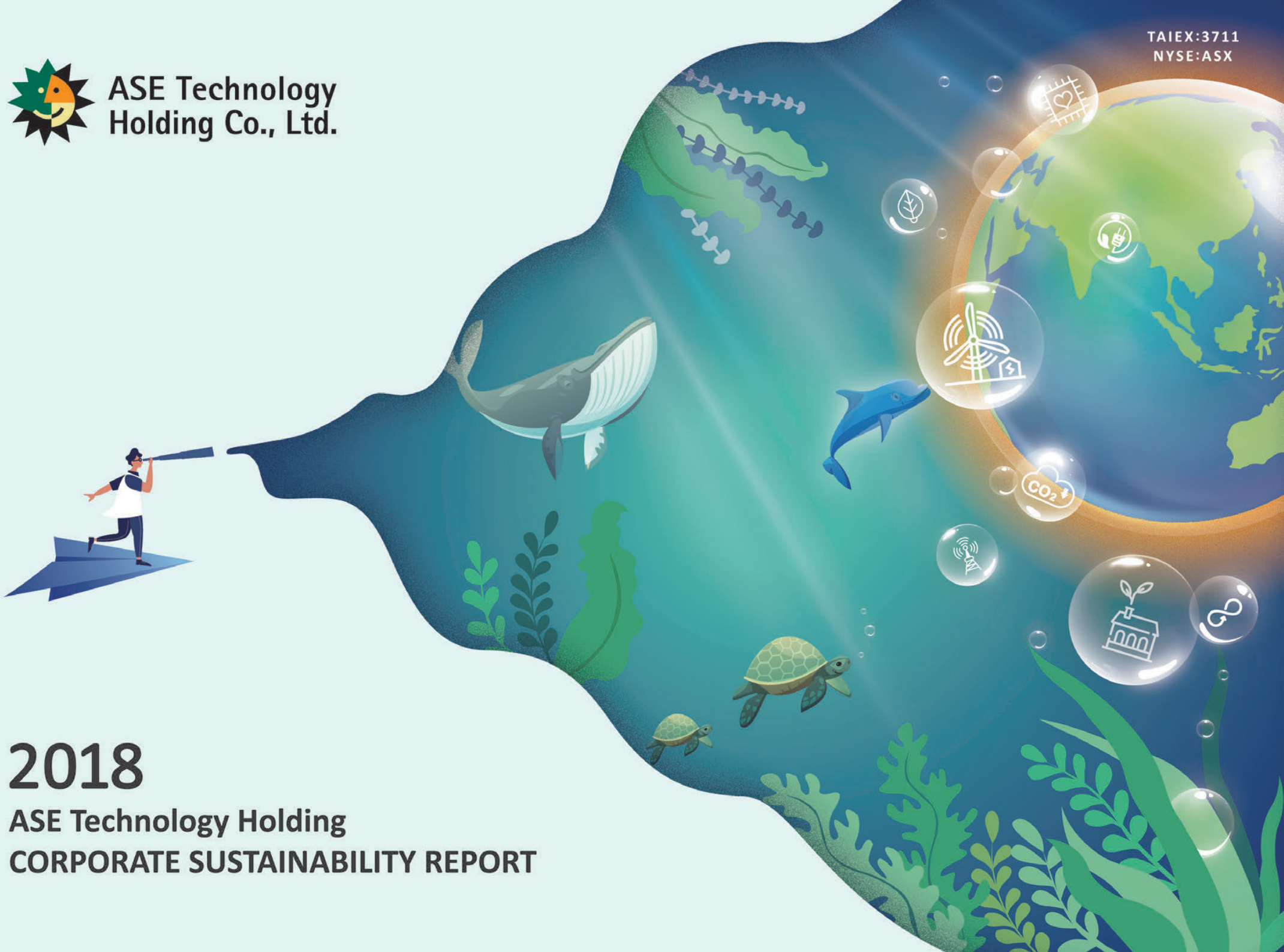
ASE Technology Holding Co., Ltd.

TAIEX:3711
NYSE:ASX



2018

ASE Technology Holding
CORPORATE SUSTAINABILITY REPORT

Committed to a Win-Win Sustainable Future

Low Carbon, Circular, Inclusive and Collaborative

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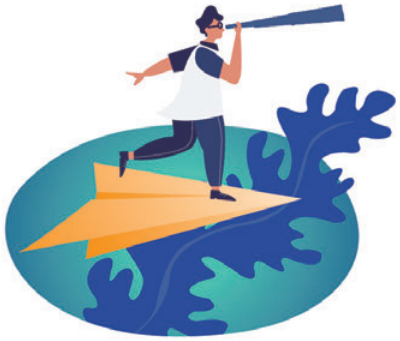

In this report, we discuss our sustainability activities in 2018.

Key Highlights

Strategies for The Implementation of The UN Sustainable Development Goals (SDGs)

Comprehensive examination and analysis of ASEH's SDGs implementation versus the industry value chain, to establish proactive responses to SDGs performance indicators of the company's core operations. Regular evaluation and management of SDGs responses are ASEH's strategic targets.

Green Building Certifications

As of December 2018, we have achieved 17 Taiwan EEWH certifications as well as 8 U.S. LEED certifications, including 1 "Diamond-rated" & 1 "Copper-rated" EEWH certifications and 1 "Platinum-rated" & 1 "Goldrated" LEED certifications which were awarded in the year 2018.

Task Force on Climate-Related Financial Disclosures (TCFD)

The TCFD framework was introduced to embed the concept of climate change into the company's corporate governance, draft climate strategies, systematically identify climate-related risks and opportunities, and to set goals and implement monitoring mechanisms. Only by assessing and measuring the financial impact of major risks and opportunities to the company, can we fully understand the effects of climate change.

Renewable Electricity Investment

The most meaningful approach in GHG management is to migrate to non-carbon based sources of energy. In 2018, the renewable power usage of ASEH was 397,766 MWh, reaching 12.7% of our total power consumption, specifically two ASE Inc. and four USI Inc. facilities are operating fully on renewable power.

Management of Conflict Minerals

Based on our Reasonable Country of Origin Inquiry (RCOI) analysis and due diligence measures in 2018, we believe that the identified smelters or refiners (SoRs) used for all of our products (from packaging, materials, and electronic manufacturing services) are DRC Conflict-Free.

Social Return on Investment (SROI) Analysis

Conducted the SROI analysis of "Supplier GHG Inventory Assistance Project". Results showed that "participation in changing general procurement habits" demonstrated the most beneficial effects, followed by "supplier reputation and business expansion" and "including GHG emissions information in procurement decisions".

2018 Awards and Recognitions

MEMBER OF
Dow Jones Sustainability Indices
In Collaboration with RobecoSAM

Named **Industry Group Leader in the 2016-2018 Dow Jones Sustainability Indices**, and listed as a constituent of the Dow Jones Sustainability World Index and Emerging Markets Index

CDP
DISCLOSURE INSIGHT ACTION

Named on the **2018 CDP A List for Climate Change and Leader Board for Supply Chain Engagement**

TCSA

Received **2018 Taiwan Corporate Sustainability Awards (TCSA)**: Awarded a Gold Award from the Top 50 Corporate Sustainability Report (Platinum), Corporate Sustainability Report (English edition), Comprehensive Performance Award, Climate Leadership Award, Supply Chain Management Award, and Social Inclusion Award

FTSE4Good

Included in the **FTSE4GOOD Emerging Markets Index** for four years in a row (2015-2018)

SAM | Sustainability Award Gold Class 2019

Listed on the **RobecoSAM Sustainability Yearbook 2017-2019, and awarded the "Gold Class" for three consecutive years** (within 1% of top performing company's score under the Semiconductors and Semiconductor Industry Group)

THOMSON REUTERS

Named as one of the **2018 Thomson Reuters Top 100 Global Technology Leaders**

FTSE4Good TIP Taiwan ESG Index

TIP Taiwan Index Plus

Listed on the **2018 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").)

ABOUT OUR REPORTING

This is our 1st CSR Report for ASE Technology Holding Co., Ltd. and its subsidiaries (collectively "ASEH"), which is prepared in accordance with the GRI Standards: Core option. Our Corporate CSR Division is in charge of data compiling and editing. The GRI content index can be found at the end of the report. This report is available in both Chinese and English. The complete electronic version can be downloaded from our website, http://www.aseglobal.com/en/csr_report

If you have any comment or suggestion, please contact us at:

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Tel: +886-7-361-7131
Email: ASE_CSR@aseglobal.com

Report Boundary

The scope of the Report encompasses Advanced Semiconductor Engineering, Inc. and its subsidiaries (collectively "ASE"), Siliconware Precision Industries Co., Ltd. and its subsidiaries[1] (collectively "SPIL") and Universal Scientific Industrial and its subsidiaries (collectively "USI"), but does not encompass wholly-owned intermediate holding companies, internal trading companies and those companies without active operations. This report encompasses our Corporate Social Responsibility activities for the year of 2018 in our semiconductor packaging, testing and materials ("ATM") facilities and electronic manufacturing services ("EMS") facilities. Any boundary adjustment of the data will be separately explained in the text of the Report.

Financial figures in this report are prepared in accordance with the International Financial Reporting Standards as issued by the International Accounting Standards Board, audited by Deloitte & Touche, and expressed in US dollars unless otherwise specified.

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 Legal and Finance Departments, the final report was approved and authorized for issue by the Chairman of Corporate Sustainability Committee.

External Assurance

ASEH engaged Deloitte & Touche to perform an independent limited assurance in accordance with ISAE 3000 Revised for this report. The independent assurance statement can be found at the end of this report.

Other CSR Reports in ASEH

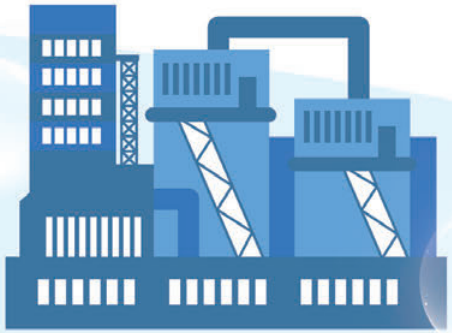
Within the ASEH, we have also published three separate CSR reports. One provides more detailed sustainability information of our ASE Kaohsiung facilities (ASEKH) in Taiwan, SPIL and the other focuses on the information about our subsidiary USI which encompass our EMS facilities.

ASE Kaohsiung · CSR Report

SPIL · CSR Report

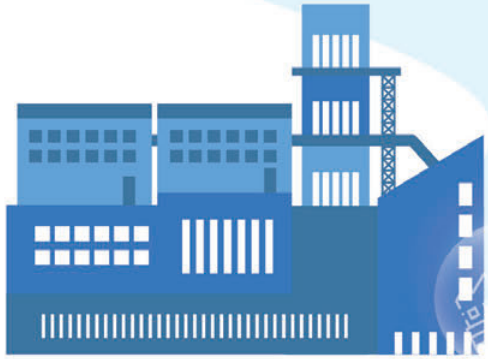
USI · CSR Report

[1] The scope of SPIL's information and data includes from May, 2018 to December, 2018 unless otherwise specified.



ASE Cultural & Educational Foundation
ASE Charitable Foundation

USI Zhangjiang
USI Kunshan
USI Taiwan
USI Jinqiao
USI Shenzhen
USI Mexico



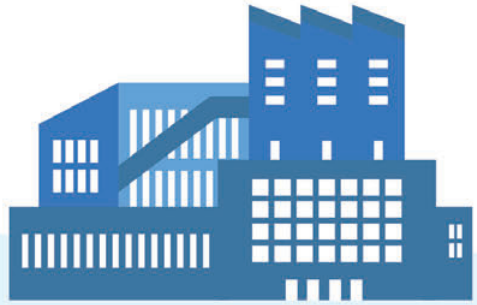
ASE Kaohsiung
ASE Chungli

ASE Shanghai (A&T)
ASE Shanghai (Material)
ASE Wuxi (Wuxi Tongzhi)

ASE Kunshan
ASE Suzhou (ASEN)
ASE Weihai

ASE Japan
ASE Korea
ASE Singapore
ASE Malaysia

SPIL Da Fong
SPIL Chung Shan
SPIL Zhong Ke
SPIL Hsinchu
SPIL Changhua
SPIL Suzhou



ISE Labs

LETTER FROM THE CHAIRMAN

Change brings impact - ASEH named Industry Group Leader in the Dow Jones Sustainability Indices for the 3rd consecutive year and the first Taiwanese company to be named twice on the CDP A List for Climate Change.

At ASEH, we believe in a bright future for everyone. Our innovative technology helps customers create energy-efficient and miniaturized products to improve the quality of life. Over 90% of electronics companies worldwide choose ASEH as their trusted semiconductor assembly and testing service partner because of our resilience in an environment full of challenges and opportunities, that enables them and other stakeholders to succeed. Our business model continues to evolve as we place greater focus on corporate sustainability and social responsibility to mitigate environmental and social issues. We proactively pursue sustainability transformations that manifest positive impacts in our business and society.

2018 was a volatile year exacerbated by the escalating US-China trade war. ASEH is a global company and our footprint covers major markets close to our customers. This allows us the dexterity to adapt to market changes as well as to minimize the impact to our customers by relocating and adjusting their production capacity. In 2018, the inclusion of SPIL into the ASE family has further cemented ASEH's position as the undisputed leader in outsourced semiconductor assembly and testing (OSAT). Moving into the next wave of the smart era, we believe that heterogeneous integration will be the key to emerging applications. Our enhanced functional integration and scaling technology will help the market to create more efficient smart networking environments and devices that bring more convenience to people's lives.

In an age of climate change and corporate sustainability, we are conscientious of the public expectations of us as a global OSAT leader. We support the United Nations Sustainable Development Goals (UN SDGs) and incorporate them into our long-term corporate sustainability goals. In recent years, our business management is based on 4 sustainability strategies - "low carbon, circular, inclusive, and collaborative", accomplished through utilizing renewable energy and smart grids (low carbon), using recycled water and adopting cradle-to-cradle designs (circular recycling), supporting community development and environmental protection (inclusive) and establishing responsible procurement procedures and sustainable supplier development mechanisms (collaborative). Across the entire company, we actively promote a strong sustainability culture and communicate our long term sustainability blueprint clearly at executive level forums and meetings.

Jason C.S. Chang
Chairman and CEO

Being able to exert a positive impact in sustainable development is ASEH's core aspiration. Any change or transformation that we undertake must bring positive impacts, like improving habits and behavior, awareness or general wellbeing, to communities, the environment and our stakeholders. We have increased our use of renewable energy to account for 13% of our total electricity consumption. Our efforts to mitigate impact on global warming has been largely achieved by setting energy-saving goals, developing renewable energy, purchasing I-RECs and utilizing green power. Reducing water consumption lowers the negative impact on water resources. Our water recycling plants recycled 9,800 m^3 of reclaimed water per day, enabling every drop of water to be used on average 2.6 times. Our state-of-the-art recycling facility has now become an educational classroom that heightens awareness of environmental conservation and its importance. As part of our community development, we promote environmental arts and culture to inspire green consumption habits, and advocate environmental education with an ultimate aim for progress in the society.

ASEH's embrace of corporate sustainability has earned us top honors in recent years. We were named on the Dow Jones Sustainability Indices Industry Group Leader for three years in a row (2016-2018); awarded the RobecoSAM Sustainability "Gold Class" Award for three consecutive years; on the 2018 CDP A List for Climate Change and Supply Chain Engagement; on the FTSE4GOOD Emerging Markets Index in 2015-2018; honored as one of the Top 100 Global Technology Leaders by Thomson Reuters in 2018; and included in the FTSE4Good TIP Taiwan ESG Index.

ASEH is a leading global service provider that offers highly efficient, turnkey semiconductor solutions in assembly, testing and system integration. Boosting our research and development, and maintaining a high standard in corporate governance and sustainable business practices are key drivers to achieve our vision and fulfill our obligations to all stakeholders.

In planning for a brighter future, we will develop an ASE2025 blueprint that expresses our determination to attain a new phase in sustainability by fostering a pragmatic, upright and responsible approach. ASE2025 is a plan that guides our aspirations toward the transformation into a world class corporation that brings meaningful changes to the industry, environment and society.

Richard H.P. Chang
Vice Chairman and President

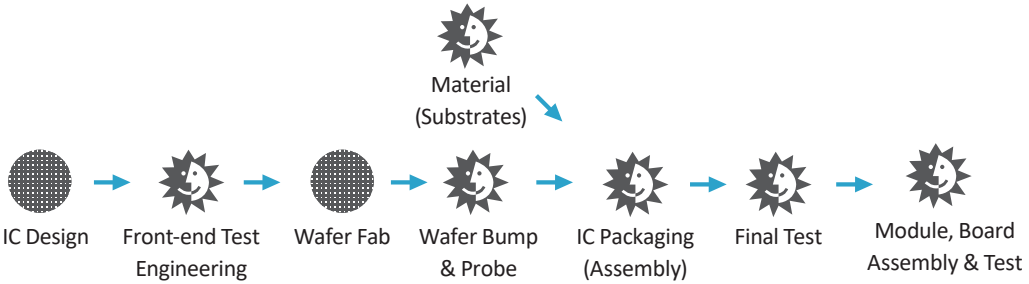
OPERATING MODEL

1.1 Company Profile

ASE Technology Holding Co., Ltd. (TAIEX:3711; NYSE:ASX), established in April 2018, consists of 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 consolidating 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 win-win sustainable future for the industry. For details, please visit 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

ASEH has a worldwide headcount of over 90,000 employees (as of December 2018). Our sales and manufacturing facilities are strategically located globally in Taiwan, China, South Korea, Japan, Singapore, Malaysia, Mexico, North America, and key European cities (with future plans to expand in Brazil and Poland).

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 continuously innovate and develop 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

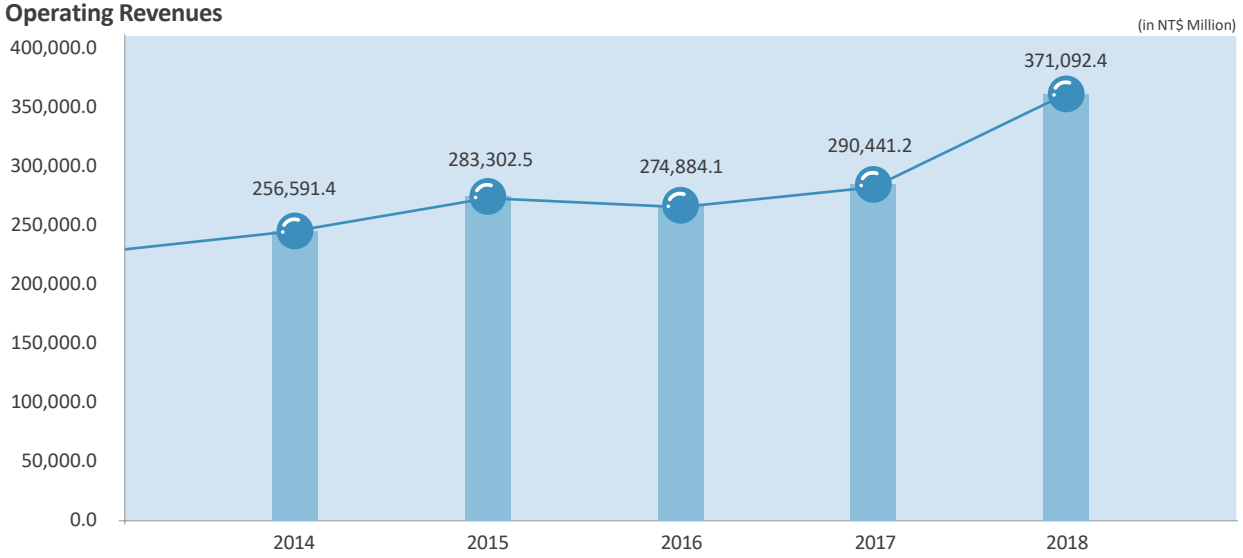
In alignment with our mission and vision, and to maintain industry innovation and leadership, we incorporated future industry trends together with the feedback from our senior management and operating units on their views about corporate sustainability to establish the ASEH Value Creation Model.

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]

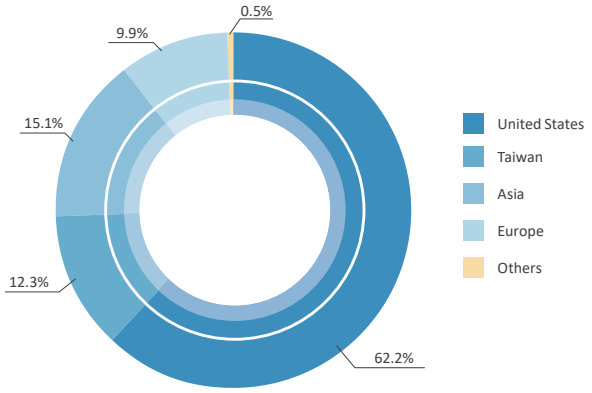
In 2018, ASEH set a new record as consolidated revenue reached NT$371.1 billion, an increase of about NT$80.7 billion, or a growth of about 27.8% from 2017. The company's semiconductor packaging and testing consolidated operating revenue for 2018 was NT$214.2 billion (excluding substrate, inter-segment and real estate revenue), an increase of about NT$61.8 billion compared with 2017. However, if the calculation is based on US dollars, it is still a brilliant financial performance as consolidated revenue reached a growth of about 40.6%, mainly attributed to the contributions of SPIL since it joined the ASEH on April 30, 2018. The company's electronic manufacturing services, consolidated revenue for 2018 was NT$151.9 billion (excluding inter-segment revenue), an increase of about NT$17.9 billion, or a growth of about 13.4% compared with 2017.

Operating Revenues



2018 Revenue

We categorize our operating revenues geographically based on the country in which the customer is headquartered.



[1] For further details on financial performance please refer to our consolidated financial report: http://ir.aseglobal.com/html/ir_financial_overview.php?

SUSTAINABLE GOVERNANCE

2.1 Organization and Structure

ASEH established the Corporate Sustainability Committee (CSC) as the highest level of organization supervising ASEH's sustainable development operations. The CSC is chaired by ASEH's chief operating officer and comprises ASEH's directors and top management executives. The CSC is responsible for promoting sustainable corporate development, overseeing ASEH's sustainability affairs, making related decisions, and reporting directly to the board of directors. The CSC is supported by five sustainability taskforces, where relevant top management executives are appointed as the taskforce coordinators. Each taskforce holds meetings regularly. Additionally, in order to enhance the synergy between measures to promote sustainable development and the rest of the company, the "Corporate CSR Division" was established to serve as the secretariat of the CSC. The Corporate CSR Division is a unit dedicated to coordinating and integrating ASEH's global resources and helping ASEH promote and implement sustainable governance systems.

Board of Directors

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

Corporate CSR Division

- Integrate corporate sustainability action plans and promote the execution of action plans
- Assess corporate-wide sustainability performance
- Lead information disclosure efforts for corporate-wide sustainability performance

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 corporate-wide sustainability performance and information disclosure

Corporate Governance Taskforce | **Environmental & Green Innovation Taskforce** | **Supply Chain Management Taskforce** | **Employee Care & Development Taskforce** | **Social Involvement Taskforce**

- Develop action plans in response to the sustainability targets
- Monitor implementation progress of the action plans and evaluate performance
- Provide consultancy, as well as expertise and experience sharing for sustainability issues

At the 2018 CSC annual meeting, the Corporate CSR Division and the five sustainability taskforces presented ASEH's performance in the field of sustainable development, as well as the degrees to which its sustainable development targets were met for CSC members to review. Sustainable development directions, targets, and plans for each relevant team in 2019 were also formulated under the supervision of the committee members. For detailed information on the performance and targets of these teams, please refer to the relevant chapters.

2018 CSC Key Projects

Taskforce	2018 Key Projects	Partners	Positive Changes
Corporate Governance Taskforce	• Corporate Governance Evaluation System	• Senior management • External consultants • External professional institutions • Academic & research institutions • Energy certificate trading companies	**Operational Benefits** • Enhancement of corporate governance mechanisms • Improvement in the eco-efficiency of manufacturing processes • Implementation of procurement risk management • Strengthen employee recruitment and retention **Social Benefits** • Mitigation of extreme climate change • Development of local communities
	• Internal and external evaluation of board performance		
	• Implementation of ASE Group integrity management		
Environmental and Green Innovation Taskforce	• Incorporation of an environmental information platform		
	• Source power from renewable sources of energy		
	• Implementation of smart grids		
Supply Chain Management Taskforce	• Conflict minerals management		
	• Supply Chain GHG Inventory Assistance Project		
	• Supply chain greenhouse gas counseling impact assessment		
Employee Care and Development Taskforce	• Projects to improve employee involvement		
	• Development programs for key skilled employees		
	• Promotion of e-education and training		
Social Engagement Taskforce	• Social participation project (SROI)		
	• Smart mobile medical vehicle and long-term care plans		
	• Social impact reports		

Sustainable Management Framework and Strategy

In order to develop a sustainable business operation, we adopt the "Corporate Social Responsibility Best Practice Principles" to fulfill our corporate social responsibility. We adhere to the "Corporate Sustainability and Citizenship Policy" to build a sustainable development framework for day-to-day operations & management, and for realizing sustainable long-term values.

We drive sustainability through proper management of opportunities and risks, aligning business models with stakeholders, and adjust the direction and goals of sustainable development accordingly.

