813	41,696	39,245
	Landfilled	ton	2,322	1,872	1,976	1,368
	Incinerated with energy recovery	ton	8,677	8,442	8,160	8,810
	Incinerated without energy recovery	ton	776	1,012	786	549
	Hazardous waste production	ton	27,954	30,675	29,540	25,419
	Recycled and reused (without energy recovery)	ton	12,424	13,048	14,064	12,963
	Landfilled	ton	1,044	870	1,326	0
	Incinerated with energy recovery	ton	3,680	6,740	5,171	5,563
	Incinerated without energy recovery	ton	7,406	7,201	7,262	1,864
	Others	ton	3,400	2,816	1,717	5,029
	Total recycled and reused	ton	54,847	62,043	69,091	66,581
	Total non-recycled and reused	ton	14,948	13,771	13,067	8,810
	Total recycled and reused rate	%	79	82	84	88
Water	Water withdrawal	m^3	24,177,331	24,961,039	25,872,192	23,398,956
	Water withdrawal intensity	m^3/ thousand USD revenue	1.755	1.468	1.262	1.072
	Ultra-pure water usage	m^3	25,113,761	26,304,664	28,660,692	28,571,562
	Water recycled and reuse	m^3	28,158,345	34,437,950	37,817,390	40,121,082
	Process water recycle rate	%	68	72	72	76
	Wastewater discharge	m^3	18,778,265	19,454,037	19,569,329	17,461,146
	Total fresh water consumption	Million m^3	24.08	24.71	24.45	23.17

[1] The data for 2022 does not include the facilities that were sold during that year

Category	Environmental Performance Index	Unit	2019	2020	2021	2022[1]
Energy	Electricity consumption	MWh	3,588,896	3,900,915	4,285,155	4,233,363
	Renewable electricity	MWh	512,067	706,105	1,030,137	819,863
	Non-renewable electricity	MWh	3,076,829	3,194,810	3,255,018	3,413,500
	Electricity intensity	MWh/ thousand USD revenue	0.260	0.230	0.209	0.194
	Liquefied Petroleum Gas (LPG)	GJ	3,094	16,770	2,273	3,253
	Liquefied Natural Gas (LNG)	GJ	255,582	324,214	332,561	333,904
	Motor gasoline	GJ	8,956	6,593	5,972	4,863
	Diesel	GJ	18,892	73,337	27,231	26,586
	Heavy oil	GJ	31,906	32,534	34,703	37,917
	Steam	MWh				35,024
	Cooling	MWh				10,297
	Total Renewable energy consumption	MWh	512,067	706,105	1,030,137	819,863
	Total non-renewable energy consumption	MWh	3,208,517	3,352,288	3,416,482	3,571,744
Green House Gas (GHG)	SCOPE 1	tCO_2e	98,880	93,996	90,591	90,993
	SCOPE 2 (Market-based)	tCO_2e	1,695,223	1,658,606	1,612,050	1,671,242
	SCOPE 1 + SCOPE 2 (Market-based)	tCO_2e	1,794,103	1,752,602	1,702,641	1,762,235
	SCOPE 1 + SCOPE 2 (Market-based)[1]	tCO_2e	1,711,124	1,755,687	1,695,826	1,762,235
	GHG intensity (Market-based)	tCO_2e / thousand USD revenue	0.130	0.103	0.083	0.081
	PFC emissions / number package output	tCO_2e/kPCs	0.00086	0.00077	0.00062	0.00091
Air Emission	VOC (Volatile organic compounds)	ton	208	219	262	291

[1] The data for 2019 to 2022 does not include the facilities that were sold during 2022

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	17	0
	Groundwater	4,700	0
	Third-party water	18,682	4,140
Water withdrawals by source of water[3]	Freshwater (TDS ≤ 1,000 mg/L)	18,651	1,430
	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[4](ML)
Water discharge by discharge destination	Surface water	10,052	0
	Groundwater	0	0
	Marine water	1,153	0
	Third-party water	6,256	3,486
Total water discharge	Surface water + groundwater + marine water + third-party water	17,461	3,486
Water discharge by source of water[5]	Freshwater (TDS ≤ 1,000 mg/L)	504	0
	Other sources of water (TDS > 1,000 mg/L)	3,313	0
Water consumption			
Total water consumption	Total water withdrawals - Total water discharge	5,938	654

[1] Areas in water stress (Stress>40%): Water withdrawal in these areas accounted for 17.69% of the overall water withdrawal. Water consumption accounted for 58.71% of the total water consumption
[2] Water withdrawals in water-stressed regions (Stress>40%): (1) ASE: Shanghai Material, ISE Labs China; (2) USI: Kunshan, Mexico; (3) SPIL: Suzhou
[3] Facilities that measure TDS in the water withdrawal: (1) ASE: Kaohsiung, Chungli, Wuxi, Korea, Singapore, ISE Labs; (2) SPIL: Suzhou; Other facilities are not included in the TDS calculated
[4] Water discharge in water-stressed regions (Stress>40%): (1) ASE: Shanghai Material, ISE Labs China; (2) USI: Kunshan, Zhangjiang, Mexico; (3) SPIL: Suzhou
[5] Facilities that measure TDS in the water discharge: (1) ASE: Kaohsiung, Japan, Singapore; Other facilities are not included in the TDS calculated

C. Water discharge in water-stressed regions (ML)[1]

Item	Unit	Taiwan_to land		Taiwan_to ocean		China		Japan		Korea		Malaysia		Singapore	
		Effluent standard	Min.~ Max.	Effluent standard	Min.~ Max.	Effluent standard	Min.~ Max.	Effluent standard (Nantion)	Min.~ Max.	Effluent standard	Min.~ Max.	Effluent standard	Min.~ Max.	Effluent standard	Min.~ Max.
pH	pH	6~9	7~8.3	6~9	7.1~8.4	6~9	6.7~8.7	5.8~8.6	6.7~8	5.8~8.6	7.2~8.2	5.5~9.0	7~7.9	6~9	0~8.1
COD concentration[2]	mg/L	<100	3.9~83.6	<280	13.4~41.4	500	10.75~199	160	-	90	3~6.8	200	4~16	600	0~46
BOD concentration	mg/L	-	2~20.4	<100	0.03~27.2	300	2.6~55	160	0.5~1	80	1.10~10.20	50	2~3	400	0~29
Suspended Solid(SS) concentration[3]	mg/L	<30	1~25.8	<100	1~18.6	400	6~81	200	0.5~29	80	0.05~4.10	100	0.9~1	400	0~67
Cu^{2+} concentration	mg/L	<1.5	0.01~0.86	<2	0.02~0.45	1	0	3	-	3	0~0.07	1	0.05~0.26	5	<0.02
Ni^{2+} concentration	mg/L	<0.7	0~0.21	<1	0~0.008	0.5	0	-	-	3	-	1	0.1	10	<0.02