ASEH Sustainable Management Framework

Corporate Social Responsibility Best Practice Principles
Corporate Sustainability and Citizenship Policy

Mission

Have a positive influence on the society

Vision

- Provide a unified solution for creating efficient semiconductors
- Elevate R&D capability
- Compliance with highest corporate governance standards
- Implement sustainable business philosophies

Principles

- Cost control
- Integrated risk management
- Development of advanced technology
- Demonstration of a responsible attitude

→

Strategies

- Circular
- Inclusive
- Low Carbon
- Collaborative

+

Operation

- Assembly (ASE and SPIL)
- Testing (ASE and SPIL)
- Material (ASE)
- Module (USI)

+

Stakeholder

- Shareholders
- Employees
- Customers
- Suppliers
- Government
- Industry Unions And Associations、NGOs
- Media
- Community

→

Dimensions

- Responsibility and Accountability
- Innovation Service
- Green Transformation
- Inclusive Workplace
- Responsible Procurement
- Corporate Citizenship

→

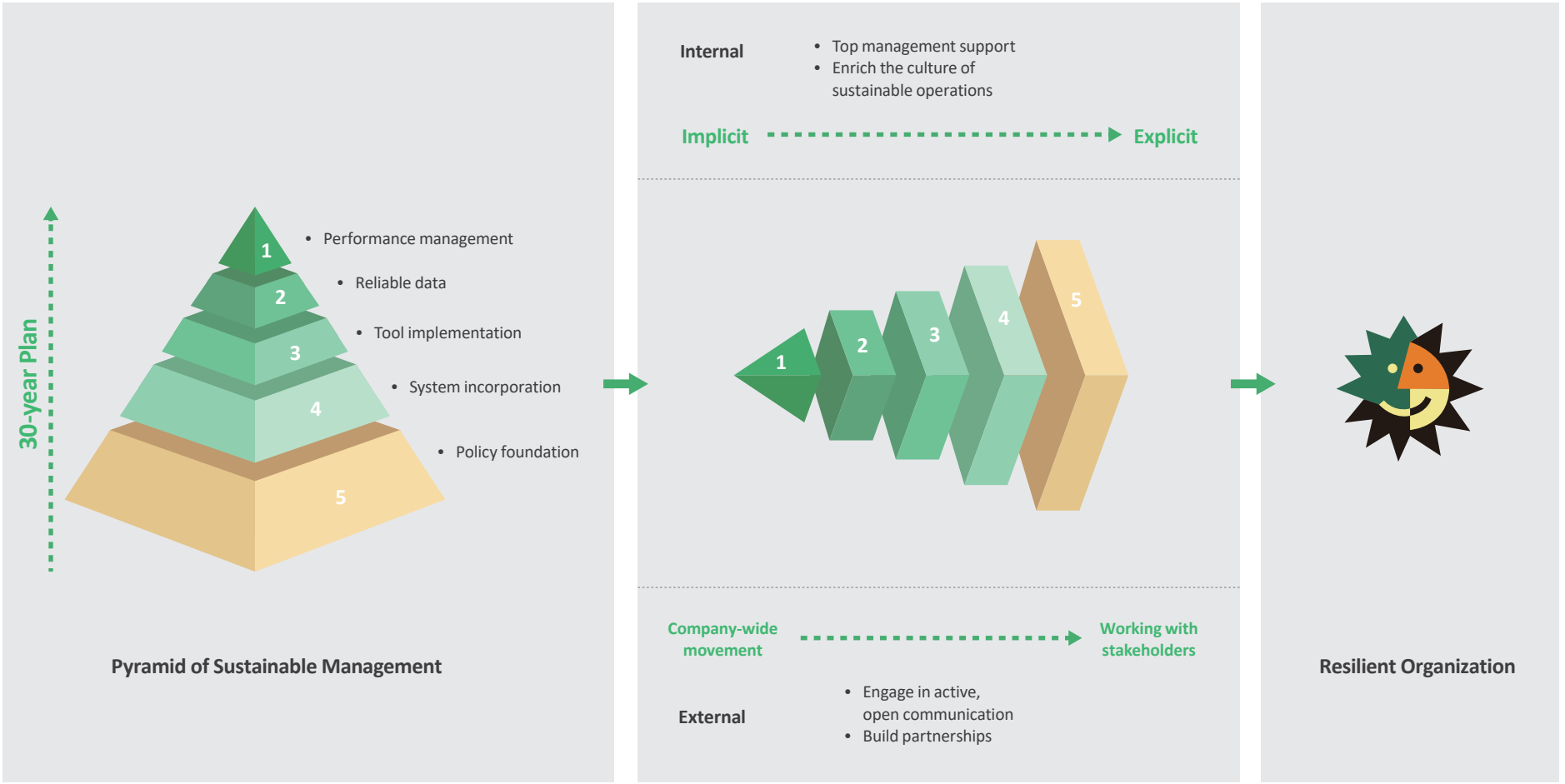
Objectives

- Ensure that the products, components, and raw materials associated with the ASEH value network can all be recycled, and maximize their efficiency and value while using them
- Establish ASEH emerging business models to create social value
- Develop ASEH into a climate leader and provide the global market with low carbon solutions
- Accelerate sustainable growth and social development as well as co-create shared value by engaging in collaborative innovation

Enriching and Promoting Sustainable Culture

When drawing up the company's long term sustainable business blueprint, we projected 30 years as the development phase during which we aim to embed sustainability in our corporate DNA.

Developing a sustainable corporation is akin to building a pyramid; in order to build higher, a wider land area and more building materials are needed for a stronger foundation.
Similarly, ASEH is focused on building a resilient and sustainable corporation through establishing a strong and firm foundation that enables it to expand its horizon.



ASEH believes that the concept of sustainable development has to be embedded in the DNA of a company for it to fully realize sustainable operations, enrich its culture, and enforce its values and philosophies. As such, we have continued to promote various internal and external sustainability activities.

In 2018, the company actively participated in various sustainability-related forums. With regards to economic sustainability, the company held supplier sustainability meetings at all of its major business locations and outstanding suppliers receive sustainability awards at the Best Supplier Award Ceremony. On environmental sustainability, ASE co-hosted the 2018 Smart Grid Conference with Chung-Hua Institution for Economic Research and Taiwan Institute of Economic Research, where experts were invited to present strategies to fight global climate change. In addition, TASS (Taiwan Alliance for Sustainable Supply) and ASEH co-organized the "Circular Economy and the Sustainable Supply Chain - 2018 Taiwan Forum". Participants from the semiconductor industry, TASS member companies and ASE's supply chain were engaged in a lively discussion on how a circular economy could be achieved to sustain the rich development of the semiconductor industry.

Internally, the company organized its annual CSC meeting, two top management sustainability forums, and one seminar on corporate sustainability and human resource practices. Each ASEH facility adopts different methods to promote and publicize the company's sustainable development-related topics and results, further raising employee awareness on sustainability. Besides conducting annual year-in-review and plans for next year, the company also invited experts to share global and industry trends in sustainability development. In 2019, the company will roll out its sustainability plan at all company levels. In addition to including sustainable development in new employee training courses, we will also conduct online training, practical training and seminars, so as to align all employees with the company's sustainability goals.

ASEH is a member of the Responsible Business Alliance[1] (RBA). Every year, all of ASEH's facilities (there are currently 25 including ASE, SPIL and USI) complete the RBA's Self-Assessment Questionnaire (SAQ) to identify labor, environmental and ethical risks in their operations. To strengthen each facility's approach to sustainability, we require all facilities to complete the RBA VAP (Validated Audit Program) in 2019. RBA VAP is the leading standard for onsite compliance verification and effective, shareable audits that help an organization improve performance, correct issues and reduce operational risks. To date, 17 facilities have completed the RBA VAP and the audit reports are provided to our customers through RBA-Online.

USI Top Management Sustainability Forum

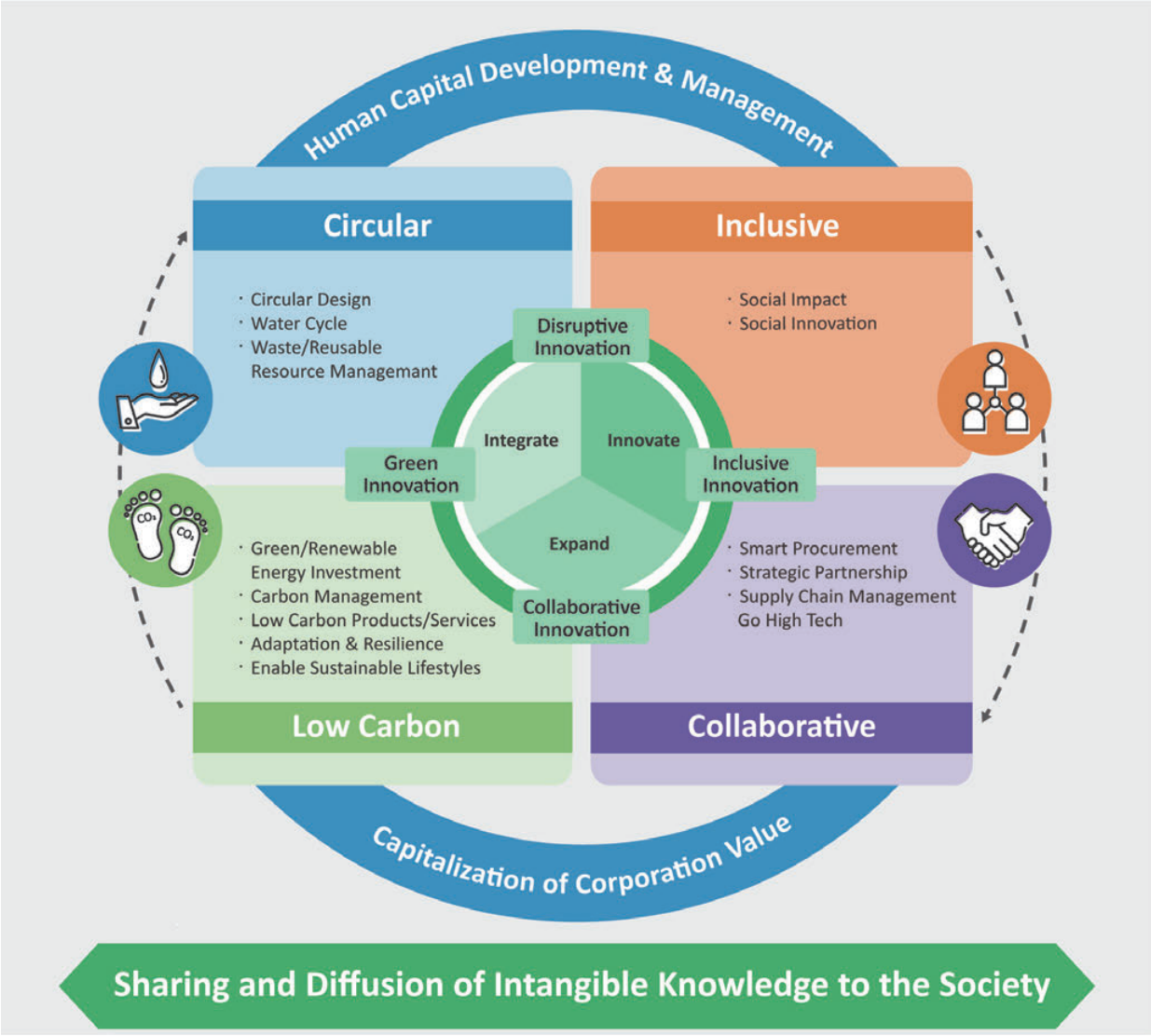
2018 Circular Economy Forum of Taiwan Sustainable Supply


Corporate Sustainability and Human Resource Practices

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

2.2 Sustainability Strategies

Today, sustainable development is not only an underlying challenge for businesses to tackle, but also a major factor influencing the direction and planning of corporate value creation. Over the next 20 years, companies will encounter many environmental and social changes that will both challenge and contribute to their sustainable growth. The factors challenging ASEH's sustainable development include climate change, uncertainty in energy and fuel supply, lack of raw material resources, water scarcity, population growth and supply chain globalization. These are key factors that companies must consider today to ensure their sustainable development. ASEH has taken into account its value creation models along with the aforementioned sustainable development trends to develop long-term, comprehensive and dynamic sustainable development strategies to steer the company towards a low carbon, circular, inclusive and collaborative future.



Sustainability Vision

Sustainability 2020 is ASEH's long-term strategic commitment to sustainability. Each year, the CSC reviews the progress of ASEH's sustainable development targets.

In addition, the progress and methodologies of our sustainability projects are publicly disclosed to ensure transparency on our efforts and results. In 2019, ASEH will formulate its sustainable development goals to comply with the UN SDGs (United Nations Sustainable Development Goals), and to enable ASEH to continue to have a positive influence on society.

Strategic Approach and Goals of Key Issues

On schedule Room for improvement

Dimensions	2018 Key Issues	Business Impact on ASEH	Strategic Approach	2020 Target	Progress/ Status
Responsibility and Accountability	Regulatory Compliance	Compliance with all applicable laws ensures public trust and helps reduce financial risks that would occur either directly through fines or indirectly through impacts on reputation.	Ensure compliance with all applicable laws: Continuously promote compliance awareness through education and training, and improve compliance management systems and processes.	No major violation	
	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%	
Innovation Service	R&D and Innovation	Continuous innovation of technologies lower costs, improve efficiency, thereby reducing resource consumption and energy consumption. In addition, business model innovation on the value chain can increase ASEH's core competitiveness and enable expansion capacity.	• Integration of group-wide innovation resources: Establish knowledge sharing and diffusion mechanisms, and ensure synergistic effects of inputs in R&D innovation. • Provide differentiated products and services: Focus on the development of advanced semiconductor packaging and testing solutions, and develop innovative business model on value chain.	• Establish a cross-site R&D innovation best practice (knowledge) sharing platform • Advanced package/module technology development for high-end application	
	Sustainable Manufacturing	Green products help to improve business and environmental performance, and position ASEH at the forefront of market and regulatory trends. Green solutions also reduce costs, increase the company's competitive advantage, long-term profitability and sustainability.	Sustainable manufacturing service: Provide product solutions that are compact, lightweight and energy efficient as well as provide eco-efficient and responsible manufacturing services.	Develop a methodology for energy saving assessment of our products in the use phase.	
	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: Provide a variety of communication channels, and use online customer service platforms to instantly interact and exchange information with customers; enhance information security management to ensure the confidentiality and integrity of customer proprietary information.	Customer satisfaction：90%	
Green Transformation	Energy Management	Having an effective energy management system helps to increase our energy efficiency and lower our energy costs, thereby reducing our energy consumption and GHG emissions.	Continue to improve energy management: Establish standardized management systems through ISO 50001, improve energy efficiency through PDCA improvement method, and build smart energy management systems to facilitate precise control and lower standby mode energy consumption.	More than 2% energy saving ratio (current year's energy saving from projects/total electricity consumption of the year)	
	Climate Change	Climate change has become a focal point of environmental issues around the world, in particular for ASEH where there is a growing dependence on energy.	Reduce GHG emissions & provide green manufacturing services: Green facilities (efficient building designs), energy conservation, efficient use of natural resource, adopting renewable energy (such as solar installations and green power purchases), and green product design.	GHG intensity (GHG emissions per revenue) : 5% reduction	
	Water Resource Management	Effective water resource management diminishes the impact of water shortages on ASEH and the value chain, and strengthens corporate competitiveness.	Establish sustainable water recycling system: Set up ASEH water management objective and strategy based upon integrated circular thinking.	• Total water withdrawal：15% reduction compared with 2015 • Process water recycling rate (Process water for reuse/Process use water)：80%	

On schedule Room for improvement

Dimensions	2018 Key Issues	Business Impact on ASEH	Strategic Approach	2020 Target	Progress/ Status
Green Transformation	Waste and Circular	Effective waste management can reduce waste generation and related costs, and continuously reduce ASEH's operational impact on the environment.	Improve source management: Identify and develop materials and production process with circular potential to minimize waste.	Waste recovery rate：75%	
Inclusive Workplace	Talent Attraction and Retention	Good labor relations promote organizational harmony and improve organizational competitiveness.	Implement employee engagement survey and feedback mechanisms: Encourage employees to actively participate in company activities, solicit for feedback using our employee engagement survey, and offer competitive compensation and benefit programs.	Employee engagement survey：100% of facilities	
	Talent Cultivation and Development	Good training and development programs help attract and retain talents, and create a pleasant working environment, thereby enhancing ASEH's productivity, strengthening innovation and enhancing profitability.	Enhance talent development and training effectiveness: Provide challenging and valuable professional career for employees by offering training and promotion opportunities within the company.	• Deployment of the ASE six-path employee career development system in all manufacturing sites in 2020 • Target to achieve the number of internal certified trainers at 6% of ASEH total headcount (equal to the ratio of ASEH's supervisors).	
	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.	Conduct risk assessments of our foreign worker agencies：100%	
	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 health.	• Disabling Frequency Rate (F.R.) and disabling Severity Rate (S.R.)：10% less than industry average • Major injury and occupational disease：0 case	
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 provide a safe working environment, their employees are respected and dignified, and their operations are ethical and environmentally friendly.	Critical direct material suppliers of packaging and material service complete foreign workers' human rights risk assessment and improvement: 100%	
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.	Our environmental conservation program primarily focuses on: Environmental education promotion, environmental quality enhancement, environmental impact minimization and environmental arts promotion.	• Environmental Conservation Contribution：NT$100 million per year • Installed LED light tubes at 70 school • 130 of hectares for tree plant	

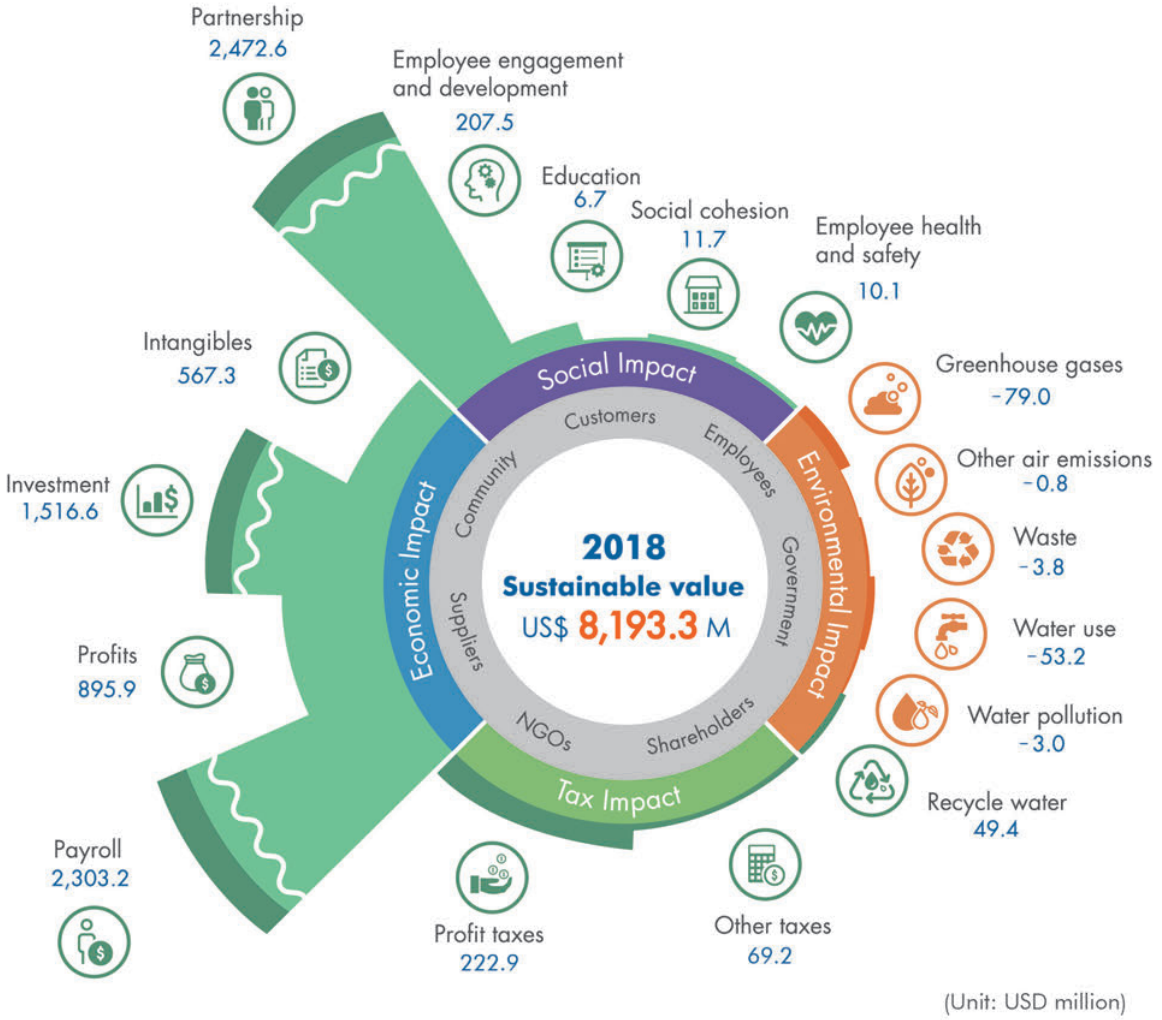
2.3 Sustainable Value Assessment

ASEH applies the total impact measurement and management (TIMM)[1] framework grouped into four areas of impacts: economic, tax, social, and environmental, to assess the sustainable value created. We adopt the monetization framework detailed in the Natural Capital Protocol, Social Capital Protocol and Integrated Reporting principles, and uses TIMM to assess the impacts of our operations on stakeholders and express the impacts in monetary terms. The TIMM framework helps measure ASEH's performance and is used to communicate with stakeholders. In 2018, ASEH created a sustainable value of US$ 8,193 million for its stakeholders, which consisted of US$5,283 million, 292 million and 2,708 million for the economic, tax, environmental, and social aspects, respectively. However we still have US$90 million impact in environmental aspect.

The sustainable development performance of ASE, SPIL and USI were all included in the 2018 TIMM analysis. Additionally, impact analyses for employee health & safety, water cycling, and chemical substances were performed. These additions were made to improve and refine TIMM analyses every year to ensure a more comprehensive picture.

The 2018 results showed that ASEH created outstanding economic value for its shareholders, suppliers, and employees and contributed a positive tax impact to the government. With regards to the environment, greenhouse gas emissions and water consumption remained the most important sustainability issues to be resolved. The company continued to launch a series of greenhouse gas emissions and water resource projects to mitigate the effects of its operations on the environment. Socially, supplier engagement is still the company's biggest source of value generation.

The supplier ISO 14064-1 guidance project was used to calculate the company's social return on investment (SROI). Using the TIMM framework, ASEH aims to maximize sustainable value for its stakeholders by leveraging on the company's resources. For ASEH's 2018 TIMM report, please refer to our report. (http://www.aseglobal.com/en/pdf/2018_aseh_timm_report_en.pdf)



[1] ASE applies TIMM in 2017 and has continued implementation in ASEH to this day.

2.4 Practice of SDGs

The 2030 Agenda for Sustainable Development prepared by the United Nations came into in effect on Jan. 1, 2016. 17 United Nations Sustainable Development Goals ("SDGs") and 169 targets which were considered to be common values shared by all human beings were introduced. ASEH has identified the SDGs that were closely related to our industry and business operations as well as set targets to achieve them. As a citizen of the world, ASEH aims to combine the common values of all human beings into our corporate culture and operations to manage our performance in sustainable development.

PwC Taiwan worked with ASEH to prioritize the SDGs targets to act and report on, based on the "Integrating the SDGs into Corporate Reporting: A Practical Guide" released by the UN Global Compact and GRI[1].

(SDGs steps outlined)[2]

[1] United Nations Statistical Commission, IAEG-SDGs, 2015. UN Global Compact, Blueprint for Business Leadership on the SDGs, 2017. Others please refer to ASEH 2018 SDGs report: http://www.aseglobal.com/en/pdf/2018_aseh_sdg_report_en.pdf

[2] UN Global Compact & GRI (Integrating the SDGs into Corporate Reporting: A Practical Guide), 2018, P5

Based on "Integrating the SDGs into Corporate Reporting: A Practical Guide", ASEH classified the 17 SDGs into three tiers:

Tier 1 – SDGs most relevant to the company's operations and must be immediately addressed

Tier 2 – SDGs highly relevant to the company's operations and must be addressed in the future

Tier 3 – SDGs relatively irrelevant to the company and do not pose a threat to its business models or industry.

Further analysis of ASEH's SDG tiers can be found below:

Tier	SDGs
Tier 1	4、6、7、8、12、13
Tier 2	1、3、9、10、11
Tier 3	2、5、14、15、16、17

ASEH selected 30 companies from amongst our customers, suppliers and peers to assess their responses to the SDGs, and compare the results with our Tier 1 SDGs. The assessment allows us to include issues that are meaningful to our business partners and build a solid relationship with our customers and suppliers to achieve sustainability goals.

SDGs	Primary risk on people and environment	Major investments in green manufacturing	Significant issues	Relevance to operations	Benchmark selection	Total
SDG 1 NO POVERTY			●	•		●
SDG 3 GOOD HEALTH AND WELL-BEING			•	•	•	●
SDG 4 QUALITY EDUCATION		•	●	●	•	●
SDG 6 CLEAN WATER AND SANITATION	•		●	●		●
SDG 7 AFFORDABLE AND CLEAN ENERGY		●	●	●		●
SDG 8 DECENT WORK AND ECONOMIC GROWTH		•	●	●	•	●
SDG 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE			•	•	•	●
SDG 10 REDUCED INEQUALITIES				•		•
SDG 11 SUSTAINABLE CITIES AND COMMUNITIES		•		•		•
SDG 12 RESPONSIBLE CONSUMPTION AND PRODUCTION		●	●	●	•	●
SDG 13 CLIMATE ACTION	•	●	●	●	•	●

* The size of the circle represents the total score of the SDGs' impact on the company's business operation, social and environmental impacts.

ASEH examined the targets of Tier 1 SDGs and referenced our business operation models and activities to identify important and potentially important targets. We then link them with our sustainability performance to prioritize the implementation of SDGs in our operations. We shall remain actively involved in the screening process of SDGs, comparing benchmarks, setting indicators, and measuring performances.

For more information, please refer to our 2018 SDGs report. http://www.aseglobal.com/en/pdf/2018_aseh_sdg_report_en.pdf

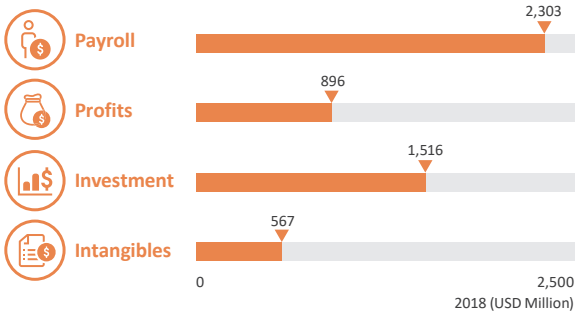
SDGs	SDGs Sub-KPIs	2018 Key Issues
	Ensure equal access for all women and men to affordable education	• Talent Attraction and Retention • Talent Cultivation and Development • R&D and Innovation • Sustainable Supply Chain • Social Involvement
	Increase relevant skills for employment, decent jobs, and entrepreneurship	
	Ensure all learners acquire the knowledge and skills needed to promote sustainable development	
	Increase recycling and safe reuse to improve water quality	• Regulatory Compliance • Water Resource Management • Sustainable Manufacturing
	Ensure sustainable withdrawals and supply of fresh water to address water scarcity and substantially reduce the number of people suffering from water scarcity	
	Implement integrated water resource management at all levels	
	Protect and restore water-related ecosystems	
	Substantially increase the proportion of renewable energy in the energy mix	• Sustainable Manufacturing • Energy Management
	Double global improvement rate in energy efficiency	
	Achieve higher levels of economic productivity through diversification, technological upgrading, and innovation	• Occupational Health and Safety • Sustainable Manufacturing • R&D and Innovation • Sustainable Supply Chain • Social Involvement
	Improve progressively the global resource efficiency in consumption and production	
	Protect labor rights and promote safe and secure working environments for all workers	
	Achieve sustainable management and efficient use of natural resources	• Regulatory Compliance • Sustainable Manufacturing • Waste and Circular
	Minimize the adverse impacts of chemicals and all waste on human health and the environment	
	Substantially reduce waste generation through prevention, reduction, recycling, and reuse	
	Encourage the adoption of sustainable practices and integrate sustainability information into the reporting cycle	
	Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters	• Regulatory Compliance • Sustainable Manufacturing • Climate Change • Energy Management • Sustainable Supply Chain • Social Involvement
	Improve education, awareness-raising, and human and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning	

RESPONSIBILITY AND ACCOUNTABILITY

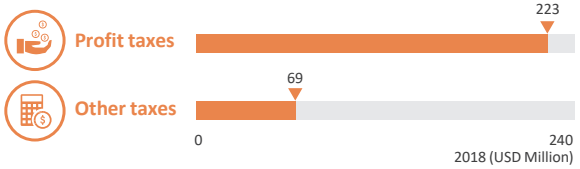
ASEH commits to constructing sound corporate governance, conducting business ethically and complying with all laws and applicable regulations where we operate.

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 in a socially responsible and honest manner to serve both the company's and shareholders' long-term interests.

Sustainable Value Assessment - Economic Aspect



Sustainable Value Assessment - Tax Aspect



2018 Key Performance

Conducting self-improvement by board members
Total number of training hours **87hr**[1]

Board assessment by external parties

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

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.