D. Product Lifecycle Management

Category	Index	Unit	2022
Life Cycle Assessment Approach	Full LCAs	% (Percentage of Total Products)	41.72
	Simplified LCAs	% (Percentage of Total Products)	8.64
	Others (green products meet international regulations & customer requirements.)	% (Percentage of Total Products)	49.64
End-of-life products and e-waste	Weight of end-of-life products and e-waste[4]	ton	1,913.03
	Weight of end-of-life products and e-waste that were recovered[5]	ton	1,572.14
	The percentage of end-of-life material recovered that was recycled[6]	%	0

E. Environmental Violations

	2019	2020	2021	2022
Number of significant violations of legal obligations/regulations[7]	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] ASE Singapore, ISE Labs China, ISE Labs and three electronic manufacturing service facilities (Kunshan, Shenzhen Mexico) do not have on-site wastewater treatment, thus not included in the statistics
[2] 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, and is therefore not included
[3] Waste water discharge of the SPIL Zhong Ke facility isdiverted 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
[4] 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
[5] 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
[6] 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
[7] Fine/penalty individually costs more than US$10,000 is defined as significant

Social Data

A. Global Workforce Structure by Nationality/Race

Nationality [1]	Total Employee		Total Employee of Management Level	
	Number	Percentage of Total Employee (%)	Number	Percentage of Total Management Level (%)
Taiwan	49,971	58.01%	4,286	71.20%
China	15,289	17.75%	1,342	22.29%
Philippines	11,539	13.40%	21	0.35%
Mexico	2,583	3.00%	86	1.43%
Malaysia	2,459	2.86%	156	2.59%
South Korea	1,906	2.21%	35	0.58%
Indonesia	1,310	1.52%	1	0.02%
Japan	403	0.47%	35	0.58%
Singapore	234	0.27%	44	0.73%
Nepal	157	0.18%	0	0%
Vietnam	237	0.28%	0	0%
Myanmar	20	0.02%	0	0%
U.S.A	13	0.01%	8	0.13%
India	11	0.01%	2	0.03%
United Kingdom	3	0.00%	3	0.05%
France	2	0.00%	0	0%
Canada	1	0.00%	1	0.02%
Total	**86,138**		**6,020**	

Race [2]	Total Employee		Total Employee of Management Level	
	Number	Percentage of Total Employee (%)	Number	Percentage of Total Employee (%)
Asian	137	65.55%	26	60.46%
White	31	14.83%	13	30.23%
Hispanic or Latino	23	11.01%	3	6.98%
Native Hawaiian or Other Pacific Islander	12	5.74%	1	2.33%
Two or More Races	5	2.39%	0	0%
Black or African American	1	0.48%	0	0%
Total	**209**		**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		13,251	19.02%
		Contract		1	0.00%
	Gender	Male		2,323	3.33%
		Female		10,929	15.68%
	Total			**13,252**	
	Employment Visa	Gender	Male	1,985	2.85%
			Female	10,722	15.39%
	Total			**12,707**	
Electronic Manufacturing Service (EMS)	Employment Type	Regular		812	4.87%
		Contract		0	0.00%
	Gender	Male		113	0.68%
		Female		699	4.20%
	Total			**812**	
	Employment Visa	Gender	Male	113	0.68%
			Female	699	4.20%
	Total			**812**	

C. Employee Information

Employment Category	Gender		Location			
	Male	Female	Taiwan	China	Rest of Asia	Americas
Permanent Employees	42,903	37,221	57,085	13,442	6,789	2,808
Temporary Employees	2,141	4,082	4,354	1,773	91	5
Non-guaranteed Hours Employees	0	0	0	0	0	0
Full-time Employees	45,014	41,215	61,349	15,212	6,879	2,789
Part-time Employees	72	46	90	3	1	24

D. Male/Female Employee (by Job Position)

Category	Group	Male		Female	
		Number	Group Percentage (%)	Number	Group Percentage (%)
Position	Management	4,315	71.2%	1,748	28.8%
	Engineering	24,293	86.2%	3,894	13.8%
	Administration	1,805	31.6%	3,913	68.4%
	Skill Job	14,673	31.6%	31,706	68.4%
Management Level	Top Management Positions[1]	685	85.6%	115	14.4%
	Middle Management Positions	1,711	80.6%	413	19.4%
	Junior Management Positions	1,490	63.8%	847	36.2%
	Management Positions in Revenue-generating Function	3,608	72.5%	1,366	27.5%
STEM Related Position		**28,751**	**82.6%**	**6,074**	**17.4%**

E. New Hire Employee

Category	Group	Number	Percentage of Total New Hire Employee (%)
Gender	Male	13,116	58.3%
	Female	9,389	41.7%
Nationality	Native	18,749	83.3%
	Foreign	3,756	16.7%
Disabled	Male	104	0.5%
	Female	56	0.2%
Position	Management	265	1.2%
	Engineering	5,264	23.4%
	Administration	1,209	5.4%
	Skill Job	15,767	70.1%
Age	<30	14,342	63.7%
	30-50	7,939	35.3%
	>50	224	1.0%
Education	Ph.D	12	0.1%
	Master	1,079	4.8%
	Bachelor	6,793	30.1%
	Other Higher Education/ High School and Below	14,621	65.0%
Total		**22,505**	