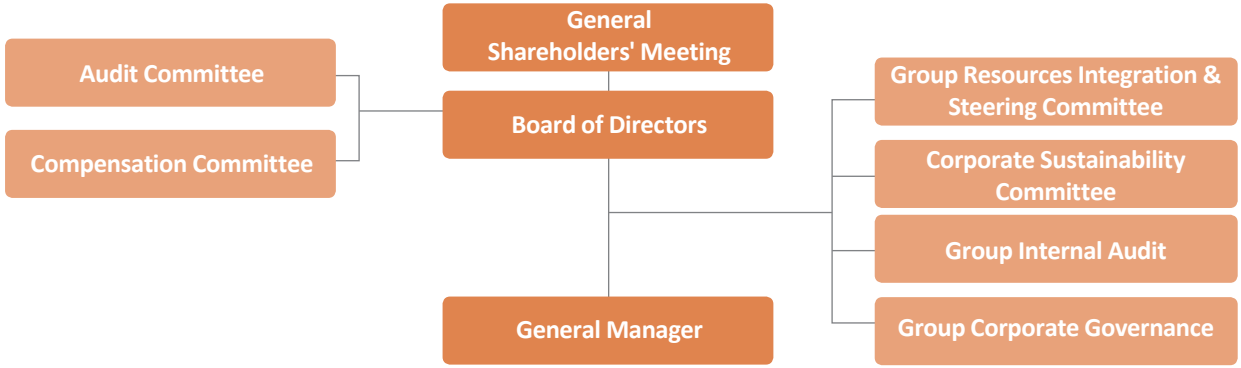
In 2018, ASEH was among the top 20% best performing listed companies with excellent ratings in the categories of "Information Transparency" and "Corporate Social Responsibility".

In 2018, ASEH was again selected to be a constituent stock of the "TWSE Corporate Governance 100 Index (TWSE CG100 Index)" based on the 2017 assessment of our corporate governance, liquidity tests and financial indicators. To achieve good corporate governance, we will continue to focus on strengthening the structure and operations of the board, protecting the rights and ensuring fair treatment of shareholders, and incorporating sustainable practices into corporate governance.

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

3.1 Board of Directors

The ASEH's board of directors (the "board") has set up the "Audit Committee[1]" and the "Compensation Committee[1]", which convene meetings and faithfully perform the duties prescribed in charters and applicable laws and regulations. In addition, they shall submit their proposals to be resolved by the board. In parallel, ASEH has the Group Internal Audit which is responsible for periodical audits and presenting audit results to the Audit Committee and the board.



Structure and Authority of the Board of Directors

The board is the highest governing body of ASEH. Jason Chang has served as Chairman and Chief Executive Officer of ASEH since its founding on April 30, 2018. He is also Chairman of Advanced Semiconductor Engineering Inc. ("ASE") since ASE's listing on the Taiwan Stock Exchange in 1989, and concurrently as the Chief Executive Officer since 2003. The Chairman utilizes a strategic leadership style to lead the management team and all employees in consolidating the core business, confronting challenges, and creating new business opportunities, establishing ASEH's leading position in the market of semiconductor assembly and test services and continues to lead growth and sustainable business of ASEH.

The board of ASEH consists of thirteen members, each serving a three-year term. Three of the members are independent directors[2]. In addition to certain 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 2018, a total of eleven board meetings were convened, including three meetings held by the first board of directors[3]; eight meetings held by the second board of directors[4] which were attended by at least two independent board members in their supervisory capacity. The average board meeting attendance rate was 88%[5]. To manage and avoid conflicts of interest, directors or the corporates they represent involving conflicts of interest which may jeopardize the interest of the company, are not allowed to participate in the discussions, exercise their votes, nor vote on behalf of other directors[6].

Diversity of Board of Directors

ASEH's Corporate Governance Best Practice Principles lists the guidelines for selecting the board of directors and takes into account diverse and complementary factors such as: gender, age, nationality, culture, professional background and industry experience. The members of the board hold a variety of professional backgrounds and industry experiences[7], and possess the abilities to conduct risk oversight and to lead the enterprise from an international market perspective.

Board of Directors Self-Improvement

To strengthen professionalism and knowledge and to respond to constantly changing and increasing sustainability issues worldwide, board members have continuously participated in training courses covering subjects on corporate sustainability for more than six hours per person per year.

1 For further details on the composition and authority of the Audit Committee and Compensation Committee, please refer to our 2018 Annual Report English version (http://ir.aseglobal.com/attachment/20190625151651429590978_en.pdf) or Form 20-F "Item 6." (http://ir.aseglobal.com/attachment/20190507142518659478105_en.pdf)

2 Independent directors are as defined in Rule 10A-3 under the U.S. 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.

3 The first board of directors and supervisors were elected at the promoters' meeting with a term of office from April 30, 2018 to Jun 21, 2018. The attendance rate of the first board of directors was 86%.

4 The first board of directors resolved on April 30, 2018 to amend the ASEH's "Articles of Incorporation" to establish Audit Committee to replace the Supervisors and proposed to the shareholders' meeting to re-elect the board of directors on June 21, 2018. According to the amended ASEH's Articles of Incorporation, 13 directors (3 independent directors and 10 non- independent directors) of ASEH's second board of directors were elected at the extraordinary shareholders' meeting, each with a three-year term of office from June 22, 2018 to June 21, 2021. The attendance rate of the second board of directors was 89%.

5 In 2018, the average attendance rate of the combined first and second board of directors' meetings was 88%.

6 For further details on directors' attendance of meetings and information regarding conflict of interest, please refer to our 2018 Annual Report English version.

7 For further details on the composition of the board of directors, and professional backgrounds and industry experiences of board members, please refer to 2018 Annual Report English version "Ch. 3. Corporate Governance Report" or 2018 Form 20-F "Item 6".

2018 Training Courses for Board Members

Course Name	Total Training Hours (Course Duration * Number of Trainees)
Experience sharing in corporate governance evaluation systems and CSR	3 hours
Company Act amendments and case studies	30 hours
Latest Company Act amendments	3 hours
Impacts and risks of the China–US trade war on Taiwan-funded companies and response mechanisms	6 hours
Trends and challenges in information security governance	33 hours
Advanced practical seminars for board directors and supervisors: how to review financial reports without a financial and/or accounting background	3 hours
Strategy on intellectual property and application of R&D tax credit	6 hours
How to successfully negotiate mergers and acquisitions: Case Studies	3 hours
Total number of training hours	87 hours

Board Participation in Sustainability Governance

The ASEH board of directors have a responsibility to ensure that the organization pays attention to sustainability and to consider economic, environmental and social factors when making major decisions. For example, in 2018 the board resolved to promote environmental protection efforts in Taiwan by contributing an amount of US$3.4 million (NT$ 100.0 million)[1] ; amended and formulated a total of eleven documents related to sustainable development; appointed independent directors to serve in the review committee for the "ASEH Supplier Sustainability Award"[2]. In addition, six directors serve as members of the CSC and regularly monitor the implementation results and future plans of sustainability programs.

Board Performance and Compensation

We have formulated compensation policies for our top management. In addition to individual performance, the compensation of top management is also determined based on the achievement of the company's financial[3] and non-financial[4] performance targets. The compensation of the CEO and other top management is approved by the board.

To enhance overall efficiency of the board and to measure the performance of the board and individual members with respect to leading and supervising the company's performance, we established an evaluation system that incorporates non-financial indicators as well as sustainability-related elements[5]. The ASEH board of directors completed an internal self-evaluation of performance at the end of 2018. An evaluation of the board of directors, as well as its members, was also conducted by an external independent party for the first time. The independent external board evaluations focused on aspects such as the professional competency, decision-making efficacy, internal audit control, and position on corporate social responsibility of the board of directors. Subsequently, concrete suggestions were offered to help improve the board of directors' competence and enhance its operating efficiency. The evaluation results were submitted to the Compensation Committee and the board in 2019 to serve as references for director performance and compensation. Meanwhile, the evaluation results were published on the company website[6].

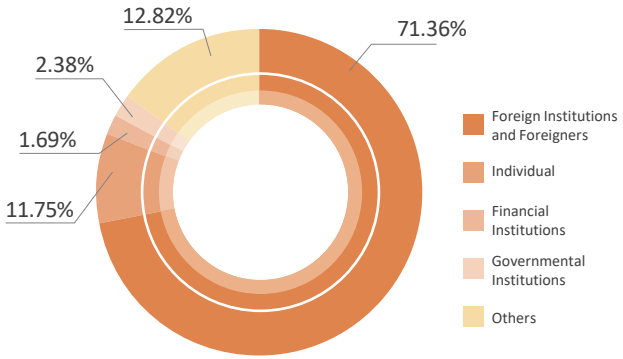
Compensation for top management includes both cash and stock options. The characteristics of the industry and the nature of the company's business are taken into consideration when determining the ratio of bonus payout based on the short-term performance of top management and the time for payment of the variable part of compensation. 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, in 2018, we formulated "Stock Ownership Guidelines". To enhance corporate governance and ensure the accountability of financial results, in 2018, 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[7].

1 Since 2014, ASE has donated NT$100 million annually to promote environmental protection in Taiwan and the program will continue after the establishment of ASEH.
2 ASE has organized the Supplier Sustainability Awards every year since 2016 and will continue to do so after the establishment of ASEH.
3 such as the performance of operating revenues, operating profits, net income, and EPS
4 such as the performance of reputation risks, customer satisfaction, feedback from stakeholders engagement, environmental and social results
5 such as the board members' realization of the ASEH's commitment to sustainability, including corporate governance, environment, employees, supply chain, society, and stakeholders. For further details, please refer to "Corporate Sustainability and Citizenship Policy" on ASEH's company website at http://www.aseglobal.com/en/csr_corporate_sustainability_policy.html
6 For further details on 2018 Board Performance Evaluation Results, please refer to ASEH's company website and visit http://cms.ase.todayir.com.tw/html/client_tw/ase/attachment/20190628150205242625466_en.pdf
7 For more important documents related to ASEH, please refer to ASEH's company website and visit http://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[1], 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.

Structure of Shareholders



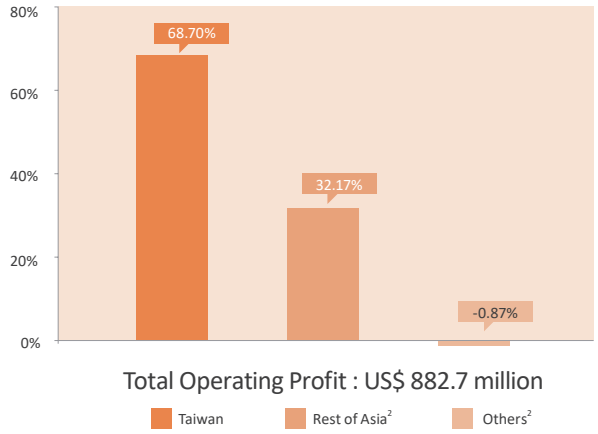
Information Transparency

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, corporate sustainability 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.

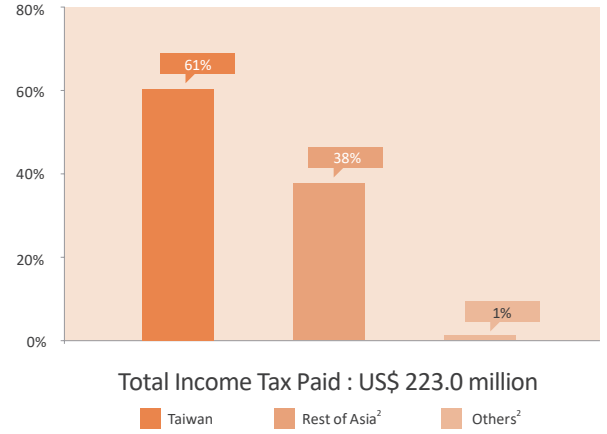
3.2 Economic Performance and Tax Governance

We categorize our operating profit and income tax paid geographically based on the country in which ASEH and subsidiaries are located. Over 68% of ASEH's operating profits are generated from our business operations in Taiwan. Meanwhile, over 60% of our income tax payments were also made to the Taiwan R.O.C. government.

2018 Operating Profit



2018 Income Tax Paid



In 2018 and 2017, the reported tax rates were 14% and 21%, respectively, and the cash tax rates[3] were 21% and 16%, respectively.

In conformity with the core values of our tax policy, ASEH is committed to fulfilling its tax payment obligations while considering the impacts and risks associated with tax payment in its business activities and promoting corporate innovativeness, research and development, and reinvestment to achieve sustainable development in accordance with government policies. Each individual entity pays taxes where profits are earned and ensures transactions are conducted at arm's length. We do not use secrecy jurisdictions or so-called "tax havens" that are meant for tax avoidance or aggressive tax planning. These core values and spirit are the foundation of our tax policy.

[1] The independent directors were elected in accordance with the candidate nomination system set out in the amended ASEH's "Articles of Incorporation" at the extraordinary general shareholders' meeting on June 21, 2018. Then the shareholders' meeting approved to amend ASEH's "Articles of Incorporation" regarding candidate nomination system for all of the board member elections on June 27, 2019.
[2] Rest of Asia includes China, South Korea, Singapore, Malaysia, and Japan. Others include America and Mexico, etc.
[3] Cash tax rates = income tax paid/profit before income tax

ASEH Tax Policy

ASEH believes that being an honest taxpayer can foster economic growth and help to maintain sustainable business in the long term.
ASEH is committed to the following:

1. **Complying with all applicable tax laws and regulations of all countries in which we operate and duly reporting and paying all necessary taxes in a timely manner.**
2. **Constructing an appropriate mechanism to evaluate potential tax risks which are given rise to our global manufacturing and sales activities.**
3. **Taking into consideration of both short term and long term tax impacts when making major business decisions.**
4. **Being transparent and disclosing tax information in accordance with applicable regulations and reporting requirements.**
5. **Developing mutually trustful and respectful relationships with tax authorities in the countries we operate, and communicating with them on tax matters where appropriate.**

Sustainable Value Assessment - Economic and Tax Aspects

We have based our economic sustainable value assessment on the extent to which its contributions increase social value. The generation and distribution of economic value reflect how wealth is created for every stakeholder. We not only create employment opportunities and provide employees with salaries and benefits, but also incorporate major capital expenditures that have been outsourced to suppliers and intangible assets to include the economic value generated during their expected usage period. We also continuously invest in product innovation and technology and service R&D to upgrade the quality of our intellectual property, enhance profitability and maximize the profits distributed to shareholders. All these demonstrate that capital flows during our operational processes are sufficient to satisfy the financial needs of every stakeholder.

In 2018, employee salaries and benefits generated the highest sustainable value in the economic impact assessment results, a clear indication that the local labor markets in which ASEH operates are of great concern to the company. We provide competitive, performance-oriented compensation as well as the opportunity to share in profits. The economic sustainable value was higher in 2017 than in the previous year. The main reasons for this were increases in both net profit and employee salaries. As ASEH's revenue increases, we prioritize the distribution of the increased profits to the employees who worked hard to create it, so that the rate at which employee salaries grow will exceed ASEH's profit growth rate.

Impact Driver	Activity / Output	Outcome / Impact
Profits	Profit distribution	Stakeholders' financial satisfaction and livelihood maintenance
Payroll	Payroll and welfare given	
Investments	Capital expenditure	
Intangibles	Research and development activities, and intellectual property purchase	Improve quality of intellectual property and intangibles
Taxes	Tax payment	Improve people's wellbeing

3.3 Business Ethics

Policies and Specifications

ASEH's board of directors 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 of directors. The Corporate Governance Taskforce under the CSC promotes 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 Internal Audit is in charge of supervision to ensure the operating effectiveness of reporting system.

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.

2018 Promotion and Implementation:

- Procedures Formulation: Establishment of the Procedures for the Handling Whistleblowing Cases of Unethical Conduct. The Procedures specify the investigation and handling procedures for whistleblowing case(s) of ethical management violations.
- Organized education and training:
  1. Directors took part in the "Trends and Challenges in Information Security Governance" course (11 participants for a total of 33 hours)
  2. Business conduct and ethics-related education and training were provided to all levels of employees in person, via online courses and e-mail at 25 business locations worldwide. The topics included the following:
     (1) Business conduct and ethics-related issues such as human rights, sexual harassment, regulatory compliance, and information security (152,115 participants for a total of 354,548 hours)
     (2) RBA Code of Conduct course (64,512 participants for a total of 60,711 hours)
     (3) Employee Code of Conduct at all business locations (27,825 participants for a total of 16,573 hours)

★ Ethical Related Regulations

- **Code of Business Conduct and Ethics**
- **Corporate Governance Best Practice Principles**
- **Corporate Social Responsibility 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**
- **Fair Competition and Antitrust Laws Compliance Policy**
- **Guidance on Prevention of Corruption**
- **Policy and Procedures for Complaints and Concerns Regarding Accounting, Internal Accounting Controls or Auditing Matters**
- **Codes of Conduct Procedures for Handling Whistleblowing Cases of Unethical Conduct**

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

Consultation and Report

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

In 2018, we received 16 cases reported through "Code of Conduct Compliance Reporting System". Among them, 11 cases were not accepted due to lack of sufficient information, while 3 are non-related cases. The remaining 2 cases are related to ethics matters and still under investigation (for more information, please refer to table below). The department involved has strengthened its anti-corruption measures and policies, such as code of conduct and ethics awareness and training program at site video walls or via video, department weekly meeting and signing declaration letter by employees. The program covering rate is 100%. Moreover, we enhanced improvement and control measures after a thorough review of all related procedures at the same time. We have scheduled further education and training programs to ensure employees fully understand the new working procedures and guidelines and follow them correctly.

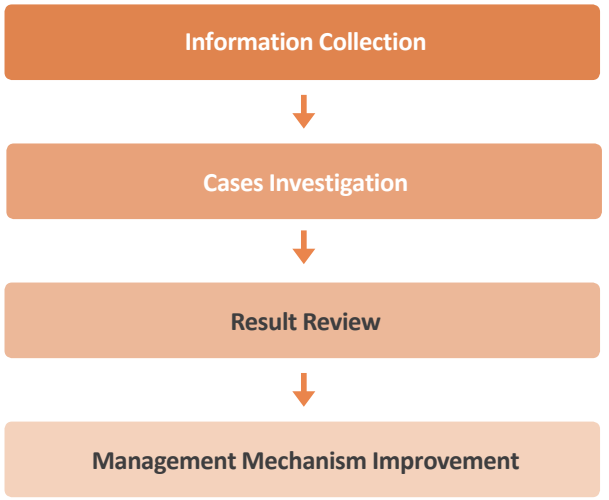
In 2018, for the purpose to reinforce the whistle-blowing mechanism, ASEH appoints an independent third party to assist in handling any reporting regarding insiders' misconducts and provide legal services in the subsequent investigation.

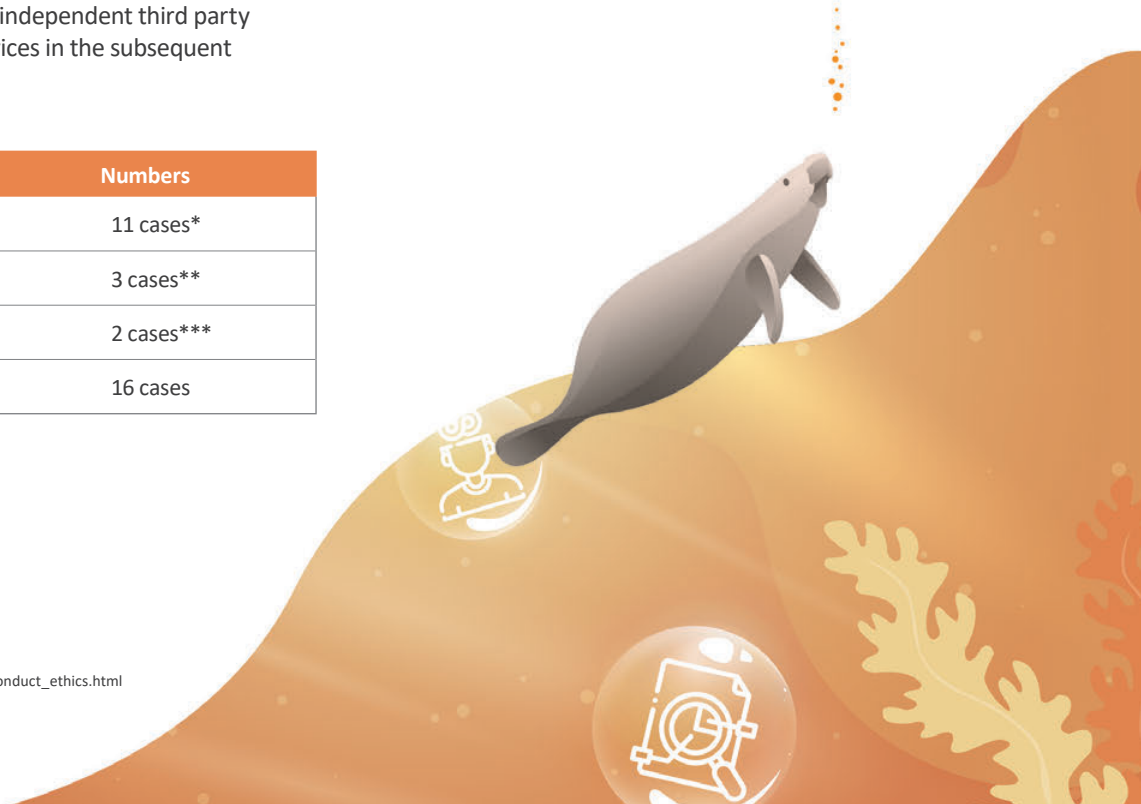
2018 Cases Received by Code of Conduct Compliance Reporting System

Item	Numbers
Not accepted	11 cases*
Not related to ethics matters	3 cases**
Related to ethics matters	2 cases***
Total	16 cases

* The 11 cases lack sufficient information to conduct further investigation.
** The 3 cases involve employees' personal complaints and were forwarded to the HR department to handle.
*** The 2 cases are alleged same ethics matters and still under investigation.

Processing Procedures for Violation Reporting





[1] For further details on internal and external report channels, please refer to ASEH's website - http://www.aseglobal.com/en/csr_business_conduct_ethics.html

3.4 Risk Management

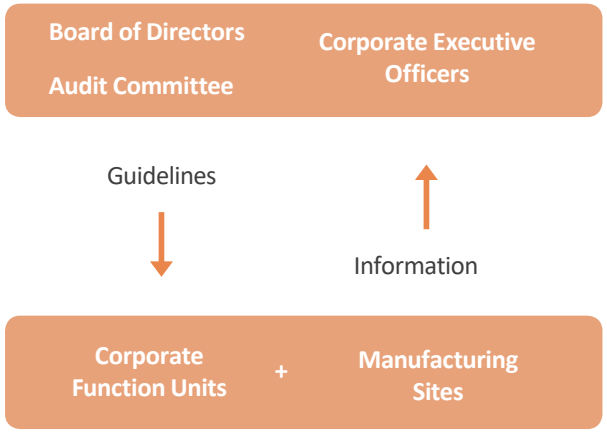
We manage risks through designated departments and functions ("risk functions") across all of our organizations. In addition, we implement Enterprise Risk Management ("ERM") at our major manufacturing sites (i.e., Kaohsiung, Chungli, Shanghai (A&T), Shanghai (Material), Kunshan, Suzhou facilities, and the USI) as well as all group-level functional departments. We held a series of workshops which help participants to understand and to develop risk management skills, and to apply what they have learned to real-life ERM projects. 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 these mechanisms effectively kept the respective risk scenarios under control.

Our risk review process is described below. Corporate level and operational level risks are identified, prioritised and reported on risk registers[2]. Major risks are assessed in terms of risk level[3] and control effectiveness, and then mapped onto a Risk Map. In addition, a correlation analysis is conducted to analyse possible interdependence of the major risks. Furthermore, risk mitigation plans are defined to reduce the residual risk if judged necessary. The major risks, together with suitable risk response plans, are reported to top management, and the progress will be monitored periodically. 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 management are invited to identify key risks that are "top of mind" for the company. 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.

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 Organization Scheme



Risk Management Process

Risk Identification	Risk questionnaires are used to gather exposure information to identify risks/events that might adversely affect the achievement of ASEH's business objectives.
Risk Assessment	Risks are assessed from three perspectives: • Likelihood • Impact (on finance, business continuity, and reputation) • Control effectiveness
Risk Response	Identify and evaluate possible responses to risk, and the evaluation criteria include: • Cost of implementation • Effectiveness (degree to which a response will reduce impact) • Feasibility (difficulty) • Time required for implementation

[1] We define an emerging risk as: an issue that is perceived to be potentially significant in future but do not currently exists, or a previously known issue that is evolving in unexpected ways with unanticipated.
[2] The risk registers include a description of the overall risk, characteristics (scenario and impact) of the risk; and current risk management activities including mitigation strategy/control measures.
[3] Risk levels are determined according to the likelihood and impact of risks.

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

Long-term Emerging Risks

Key Technology Talent Shortage

Risk Description: Semiconductor plays a critical role in improving daily lives. With the progress in 5G commercialization, and the expansion of AI and IoT applications, the revenue of the semiconductor industry is predicted to exceed 1 trillion US dollars by 2030. Hence, the rise in demand for talents in 5G, AI, RF and optical packaging.

Potential Impact: According to the report "Global Talent 2021" by Oxford Economics, the rate of growth of talents in Taiwan has depreciated 1.5% annually within a decade (2012-2021). During the same period, China's semiconductor industry has seen accelerated growth and has cannibalized Taiwan's talent pool with competitive salary offers. Higher academic requirements and the longer incubation time for semiconductor talents further widened the gap between demand and supply in advanced technology development. ASE suffers from this situation as well, especially for IoT, AI, and 5G.

Response Strategies: In the development of optical packaging, AI and RF, we have initiated a project focusing on key technology talents, by internally grooming and proactively hiring to retain and attract key personnel. ASE collaborated with top universities to establish the "ASE Industry Academy" to train its engineers in the fields of Advanced IC Packaging and Testing, Smart Factory Automation, and Artificial Intelligence. We also participate actively in job fairs, and optimize the use of online job websites and headhunting agencies.

Global Uncertainty in Trade Policy among Major Economies

Risk Description: In recent years, major economies have implemented trade controls and tariff increases with and without pre-warning. Some of these measures have an immediate impact on the semiconductor supply chain and pose risks to ASEH's operations.

Potential Impact: These trade disputes will not only lead to a decline in the revenue of sanctioned semiconductor companies, but may also lead to a global decline in the semiconductor industry, impacting the revenue of ASEH. In addition, our industry requires a lead time of one to two quarters for production fulfillment, and frequent trade policy changes will lead to fluctuations in customers' demand without warning. Such fluctuations will affect the accuracy of our production planning, which will in turn impact the profit of ASEH.

Response Strategies:

1. Outsourced semiconductor assembly and testing is a globalized industry and we have been strategically strengthening our foothold globally with customers in many different regions. We will strive continuously to expand our market penetration to reduce the risk of trade conflict in any single region.
2. We will strengthen our production process and equipment standards to meet different customer and product requirements that will help further enhance the flexibility and efficiency of internal capacity adjustment. At the same time, we will work closely with suppliers to minimize the lead time for equipment procurement and reduce investment risk exposures.
3. We will continue, on a quarterly basis, to analyse the electronics and semiconductor industry data, and customers' production demand. In the event of any abnormality, we will disseminate the information to relevant departments and conduct in-depth research and tracking that will help us to prepare for any potential risks in advance.

Impact of Climate Change

Risk Description: Rising carbon emissions is causing serious global warming, and extreme climate is becoming the norm. Major global companies have joined the RE100 initiative to use renewable energy to reduce carbon emissions. The amendments to the revised draft of the Taiwan Regulations on Renewable Energy Development Act was passed in April 2019 to regulate the use of renewable energy by large power consumers.

Potential Impact: If customers request ASEH to provide products that use 100% renewable energy, it may affect our operation and financial results. If we are unable to meet the customers' requirements, ASEH may lose some market share.

Response Strategies: We have established a low-carbon policy, with particular emphasis on "energy saving", "green energy" and "storage energy", and green and renewable energy investment strategies. In response to the RE100 Initiative and the Taiwan Renewable Energy Development Act, we are evaluating the costs and benefits of working with solar power plants to begin the use of 10% renewable energy in 2020, followed by a 3% increase year on year.

Financial Risk

Interest Rate Changes: Our exposure to interest rate risks relates primarily to our long-term floating rate loans, which is normally incurred to support our corporate activities and capital expenditures. We entered into several interest rate swap contracts to mitigate the interest rate risk on our long-term loans.

Exchange Rate Changes: Exchange rate movements against the NT dollar, our functional currency, give rise to the risk of foreign currency exposure. To protect against reductions in value and the volatility of future cash flows caused by changes in foreign currency exchange rates, we utilize currency forward contracts and swap contracts from time to time to reduce the impact of foreign currency fluctuations on our results of operations.

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. 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:

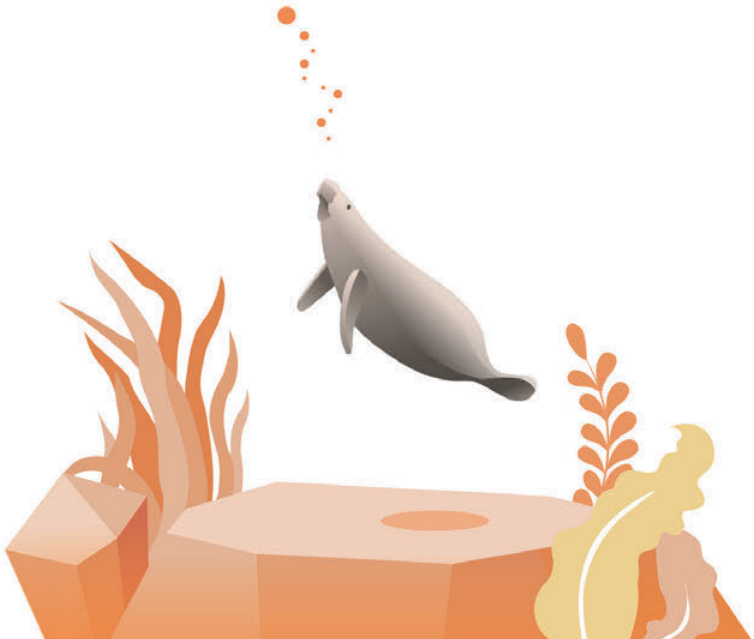
- Operational effectiveness and efficiency
- Reliable, timely, transparent reports in compliance with relevant regulations
- Compliance with relevant laws and regulations

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 2018, to strengthen the supervision and management of ASEH subsidiaries, USI[1] was included in the group's internal control framework. By enabling both the document control and organizational structure to be effectively linked, we were better able to respond to changes in USI's product business units.

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, all ASEH locations have begun to use information application software or automated control processes. The ASE Kaohsiung facility was first to develop an SAP authorization management system that sets permission access for users based on job functions. The system automatically updates user access whenever there are organizational or personnel changes, preventing potential fraud from improper authorization or conflicts. Additionally, we established global internal control and risk management platform in 2018, and conducted regular verification of authorization access, Segregation of Duties and enterprise risk management activities. The development of e-platforms helped aggregate and analyze internal control-related management activities and detect risks. Besides reducing labor costs and improving efficiency, useful information is generated in real time for our management to make decisions that would ensure operational goals are met.

★ **ASEH Internal Control Management Process**



[1] Including Taiwan and China facilities of USI.

Internal Audit

The Group Internal Audit under the board assists the board and the managers in inspecting and evaluating the validity of the internal control system, as well as assessing the effectiveness and efficiency of the company's operations; the reliability, timeliness and transparency of reports; and compliance with regulations. It also offers suggestions for improvements when necessary to ensure the continued effective implementation of the internal control system.

The Group Internal Audit allocates an appropriate number of qualified, full-time internal auditors based on factors including the scale of the investment, business conditions, management requirements, and relevant laws and regulations to perform internal auditing tasks from an independent, objective, and impartial standpoint. Our competency standards for internal auditors comply with the provisions stipulated by the competent authorities. Auditors undergo professional training on an annual basis and take part in relevant business training organized by accreditation bodies or by the company itself to upgrade their capabilities and the quality of their audits as well as to continuously improve auditing procedures and verification processes and skills. In this way, they can actively develop their auditing and supplementary verification tools and upgrade the effectiveness of their auditing work.

The Group Internal Audit has established a risk-focused internal audit system to carefully evaluate the risks in each subject in every audit category. The assessment results are then used to determine the focus, scope, method, procedures and frequency of the auditing work, as well as determine the significant risks that should be prioritized and where checks need to be strengthened. In this way, the company can achieve the most efficient allocation of auditing resources and keep the board and managers updated regarding the status of its internal control operations. Managers can thereby understand existing shortcomings or hidden risks, and effectively assist the company and subsidiaries in improving the internal control system, risk management, and corporate governance. The Group Internal Audit reviews the internal control self-assessment reports of the company and its subsidiaries' on an annual basis along with improvements to the internal control shortcomings and anomalies discovered during audits. These serve as a basis for the board and CEO to assess the validity of the overall internal control system and for issuing statements on the internal control system.

The Group Internal Audit delivers audit reports and follow-up summary reports to the independent directors on a monthly basis for reference purposes. The supervisor of the Group Internal Audit also attends the Audit Committee's quarterly meetings to report to independent directors the audit results. The supervisor also reports to the board on the progress and findings of auditing operations, and follows up on and internal audit requests and suggestions raised by independent directors, the Audit Committee and the board. These requests and suggestions are administered and reported within a specified time period.

Throughout 2018, we continued to refine our internal audit management process, upgrade the skills and capabilities of employees, integrate our internal audit resources, and improve the content and quality of our reporting in order to elevate the value and effectiveness of internal audits.

Internal Audit Management Process

3.5 Human Rights Management

Human Rights Policy

For the protection and promotion of human rights, ASEH supports and respects international standards, including the UN Universal Declaration of Human Rights, the first & second principles of UN Global Compact, UN Guiding Principles on Business and Human Rights, ILO International Labor Standards, Declaration of Fundamental Principles and Rights at Work, as well as relevant local laws and regulations. Additionally, ASEH implements human rights protection by joining the RBA. ASEH has established human rights management principles accordingly to protect the human rights of all ASEH's employees and also expects our suppliers to uphold these principles in order to protect the human rights.

Four Principles

Protect

ASEH complies with all labor and gender equality related laws and regulations where we operate, and provides employees with a safe and healthy work environment.

Remedy

ASEH vows to maintain an accessible and open grievance mechanism, and to take immediate remedial measures if any violation of human rights issues occurred.

Respect

ASEH forbids forced labor, child labor, discrimination, and harassment, and guarantees the freedom of association, privacy, reasonable working hours and appropriate compensation and benefits.

Management

ASEH continuously promotes human rights education, regularly assesses human rights risks, reports and discloses assessment results to top executives and to the public.

Human Rights Governance

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 CSC at regular meetings.

Employee and operation-related human rights issues are managed by the Employee Care and Development Taskforce, using the RBA management. On community and environmental human rights issues, each facility implements environmental monitoring and survey community feedback locally to identify risks. For suppliers, the Supply Chain Management Taskforce conducts supplier sustainability assessments to identify related risks.

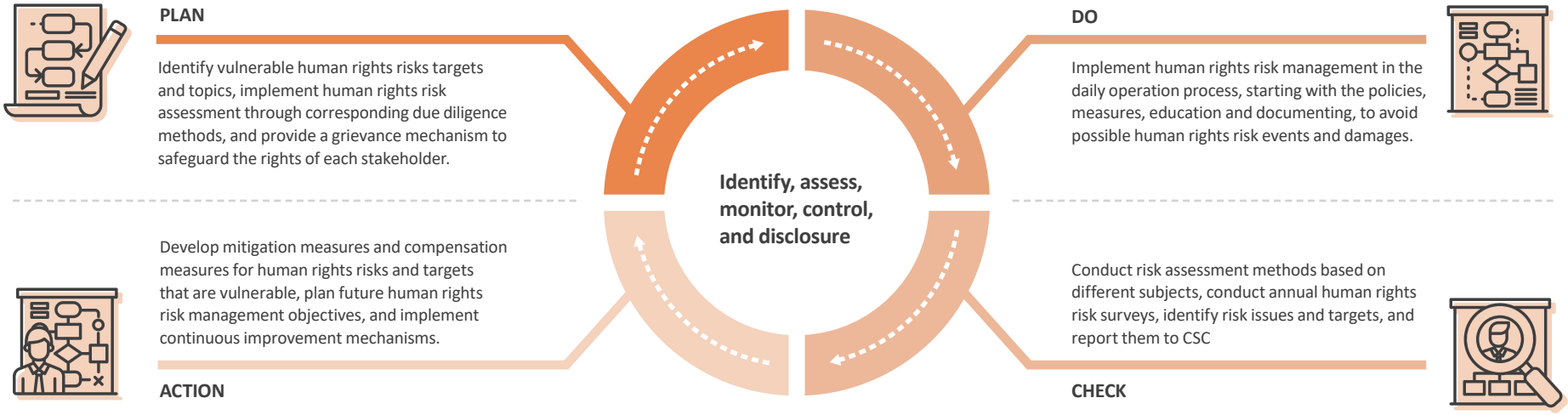
Human Rights Assessment

ASEH manages human rights at work through the PDCA process of identification, assessment, monitoring, control and disclosure. We direct focus on our employees, supply chain and community, and we conduct due diligence and set up grievance channels to avoid any violations.

Employees and the community are our main focus in dealing with human rights risks in our production operations. We conduct risk assessments through RBA SAQ and RBA VAP at our facilities worldwide, to identify risk topics and targets, and take measures to mitigate these risks. "Working Hours", "Emergency Preparedness", "Freely Chosen Employment" and "Occupational Safety" were assessed as the major risk factors. We developed annual mitigation measures by enhancing human rights awareness through education and training, recruiting sufficient manpower and managing work hours, and creating workplace safety culture and injury prevention. For more information, please refer to "6.4 Occupational health and safety"

With regards to human rights risks associated with the company's suppliers, the company assesses such risks by using the supplier sustainability risk assessment questionnaires and the RBA SAQ. For tier-1 suppliers, the company conducts surveys using sustainability risk assessment questionnaires, which include questions on human rights issues. "Working Hours", "Wages and Benefits", "Occupational Safety" and "Emergency Preparedness" were listed as the key risk factors. Based on the assessment, high risk suppliers were identified and countermeasures were implemented accordingly to verify and lower any risks. For more information, please refer to the "7 Responsible Procurement".

Human Rights Risk Management Process of ASEH

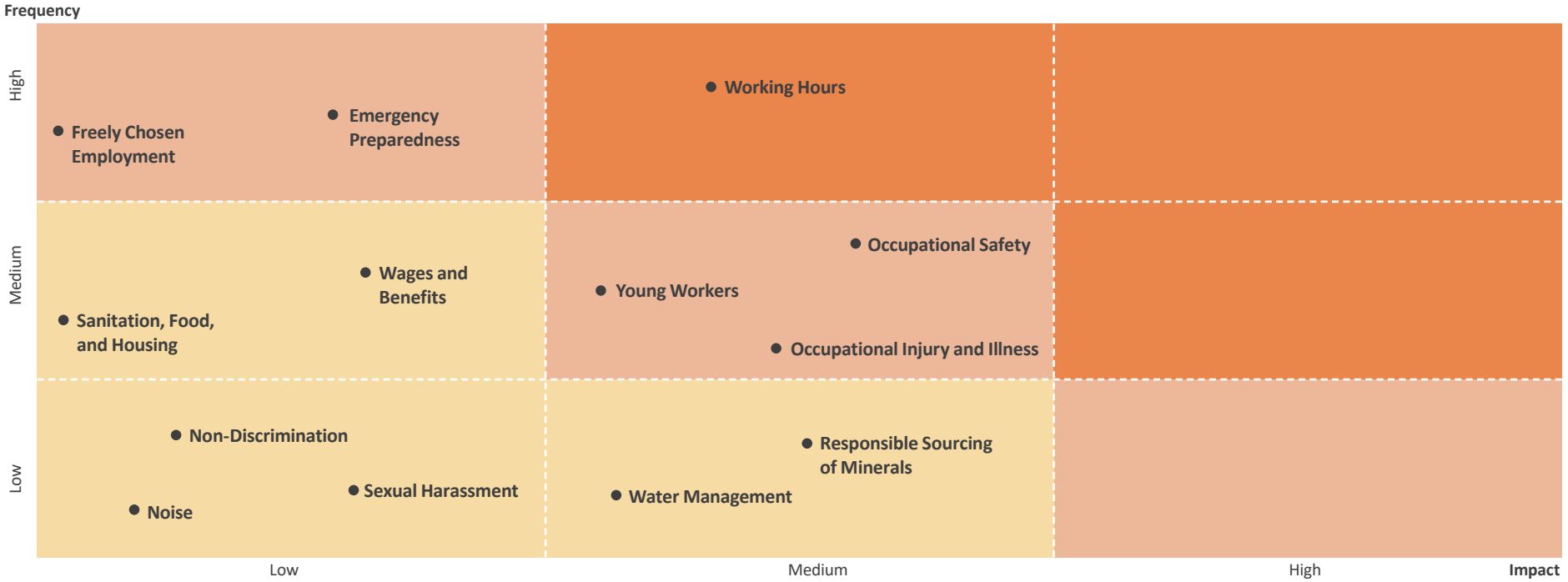


Our Role	Policy	Interest Group	Human Rights Issues	Due Diligence	Complaint Mechanism
Employer	ASEH Human Rights Policy	Foreign employees	Non-Discrimination and Freely Chosen Employment	RBA SAQ and Validated Audit Process (VAP)	1. Internal whistle-blowing channels: the internal whistle-blowing channels of subsidiary companies 2. External reporting channel: http://www.aseglobal.com/en/csr_business_conduct_ethics.html
		All employees	Working hours, Emergency Preparedness, Occupational Safety, Wages and Benefits, Non-Discrimination and sexual harassment		
		Child labor	Young workers		
Purchaser	ASEH Purchasing and Supply Chain Development Policy	All suppliers	Responsible Sourcing of Minerals, Young workers, Wages and Benefits, Occupational Safety and Emergency Preparedness	Utilize supplier sustainability questionnaires, and survey human rights risks using RBA SAQ	
Contributor to community development	ASEH Corporate Social Responsibility Best Practice Principles	Local communities	Noise and water resource management	Monitor noise created and water discharged by facilities	

Our human rights management policies/guidance are set out in the following documents

1. "ASEH Human Rights Policy", please visit: http://www.aseglobal.com/en/csr_human_rights_management.html
2. "ASEH Corporate Social Responsibility Best Practice Principles", please visit: http://ir.aseglobal.com/attachment/20180713163117124148942_en.pdf
3. "ASEH Code of Business Conduct and Ethics", please visit: http://ir.aseglobal.com/attachment/20180622151727139618980_en.pdf
4. "ASEH Purchasing and Supply Chain Development Policy", please visit: https://www.aseglobal.com/en/pdf/2019_ASETH_PurchasingAndSupplyChainDevelopmentPolicy.pdf
5. "ASEH Supplier Code of Conduct", https://www.aseglobal.com/en/pdf/ASE_Holding_Supplier_CoC_EN_2018.pdf

ASEH Human Rights Risk Matrix



Target	Employees		Suppliers	
	Labor	Health and Safety	Labor	Health and Safety
Risk issues	• Working hours • Freely Chosen Employment • Wages and Benefits	• Occupational Safety • Emergency Preparedness	• Working hours • Wages and Benefits	• Occupational Safety • Emergency Preparedness
Mitigation measures	• Sufficient recruitment of employees to meet capacity needs, reducing the need for employees to work overtime • Promoting human rights training courses at all facilities.[1] • Adhere to local regulations and regularly reviews and revise employee handbook.	• Hosted monthly work safety meetings to ensure reduction in the incidence of occupational injury-related accidents; and publicize cases of work-related injury to prevent similar accidents. For more information, please refer to "6.4 Occupational Health and Safety - Classification and Improvement of Work Injury Events" • Disaster prevention safety education and training, and ensuring smooth evacuation routes. For more information, please refer to "6.4 Occupational Health and Safety - Disaster Prevention Exercises and Emergency Responses"	• Have subsidiaries companies perform annual audits or RBA VAP on their suppliers to prevent risks from occurring • Require suppliers to improve their human rights risks and keep track of their progress. • For more information, please refer to "7.3 Supply Chain Sustainability Management - Supplier Sustainability Audit Mechanism"	
Compensation measures	• Developed standards and monitoring mechanisms to ensure one compulsory day off for every seven days worked and overtime. • For employees whose transportation rights have been infringed, return the fees for financial compensation and modify the labor policy and other measures. • For employees who have resigned, they shall be paid within the specified time limit according to local regulations.	• Health assessments conducted by a doctor, assistance in applying for medical insurance compensation • Regular emergency evacuation drills for fires, earthquakes and complex disasters, and timely calibration of preventive and early warning measures	• Suppliers are required to provide compensation measures such as "counseling", "financial compensation" or "policy modification" for employees whose rights have been infringed. • For more information, please refer to "7.3 Supply Chain Sustainability Management - Supplier Sustainability Audit Mechanism"	

[1] In 2018, a total of 146,826 human rights training hours were completed at ASEH, 92% participants for human rights training program.

3.6 Regulatory Compliance

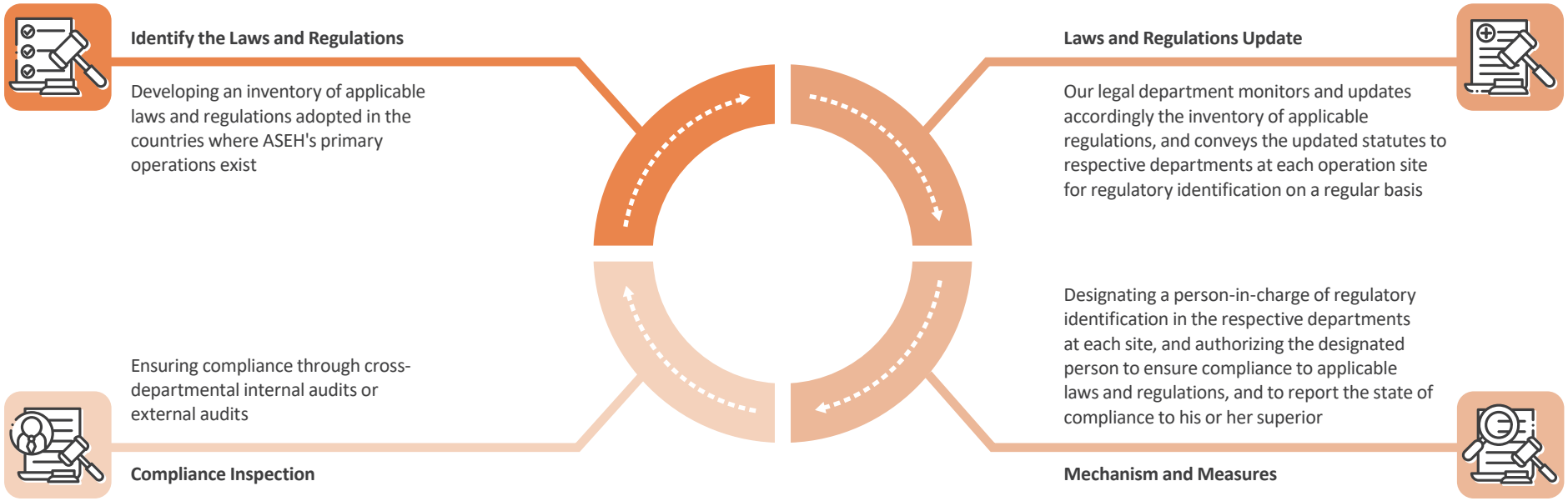
We conduct all our business activities in strict compliance with relevant laws. To ensure legal compliance, ASEH updates itself regularly on domestic and foreign laws and policies that affect its operations, and prioritize regulatory compliance at all of its business locations.

Our legal department coordinates with teams from subsidiary companies to implement systems that help identify potential legal risk exposure at all locations. To ensure adequate management of exposures, ASEH conducted internal audits and engaged professional third-party institutions in 2018, to conduct reviews in areas prone to risks such as environmental protection and factory safety related operations.

In the international arena, ASEH has taken steps to educate and train employees to comply with regulations that affect our global business including the EU General Data Protection Regulation (GDPR), the Company Act (Taiwan), environmental protection laws in mainland China, and the export restrictions on ZTE enforced by the US Commerce Department.

ASEH is compliant with the regulations stipulated by Taiwan's Company Act, Fair Trade Act, and Securities and Exchange Act for corporate governance and publicly listed companies. ASEH did not violate any of the aforementioned laws in 2018. ASEH is also striving for zero violations in labor and environmental protection related-laws.

Regulatory Compliance Process



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 sustainability in 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.

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 research and development ("R&D") of advanced semiconductor packaging technology and cultivates experienced and skilled engineering teams to meet customers' demands for high performance and cost reduction. Our R&D expense increased 27.4% to NT$14,962.8 million (US$488.8 million) in 2018, compared to NT$11,746.6 million in 2017, accounting for 4.0% of operating revenues. As of December 31, 2018, our R&D headcount is 10,283 employees, an increase of 36% compared with 7,570 employees at the end of 2017.

With the slowing down of Moore's Law, and a changing technology landscape created by ubiquitous computing applications such as the Internet of Things (IoT), the industry is faced with increasing challenges of integrating more chip functions packed onto a smaller form factor. Such a phenomenon has given rise to the importance of heterogeneous integration that enables miniaturization and higher performance for smart connectivity environments and devices which improves life and convenience to human beings.

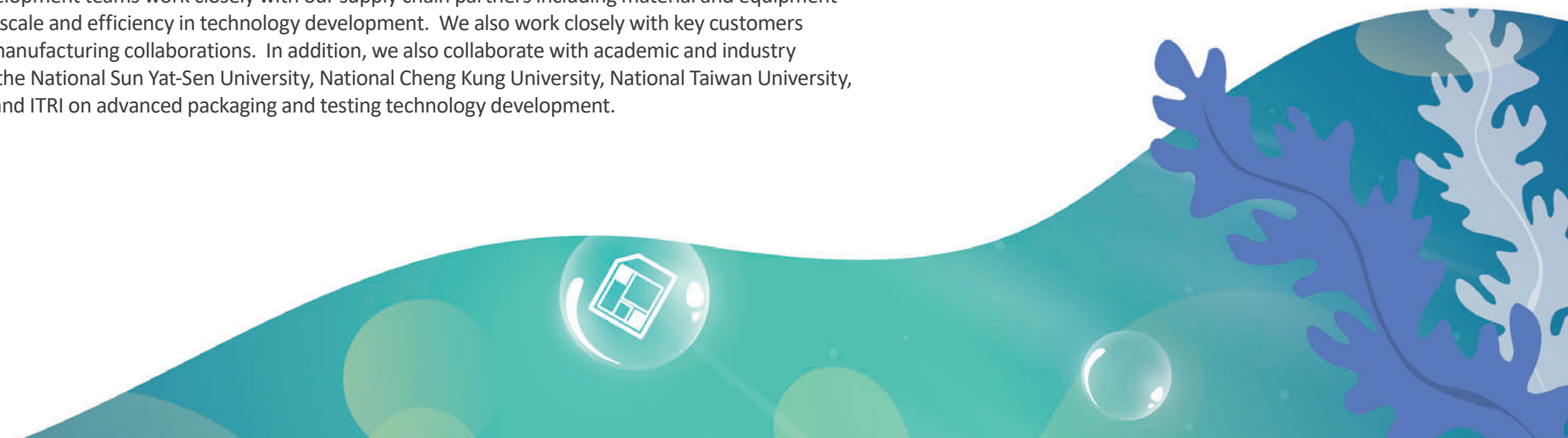
ASEH is focused on three core technologies - advanced system-in-package/system-in-module, copper wire bonding/ flip chip bumping and moderate to low-pin-count packaging. In 2018, the key products and technologies successfully developed were: (1) Flip chip packaging: Process certification for 7/10 nm chip, flip chip package application for 14/16 nm copper process/ultra low dielectric chip, silver alloy wire technology for hybrid flip chip BGA package; (2) Wire bond packaging: Second-generation component embedded packaging technology, pressure sensor packaging technology, ultra-fine pitch and wire diameter copper/gold wire bonding technology, mobile DRAM technology; (3) Wafer-level packaging: Silicon photonics packaging technology, through-hole via glass substrate packaging, wafer-level chip scale six-sided protection packaging technology, fan-out PoP package, die-to-wafer attach process technology; (4) Advanced IC and module packaging: Low-power antenna design and packaging technology, flexible substrate and packaging technology, double-sided thin wireless communication module, 5G antenna package product development. In the next few years, our research and development will be focused on enhancing fan-out wafer-level package (FOWLP) and system-in-package (SiP) technologies and developing low power integrated system solutions for emerging applications such as AI, IoT, 5G and AR/VR.

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 also 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 Platform

ASEH has established a Technology Board that aims to connect employees from related professional fields through the integration of technology and knowledge sharing and the creation of a platform for in depth analysis and discussions. Information is shared across the board to enhance organizational performance through knowledge management and help strengthen the company's leading position in the industry.

ASEH established a "best known method" (BKM) platform to encourage employees to share innovative engineering technologies regularly. In addition, we built a global knowledge management platform (KM platform) to enable the recording and exchanging of valuable R&D data and experience. As of 2018, a total of 20 manufacturing sites and more than 2,000 employees had registered on the KM platform. The platform featured five categories, namely: "e-OJT, Technology Board, BKM, Green Innovation/Climate Change, and Clients/ Competitors/Suppliers/External Consultants/Seminar Materials" and contained more than 3,000 technology-related data records that had been viewed more than 20,000 times. ASEH will continue to improve the KM platform functions and strengthen the development of engineering technology to elevate the company's competitiveness and development potential.



Smart Manufacturing

The Fourth Industrial Revolution is changing the way companies operate, and smart manufacturing has become a key factor for companies to gain a competitive edge. Our smart factory roadmap is based on four building blocks: manufacturing execution system (MES), automated material handling system (AMHS), advanced process control (APC), and facility monitor and control system (FMCS). We use technologies such as robots, automated handling, the Industrial Internet of Things (IIoT), artificial intelligence (AI), big data and cloud computing to achieve the goal of smart manufacturing. We plan to create a unique smart factory ecosystem through the following steps: (1) establish an infrastructure for automated manufacturing; (2) master the core technologies; (3) cultivate independent self-development capability; and (4) expand application scenarios. As of 2018, we have set up six "lights-out factory". Our plan is to increase to 14 "lights-out factory" in the next three years.