[1] Top Management Positions: Senior Manager to Senior Vice President

F. Turnover Rate

Category	Group	2019		2020		2021		2022	
		Number	Percentage of Group (%)	Number	Percentage of Group (%)	Number	Percentage of Group (%)	Number	Percentage of Group (%)
Gender	Male	10,225	53.0%	8,485	55.3%	10,339	57.3%	7,319	53.7%
	Female	9,052	47.0%	6,851	44.7%	7,695	42.7%	6,312	46.3%
Position	Management	1,396	7.2%	346	2.3%	433	2.4%	369	2.7%
	Engineering	3,189	16.5%	3,163	20.6%	3,956	21.9%	3,364	24.7%
	Administration	716	3.7%	685	4.5%	843	4.7%	791	5.8%
	Skill Job	13,976	72.5%	11,142	72.7%	12,802	71.0%	9,107	66.8%
Age	<30	12,247	63.5%	8,840	57.6%	9,995	55.4%	6,738	49.4%
	30-50	6,649	34.5%	6,080	39.7%	7,591	42.1%	6,451	47.3%
	>50	381	2.0%	416	2.7%	448	2.5%	442	3.2%
Education	Ph.D	17	0.1%	17	0.1%	21	0.1%	15	0.1%
	Master	652	3.4%	699	4.6%	909	5.0%	739	5.4%
	Bachelor	3,463	18.0%	3,306	21.6%	6,420	35.6%	3,809	28.0%
	Other Higher Education/ High School and Below	15,145	78.6%	11,314	73.8%	10,684	59.2%	9,069	66.5%
Total		**19,277**		**15,336**		**18,034**		**13,631**	

G. Full-time Employees in Non-executive Positions

Category	2019	2020	2021	2022	Difference of 2021-2022
Employee[1]	46,493	47,753	48,013	50,061	2,048
Average Compensation (NT$)	759,968	799,730	914,627	1,001,460	86,833
Median Compensation (NT$)	627,111	670,687	726,063	771,532	45,469

H. Parental Leave

Category	Group	Number	Percentage of Group (%)	Total
Employees Qualified for Parental Leave in 2022	Male	3,383	61%	5,568
	Female	2,185	39%	
Employees that Applied for Parental Leave in 2022	Male	278	29%	954
	Female	676	71%	
Application Rate (%)	Male	8%		17%
	Female	31%		
Employees Expected to Return to Work in 2022 After Parental Leave	Male	259	32%	816
	Female	557	68%	
Employees Return to Work in 2022 After Parental Leave and Returned as Scheduled or In Advance	Male	215	33%	650
	Female	435	67%	
Return Rate (%)	Male	83%		80%
	Female	78%		
Actual Number of Employees Returned to Work in 2021	Male	130	25%	522
	Female	392	75%	
Employees that Returned to Work in 2021 and Still in Service in 2022	Male	101	23%	433
	Female	332	77%	
Retention Rate (%)	Male	78%		83%
	Female	85%		
New Borns in 2022		1,684		

[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(%)													
Inspiration	78	77	83	58	78	76	78	78	78	80	80	87	87
Inclusion	82	81	85	59	83	81	82	81	82	82	83	89	88
Understanding	82	81	85	58	80	80	81	82	84	84	84	90	90
Drive	80	79	83	58	79	78	80	79	81	83	83	88	89
Voice	79	78	83	51	78	78	79	79	78	81	82	88	89
Organization	84	84	87	57	82	83	84	84	84	86	87	89	91
Growth	72	71	76	51	74	72	73	71	71	74	75	82	85
Capability	72	72	74	55	73	71	72	71	72	73	76	82	84
Fair Rewards	70	70	71	61	72	69	70	69	70	70	72	79	81
Trust	70	69	75	49	72	69	70	69	69	73	72	81	84
Collaboration	79	78	83	51	79	79	80	79	79	80	82	86	86
Support	85	86	86	73	87	86	86	84	84	84	88	92	92
Employee Engagement Indicators (%)													
ESG	81	80	83	80	81	79	80	80	82	84	84	88	91
Retention	71	69	72	55	66	66	68	70	75	80	74	78	85
Sustainable Engagement	79	78	81	79	81	79	79	78	79	82	82	87	91

[1] The Employee Engagement Survey is conducted once every two years and the next survey will be in 2023

J. Training Hours and Training Spent

Category	Group		Number	Percentage of Group (%)
Training Hour(Hour)	Gender	Male	4,804,053	54%
		Female	4,143,461	46%
	Total		**8,947,514**	
	Position	Management	494,207	6%
		Engineering	3,272,652	36%
		Administration	331,553	4%
		Skill Job	4,849,102	54%
	Training Type	Mandatory Trainings[1]	5,075,168	57%
		Non-mandatory Trainings[2]	3,872,347	43%
Training Spent(US$)	Gender	Male	7,042,601	60%
		Female	4,786,499	40%
	Total		**11,829,100**	
	Age	<30	3,249,633	28%
		30-50	7,962,221	67%
		>50	617,246	5%
	Management Level	Senior	191,096	11%
		Middle	594,002	35%
		Junior	932,638	54%
	Training Type	Mandatory Trainings	3,823,441	32%
		Non-mandatory Trainings	8,005,659	68%

[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

K. Human Capital Return on Investment

Year	2019	2020	2021	2022
Human Capital Return on Investment (ROI)[1]	1.31	1.42	1.63	1.75

L. Non-employee Workers[2]

Work Location	Number[3]
Taiwan	17,085
China	3,719
Rest of Asia	1,256
Americas	153
Total	**22,213**

M. Workers[4] Occupational Health and Safety

Category	Group	Employee	Contractor
Category of Occupational Injuries	Number of Physical Injuries	120	11
	Number of Chemical Injuries	4	0
	Number of Ergonomic Injuries	3	0
	Number of Biological Injuries	0	0
	Number of Psychosocial Injuries	0	0
Total		**127**	**11**
Occupational Injuries	Rate of Occupational Injury[5]	0.66	0.53
	Number of Disability Cases	0	0
	Rate of Disability[6] Cases	0	0
	Number of Fatalities	0	1
	Rate of Fatalities[7]	0	0.05
Occupational Diseases	Occupational Diseases	21	0
	Number of Fatalitie	0	0
	Rate of Fatalities[8]	0	0
Total Number of Working Hours (Hour)		**193,492,534**	**20,842,353[9]**