Major automation technologies introduced in 2018:

- Fault Detection and Classification (FDC)
  ASEH applies IoT (Internet-of-Things) technology in its production lines, where connected sensors help detect the condition of machines in real time. The automatic early-warning function enabled production lines to quickly formulate contingency plans to prevent product quality loss when unexpected machine downtime occurs. In addition, the data of malfunctioning machines can be analysed and classified using EDAS (Engineering Data Analysis System) to improve performance and machine available time.

- Automatic Virtual Metrology (AVM)
  We use predictive technology to conjecture the quality of a process tool, thereby achieving nearly zero defects on full inspection. Moreover, virtual metrology is performed to significantly reduce the sampling rates required for production lines, leading to lower operation costs and increased OEE (Overall Equipment Effectiveness).

- Artificial Intelligence (AI) for Automated Optical Inspection (AOI)
  AOI systems use machine vision technology to obtain the surface images of products and computer image processing technology to detect product abnormality. We incorporate deep learning algorithms into our existing AOI technology to greatly improve recognition speed and accuracy. The scope of application was further expanded to effectively lower the burden of visual inspection personnel and enhance output efficiency and yield.

- Cyber Security
  We developed smart anti-virus firewalls and abnormal network traffic detection mechanisms to effectively protect computers from viruses and reduce the risk of business disruption and data leakage.

System-in-Package (SiP)

The semiconductor industry is facing a new era in which device scaling and cost reduction will no longer continue on the path followed for the past few decades. Semiconductor companies are now looking for technology solutions to bridge the gap and improve cost-performance, while at the same time adding more functionality through integration. Integrating all the functions into a single chip (SoC) present many challenges that include higher costs and design complexities. An attractive alternative is heterogeneous integration that uses advanced packaging technology to integrate devices which could be separately designed and manufactured by the most suitable process technology in the most optimized way. System-in-Package (SiP) technology is the key enabler for future heterogeneous integration (HI) demands.

What is System-in-Package (SiP)?

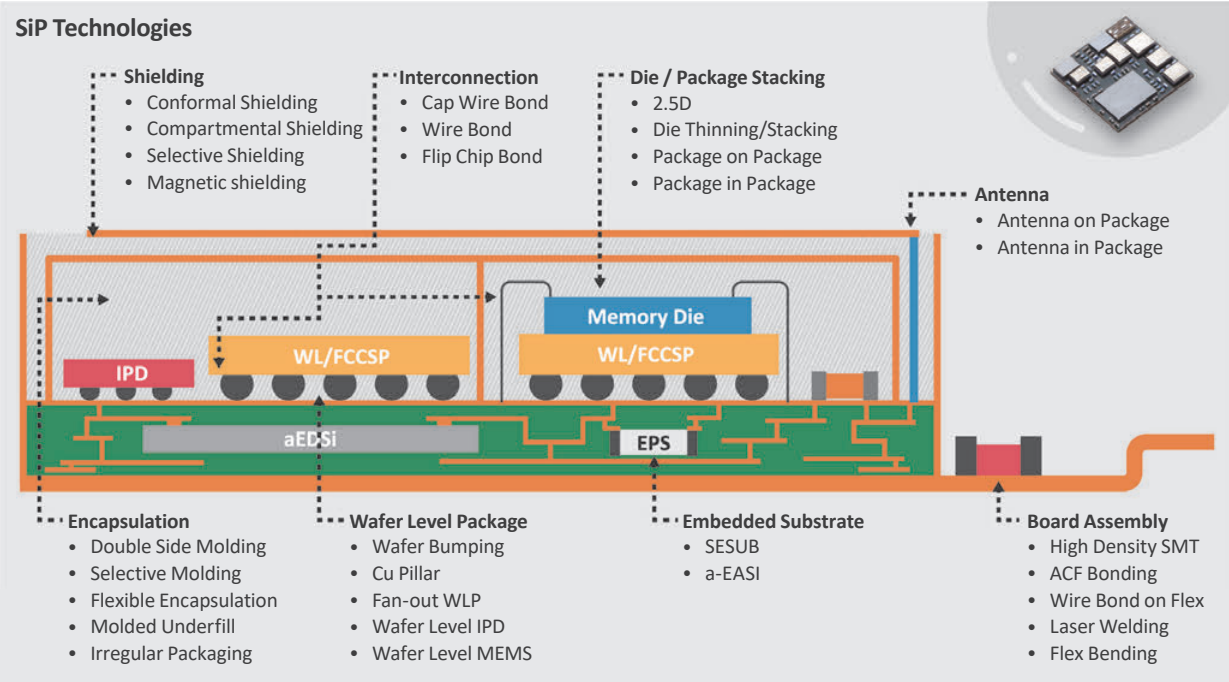
ASE defines SiP as a package or module that contains a functional electronic system or subsystem that is integrated and miniaturized through IC assembly technologies. Rather than generic IC packaging technologies, development of SiP requires heterogeneous integration of single or multiple chips (such as a specialized processor, DRAM, flash memory), surface mount device (SMD) resistor/capacitor/inductor, filters, connectors, MEMS device, sensors, other active/passive components and pre-assembled package or subsystem.

SiP Applications

SiP solutions are highly adopted by end customers for applications including wireless communication, computer storage, power and sensor. In addition, ASE SiP solutions enable a wide range of smart applications including smart living, smart bike, smart city and smart automotive. Advanced SMT, encapsulation, shielding as well as interconnection assembly technologies are developed to meet future requirement arised from 5G communication, AR/VR sensing, and health caring applications.

Enabling Technologies

ASE's SiP solutions leverage upon established IC assembly capabilities including copper wiring, flip chip packaging, wafer level packaging, fan-out wafer level packaging, 2.5D/3D IC and embedded chip packaging to address ongoing trends for the mobile device, IoT (Internet of Things), high performance computing, automotive device, and IoV (Internet of Vehicles) markets.



Turnkey Solution

ASE offers customers complete SiP manufacturing capability including system design, software development, module testing and electrical heat transfer simulation technology to enable smaller, higher performance, lower power consumption and more cost effective end products.

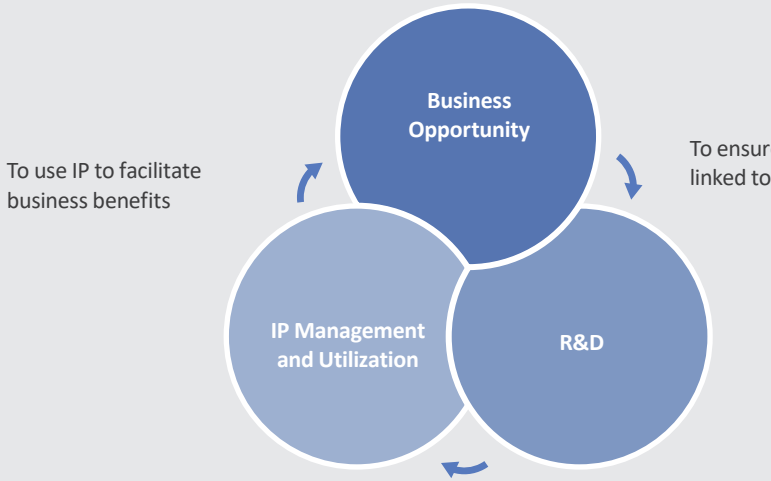
System Co-Design	Packaging Consultancy	System Test Consultancy
• SiP Electronic Design Automation (EDA) Solution • RF Circuit design • Antenna Design • Shielding Solution • Substrate Layout design	• Package selection & configuration • Design rule guideline • Process capability • Reliability verification	• RF Wafer probing • RF ATE Platform • EVB design & fabrication • Testing tooling design • Final test solution development

Intellectual Property Management

Intellectual property (IP) is an important aspect of a company's innovation management. Effective IP management helps to maintain ASE's leading position in corporate innovation.

ASE's IP management is closely embedded into its overall business operation planning and implementation to form a continuous innovation cycle consisting of "business opportunity", "R&D" and "IP management and utilization". The innovation cycle includes the following three phases:

1. Research and development activities are conducted in response to market's prospective demands, to ensure that the R&D activities are linked to key business opportunities;
2. Through our effective IP application system and tools, R&D activities are carefully recorded and processed for intellectual property rights protection (e.g. patents, trademarks and trade secrets);
3. High-value IP helps to facilitate business success, obtain orders from customers, develop more new business opportunities, thereby creating a positive sustainable cycle. In addition, by protecting R&D achievements with intellectual property rights, an IP protective wall is established to prevent others from plagiarizing ASE's technologies and to defend against the threat of competitors with their intellectual property.



As of January 31, 2019, we held 2,415 Taiwan patents, 1,588 U.S. patents, 1,375 P.R.C. patents and 29 patents in other countries related to various semiconductor packaging technologies and invention, utility and design on our electronic manufacturing services. In addition, as of January 31, 2019, we also had a total of 1,395 pending patent applications including 153 in Taiwan, 430 in U.S., 788 in P.R.C. and 24 in other countries.

4.2 Sustainable Manufacturing

Sustainable Manufacturing Declaration

ASEH provides eco-efficient and responsible service to customers through the integration of sustainable practices into all stages of the manufacturing process, including material usage, design, procurement, production and packing. These practices help reduce costs, enhance competitiveness and reduce the impacts on environment, safety and health.

ASEH is committed to:

- Complying with all applicable laws and regulations.
- Managing hazardous substances in parts and materials that are used to make products.
- Providing product solutions that are compact, lightweight and energy efficient.
- Continuously enhancing resource recycling, reducing greenhouse gas emissions, waste generation, wastewater effluent and chemical usage.
- Reducing product packaging and wastes.

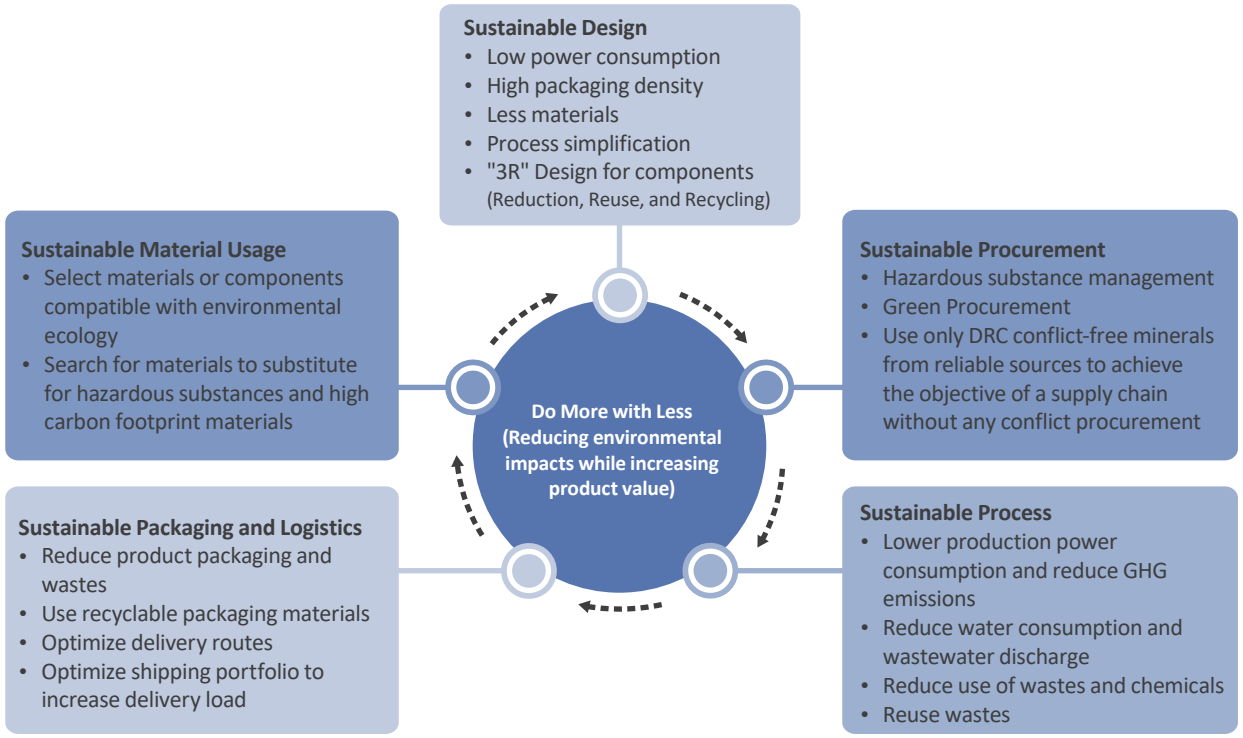
Green Laboratory

Our green laboratory is dedicated to the following:

- Evaluation and development of green materials: Evaluation of non-toxic or low toxic product raw materials and process chemicals.
- Development of environmental testing technology: Establishment of monitoring technology, mechanism and standard, compliant with world environmental regulations.
- Development of Green Process: Improve utilization rate of chemicals or raw materials; evaluate recovery, reduction and reproduction technologies for waste, wastewater and chemicals.
- Development of Environment Friendly Packaging: Develop bio-composite packaging materials.

Sustainable Manufacturing Principles

To manage product life cycles, ASEH has formulated five sustainable manufacturing principles governing its product stages: raw material selection, design, procurement, production, and packaging and logistics. Sustainable manufacturing enable ASEH to produce more with less, increase product value while reducing environmental impact, and provide customers with eco-efficiency products. As each manufacturing stage is closely related to one other in terms of environmental, health and safety impacts, continuous improvement and technological innovation is therefore required at every stage. These improvements and innovations are necessary at every manufacturing stage in order to provide our customers with sustainable products. Hazardous substance management is an integral part of sustainable manufacturing and ASEH has established regulations and standards that follow international guidelines like the IECQ QC 080000, ROHS, REACH, Energy Star, EU Energy-related Products Directive as well as adhere to customers' requirements. These efforts enable ASEH to provide eco-design for green products and offer services that produce environmentally-friendly products.



Sustainable Manufacturing Related Projects

	Project Description	Benefits
Sustainable Use of Materials	Use of boric acid-free developer for positive-type developing processes of wafer bumps	Reduce treated wastewater and lowers boron emissions by at least 1,400 kg annually
Sustainable Design	Designed wireless communication modules for IoT applications. Classified end applications by different customer groups. In 2018, new generation chipsets consumed less power than previous generations'.	Selected the use of components with lower power consumption at the product design stage, which helped reduce carbon emissions by at least 70,000 kWh based on last year's sales volume.
Sustainable Production	After the sludge produced by the wastewater treatment plant of each facility is filtered by the dewatering machine, the combined dewatered sludge are dried together, which reduces the water content further by 50~60%.	Lowered the amount of sludge outsourced to external companies for treatment and disposal by at least 2,076 tons per year
	Analyzed the waste liquid generated in the photoresist stripping and cleaning process during manufacturing. Verify the design of liquid waste distribution and the subsequent recycled waste is processed by waste treatment companies where the cyclopentanone is distilled and recycled.	Reduced the amount of liquid waste to be incinerated/chemically processed by at least 48.7 tons
	Optimized internal wastewater treatment facility to process highly organic liquid waste.	Lowered the amount of sludge outsourced to waste treatment companies for processing by at least 295.16 tons per year
Sustainable Packaging	Change the packaging materials from PE film, which are easily damaged, to reusable PE plastic bags	Reduce packaging materials by at least 800kg annually because PE plastic bags can be reused approximately 30 times

Product Eco-efficiency

ASEH has established the product eco-efficiency assessment model (EE model) to increase product value whilst improving environmental quality. We adopt the ISO 14040 life cycle assessment (LCA) and the ISO14045 eco-efficiency assessment of product systems, and employ SimaPro software tools and the ReCiPE methodology to evaluate the environmental characteristics of the product and the environmental impacts throughout the various stages of the product life cycle. The studies allow us to make appropriate changes to reduce harmful impacts to the environment.

In 2018, the company evaluated the energy conservation and carbon reduction effects of its six major products (sales management systems, network storage systems, smart handheld devices, WiFi modules, motherboards and solid-state drives) to understand if these products when used by end-users, are energy saving and reduce carbon emissions. Through the establishment of the eco-efficiency assessment model, we hope to optimize product value and improve environmental quality.

In 2018, we developed a dual-stage product impact assessment simulation through industry–academia collaboration, establishing assessment models and trials for major environmental impact categories to expand the impact levels onto environmental, financial and social areas. Internally, we reduced our use of raw materials during the various stages of products' life cycles, lowering the impact of our operation on the environment.

In 2018, the company's smart storage server met the ISO 14067 Carbon Footprint of Products Standards. ASEH provides customers with manufacturing-related services to help them develop energy efficient products including wireless communication modules, point-of-sale (POS) machines, ATX multi-rail power supply units, motherboards, smart handheld devices, NAS systems, SSDs, and server systems. Dual-stage product impact assessment simulations were used to analyze product performance at the end-user with the information used by product development to develop energy and carbon saving products that will reduce greenhouse emissions.

Year	Product	Assessment Result	Recommendations for Improvement
2016	• BGA • Communication modules	• BGA (gold wire) had a single damage score of 6.18E-04 (Pt), which was approximately six times that of BGA (copper wire) (1.02E-04 (Pt)). • Power and raw materials purchased outside of the manufacturing processes such as integrated circuits, ceramic substrates, and iron frame exhibited the most impact on the environment.	• Without compromising the functionality of BGA products, the downstream sectors of the semiconductor industry should consider replacing gold wires with copper wires. • he manufacturing process should be oriented towards providing energy saving solutions and using environmentally friendly raw materials.
2017	• Wafer bumping • Sales management systems, network storage systems, smart handheld devices, WiFi modules, motherboards, and solid-state drives	• Wafer-bump product characteristics show that the manufacturing process stage exhibited the most negative impact on the environment (accounting for approx. 60-80%), followed by the raw material stage (accounting for approx. 15% or more); "product categories" (0.1559 Pt/in^2) and "non-electroplated" (0.0326 Pt/in^2) had the most and least effect on the environment, respectively. • The energy conservation and carbon emissions reduction assessment of the product usage stage showed energy savings of 64,841,852 kWh of electricity and carbon emissions reduction of 35,922 tons Co_2e.	• Raise the efficiency of existing manufacturing process and reduce polluting emissions to effectively reduce the damage and impact on the environment; introduce the use of boron-free developers. • Strengthen green and energy-saving design of products; raise energy conversion efficiency and comply with related E.U. and international product energy consumption laws; adjust the quantitative methods for assessing product power-saving efficiency; and refine checks on data integrity.
2018	• Sales management systems, network storage systems, smart handheld devices, WiFi modules, motherboards, and solid-state drives • Smart storage servers	• The energy conservation and carbon emissions reduction assessment of the product usage stage showed energy savings of 38,874,948 kWh and carbon emissions reduction of 21,536 tons. • The dual-stage product impact assessment of the end-user (i.e., consumer) stage showed increases in energy conservation efficiency (+2.24μJ/b), consumer purchase cost (+NT$1,290), and information security cost (+US$17,906), outperforming other similar products.	• Continue to perform dual-stage product impact assessments; incorporate the concepts of product recycling and social return on investment; enhance the sustainable marketing of products; increase brand competitiveness to provide a complete assessment of product sustainability.

External Product Verifications

2016

Completed the ISO 14067 carbon footprint verification and the ISO 14045 eco-efficiency assessment of product systems for testing services, BGA, lead frame, CSP, and flip chip products.

2017

Completed the ISO 14067 carbon footprint and the ISO 14051:2011 material flow cost accounting verifications for wireless communication modules (4G dual-band communication module).

2018

Completed the ISO 14067 carbon footprint verification for smart storage servers.

Energy Conservation and Carbon Emissions Reduction Assessment of The Product Usage Stage

2016

Reduced carbon emissions by at least 62,000 tons CO_2e

2017

Reduced carbon emissions by at least 70,000 tons CO_2e

2018

Reduced carbon emissions by at least 63,000 tons CO_2e

The company has helped customers develop energy efficient products including wireless communication modules, POS machines, ATX multi-rail power supply units, motherboards, smart handheld devices, NAS systems, SSDs, and server systems

4.3 Products and Services

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. Packaging and testing are the core service offerings of ASE. The semiconductors we package are used in a wide range of end-use applications, including communications, computing, 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.

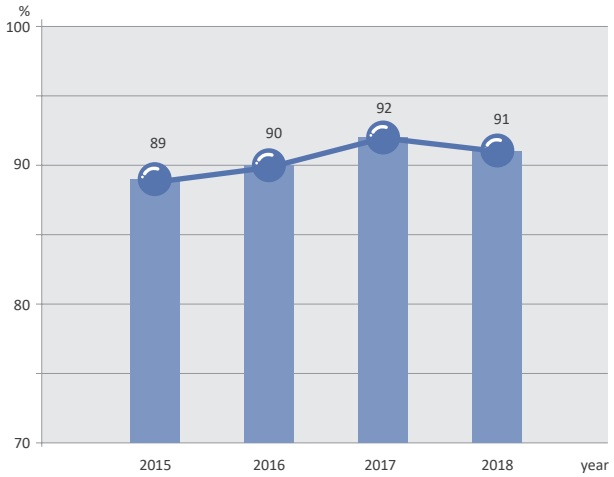
Customer Service

Our key customers typically operate in the semiconductor and electronics industries. Our five largest customers together accounted for approximately 42%, 46.4% and 46.2% of our operating revenues in 2016, 2017 and 2018, respectively. 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.

To ensure that customer suggestions are properly delivered and processed, we have a dedicated team in place for reporting feedback and customer communication. We provide multidimensional communication channels for customers such as technical forums and regular email updates to customers on significant company events, milestones and business highlights. We actively participate in various industry events to allow customers to understand our advanced technology through presentations and forums.

Our "Customer Satisfaction Survey" includes a section to find out customers' rating on our subsidiaries' QCDST (Quality-Cost-Delivery-Service-Technology), as well as their opinions on ASEH and our subsidiaries' corporate sustainability. The survey results are integrated into our TQMM system (Total Quality Micro-Management System) to help management and employees to continuously improve customer satisfaction.

Customer Satisfaction Trend



Customer Proprietary Information Protection

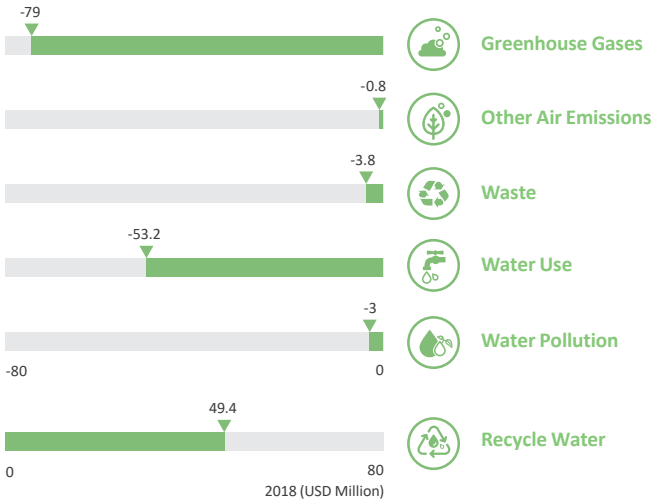
To ensure the confidentiality and integrity of customer proprietary information, our subsidiaries have established the "Information Security Policy" that defines procedures for confidential information. Under this policy, we issued the Information Security Standard that specifies rules for employees to follow in their daily operations.

GREEN 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 a environmental 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 life cycle to provide green and low carbon manufacturing services.

Sustainable Value Assessment - Environmental Aspect



2018 Key Performance

Included in the CDP for Climate Change

Included in the CDP of Supply Chain Engagement

A List Leader Board

100% Greenhouse gas emission verification

Computation of the financial implications from climate risks and opportunities

274 energy saving and carbon reduction projects implemented in 2018

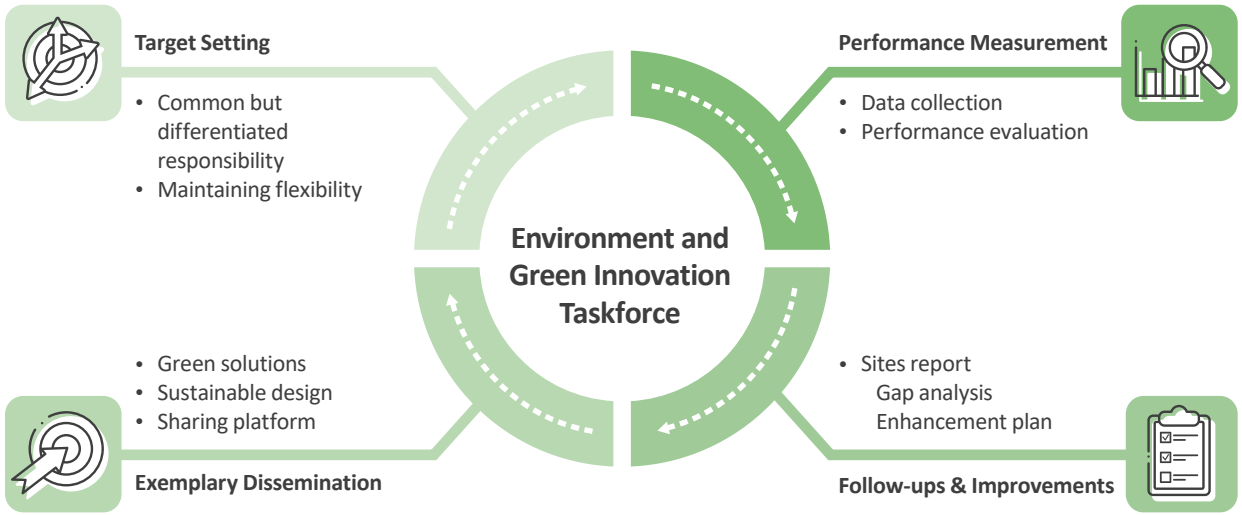
resulting in **13%** electricity savings (483,405 MWh)

106% water reuse & recycling efficiency

Renewable electricity accounts for **12.7%** of total electricity consumption

Total of **25** green building certifications (EEWH*17, LEED*8)

SDGs	Business Action	2018 Material Aspects	KPI	2018 Target	Status	2018 Performance	2019 Target
6	• Develop and implement holistic water strategies that are socially equitable, environmentally sustainable, and economically beneficial within the scope of our operations and supply chain • Protect and/or restore water-based ecosystems around our operations and supply chain	Water Resource Management	Water withdrawal	9% reduction compared to 2015	Not achieved	35% increase compared to 2015	12% reduction compared to 2015
			Process water recycling rate (Process water for reuse/ Process use water)	78%	Not achieved	64%	79%
7	Significantly increase energy efficiency, procure remaining energy needs from renewable sources, and promote the same practices across the supply chain through supplier selection and support	Energy Management	Energy saving ratio from energy saving and carbon reduction projects	2% of 2018 power need	Achieved	13% of 2018 power need	2% of 2019 power need
		Sustainable Manufacturing	Building a methodology for energy saving assessment of our products during usage	Quantification of energy saving and carbon reduction benefits of USI's key products during usage phase	Achieved	Completed quantification of energy saving and carbon reduction benefits of USI's key products during usage	Conduct ISO 14067 verification for substrate
	Develop and implement business models to deliver sustainable energy and energy efficiency technologies to new markets and communities	Energy Management	Renewable electricity ratio	6% of total 2018 electricity consumption	Achieved	12.7% of total electricity consumption	9% of total electricity consumption
12	• Design and adopt a responsible, circular business model • Shift to a portfolio of goods and services that require and promote negligible use of resources and produce negligible waste	Waste and Circular	Waste recycling rate	72.5%	Achieved	74.6%	74%
13	Substantially reduce emissions associated with our and supply chain operations, in alignment with climate science	Climate Change	GHG intensity (GHG emissions/revenue)	3% reduction compared to 2015	Achieved	12% reduction compared to 2015	4% reduction compared to 2015
			GHG verification	100%	Achieved	100%	100%



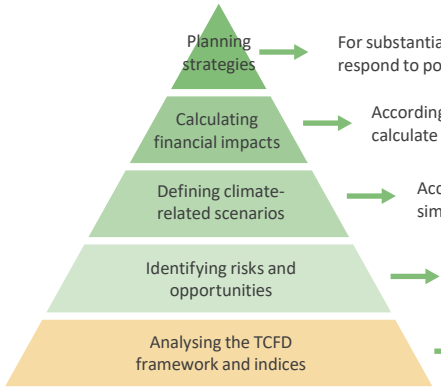
Business models worldwide are transforming along with the changing physical environment. The concerns of stakeholders regarding climate change has exerted growing pressure on enterprises. While climate change has become the biggest market disruptor in coming years, it can also be viewed as a market development opportunity. Climate change will pose challenges to existing products, services, enterprises and the government, but it can also create vast new opportunities, market potential and business alliances. How ASEH interprets and responds to new market realities, will be the key to our continuous growth to become a leading enterprise capable of seizing opportunities and coping with risks and pressure.