N. Employee Absence Statistics

Year	2019	2020	2021	2022
Absence Ratio(%)	3.1%	2.2%	2.0%	2.1%

1 Human Capital ROI = (Total Revenue – (Total Operating Expenses - Total employee-related expenses)) / Total employee-related expenses

2 Non-employee workers :
(1) Types and job functions include: engineering contractors, equipment maintenance, cleaning, janitorial services, catering, and convenience store services
(2) Contractual relationship: employed through third-party contractors

3 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)

4 The Workers include employee and non-employee workers (exclude visitors)

5 Rate of occupational injury= (number of occupational injury *1,000,000)/ total hours of actually worked

6 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

7 Rate of fatalities from occupational injuries= (number of fatalities from occupational injuries *1,000,000)/ total number of working hours

8 Rate of fatalities from occupational diseases= (number of fatalities from occupational diseases *1,000,000)/ total number of working hours

9 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

	2019	2020	2021	2022
No. of project	11	10	10	19
Cost-saving of outsourced waste management (US$)	348,000	566,000	1,096,000	5,600,000

Industry-Academia Collaboration Programs

	2019	2020	2021	2022
No. of interns	1,183	638	224	410
No. of people participated in the semiconductor courses	230	169	862	209
No. of semiconductor assembly technology research projects	38	74	66	74

Afforestation Projects

	2019	2020	2021	2022
No. of planting area (hectares)	13	18.05	13.42	31.79

Volunteer

	2019	2020	2021	2022
No. of volunteers participating in the event	2,300	2,822	3,810	4,700
No. of volunteer hours	9,200	5,918	8,500	12,560

Environmental Education Program

	2019	2020	2021	2022
No. of courses	24	31	45	1,348
No. of participation	2,500	2,700	1,770	26,017
No. of seed teachers	120	238	42	173
No. of training materials/films	10	38	27	59

Supply Chain Data

A. Supplier Sustainability Assessment

Category		Supplier		2022	2022 Target
Desk Assessment		Tier-1 Supplier		749	Supplier Sustainability Assessment: 700 suppliers
		Significant Supplier	Tier-1 Supplier	262	
			Non-tier 1 Supplier	88	
Physical Assessment	On-site and Remote Assessment	Tier-1 Supplier		120	
		Significant Supplier	Tier-1 Supplier	47	
			Non-tier 1 Supplier	17	
	RBA VAP and 3rd- Party Assessment	Tier-1 Supplier		67	
		Significant Supplier	Tier-1 Supplier	31	
			Non-tier 1 Supplier	25	

B. Critical Direct Material Suppliers Completing RBA SAQ

Category	2019	2020	2021	2022
Critical Direct Material Suppliers Completing RBA SAQ (%)	70%	64%	71%	78%

C. Non-tier 1 Suppliers Risk Assessment

Category	2019	2020	2021	2022
Non-tier 1 Suppliers Conduct Risk Assessment (by tier-1 procurement amount) (%)	58%	56%	61%	53%

D. Critical Suppliers Obtaining GHG Certification

Category	2019	2020	2021	2022
Critical Suppliers Obtaining ISO 14064-1 Certification (%)	-	45%	51%	61%

E. Conflict Minerals

Category	2019	2020	2021	2022
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%

F. Supplier ESG Capacity Building Programs

Category	2022	2022 Target
Total Number of Suppliers in ESG Capacity Building Programs	63	60
Significant Suppliers in ESG Capacity Building Programs (%)	13.2%	

Critical Supplier List

ASEH Critical Supplier List (ATM) in 2022

3M	ADVANCED RECYCLING CO., LTD.	ADVANTEK	AIR LIQUIDE FAR EASTERN LTD.	ASE (SHANGHAI) INC.
ASE TRAY PLANT	ASIA PAL PRECISION INDUSTRIES CO., LTD.	ATO TECH	CHANG WAH ELECTROMATERIALS INC.	CHAR MAY ADVANCE CHEMICAL CORPORATION
CHEMLEADER CORPORATION	CRYSTAL-OPTECH	DAEDUCK ELECTRONICS CO., LTD	DAEWON SEMICONDUCTOR PACKAGING INDUSTRIAL CO., LTD.	DAEWON-PEAK
DDP SPECIALTY PRODUCTS CO., LTD	DISCO CORPORATION	DOWA ELECTRONICS MATERIALS CO., LTD	DUPONT	E.PAK RESOURCES (S) PTE LTD
EHWA DIAMOND	FUJIFILM ELECTRONIC MATERIALS CO., LTD.	FURUKAWA ELECTRIC CO., LTD.	FUSHENG ELECTRONICS CORPORATION	GTA MATERIAL CO., LTD.
HAESUNG DS CO., LTD.	HERAEUS GROUP	HON HAI PRECISION INDUSTRY CO., LTD.	HWA SHU ENTERPRISE CO., LTD.	INNOX ADVANCED MATERIALS CO., LTD
JABON INTERNATIONAL CO., LTD.	JENTECH PRECISION INDUSTRIAL CO.,LTD	KG TECHNOLOGY LTD.	KINSUS INTERCONNECT TECHNOLOGY CORP	KOREA CIRCUIT
KOSTAT, INC.	KULICKE AND SOFFA INDUSTRIES INC.	LG INNOTEK CO., LTD.	LINTEC CORPORATION	LUCANDO CHEMICAL TECHNOLOGY CO.,LTD.
MACDERMID PERFORMANCE SOLUTIONS TAIWAN	MATERION TAIWAN CO., LTD.	MEC COMPANY LTD.	MERCK PERFORMANCE MATERIALS LTD	MICROELECTRONICS TECHNOLOGY INC.
MITSUBISHI CORPORATION PLASTICS LTD.	MITSUI CHEMICALS	MITSUI HIGH-TEC, INC.	MK ELECTRON CO., LTD.	MURATA ELECTRONICS
NAMICS CORPORATION	NAN YA PCB CORPORATION	NIPPON MICROMETAL CORPORATION	NU-GEN INTERNATIONAL CORP.	PEAK INTERNATIONAL (ASIA) LTD.
PECO TEK CO., LTD.	PHOENIX PIONEER TECHNOLOGY CO.,LTD.	RESOUND TECH INC.	SAMSUNG ELECTRO-MECHANICS CO..LTD	SAMSUNG ELECTRO - MECHANICS CO.,LTD
SAN FU CHEMICAL CO., LTD.	SENJU METAL INDUSTRY CO., LTD.	SEO KWANG MANUFACTURING CO.,LTD.	SHINKO ELECTRONICS (S) PTE LTD	SHOWA DENKO SEMICONDUCTOR MATERIALS
SIMMTECH CO., LTD.	SMALL PRECISION TOOLS PTE LTD	SUMITOMO BAKELITE CO., LTD.	SUN SURFACE TECHNOLOGY CO., LTD.	SUNBRIGHT APPLIED MATERIALS CORP.
SUNRISE PLASTICS INDUSTRY CO., LTD.	SYTEC MATERIALS TECHNOLOGY CO.,LTD.	TAI HONG CIRCUIT IND. CO.,LTD	NITTO CORPORATION	TOKUYAMA CORPORATION
TANAKA KIKINZOKU KOGYO K.K	TANAKA ELECTRONICS (HANGZHOU) CO.,LTD.	TECREACH KOREA. CO., LTD.	TOKYO OHKA KOGYO CO.,	TOPPAN PRINTING CO., LTD.
UBOT INCORPORATED LIMITED	UNIMICRON TECHNOLOGY CORP.	UNION TOOL GROUP	YANTAI ZHAOJIN KANFORT PRECIOUS METALS CO., LTD.	ZHEN DING TECHNOLOGY CO., LTD.