2018 was an important year for global action against climate change. The Intergovernmental Panel on Climate Change (IPCC) released a special report emphasizing the urgent need to change global GHG emissions pathway. We adopt the guidelines set out by the United Nations Framework Convention on Climate Change (UNFCCC or FCCC) by encouraging all facilities to submit their own self-initiated goals that are set according to their own operation scale and capabilities. The concept of "common but differentiated responsibilities (CBDR)" helps steer the ASE operations to achieve 2020 Environmental Goals through the support from the Environment and Green Innovation Taskforce. Progress is monitored by tracking information from all facilities, including power consumption, water withdrawal, waste, etc. through dynamic environmental performance billboards and then reported to the CSC. We have also established a Green Solutions Sharing Platform to promote sustainable design in new product development, such as minimizing material usage; developing and selecting materials with low carbon footprints; supervising hazardous substance; achieving higher energy and water resource efficiency use in the manufacturing process; and sharing management-related knowledge and practices in manufacturing, waste products and gas emissions. We encourage our employees to address environmental sustainability issues and jointly improve the company's environmental performance.

5.1 Climate Change and Energy Management

For investors, climate change and energy management bring gigantic financial challenges and opportunities. The risk-reward ratio they face can fluctuate due to climate change, climate policies or new technologies. Companies vulnerable to climate risks have weaker capabilities to transition to a low-carbon economy and correspondingly present lower returns to investors, and vice versa. Investors measure their investment returns by analysing in detail a company's roadmap for transitioning to a low-carbon economy. To boost global investor confidence, ASEH responded to the DJSI and CDP Climate Change Questionnaires, and has scored ratings of A, A- and A in CDP in the past three years.

Climate change remains one of the most urgent risks to be addressed globally and is also a factor that impacts the approach and direction of the market's development. In light of the uncertainties arising from climate change and the transition of the global energy sector to zero-carbon, ASEH is focused on establishing leadership in sustainable solutions for a low-carbon economy that improve management performance through a climate-friendly, resilient and cost effective approach. We continue to monitor the financial implications of the risks and opportunities brought about by climate change, and the actions and results of our climate change management. We have invited specialists to assess feasible paths to achieving scientific carbon reduction targets and establish robust response systems to adapt to, and mitigate climate change, and to outline effective management measures for the future. ASEH is convinced that in addition to challenges, climate change will bring opportunities, and such opportunities can be transformed into a driving force for corporate growth. As such, on top of risk mitigation, prevention and management of climate change, we will identify and assess risks to proactively seek out opportunities to ensure ASEH's growth and profitability in a climate resilient economy.

Measures Taken Against Climate Change	Principal Methodology
1. Establish low-carbon strategies	✓ Integrated carbon management: establish a comprehensive carbon management strategy, policy and system based on energy saving, green energy and energy storage, to reduce carbon emissions. ✓ Green and renewable energy investment: establish our strategies of green and renewable energy investment, reduce environmental external costs, and seize green business opportunities. ✓ Low-carbon products and services: establishing feasible carbon-reduction projects. ✓ Adaptation and resilience: Identify our vulnerabilities to climate change and develop adaptation strategies. ✓ Creating a sustainable culture: Cultivating a "green" corporate culture and becoming a leading low-carbon solution provider.
2. Include low-carbon strategies in the management framework	Manage climate-related risks and opportunities using ASEH's enterprise risk management system and referencing the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD is formed by the Financial Stability Board). In order for ASEH to ensure and advance its interests, the company must effectively control and manage risks such that they fall into acceptable parameters. The company intends to achieve this through the utilization of management systems (where various factors in climate change are considered) to conducting scenario analyses, by which possible outcomes can be simulated.
3. Fulfill corporate social responsibility	 For substantial financial impacts, the results from top-level management reviews are used to devise concrete measures and financial plans to respond to potential risks and business opportunities. According to the parameters defined through scenario analysis, selected data estimation methods are used to measure the scale and calculate the financial impacts of risks and opportunities. According to the identified critical risks and opportunities, each facility will set its climate change scenario analysis methodology to simulate various parameter changes in the future to determine management or financial areas that are likely to be impacted. Climate-related risk and opportunity issues are selected based on global trends and industry characteristics. A standardized method is established to assess the rate and extent of impact, in addition to drawing out a risk and opportunity matrix to identify the sources of risks and opportunities with significant influence on management. The contents of the TCFD framework and indicators are analysed to strengthen response strategies.

Structure of Climate-related Financial Disclosure

Risk Governance	Strategies	Risk Management	Metrics and Objectives
a. Board's oversight of climate change-related risks and opportunities b. Role of management in assessing and managing climate change-related risks and opportunities	a. Identify short-, medium- and long-term climate change-related risks and opportunities b. Determine impact of climate change-related risks and opportunities on organization's operations, strategies and financial planning c. Assess the resilience of organization's strategies under different climate-related scenarios	a. Identify and assess climate change-related risks b. process for managing climate-related risks c. Integrate processes for identifying, assessing, and managing climate-related risks into the organization's overall risk management	a. The metrics used by the organization to assess climate change-related strategies and risk management procedures b. Greenhouse gas emissions and related risks c. The targets used by organization to manage climate change-related risks and opportunities and performance
Organizational Response Management			
The CSC is the highest level of organization for our sustainability management and comprised of top management executives who also serve as members of the board of directors. The CSC consists of five taskforces, the Environment and Green Innovation Taskforce has responsibility for solving the environmental protection and climate change-related issues. (Please refer to 2.1 Organization and Structure for details)	a. According to our management timeline targets, short-term is defined as less than three years, mid-term as three to five years and long-term as more than five years. Short-term risks mainly come from cost of raw material, existing and emerging renewable energy regulations, and the frequency and intensity of extreme weather events. Mid-term risks include the cost of GHG emissions, investment and transition to low-carbon technology and changes in customer behavior and preferences. Stigmatization of sector, low-carbon market economy transition, and incremental change in climate parameters are classified as long-term risks. b. Areas impacting operations include products, services, supply chain, customers, research and development, and adaptation and mitigation measures. Our strategy is impacted by resource limitations and the search for sustainable strategy partners to optimize semiconductor industry value. Major areas impacting our financials include revenue, management cost, capital acquisition, and assets and liabilities. c. Three types of climate scenarios, 2°C, Nationally Determined Contributions (NDCs), and Business as Usual (BAU), are adopted to perform simulation analysis of transformational and physical risks.	a. Various documents and forms that are used to identify climate change risks and opportunities are revised annually. Said forms and documents are regularly distributed to sites worldwide for them to assess their own risks. b. The results of risk and opportunity identification are presented in the CSC meeting for relevant committee members and task forces to work out respond measures. c. Climate change and various operational risks are consolidated in the ERM system to be identified, evaluated, and managed regularly according to standard operating procedures.	a. Greenhouse gas emissions, energy resources used, and waste produced per unit of revenue generated were used as indicators for the company to measure the risks and impact of its operations; the feasibility of using internal carbon pricing to lower said risks was evaluated. b. The fees and taxes on fossil fuels imposed by relevant laws constitute the risk posed from direct energy emissions. The risk of indirect energy emissions is calculated by assessing the increasing rate of renewable electricity use, which increases operating costs. The risk of indirect energy emissions posed by upstream and downstream is resulting from the limited influence and improvement in carbon reduction performance, hindering major reductions in carbon footprint. c. Greenhouse gas, energy resource, water resource, and waste reduction targets were developed; more efficient products to lower carbon emissions have been designed

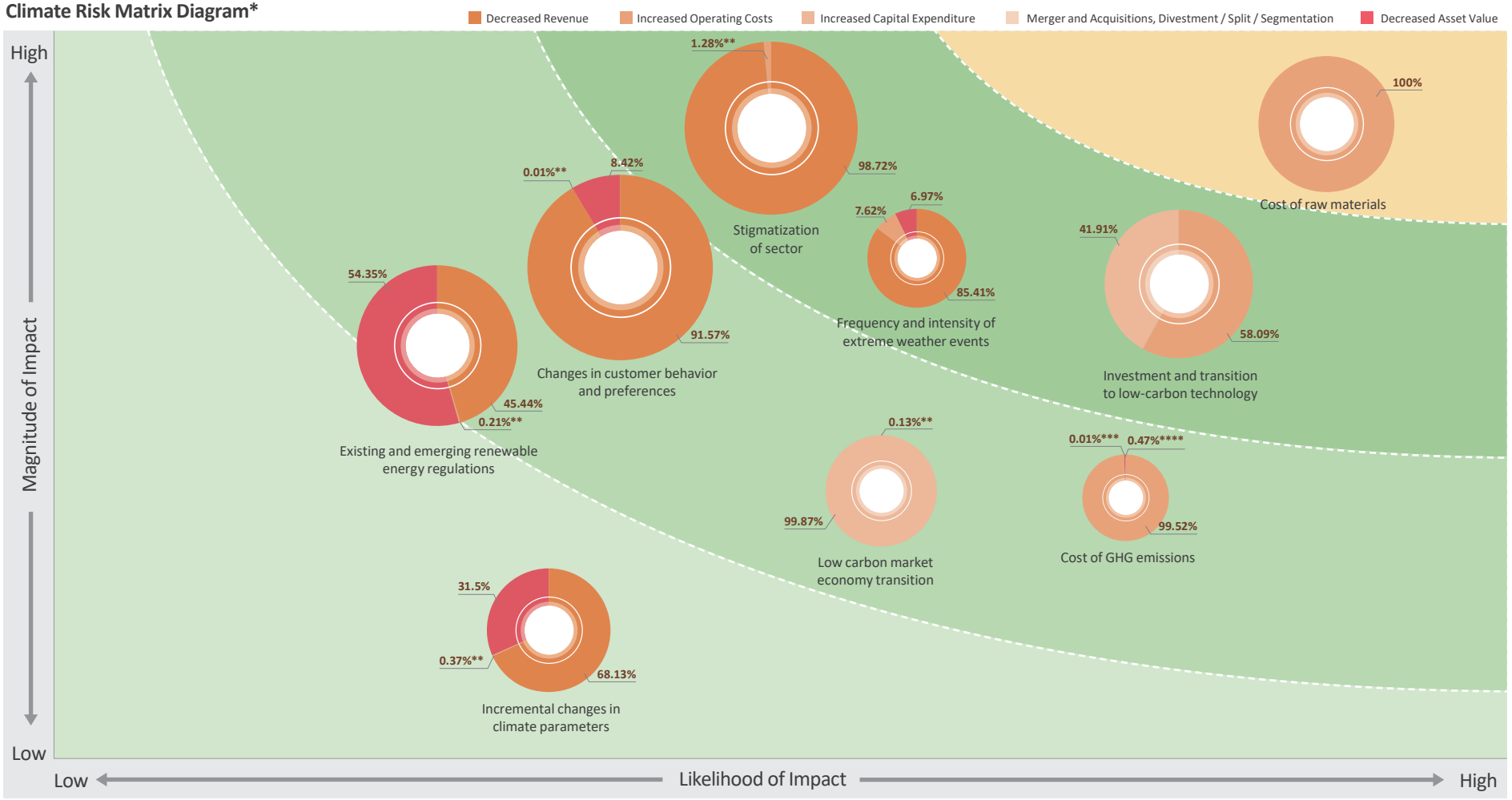
In the Paris Climate Change Conference held in December of 2015, climate finance in particular received significant attention. In 2014, ASEH issued first green bonds and used the funds for the construction of green buildings and the development of green manufacturing processes. We are actively striving to issue the second green bonds in the near future and will continue to evaluate and plan for more green financing projects. To meet management needs and achieve the low carbon transformation target, we have taken 3 major steps: (1) to establish low carbon strategies, (2) to include them in the management framework and (3) to fulfill corporate social responsibility.

These steps will help shape ASEH as a leader in climate change responses and enable us to share our low-carbon solutions to the world.

ASEH understands that a precise climate-related financial disclosure needs to be implemented via rigorous procedures and methods. The implementation may involve many company units and touch on certain core management information. The support of management and coordination of mid-level executives are therefore necessary, along with collaboration between departments and the application of professional know-how, in order to achieve the company's final goal in financial disclosure. To disclose meaningful information on climate-related risks, ASEH incorporated climate change assessment, monitoring and management into its day-to-day operations and further refined its policies, procedures and implementation.

Through our three steps of low-carbon transformation, we have identified 9 major risks and 11 relevant opportunities that have significant impact on finance.

Climate Risk Matrix Diagram*



* The size of the circle represents the scale of the financial impact
** Increased Operating Cost
*** Merger and Acquisitions, Divestment/Split/Segmentation
**** Decreased Asset Value

ASEH's Climate-related Risks and Opportunities

Type	Climate Change-Related Risks	Potential Financial Impact	Type	Climate Change-Related Risks	Potential Financial Impact
Transitional	Cost of raw materials	Operating costs ▲	Resource Efficiency	More efficient buildings	Operating costs ▼ Asset Value ▲
	Cost of GHG emissions	Operating costs ▲ Asset Value ▼		Reduced water usage and consumption	Operating costs ▼
	Existing and emerging renewable energy regulations	Operating costs ▲ Asset Value ▼	Energy Sources	Participating in carbon market Use of new technology Shift to decentralized energy generation	Operating costs ▼ Revenue ▲
	Investment and transition to low carbon technology	Revenue ▼			
	Stigmatization of sector	Revenue ▼ Operating costs ▲ Asset Value ▼	Products/ Services	Development or expansion of low carbon products and services R&D and innovation	Revenue ▲ Asset Value ▲
	Changes in customer behavior and preferences	Revenue ▼ Operating costs ▲	Markets	New market partnerships Acquisition of public sector incentives	Operating costs ▼ Capex ▼
	Low carbon market economy transition	Operating costs ▲ Capex ▲	Climate Resiliency	Participating in renewable energy programs and energy efficiency measures Resource substitution and diversification	Operating costs ▼ Capex ▼ Asset Value ▲
Physical	Frequency and intensity of extreme weather events	Revenue ▼ Operating costs ▲ Asset Value ▼ Liability ▲			
	Incremental changes in climate parameters	Revenue ▼ Operating costs ▲			

Response Measures

- Improve energy efficiency, promote energy saving and water recycling and reuse programs [1]
- Use green facilities to construct new factories[2], establish potential flood analyses and emergency response measures
- Set up a supplier sustainability management process, conduct risk assessments, green procurement and product reuse[3]
- A smart grid was established to meet internal energy needs and prevent power rationing from causing production losses at our facilities.
- Conduct a trial project to evaluate SBT (science-based targets) carbon reduction paths and internal carbon pricing
- Continue to monitor, identify and communicate regulatory changes and trends
- Offer policy recommendations and align with the government through industry unions and associations
- Strengthen sustainable manufacturing and provide low carbon product solutions
- Establish a positive image through international third party sustainable development certification
- Conduct climate scenarios analyses; simulate the extent of the impact major risks had on finance; and formulate early warning policies

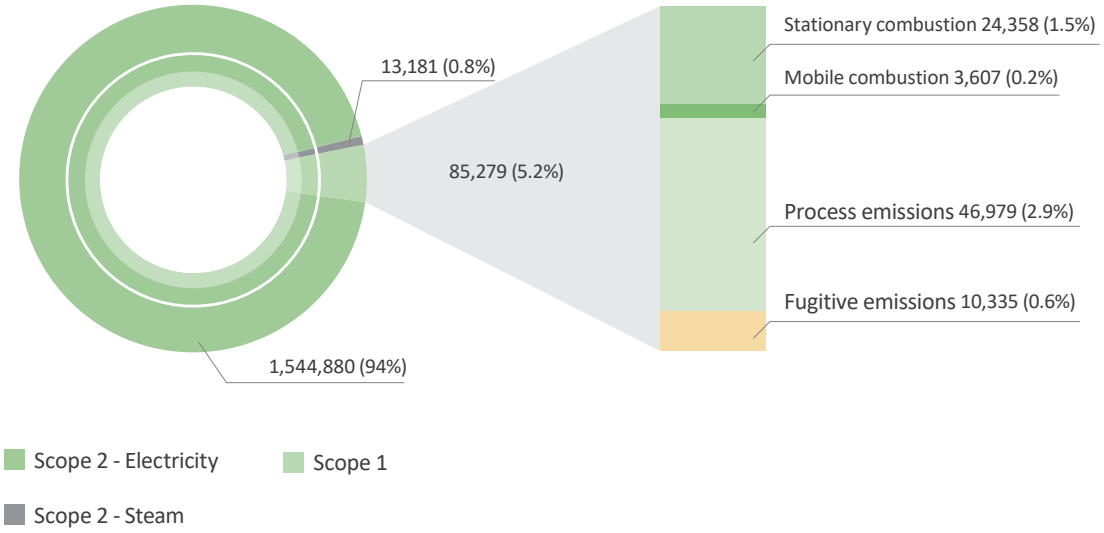
[1] Management costs, please refer to Environmental Expenditures and Investments > Operating Costs.
[2] Management costs, please refer to Environmental Expenditures and Investments > Operating Costs > Resource Circulation Costs.
[3] Management costs, please refer to Environmental Expenditures and Investments > Upstream/Downstream Costs.

Greenhouse Gas Emissions

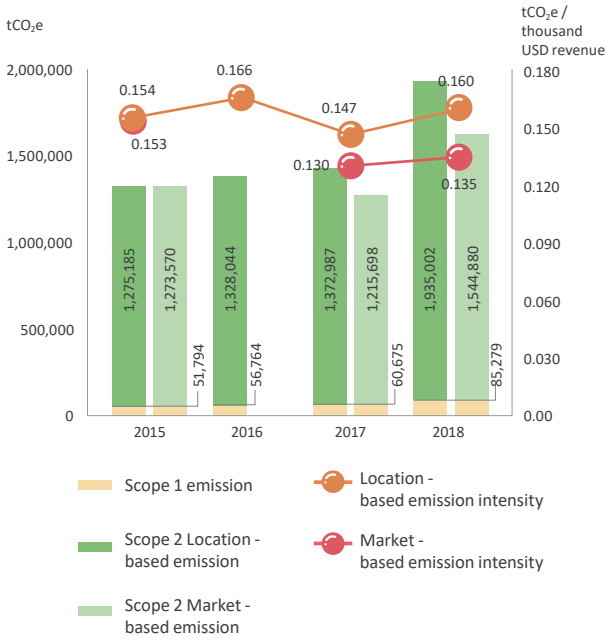
In response to the issue of global climate change, increasingly rigorous total emission controls and carbon exchange regulations, we continue to require that all facilities pass the ISO 14064-1 GHG emission verification to monitor emissions as well as establish energy-saving targets, develop renewable energy and implement I-RECs projects to reduce GHG emissions. We make active efforts to consolidate external resources to develop various innovative measures for energy saving and carbon reduction to move closer to the global carbon reduction target.

This year, our GHG emissions (Scope 1 and 2) from ASEH's manufacturing facilities[1] total 1,630,159 tCO_2e[2,3]. For Scope 1 emissions, most (i.e., 55%) were created during the manufacturing processes. By contrast, for Scope 2, most (i.e., 99%) were created by electricity use. Compared with 2017, total emissions and emission intensity increased by 28% and 3.4% (0.135 tCO_2e/thousand USD revenue), respectively. The increase in total emissions was due to SPIL being included in ASEH's operation since May 2018. With the increase in emission intensity accounting for approximately 12% of total emissions, the company has made significant improvement in renewable energy use, overall energy efficiency, and revenue growth.

2018 Scope1 & 2 Emission Category and Ratio (Unit: tCO_2e / %)



Greenhouse Gas Emission and Intensity



[1] The consolidation approach is followed by operational control, and this includes all packaging, testing, materials (ATM), and electronic manufacturing service (EMS) facilities.
[2] Our inventory of greenhouse gases include: CO_2, CH_4, N_2O, HFC, PFCs, NF_3, SF_6.
[3] The electricity usage emissions were calculated by the emission factor from sites' local utilities. Global warming potential (GWP) values refer to IPCC Fifth Assessment Report, AR5.

In addition to conducting internal greenhouse gas inventories annually and continuously reducing emissions, ASEH also implements a series of emission source identifications for Scope 3 value chain emissions. The Kaohsiung, Chungli, USI Taiwan and SPIL facilities have implemented third party verification of Scope 3 emissions using quantitative assessments. Information is used to identify the most feasible carbon emissions reduction hotspots. We also encourage our value chain partners to work with ASEH and subsidiaries to jointly reduce greenhouse gas emissions.

Scope 3 Emissions		
Emission sources	**Reference for emission factor**	**Emissions(tCO_2e)**
Fuel-and energy-related activities	EPA Product Carbon Footprint Database	113,639
Purchased goods and services	EPA Product Carbon Footprint Database	315,814
Upstream transportation and distribution	EPA Product Carbon Footprint Database	392,128
Waste generated in operations	EPA Product Carbon Footprint Database	7,086
Employee commuting	EPA Product Carbon Footprint Database and research data	9,433
Business travel	Distance×emission factor	559
Downstream transportation and distribution	Product weight(kg) x ∑(Emission factor based on transport mode($kgCO_2e$/tkm) x Distance(km))	19,044

Carbon Footprint Verification

We established a GHG inventory database and the ISO 14040 Life Cycle Assessment (LCA) system to collect the environmental impact data from four of our major assembly products- Leadframe package, Ball Grid Array (BGA) package, WLP, and flip chip package and substrates. From 2016~2017, we received ISO 14067 verification for our package series products (as shown in table below). In 2018, carbon footprint inventories were taken on the 4G dual-band communications modules and XnBay smart servers manufactured at USI's Zhangjiang facility and Shenzhen facility, respectively. Carbon footprint management is divided into two stages (i.e., raw materials and manufacturing) and carbon emission reduction hotspot inspections are conducted at both stages. As an OEM business, we use raw materials requested by customers. Thus, the extent to which we can reduce carbon emissions during the raw materials stage is limited. As for the manufacturing stage, ASE Kaohsiung continued to review its electricity consumption and promote energy-saving projects. In the short term, we are focusing on evaluating basic data and establishing raw material carbon emission coefficients while researching and developing low-carbon materials for the long term.

1. BGA package_ Gold wire	2. BGA package_ Copper wire
3. Flip Chip package_ Gold wire	4. Flip Chip package_ Copper wire
5. Flip Chip package_ Silver wire	6. Leadframe package_ Gold wire
7. Leadframe package_ Copper wire	8. Chip Scale Package(CSP)
9. Bumping	10. Substrate
11. 4G dual-band communications module	12. XnBay smart server

Energy Management and Conservation

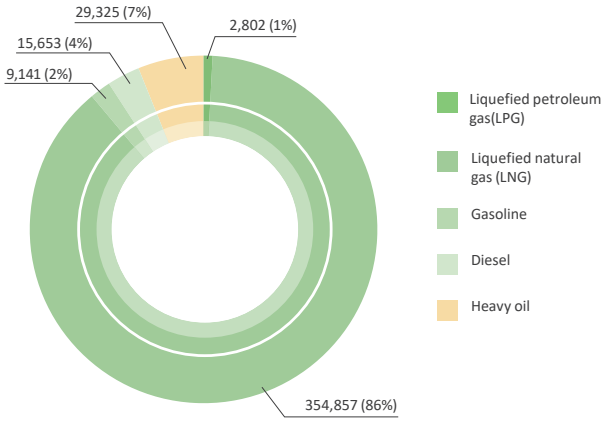
Most operating locations of ASEH subsidiaries receive their energy from public electric grids while a few locations use self-generated power using natural gas, petroleum or diesel. We have already implemented the ISO 50001 international standard at 13 of all 25 facilities (i.e. 52%) to better manage energy use and improve energy efficiency. These facilities include ASE Kaohsiung, Chungli, USI Zhangjiang, Kunshan, Shenzhen, Jinqiao, Mexico, Taiwan, SPIL Dafong, Chungshan, Hsinchu, Changhua, and Zhongke facilities.

Non-renewable Fossil Fuels

When sorted by heating value (Giga Joules, GJ), the major fuel consumption in 2018 is listed in the following order: liquefied natural gas (LNG), heavy oil, diesel, gasoline and liquefied petroleum gas(LPG), totaled 411,778 GJ[1]. According to the 2015–2017 major fuel usage shown in the environmental data section of the appendix, fuels were mainly used in electric generators, forklifts, company vehicles, and boilers. Fuel consumption data from 2015 to 2018 showed that the most used fuel was natural gas; averaging approximately 80% over the four years. It was the only fuel that continued to show increased usage (it increased by 22% during the four years). By contrast, other fuel types showed decreasing trends annually, where they decreased by 49% over the four years.

[1] Fuel heating value is referred from the "heating value of energy products" table. Our total internal energy consumption = non-renewable fuel consumption + renewable fuel (electricity) consumption + purchased and used electricity, heating, cooling and steam = 11,798,351 GJ.

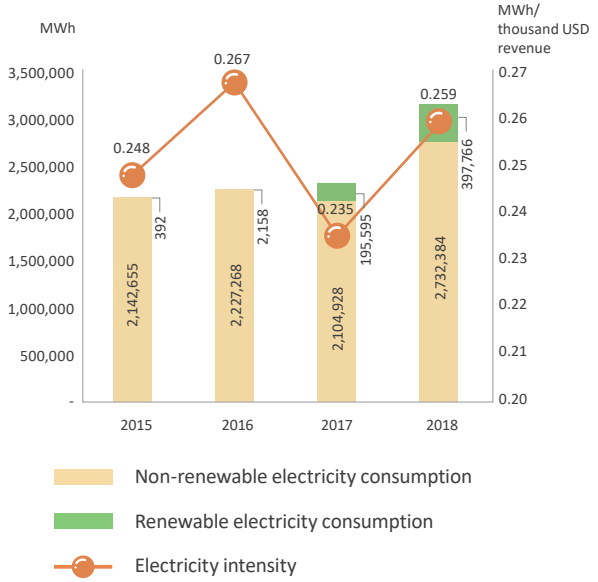
2018 Non-Renewable Fossil Fuel Consumption and Ratio (Unit:GJ)



Electricity Consumption

ASEH's electricity consumption is 3,130,150 MWh in 2018, an 36% increase of 829,627 MWh compared with 2017. The increase was mainly due to the inclusion of SPIL and the organic growth of ASE and USI. In terms of the source of electricity use, 12.7% of the total use in 2018 is green power (including renewable energy/ certificates), compared with 8.5% in 2017; the ratio increased by 4.2%, and the total increased by 202,171 MWh. The main indicator of energy management is electricity consumption intensity (MWh/thousand USD revenue[1]). In 2018, the intensity is 0.259 MWh/ thousand USD revenue. Compared with 2017, the overall electricity consumption intensity increased by 10% in 2018 and when compared with the 36% increase in total electricity consumption, the results demonstrated the continued efforts made by ASEH to review energy-saving hotspots, optimize production management and scheduling, and create positive performance in product and service output.