Third Party Assurance Statement

Deloitte.

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INDEPENDENT AUDITORS' LIMITED ASSURANCE REPORT

The Board of Directors and Shareholders
ASE Technology Holding Co., Ltd.

We have performed a limited assurance engagement on the Sustainability Report ("the Report") of ASE Technology Holding Co., Ltd. ("the Company") for the year ended December 31, 2022.

Responsibilities of Management for the Report

Management 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 and Universal Standards, Sector Standards and Topic Standards published by the Global Reporting Initiative (GRI), the Sustainability Accounting Standards for Semiconductors Industry and Electronic Manufacturing Services & Original Design Manufacturing Industry issued by Sustainability Accounting Standards Board and other applicable rules according to its sector features, and for such internal control as management determines is necessary to enable the preparation of the Report that are free from material misstatement.

Auditors' Responsibilities for the Limited Assurance Engagement Performed on the Report

Except as stated in the following paragraph, we conducted our work on the Report 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 the preparation, with no material misstatement in all material respects, of the Report. The nature, timing and extent of procedures performed in a limited assurance engagement are different from and more limited than 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 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 applied professional judgment in the planning and conduct 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:

- Obtaining and reading the Report.
- Inquiring management and personnel involved in the preparation of the Report to understand the policies and procedures for the preparation of the Report.

- Inquiring the personnel responsible for the preparation of the Report to understand the process, controls, and information systems in the preparation of the Report.
- Analyzing and examining, on a test basis, the documents and records supporting the Report.

Inherent Limitations

The subject information included non-financial information, which was under 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 Controls

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 contains integrity, objectivity, professional competence and due care, confidentiality and professional behavior as the fundamental principles. In addition, the firm applies Statement of Quality Management Standard 1 "Quality Management for Public Accounting Firms" issued by the Accounting Research and Development Foundation of the Republic of China and, accordingly, 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 performed and evidence obtained, nothing has come to our attention that causes us to believe that the information in the Report is, in all material respects, not prepared in accordance with the above mentioned reporting criteria.

Other Matters

We shall not be responsible for conducting any further assurance work for any change of the subject matter information or the criteria applied after the issuance date of this report.

Deloitte & Touche

Deloitte & Touche
Taipei, Taiwan
Republic of China

August 1, 2023

GRI Content Index

Statement of use	ASEH has reported in accordance with the GRI Standards for the period 2022/01/01~2022/12/31.
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	12-13
2-2	Entities included in the organization's sustainability reporting	ABOUT OUR REPORTING	6
2-3	Reporting period, frequency and contact point	The reporting period of this report is from January 1, 2022 to December 31, 2022, which is the same as the reporting period of the financial report. We publish the sustainability report every year in August. ABOUT OUR REPORTING	- - 6
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	8 199
Activities and workers			
2-6	Activities, value chain and other business relationships	1.1 Company Profile	12-13
2-7	Employees	Appendix: Social Data - C. Employee Information	189
2-8	Workers who are not employees	Appendix: Social Data - L. Non-employee Workers	195
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	16-21 46 -
2-10	Nomination and selection of the highest governance body	3.1 Board of Directors	46
2-11	Chair of the highest governance body	3.1 Board of Directors	46
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	16-21 34-43 54-60
2-13	Delegation of responsibility for managing impacts	3.4 Risk Management	54-60
2-14	Role of the highest governance body in sustainability reporting	This report was approved and authorized by the Corporate Sustainability Committee.	-
2-15	Conflicts of interest	3.1 Board of Directors For more information, please refer to 2022 Annual Report " List of Major Shareholders", "Relationships among the Top Ten Shareholders", and 2022 Consolidated Financial Report " Marketable Securities Held", "Total Purchases from or Sales to Related Parties", and "Receivables from Related Parties".	46 -
2-16	Communication of critical concerns	3.1 Board of Directors For more information, please refer to 2022 Annual Report "Ch. 3.4 Corporate Governance".	46-47 -
2-17	Collective knowledge of the highest governance body	3.1 Board of Directors	47
2-18	Evaluation of the performance of the highest governance body	3.1 Board of Directors	47-48
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 141 of the 2022 Annual Report (English version).	47-48 -
2-20	Process to determine remuneration	2.4 Materiality Assessment and Stakeholder Communication 3.1 Board of Directors	34-43 47-48
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, please refer to page 12 of the ASEH 2020 Annual Report (English version).	192 -

GRI Standard	Disclosure	Related Section / Explanatory Notes	Page No.
Strategy, policies and practices			
2-22	Statement on sustainable development strategy	3.1 Board of Directors 3.3 Business Ethics	47 51
2-23	Policy commitments	3.3 Business Ethics 3.4 Risk Management 3.5 Human Rights Management	51 54-60 61
2-24	Embedding policy commitments	3.3 Business Ethics	51-52
2-25	Processes to remediate negative impacts	2.4 Materiality Assessment and Stakeholder Communication	34-43
2-26	Mechanisms for seeking advice and raising concerns	3.3 Business Ethics	53
2-27	Compliance with laws and regulations	3.6 Regulatory Compliance Appendix: Environmental Data - E. Environmental Violations	67 187
2-28	Membership associations	8.5 Public Advocacy	178-182
Stakeholder engagement			
2-29	Approach to stakeholder engagement	2.4 Materiality Assessment and Stakeholder Communication	34-43
2-30	Collective bargaining agreements	6.1 Talent Attraction and Retention	132
GRI 3: Material Topics 2021			
3-1	Process to determine material topics	2.4 Materiality Assessment and Stakeholder Communication	34-43
3-2	List of material topics	2.4 Materiality Assessment and Stakeholder Communication	34-43
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	10-11 15 22-25 34-43
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 our Consolidated Financial Report: https://ir.aseglobal.com/html/ir_financial.php	15 26-33 49-50 -

GRI Standard	Disclosure	Related Section / Explanatory Notes	Page No.
201-2	Financial implications and other risks and opportunities due to climate change	5.1 Climate Leadership TCFD Report: https://www.aseglobal.com/en/pdf/2021-tcfd-report-en.pdf	92-99 -
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 140-143 of the ASEH 2020 Annual Report (English version) and page 39 Financial Report (English version) ASEH is entitled to tax incentive. Please refer to page 80 of our Financial Report (English version).	126-127 -
201-4	Financial assistance received from government	ASEH is entitled to tax incentive. Please refer to page 80 of our 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	22-25 34-43 122-123
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), 50% were local residents (with Republic of China citizenship).	46 -
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	22-25 26-33 34-43
203-1	Infrastructure investments and services supported	2.3 UN Sustainable Development Goals and Sustainable Value Assessment	26-33
GRI 204: Procurement Practices 2016			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 7.3 Sustainable Supply Chain Management	22-25 34-43 150-155
204-1	Proportion of spending on local suppliers	7.2 Supply Chain Management Framework	150

GRI Standard	Disclosure	Related Section / Explanatory Notes	Page No.
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	22-25 34-43 51-53
205-1	Operations assessed for risks related to corruption	3.3 Business Ethics	51-53
205-2	Communication and training about anti-corruption policies and procedures	3.3 Business Ethics 6.1 Talent Attraction and Retention 7.2 Supply Chain Management Framework	51-53 122 150
205-3	Confirmed incidents of corruption and actions taken	3.3 Business Ethics In 2022, ASEH did not engage in any political contributions.	51-53 -
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	22-25 34-43 51-53
206-1	Legal actions for anticompetitive behavior, antitrust, and monopoly practices	In 2022, 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	22-25 34-43 86-105
302-1	Energy consumption within the organization	5.1 Climate leadership - Fossil Fuels (Non-renewable), Electricity and Renewable Energy Consumption	104-105
302-3	Energy intensity	5.1 Climate leadership - Electricity and Renewable Energy Consumption	105
302-4	Reduction of energy consumption	5.1 Climate leadership - Energy Saving and Carbon Reduction Projects	102-103
GRI 303: Water and Effluents 2018			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 5.2 Water Resource	22-25 34-43 107-110
303-1	Interactions with water as a shared resource	5. GREEN MANUFACTURING AND LOW-CARBON TRANSFORMATION 5.1 Climate leadership - Transitioning towards Low-Carbon Resilience 5.2 Water Resource	87-88 89-90 107-110
303-2	Management of water discharge related impacts	5.2 Water resource - Waste water management and control	110
303-3	Water withdrawal	5.2 Water resource- 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	109-110 184 186
303-4	Water discharge	5.2 Water resource - Waste water management and control 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 (ML)	110 184 186 187
303-5	Water consumption	5.2 Water resource- 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	109-110 184 186
GRI 305: Emissions 2016			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 5.1 Climate Leadership	22-25 34-43 88-100
305-1	Direct (Scope 1) GHG emissions	5.1 Climate leadership - Greenhouse Gas Emissions Management	101
305-2	Energy indirect (Scope 2) GHG emissions	5.1 Climate leadership - Greenhouse Gas Emissions Management	101
305-3	Other indirect (Scope 3) GHG emissions	5.1 Climate leadership - Greenhouse Gas Emissions Management	102
305-4	GHG emissions intensity	5.1 Climate leadership - Greenhouse Gas Emissions Management Appendix: Environmental Data- A. Waste, Water, Energy, GHG & Air emission	100-103 185