Electricity Consumption and Intensity



Investing in Green Energy

The most meaningful approach in GHG management is to migrate to non-carbon based sources of energy. Our power needs are considerable, and we see green power and clean energy as viable alternatives to migrate away from carbon sources and reduce our overall GHG emissions. In 2018, the renewable power usage of ASEH was 397,766 MWh, reaching 12.7% of our total power consumption, specifically two ASE and four USI facilities are operating fully on renewable power. Moreover, in 2018 the SPIL Zhongke Facility started to set up a solar power system with a device capacity of 1,395.35 kW. It will be inaugurated in April of 2019 and 1,400 MWh of annual power generation output is expected. The facility's carbon emissions are expected to be reduced by 985 tCO_2e each year.

Country	Facility	Development Method	2018 Renewable Energy Consumption(MWh)	Ratio to The Facility's Electricity Consumption(%)
Taiwan	ASE Kaohsiung [2]	Solar power installation	29	<1%
	USI Taiwan	I-RECs purchase	1,718	10%
USA	ISE Labs	Solar power installation	307	4%
China	ASE Kunshan	Solar power purchase	2,103	4%
	ASE Wuxi	Solar power installation	0.6	<1%
	ASE Weihai	I-RECs purchase	50,640	100%
	ASE Suzhou	I-RECs purchase	72,311	100%
	USI Zhangjiang	I-RECs purchase	57,093	100%
	USI Jinqiao	I-RECs purchase	51,183	100%
	USI Shenzhen	I-RECs purchase	33,776	100%
	USI Kunshan	I-RECs purchase	23,605	100%
	SPIL Suzhou	I-RECs purchase	105,000	94%

[1] This data includes all packaging, testing, materials (ATM), and electronic manufacturing services (EMS) facilities, excluding real estate.
[2] K26's solar power generation has accumulated Taiwan Renewable Energy Certificates(T-RECs) since August 2017; for cumulative amount, see the National Renewable Energy Certification Center (https://www.trec.org.tw/)

Overall Energy Conservation and Carbon Reduction Results

Although our overall electricity usage rose in 2018 due to production increase, our energy conservation efforts have had a positive impact on our total electricity consumption and Scope 2 emissions. We implemented 274 energy conservation projects. Through ISO 50001, difference of electric meter before and after projects and evaluation of equipment efficiency, resulting in estimated electricity savings of 483,405 MWh (equivalent to 13% of the year's electricity demand), which equates to an emissions reduction of 354,913 tCO_2e[1]. This amount to the estimated emissions from the annual electricity consumption of 137,900 Taiwanese households[2]. In 2018, we set facility energy efficiency standards that will serve as the criteria for considering equipment replacement.

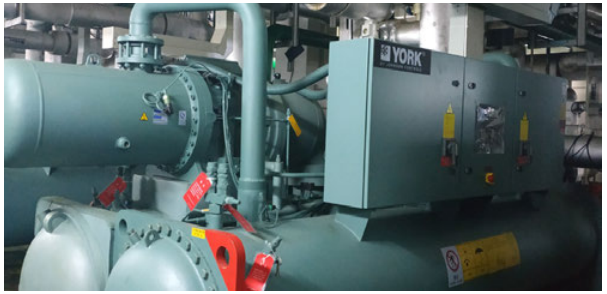
Major Energy Saving and Carbon Reduction Projects

Type	Major Projects	Annual Energy Saving (MWh)	Annual Energy Saving (GJ)	Annual Carbon Reduction (tCO_2e)
Process	• DI water recycling in sawing machine • Vacuum pump adjustment • Smart meter installation • Computer replacement • Machine optimization	70,997	255,590	39,906
Building Services	• Lighting enhancement • Chilled water system optimization • Variable Frequency Drive (VFD) installation to air conditioning • Heat recovery • Rationalization of ventilation	14,642	52,711	8,608
Low Carbon Energy	• Solar power installation and purchase • Renewable energy certificate purchase	397,766	1,431,956	306,399
Total		483,405	1,740,257	354,913

[1] The CO_2 equivalent is calculated based on each facility's local electricity emission factor.
[2] The calculation is based on the household electricity consumption, 292kWh, per month estimated by Taipower Company in 2018.


[ASE Kaohsiung] Washing machine optimization


[ASE Chungli] Adjustment of air compressor



[USI Shenzhen] Chilled water system optimization


[SPIL Zhongke] High efficiency vacuum machine

ASEH Promotes the Building of Smart Grid

What is a smart grid ?

A smart grid is a modern power transmission network using information and communications technologies to detect the conditions on both the supply end and the demand end. Adjustment of power generation, transmission, and distribution is then conducted based on the data collected. Power consumption of homes and businesses can also be adjusted to save energy, reduce energy loss, and increase the reliability of power grid.

Purposes

Currently, rolling blackouts or under-frequency load shedding relays are adopted to cope with insufficient power supply. However, as smart grid technologies have improved, ASEH hopes to take more active measures to promote the installation of a smart grid to prevent production loss from power rationing. This not only provides opportunities to greatly reduce the company's energy expenditure, but also reduces power demand during peak hours and enhances power supply resilience and power system flexibility. The main purpose is therefore not to reduce power bills but to lower risks.

Approaches

ASEH and the ASE Cultural & Educational Foundation commissioned Chung-hua Institution for Economic Research and Taiwan Institute of Economic Research to run a two-year project (2018-2019) to study and devise ways to accelerate the establishment of a smart grid for the semiconductor industry. This was done by analyzing the application of smart grids in manufacturing industries around the world, as well as the benefits and related issues, to offer suggestions for ASEH to install a smart grid. It also puts forth a proposal to the government in support of implementing policies that encourage and help manufacturing industries develop smart grids. The two think tanks are expected to come up with measures to urge hi-tech businesses to participate in smart grid design, demonstration and verification. They will also present a plan for setting up a power demand verification & response system and a feedback mechanism. ASEH hopes to adopt smarter approaches to confront power shortage risks in the future and create a win-win for the industry and power companies.

Investment

The initial estimate made according to the study's results shows the capital needed to install a regional grid, an energy management system, and energy storage facilities & devices will exceed NT$100 million.

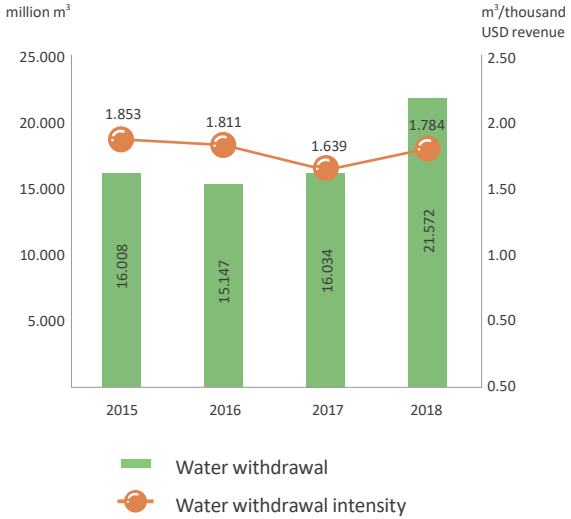
Expected results

In addition to reducing energy costs for ASEH, these measures can also lower the peak electricity demand in Taiwan. In doing so, we not only fulfill our corporate social responsibility but also move closer to the goal of sustainable development. Moreover, it is hoped the practice can set an example and encourage more enterprises to follow suit.

5.2 Water Resource Management

Our water management program is based on three approaches: reduce, reuse & recycle. Municipal water is the main source of water used for our business operation[1]. The record provided by our facility water meters and water bills showed our overall water intake in 2018 was 21,571,571 metric tons[2].Because of the merger with SPIL in May 2018 and significant increases in annual production capacity, ASEH's water usage increased by approximately 35%. ASEH's water use intensity (metric ton/thousand USD revenue[2]) in 2018 was 1.784, which was an increase of 8.9% compared with that of 2017 (1.639). Similar to greenhouse gas emissions and energy use intensity, the increase in water use intensity was substantially lower than the increase in total consumption, indicating that the company was using water resources more economically. In the future, we pledge to continue recycling water in all our facilities to reduce both water use intensity and overall amount used.

Water Withdrawal and Intensity

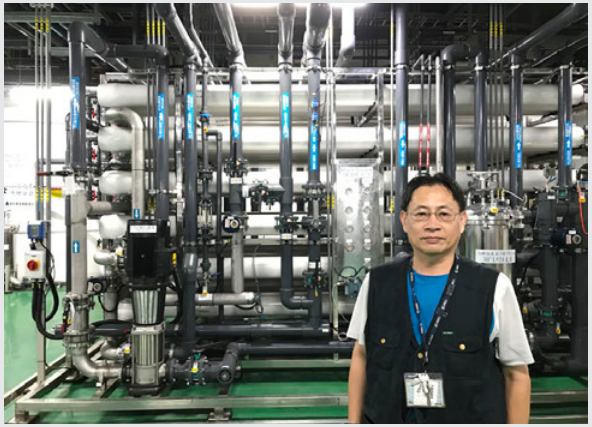


In 2018, ASEH reclaimed a total of 22,934,123 metric tons[3] of water (equivalent to 106% of the year's water withdrawal). Our primary water recycling methods are ultra-filtration systems, chemical mechanical polishing (CMP) wastewater recycling, and reverse osmosis (RO) water recycling. We also harvest rainwater for scrubbing towers and cooling towers.

The Cycle of Trickling Water

Due to its growing production volume, the ASE Chungli Facility has also experienced an increase in water usage. To mitigate the impact of this increased manufacturing capacity on local water resources, the facility currently recycles stage-one wastewater to Building A and B for further use in manufacturing processes. In addition, wastewater recycling facilities for stage-two effluent wastewater discharged from the new Building L are also under construction. Phase one of construction was completed in the first quarter of 2019, increasing the volume of reclaimed water from 4,500 to 5,400 tons and increasing the total water recycling capacity by 27,900 tons. These water reclamation measures reduced the volume of discharged wastewater and created millions of dollars worth of economic benefit through water conservation. In the event of a drought, these facilities can not only help the company cope with water rationing, but also mitigate water shortages faced by local communities.

The management and staff at the ASE Chungli facility have long paid great attention to the preservation of water resources and remain conscientious in the management of day-to-day water usage. Despite its growth in production volume, ASE Chungli facility has lowered its water consumption and actively implemented the reclamation of effluent wastewater and wastewater discharged from its manufacturing processes. These measures have maximized the wastewater reclamation from its manufacturing processes and helped the company to uphold its duty as a corporate citizen and its obligations to corporate social responsibility, furthering its development and application on the issues and practices of water conservation.



Hong Zheng-guang, Senior Engineer/Facility Affairs Office, ASE Chungli Facility

[1] The water source for all facilities is municipal water, with the exception of the USI Taiwan, ASE Chungli, SPIL Dafong, Chungshan, Changhua facilities, which use 3,590,021 metric tons of groundwater, and the ASE Kaohsiung and Kunshan facilities, which harvest and reuse 63,202 metric tons of rainwater. 26,011 tons of recycled water obtained from the water recycling facility in Nanzih Export Processing Zone for ASE's Kaohsiung Facility.
[2] This data includes all packaging, testing, materials (ATM), and electronic manufacturing services (EMS) facilities, excluding real estate.
[3] The volume of recovered water was estimated using our facilities' water meter records and assessing water recovery equipment efficiency.

Wastewater Management

ASEH invests funds every year to gradually upgrade and replace wastewater treatment facilities. To improve effluent disposal efficiency and enhance rate of utilization of our water resources, over 20 types of pipelines have been installed. Wastewater that cannot be recycled is disposed of through the appropriate sewage disposal facilities. In 2018, we discharged 17,303,186[1] metric tons of wastewater, 85% goes to land while 15% discharges to ocean[2]. The effluent water quality conforms to current regulations and is regularly tested to ensure that it has no significant environmental impact on the surrounding water bodies. Substantial investments have been made to replace and upgrade wastewater treatment related facilities gradually. We have voluntarily raised the water quality requirement standards for effluent treated by reclaimed recycling process, so our standards are stricter than the laws and regulations (as shown in Appendix, Environmental Data, B. Effluent quality of our facilities with on-site wastewater treatment). Externally, we conduct offsite sampling and analysis of our effluent quality every quarter. Internally, our corporate chemical lab was accredited by Taiwan Accreditation Foundation (TAF). It is now able to conduct in-house measurement of our wastewater to ensure that the water quality from our operations and effluent is in compliance with regulated standards.

In 2018, we invested RMB 1.77 million (around US$270,000) to install the same system at the Zhangjiang facility. Wastewater is recycled and filtered with ultrafiltration membranes and runs through UV sterilization equipment before it enters a reverse osmosis system and subsequently stored in cooling towers to be used in manufacturing processes. The system effectively reduces tap water consumption at Zhangjiang facility by 41%.

[1] Three electronic manufacturing services facilities (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.
[2] Discharging to land means the wastewater goes to rivers, lakes, sewerage and underground.

Reducing Waste to Zero

USI continues to comply with the government's policies in waste reduction and maximizing resource utilization and has initiated ecological construction to establish an eco-friendly environment. In just seven months, construction for the phase two of the zero discharge facility was completed. We also developed the type of microbe most effective in the treatment of wastewater generated in the cleaning process during manufacturing. Our efforts in the phase two of the zero industrial wastewater discharge project have increased the volume of reclaimed wastewater and reduced the consumption of tap water. The overall wastewater reclamation rate has been maintained at 100%.

USI shall continue to meet its obligations with regards to corporate social responsibility through the continuous pursuit of eco-friendly optimization solutions and efforts to mitigate environmental pollution. I would like to thank the hardworking staff in the Facility Affairs Office and the senior management for their support of our endeavors towards environmental conservation.

Chen Guo-tian, Engineer/Facility Affairs Office, USI Jinqiao Facility

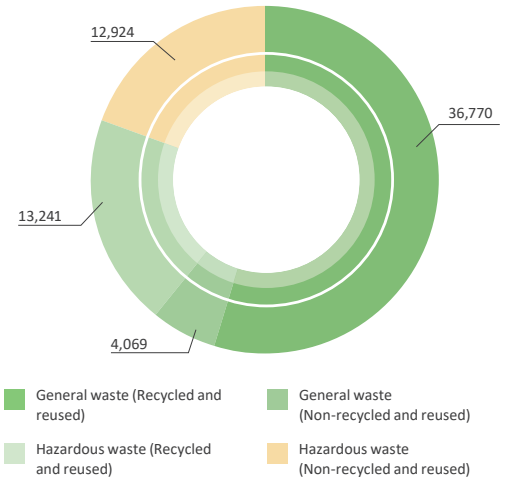
5.3 Waste Management

With regards to pollution control, besides adopting the ISO 14001 environmental management system to decrease the emission of pollutants and alleviate the impact on the environment, we also apply the concept of circular economy and recycling systems to improve the effectiveness of environmental protections. By doing so, we hope to encourage our industry, and even other industries, to work together and improve the recycling of resources.

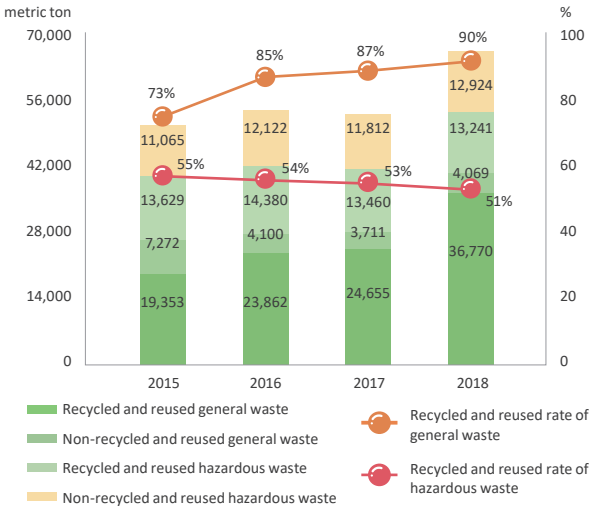
In 2018, we generated 67,004 metric tons of waste, including 40,839 metric tons of general waste (61%) and 26,165 metric tons of hazardous waste (39%). By adopting the circular economy model, our recycling rate of general waste is 90% while hazardous waste is 51%. We recycled a total of 50,011 metric tons of general and hazardous waste with an improvement in recycling rate from 71% in 2017 to 74.6% in 2018. The results indicate the effectiveness of the circular economy model. As the company continues to expand, we shall continue the effort to optimize waste resource recycling via collaboration with the industry and academic sector.

2018 Waste Generation and Treatment Amount[1]

(Unit:metric tons)



Waste Management and Recycling Rate



ASEH practices source reduction and uses eco-friendly materials to minimize the generation of waste and reduce environmental pollution. At the same time, we also seek external resources and adopt the circular economy model to recycle waste. In 2018, we collaborated with other industries to optimize the use of waste resources and also cooperated with the academic sector to continue to improve waste management and reduce the emission of pollutants.

We implement waste reduction projects to treat organic wastewater, recycle and reuse plastic materials, and recycle waste cyclopentanone solutions in our facilities. As a result, we were able to reduce waste management expenses by US$1.14 million in total.

[1] The waste weight data is calculated by summing up the weight of each trip to remove the waste.

Sludge Volume Reduction via Heat Treatment and Management of Waste Disposal Services

We have optimized wastewater treatment techniques & conditions and also reduced sludge output from wastewater treatment plants through industry-academia cooperation. Sludge, previously disposed through outsourced contractors, is now heat-treated in our plants to remove water. The moisture content of sludge is further reduced from 75% to 45%. The process successfully decreases sludge output and reduces the volume to be disposed of by 2,076 metric tons per year.

Project to Recycle & Reuse Plastic Wastes

Plastic wastes such as the trimmed edges of the epoxy molding compound produced in the molding process is fragmented and mixed into industrial raw materials for further reuse, such as in concrete additives and brick making, contributing to reduction of approximately 750 metric tons plastic waste per year.

Moving Towards a Circular Economy

Reuse of resources remains thought provoking as the earth's resources are limited and continue to face depletion through intense environmental ecology and climate change. ASEH takes into consideration relevant technologies and the economic benefits that would help us transition our business into the circular economy. We actively promote and partake in activities to achieve a circular economy through 5 main pillars: direct recycling, reuse, off-site regeneration, renewable materials, supply and rental.

Using ASEH as the core, we connect the industry's suppliers and partners to create a semiconductor circular economy value, through redesign, circular value-add, recycling and recovery, sharing economy, circular agriculture and industrial symbiosis. We collaborate not only within our industry, but also cross-industry to study life cycle resource use, and look for ways to reduce, recycle and reuse, and maximize resource utilization efficiency.

Circular Economy Promotion Blueprint

Circular Economy Forum of Taiwan Sustainable Supply

Drastic changes in global environment have led to a growth in environmental awareness. In an effort to increase our suppliers' environmental awareness and to leverage on the global trend towards a circular economy, we cooperated with Taiwan Alliance for Sustainable Supply (TASS) to organize the "TASS Sustainability Forum". The event aimed to break the traditional "linear economy" production model through the collective efforts of government, industry, academia, as well as the global supply chain, to bring hope and a brand-new direction for a "zero waste" future. We have been cooperating with our supply chain to expand the influence of sustainability. We have even integrated the Sustainable Development Goals (SDGs) into our structure for the development of a sustainable, long-term strategy and formulated four strategic pillars: low carbon, circular, inclusive, and collaborative. Moreover, suppliers' SDGs performances are listed as one of the evaluation criteria of the ASE Supplier Sustainability Awards 2018. ASEH's mission on sustainability development continues to be focused on becoming a driving force behind the establishment of green SAT (semiconductor assembly and test) supply chains.

5.4 Green Facility

ASEH's global production facilities have been 100% ISO 14001, ISO 14064-1 and IECQ HSPM QC 080000 certified. There are 13 facilities that have obtained ISO 50001 certification, equalling a ratio of 52%. ASE's Kaohsiung facility has also implemented ISO 14067, ISO 14064-1 and ISO 14045 standards to better manage the product life cycle's carbon emissions, water consumption and eco-efficiency.

Environmental Management System and Certification

ISO 14001 Environmental Management System	IECQ HSPM QC 080000 Hazardous Substance Process Management	ISO 14064-1 Greenhouse Gas Emission
Coverage: 100%	Coverage: 100% except for ISE Labs*	Coverage: 100%
ISO 50001 Energy Management System	**ISO 14067 Carbon footprint**	**ISO 14046 Water footprint**
Coverage: ASE Kaohsiung, Chungli; USI Taiwan, Zhangjiang, Jinqiao, Shenzhen, Kunshan, Mexico; SPIL Dafong, Chungshan, Hsinchu, Changhua and Zhongke	Product & service type: Leadframe, BGA, Chip Scale Package(CSP), Flip Chip, Bumping, Substrate, Coverage: ASE Kaohsiung 4G dual-band communications module, Coverage：USI Zhangjiang XnBay smart server, Coverage：USI Shenzhen	Coverage: ASE Kaohsiung
ISO 14045 Product Eco-Efficiency	* ISE Labs is IC testing facility that does not need to require IECQ HSPM QC080000 certification.	
Coverage: ASE Kaohsiung		

Gas Emissions Control

We use various methods to treat gas emissions and control their concentration, including wet scrubbers, activated carbon adsorption, condenser systems, chemical washing, biological washing, UV photolysis, zeolite concentration rotor and burning. In 2018, ASE generated 185 metric tons of VOCs[1], 7.7 metric tons of SOx[2], 24.7 metric tons of NOx[3], 9.2 metric tons of particulate matter(PM)[4] and zero metric tons of ozone depleting substances[5].

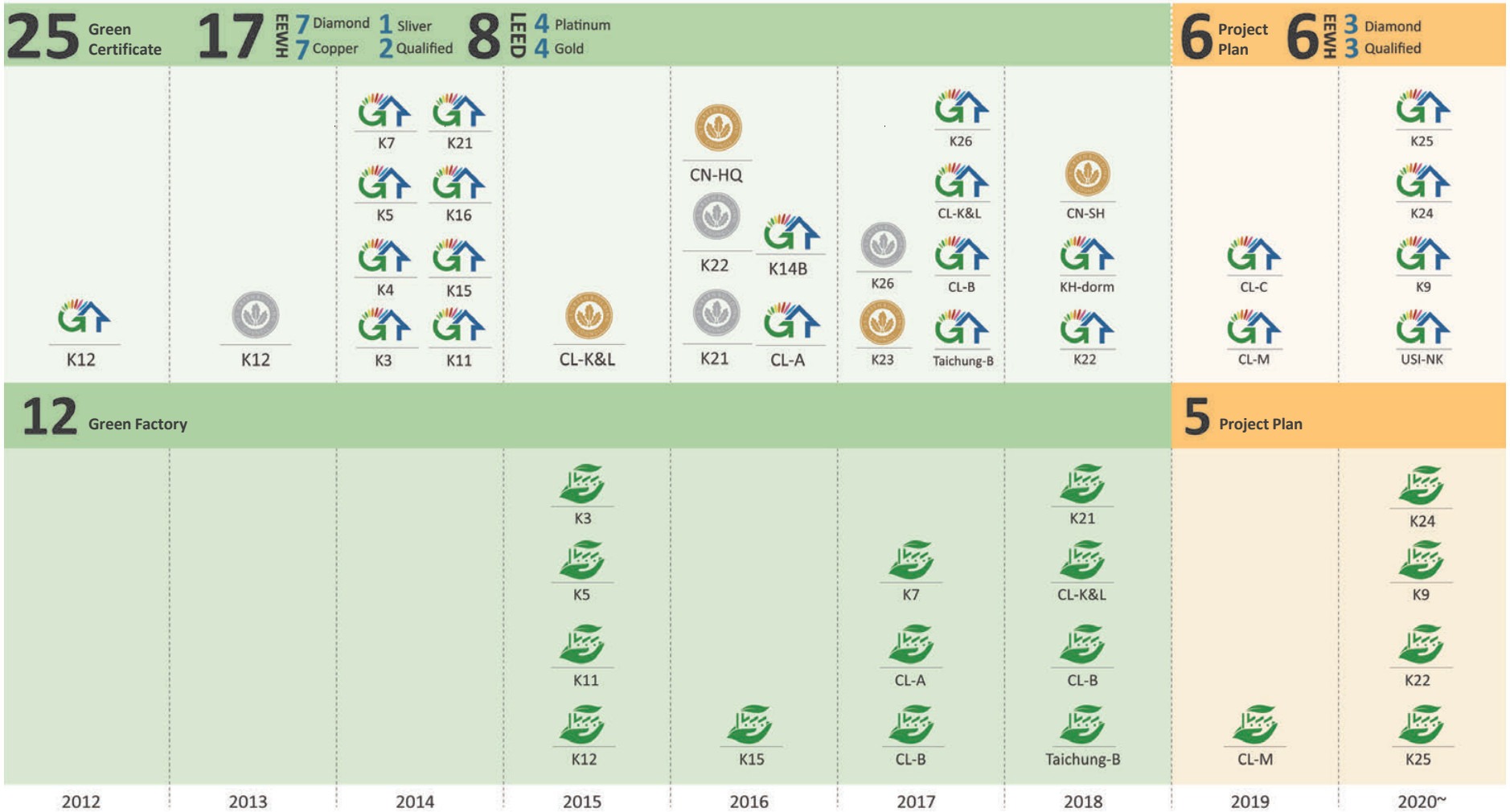
The decrease in VOC emissions is a result of directly testing and measuring VOC concentration of waste chemical and upgrading airtight negative pressure on equipment to prevent pollutant dissipation. In addition to the original treatment equipment and to meet future expansion, the gas emission management plan will continue to be optimized for the following projects:

- Cleansing materials adopted to replace the highly volatile organic compound materials originally used.
- Different types of high-efficiency processing equipment (such as the zeolite concentration rotor incineration system, active carbon adsorption equipment, etc.) introduced in existing facilities.
- Effective optimization of biological treatment system via collaborative studies on the efficiency of biological treatment of air pollutants along with the academic analysis of the microbial composition and treatment efficiency of biological treatment systems.
- Sealed negative-pressure design adopted to improve capture efficiency and collect pollutants from fixed sources.

1 VOCs are calculated using public factors, and are either directly measured or calculated using mass balancing.
2 SOx is calculated using public factors, or converted using the composition ratio.
3 NOx is calculated using public factors, or directly measured.
4 PM is calculated using public factors, or directly measured.
5 Only emissions of ozone depleting substances used as raw materials during manufacturing activities are considered. Other vaporization activities related to manufacturing activities are not considered part of the business' main activities and are therefore excluded from disclosure.