GRI Standard	Disclosure	Related Section / Explanatory Notes	Page No.
305-5	Reduction of GHG emissions	5.1 Climate leadership - Greenhouse Gas Emissions Management 5.1 Climate leadership - Energy Saving and Carbon Reduction Projects	100-103
305-6	Emissions of ozone-depleting substances (ODS)	5.4 Air Emissions Control	113
305-7	Nitrogen oxides, sulfur oxides, and other significant air emissions	5.4 Air Emissions Control Appendix: Environmental Data - A. Waste, Water, Energy, GHG & Air emission	113 185
GRI 306: Waste 2020			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 5.3 Waste Management	22-25 34-43 111-112
306-1	Waste generation and significant waste-related impacts	5.3 Waste Management	111-112
306-2	Management of significant waste-related impacts	5.3 Waste Management	111-112
306-3	Waste generated	5.3 Waste Management Appendix: Environmental Data - A. Waste, Water, Energy, GHG & Air emission	111 184
306-4	Waste diverted from disposal	5.3 Waste Management Appendix: Environmental Data - A. Waste, Water, Energy, GHG & Air emission	111-112 184
306-5	Waste directed to disposal	5.3 Waste Management Appendix: Environmental Data - A. Waste, Water, Energy, GHG & Air emission	111-112 184
GRI 308: Supplier Environmental Assessment 2016			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 7.3 Sustainable Supply Chain Management - Sustainability Risk Assessment	22-25 34-43 150-155
308-1	New suppliers that were screened using environmental criteria	3.3 Business Ethics 7.3 Sustainable Supply Chain Management - Sustainability Requirement / Sustainability Risk Assessment	52 150-155
308-2	Negative environmental impacts in the supply chain and actions taken	7.3 Sustainable Supply Chain Management - Sustainability Requirement / Sustainability Risk Assessment	150-155
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	22-25 34-43 122-123
401-1	New employee hires and employee turnover	6.1 Talent Attraction and Retention Appendix: Social Data - C. New Hire Employee, D. Turnover Rate	122-125 190-191
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 - F. Parental Leave	192
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	22-25 34-43 131-133
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	22-25 34-43 137-138
403-1	Occupational health and safety management system	6.3 Occupational Health and Safety	137-138
403-2	Hazard identification, risk assessment, and incident investigation	6.3 Occupational Health and Safety	137-141
403-3	Occupational health services	6.3 Occupational Health and Safety	141-143

GRI Standard	Disclosure	Related Section / Explanatory Notes	Page No.
403-4	Worker participation, consultation, and communication on occupational health and safety	6.3 Occupational Health and Safety	137-143
403-5	Worker training on occupational health and safety	6.3 Occupational Health and Safety	137-143
403-6	Promotion of worker health	6.3 Occupational Health and Safety	137-143
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	6.3 Occupational Health and Safety	137-143
403-8	Workers covered by an occupational health and safety management system	6.3 Occupational Health and Safety Appendix: Social Data - J. Workers Occupational Health and Safety	137-143 195
403-9	Work-related injuries	6.3 Occupational Health and Safety Appendix: Social Data - J. Workers Occupational Health and Safety	137-143 195
403-10	Work-related ill health	6.3 Occupational Health and Safety Appendix: Social Data - J. Workers Occupational Health and Safety	137-143 195
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	22-25 34-43 134-136
404-1	Average hours of training per year per employee	6.2 Talent Cultivation and Development	134-136
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.	134-136 -
404-3	Percentage of employees receiving regular performance and career development reviews	6.1 Talent Attraction and Retention	130
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	22-25 34-43 122-123
405-1	Diversity of governance bodies and employees	3.1 Board of Directors 6.1 Talent Attraction and Retention - Diversity in Human Resources	47 122-123
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 7.3 Sustainable Supply Chain Management	22-25 34-43 61-66 150
408-1	Operations and suppliers at significant risk for incidents of child labor	3.5 Human Rights Management 7.3 Sustainable Supply Chain Management No significant risk of hire child labor and young workers exposed to hazardous work.	61-66 150 -
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 7.3 Sustainable Supply Chain Management	22-25 34-43 61-66 150
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	3.5 Human Rights Management 7.3 Sustainable Supply Chain Management Non-significant risk for incidents of forced or compulsory labor either.	61-66 150 -
GRI 414: Supplier Social Assessment 2016			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 7.3 Sustainable Supply Chain Management - Sustainability Requirement / Sustainability Risk Assessment	22-25 34-43 150-155
414-1	New suppliers that were screened using social criteria	3.3 Business Ethics 7.3 Sustainable Supply Chain Management - Sustainability Requirement / Sustainability Risk Assessment	52 150-155
414-2	Negative social impacts in the supply chain and actions taken	7.3 Sustainable Supply Chain Management - Sustainability Requirement / Sustainability Risk Assessment	150-155

GRI Standard	Disclosure	Related Section / Explanatory Notes	Page No.
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	22-25 34-43 68-71
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 2022.	66 -

Customized Standard

Standard	Disclosure	Related Section / Explanatory Notes	Page No.
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	22-25 34-43 72-80 81-84
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	22-25 34-43 85
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	22-25 34-43 68-71
Social Involvement			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 8. Corporate Citizenship	22-25 34-43 160
Local Communities			
3-3	Management of material topics	2.2 Sustainability Strategies 2.4 Materiality Assessment and Stakeholder Communication 8.1 Social Involvement Overview	22-25 34-43 165-166

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	5.1 Climate leadership - Greenhouse gas emissions management	100-103
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 - Greenhouse gas emissions managemen	100-103
Energy Management in Manufacturing			
TC-SC-130a.1	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable	5.1 Climate leadership - Electricity and the Use of Renewable Energy Appendix: Environmental Data - A. waste, water, energy, GHG & air emission	104-105 185
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	5.2 Water Resource-Water withdrawal and Reuse Appendix: Environmental Data - B. The amount of water withdrawals and discharge in water-stressed regions	109-110 186
Waste Management			
TC-SC-150a.1	Amount of hazardous waste from manufacturing, percentage recycled	5.3 Waste Management Appendix: Environmental Data - A. Waste, Water, Energy, GHG & Air emission	111 184
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	137-143
TC-SC-320a.2	Total amount of monetary losses as a result of legal proceedings associated with employee health and safety violations	In 2022, ASEH was fined approximately US$7,800 for violating employee health and safety protocols (there were no fines exceeding US$10,000).	-

Topic / Code	Accounting Metric	Related Section / Explanatory Notes	Page No.
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 38% of the total ASEH employees.	61-66 189 -
Materials Sourcing			
TC-SC-440a.1	Description of the management of risks associated with the use of critical materials	7.3 Sustainable Supply Chain Management	150-155
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 2022, ASEH did not suffer any financial losses from violating anti-competitive regulations.	-

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	5.2 Water Resource Appendix: Environmental Data - B. The amount of water withdrawals and discharge in water-stressed regions	109-110 186
Waste Management			
TC-ES-150a.1	Amount of hazardous waste from manufacturing, percentage recycled	5.3 Waste Management Appendix: Environmental Data - A. Waste, Water, Energy, GHG & Air emission	111 184
Labor Practices			
TC-ES-310a.1	(1) Number of work stoppages and (2) total days idle	In 2022, 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	7.3 Sustainable Supply Chain Management	150-155
Activity Metrics			
TC-ES-000.C	Number of employees	Total number of USI employees is 16,660	-

Sustainability Indicators — SEMICONDUCTORS

No.	Indicators	Disclosure
1	Total energy consumption, percentage of purchased electricity and utilization rate of renewable energy	Total energy consumption was 15,809,787 GJ, with grid (imported) electricity accounting for 78.23% of the total consumption and renewable energies accounting for18.67%.
2	Total water r withdrawal and total water consumption	In 2022, total water withdrawals amounted to 23,398,956 m^3, and total water consumption amounted to 5,937,810 m^3.
3	The weight and recycling percentage of hazardous waste generated	In 2022, total hazardous waste was produced to 25,419 tons, and the recycling rate was 73%.
4	The type, number and rate of occupational incidents	Category of Occupational Injuries in 2022: 1. Number of Physical Injuries: 120 peoples (95%) 2. Number of Chemical Injuries: 4 peoples (3%) 3. Number of Ergonomic Injuries: 3peoples (2%) 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 2022, the weight of end-of-life products and e-waste was 1,913 tons, and the recycling rate 0%.
6	Risk management regarding the use of critical materials	Please refer to 7.3 Supply Chain Sustainability Management
7	Total amount of monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations	In 2022, 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): 44,923,223 kpcs 2. Electronic Manufacturing Service (EMS): 973,508 kpcs

TCFD Comparison Table

Dimension	General industry index (2021 edition)	Comparing Section	Page No.
Governance	a) The board's oversight of climate-related risks and opportunities.	3.1 Board of Directors 3.4 Risk Management	46 54-57
	b) Management's role in assessing and managing climate-related risks and opportunities.	3.4 Risk Management	54
Strategy	a) The climate-related risks and opportunities the organization has identified over the short, medium, and long term.	5.1 Climate Leadership	89-106
	b) The impact of climate related risks and opportunities on the organization's businesses, strategy, and financial planning.	5.1 Climate Leadership	107-109
	c) The resilience of the organization's strategy, taking into consideration different climate-related scenarios,including a 2℃ or lower scenario.	5.1 Climate Leadership 5.2 Water Resource	98 108
Risk Management	a) The organization's processes for identifying and assessing climate-related risks.	3.4 Risk Management 5.1 Climate Leadership	54 91-93
	b) The organization's processes for managing climate-related risks.		
	c) How processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.		
Metrics and Targets	a) The metrics used by the organization to assess climaterelated risks and opportunities in line with its strategy and risk management process.	5.1 Climate Leadership	89-93
	b) Scope 1, Scope 2 , and if appropriate, scope 3 greenhouse gas (GHG) emissions and the related risks.		
	c) The targets used by the organization to manage climate-related risks and opportunities and performance against targets.		

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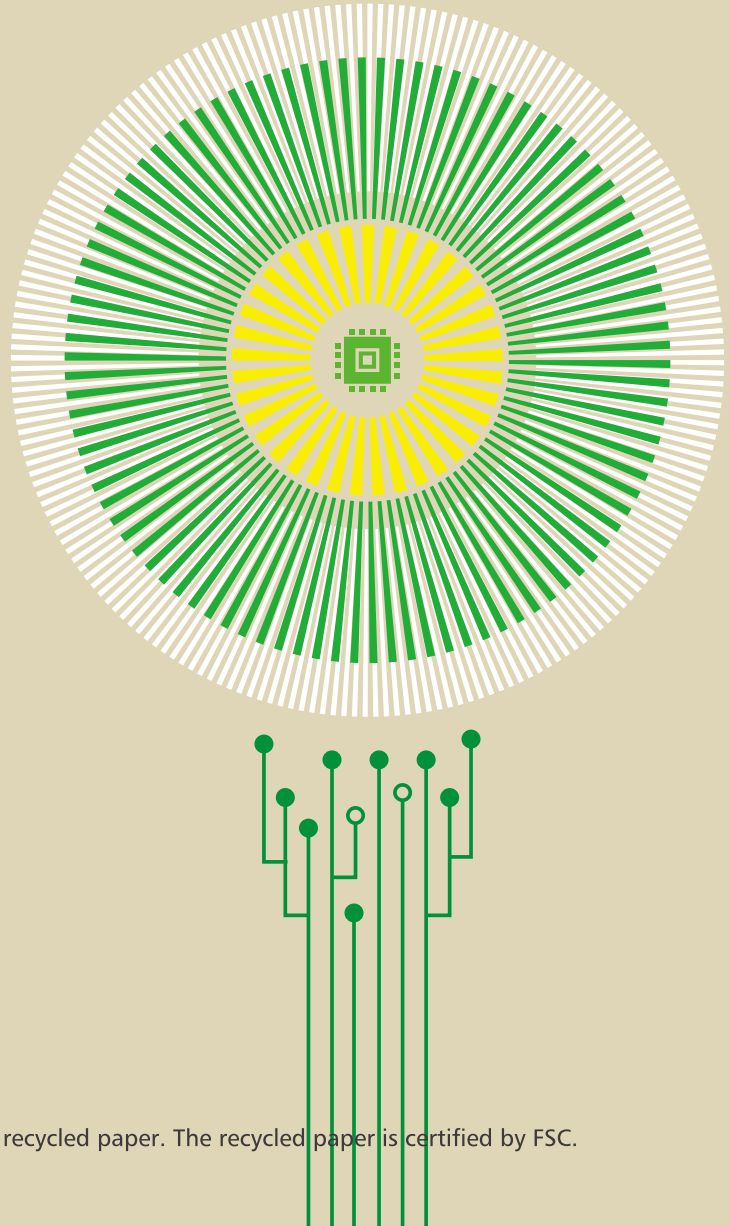

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