Green Buildings and Green Factory

As of 2018, ASE has achieved 17 Taiwan EEWH certifications as well as 8 US LEED certifications including 1 "Diamond-rated", 1 "Copper-rated" EEWH certifications, and 1 "Gold-rated" LEED certifications which were awarded in the year 2018. We plan to pursue an additional 6 Taiwan EEWH certifications. Since 2012, ASE has begun upgrading existing facilities and constructing all new manufacturing facilities and office buildings according to international Green Building standards such as the U.S. LEED (Leadership in Energy and Environmental Design) and Taiwan EEWH (Ecology, Energy Saving, Waste Reduction and Health). We further promote the "Green Factory Label" Certification by implementing the Green Building concepts as well as Clean Manufacturing Processes to create a better working environment that uses energy more efficiently, enhances people's health and safety, improves reliability, operational efficiency and business performance. At present, a total of twelve plants received the "Green Factory Label,"[1] including 4 plants certified in the year 2018. We plan to obtain the "Green Factory Label" for additional five plants – Kaohsiung K9, K22, K24 and K25 plants and Chungli M plant.



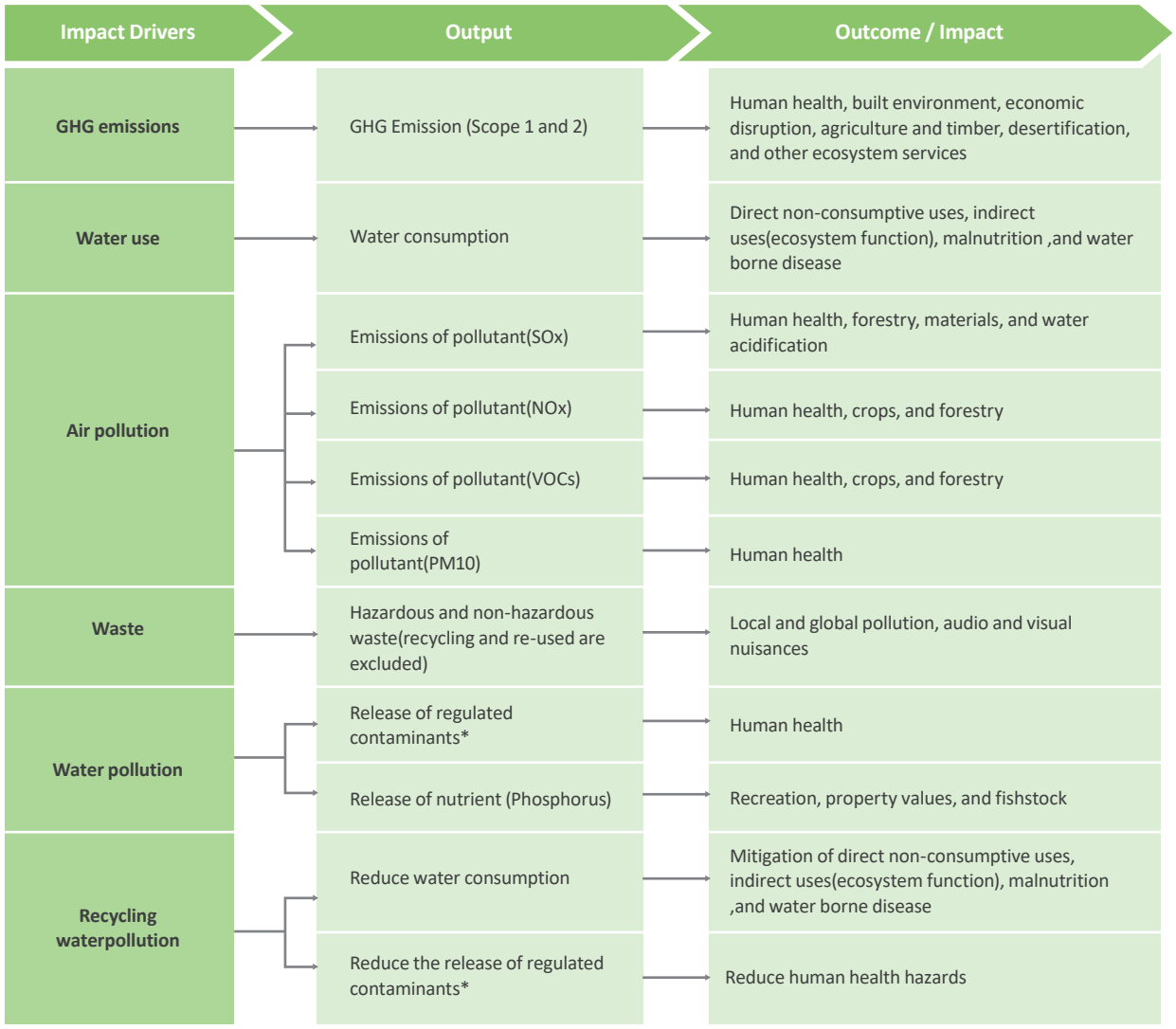
[1] "Green Factory Label" can be obtained after passing the certification of "Green Building certification" and "Clean Production Assessment". "Clean Production Assessment" is conducted by the Industrial Development Bureau (IDB) of the Ministry of Economic Affairs (MOE) and based on the concept of "clean production" as defined by the United Nations Environment Programme (UNEP).

5.5 Environmental Sustainable Value

Sustainable Value Assessment-Environmental Aspect

ASEH's sustainable value assessment for the environmental focuses on key environmental issues related to the company's operations, including GHG emissions, air pollution, waste water pollution, solid waste and water consumption. We apply the Natural Capital Protocol as a guideline for the development of our assessment methodology, and use the environmental profit and loss (EP&L) methodology to map out the impact of our pollutant emissions and resource consumption and compute their social costs associated with human health damage, loss of environmental resources, and ecological damage.

The SAT manufacturing process consumes a high volume of electricity and water resources, and our environmental assessment results in 2018 indicate that the monetized impact of greenhouse gases were the largest of such impacts, followed by water use. These two environmental issues together accounted for over 90% of overall environmental impact.
We have launched several environmental impact reduction projects for greenhouse gas and water use, including the development of low-power consumption products, energy and carbon reduction projects, water recycling treatment plants, and water recycling projects.



* The following constraint pollutants are considered: phenols, grease, cadmium, lead, total chromium, hexavalent chromium, copper, zinc, nickel, arsenic, silver.

5.6 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 2018 amounted to US$71.1 million, with capital expenditure and expense accounting for 41% and 59% respectively.

(million USD)			2015		2016		2017		2018	
Category		Description	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.	24.4	5.3	23.9	7.2	12.2	8	20.0	15.4
	Resource Circulation Cost	Efficient utilization of resources, waste reducing, recycling, and disposal, etc.	17.9	9.3	4.1	11.8	12.4	15	8.6	12.0
Upstream/Downstream Cost		Green procurement, recycling of used products, etc.	1.4	3.6	0.9	0.7	0.56	0.3	0.4	1.3
Administration Cost		Manpower engaged in environmental improvement activities and environmental education, acquisition of external environment licenses/certification, government environmental fees, etc.	-	8.5	-	8.1	-	8.1		9.3
Social Activity Cost		Donations to, and support for, environmental groups or activities, etc.	-	3.5	-	3.2	-	3.4		3.9
Environmental Remediation Cost		Fines, recovery of the environmental degradation, degradation suits, and insurance fees, etc.	-	0.2 (0 major case*)	-	0.2 (0 major case*)	-	0.2 (0 major case*)	-	0.1 (2 major case*)
Others		Global environmental conservation cost and cost to develop products to curtail environmental impact at the product manufacturing stage, etc.	-	0.03	-	0.03		0.07		0.06
Total			43.7	30.4	28.9	31.2	25.2	35.1	29.0	42.1

* We defined major cases as the environmental-related fines or penalties greater than US$10,000. In 2018, we received 2 major environmental-related fines or penalties, and the total fines was US$93,499. In addition to implementing improvement measures for problems encountered in individual cases, ASEH improved its overall systems including (1) interpreting environmental protection-related laws and inspecting company compliance with said laws; (2) re-examining and introducing more complete environmental protection-related policies and procedural documents; (3) establishing environment management task forces to provide environmental protection-related education and training to employees of all levels; (4) upgrading environmental treatment equipment and strengthening air pollution, wastewater, and waste management models; (5) optimizing internal emergency response procedures and hosting regular drills; and (6) performing regular internal cross-inspections to identify opportunities for self-improvement. We were not subjected to any major non-financial penalty or litigation that results in facility shutdown.

Environmental Benefits

ASEH records environmental benefits generated from activities that reduce impacts on the environment. Our total environmental benefits for 2018 amounted to US$60.6 million.

(million USD)		2015		2016		2017		2018	
Category	Description	Environmental Benefits	Economic Benefits	Environmental Benefits	Economic Benefits	Environmental Benefits	Economic Benefits	Environmental Benefits	Economic Benefits
Cost Savings	Reduction in electricity costs due to energy saving projects	106,808 MWh	10.0	197,576 MWh	15.1	60,988 MWh	5.4	483,405 MWh	44.6
	Reduction in water costs due to water saving projects	13,133,452 metric tons	6.1	15,096,545 metric tons	6.0	15,175,519 metric tons	6.7	22,934,123 metric tons	9.5
	Reduction in waste disposal costs due to waste recycling	32,981 metric tons	4.7	38,243 metric tons	6.4	38,115 metric tons	7.6	50,011 metric tons	6.5
Total		-	20.8	-	27.5	-	19.7	-	60.6

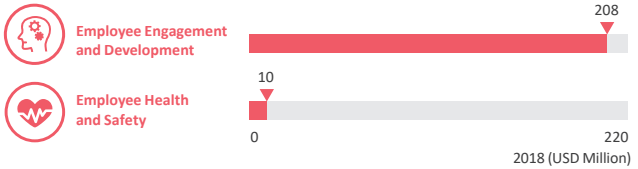
Our estimated environmental capital expenditures for 2019 will be approximately US$34.2 million. The board of directors has resolved in February 2019 to contribute around US$3.3 million (NT$100.0 million) through the ASE Cultural and Educational Foundation in environmental projects in 2019.

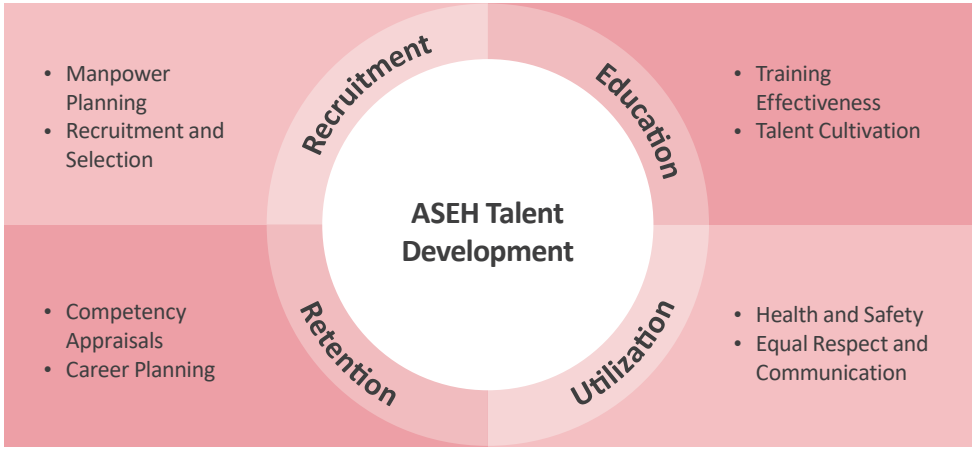
INCLUSIVE WORKPLACE

ASEH is committed to protecting human rights, ensuring diversity in our workforce and providing employees with a safe, healthy and stimulating work environment.

ASEH is committed to continuously invest in talent cultivation by motivating employees to further their career within the company and retaining highly skilled and experienced employees. We respect the rights of our employees and we strive to provide a safe, comfortable, healthy and productive workplace for our employees.

Sustainable Value Assessment – Social Aspect (Employees)





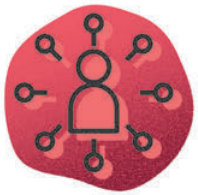
2018 Key Performance

Female Supervisors

1,286 24% of total ASEH supervisors

Internal Certified Trainers

4,395 12% more than in 2017



Labor Union

32,276 35% of total ASEH headcounts

SDGs	Business Actions	2018 Material Aspects	KPI	2018 Target	Status	2018 Performance	2019 Target
4 QUALITY EDUCATION	Ensure that all employees across the business and supply chain have access to vocational training and life-long learning opportunities	Talent Cultivation and Development	Generation rate of ASEH six-path employee career development system	To reach 85% of ASEH six path employee career development system	Not Achieved	All sites achieved 84% of ASEH six-path employee career development system	To reach 85% of ASEH six path employee career development system
			Internal certified trainers	The number of internal certified trainers to reach 5.8% of total headcount	Not Achieved	The number of internal certified trainers will reach 4.7% of total headcount	The number of internal certified trainers will reach 5%[3] of total headcount
		Talent Attraction and Retention	Employee engagement survey	Employee engagement survey conducted in 2019	On going	Employee engagement survey conducted in 2019	80% Survey coverage, 73% actively engaged employees in 2019
8 DECENT WORK AND ECONOMIC GROWTH	Support decent working conditions for all employees across the business and supply chain, with partnerships to build suppliers' capacity to do the same	Occupational Health and Safety	Cases of occupational disease and major injury	Zero cases of occupational disease and major injury	Achieved	Zero cases of occupational disease and major injury	Zero cases of occupational disease and major injury
			• Disabling Injury Frequency Rate (F.R.) • Disabling Injury Severity Rate (S.R.)	Lower than the average of Taiwan's Semiconductor[1]	Not Achieved	F.R. : 0.796 S.R. : 13.708	5% lower than the average of Taiwan's Semiconductor and Electronic Components
				Lower than the average of Taiwan's Electronics and Components[2]	Achieved	F.R. : 0.225 S.R. : 4.155	

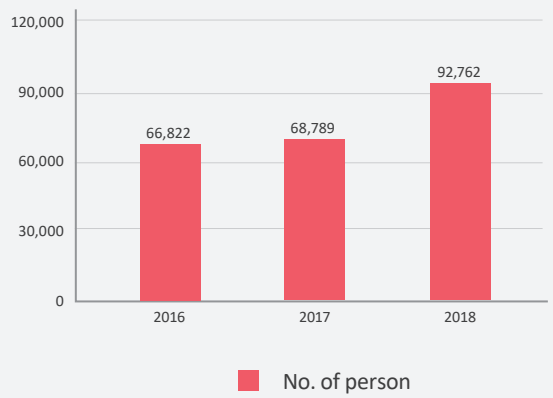
[1] In 2018, the F.R and S.R average of Taiwan's semiconductor industry is 0.55 and 8.
[2] In 2018, the F.R and S.R average of Taiwan's electronic components industry is 0.78 and 26.
[3] In 2018, because SPIL joined ASEH, we have updated 2019 target of internal trainers.

6.1 Global Recruitment and Diversity

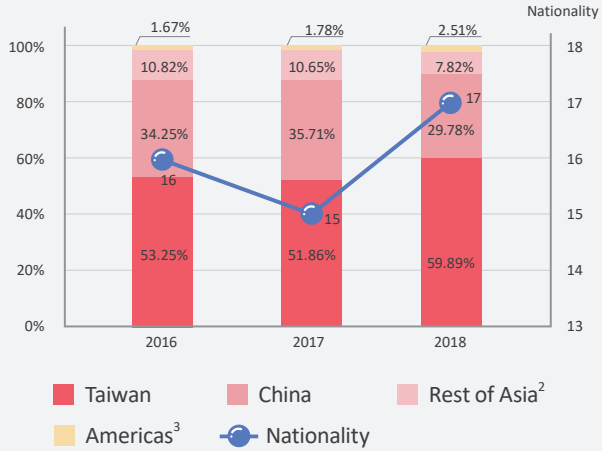
Our recruitment strategy is based on the unique traits of our global locations such as local values, culture and the types of job positions (management, technical, administrative, operational). In 2018, we recruited approximately 34,468 employees through diverse recruitment channels including; campus recruitment, employee referrals, internship programs, alternative military service plan, executive search companies, recruitment exhibitions, online recruitment and digital job boards. The proportion of new employees from 2016 to 2018 was 43%, 40% and 37% respectively.

ASEH has 25 manufacturing facilities in eight countries worldwide and employs approximately 92,000 employees[1], of which 94% are permanent and 6% are contractors. The number of employees was considerably higher than 2017 because of the merger with SPIL which led to an increase in the number of employees in Taiwan and China to 60% and 30% of our total headcount respectively. Male and female employees at ASEH were equally represented, and approximately 24% of our female employees are in leadership roles. 42% of employees are aged 16-30 and 53% are aged 31-49.

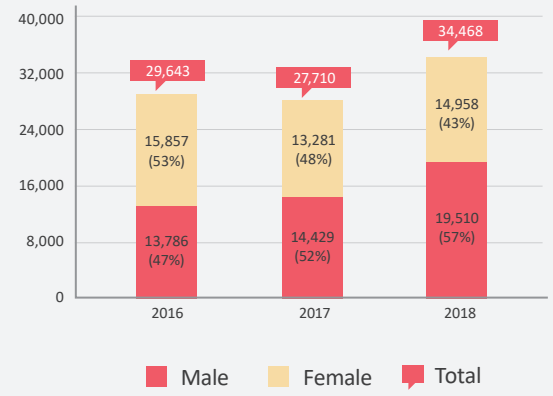
ASEH Total Employee



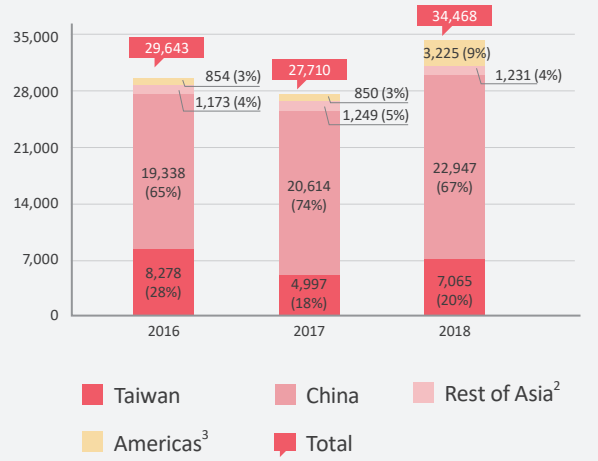
Geographic Distribution



New Hires by Gender



New Hires by Geographic

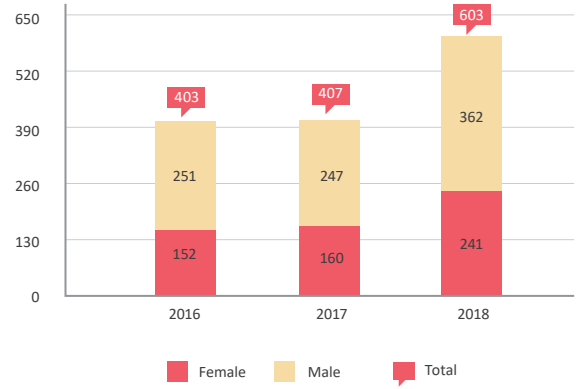


[1] The workforce data covers all of our manufacturing facilities, but excludes our sales, administrative and other offices located in North America and Europe.
[2] Rest of Asia: Japan, Korea, Singapore and Malaysia
[3] Americas: USA and Mexico

Global Workforce Diversity and Inclusion

We embrace diversity and inclusiveness in our recruitment policy and offer equal opportunities regardless of race, gender, nationality, religion, political affiliation, sexual orientation, and/or age. Female employees accounted for roughly half of the total number of employees over the past three years. The number of female representation in leadership roles has increased slightly from 10.75% (2016) to 12.82% (2018), demonstrating our commitment to ensure non-discrimination with respect to promotion opportunities. We comply strictly with the regulations in the countries we operate in and the RBA (Responsible Business Alliance) Code of Conduct. Our worldwide facilities are free of child and forced labor, and we are committed to protect and respect human rights. As of Dec. 31, 2018, we have a headcount of 603 employees with disabilities. To manage a diverse workforce, we have put in place programs to ensure our foreign employees adapt well by arranging training classes in their native language, availing translators at our facilities, and ensuring that they are not forced to pay fees to employment agencies. Newly hired foreign employees are provided with relevant information on local norms and culture, and a buddy system made up of senior employees. All our foreign employees enjoy the same benefits as local employees. The creation of a non-discriminatory and inclusive workplace contributes to an improvement in our team performance and raising our level of innovation, that cater to our wide range of customers' and diverse market needs.

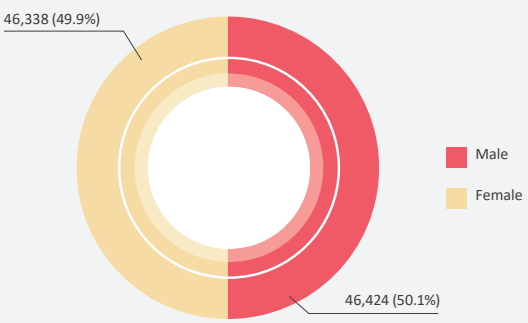
Disabled Employee by Gender



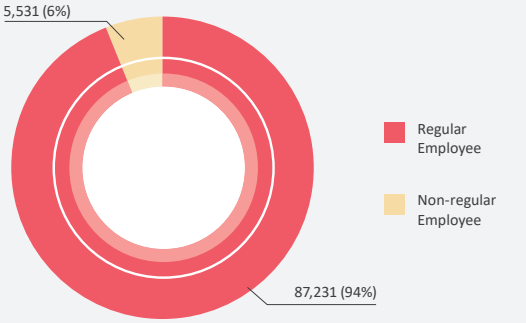
Diversity Indicator

	2016	2017	2018
Female share of total workforce(%)	50.49%	49.72%	49.95%
Females in management positions(% of total management workforce)	27.59%	28.61%	23.89%
Females in junior management positions(% of total junior management positions)	33.54%	34.29%	34.18%
Females in top management positions[1](% of total top management positions)	10.75%	11.50%	12.82%
Females in management positions in revenue-generating function[2] (% of revenue-generating function managers)	N/A[3]	22%	22.27%

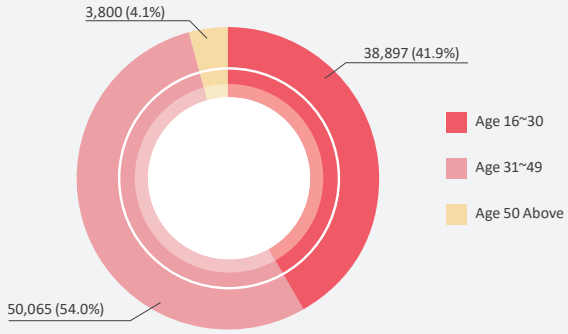
All Employee by Gender



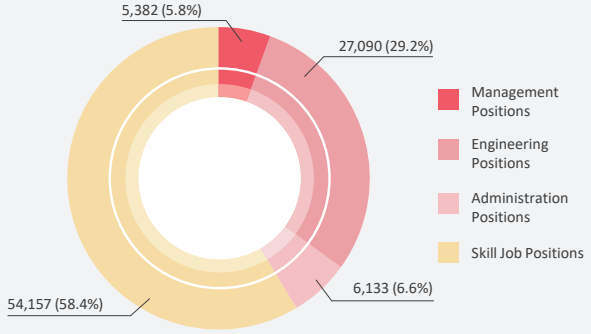
Regular/Non-regular Employee



Employee Age Distribution



Employee by Job Category



[1] Top management positions: Director and vice presidents level.
[2] Revenue-generating function: e.g. sales function, excluding support functions such as HR, IT Legal, etc.
[3] In 2016, we didn't collect the female information in revenue-generating function.

6.2 Talent Attraction and Retention

To ensure fair and equal promotion opportunities, positive labor-management relations, competitive compensation and benefits, and open communication, ASEH established committees for Employee Welfare, Employee Meals, and Labor Pension Fund. Other committees such as technological innovation, quality, industrial engineering etc were also established to allow employees to maximize their potential, and to help us attract and retain outstanding people and enhance the company's growth momentum.

Employee Engagement

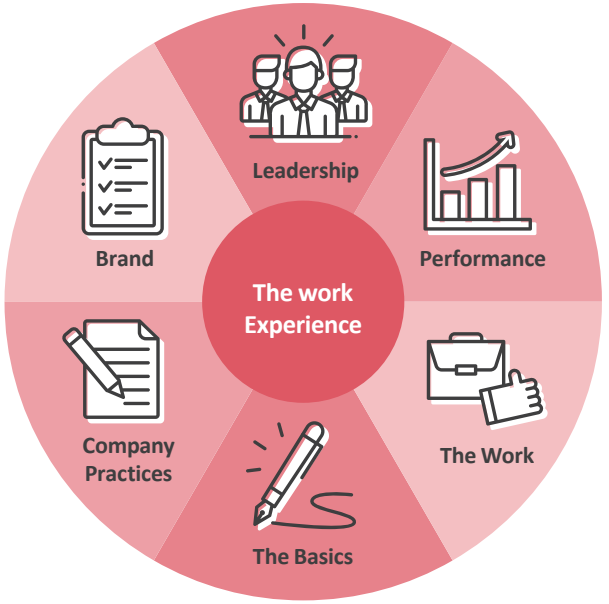
A company's most important asset is its employees. One of the long-term strategies for implementing sustainable development is using human capital effectively to create value. In the past, we conducted surveys based on employee satisfaction. After many years of analysis, reference to international trends, and discussions with scholars and experts, we collaborated with a consultant to conduct "Employee Engagement Survey" for the first time in 2017. This survey helps an organization to collect and measure employee opinions effectively, and then develop strategic methodology to attract, retain, and nurture outstanding employees.

we established the "Employee Engagement Survey Implementation Guidelines" as a common principle and operation method for the implementation of the engagement survey in each site. ASEH plans to conduct a comprehensive survey every two years. In 2017, we teamed up for the first time with 14 of our facilities (in the greater China region) to survey indirect employees on 15 items in six major fields of employee engagement.

ASEK Staff Concert

The Behaviors of Employee Engagement

Willing to Promote	Willing to Stay	Make an All-out Effort
Often say good things of the company to colleagues and customers	Has a strong sense of belonging and eagers to be a one of the organization	Not only do the best at the work, but also willing to pay extra effort for the success



Employee Engagement Aspects

Employee Satisfaction/Engagement Survey Result & Target

Year	2015(Satisfaction)	2017 Target	2017(Engagement)	2019 Target
Satisfaction/Engagement(%)	70.6	73	75	>=73
Conduct Coverage (%)	64	70	73.6	85

Breakdown of Engagement Survey Result

Survey Item	All Employee	Female	Male	Promotion of Improvement Measures
Overall Survey Result	75%	74%	78%	• Mechanisms for diversified career development - Enable job rotation and improve individual career development channels • New employee care system - Conduct regular conversations with new employees to familiarize them with the company, policies and benefits; thereby increasing the retention rate of new employees • Multi-faceted comprehensive ability assessment - Promotion of professional competency assessment with incentives to improve employee retention. • Competency of line supervisors in management roles - Promotion of Training Within Industry (TWI) courses, ensuring the teaching and development of work-related skills, and establishing standard operating procedures • Regular communication mechanisms for employees - Establishment of a diversified communication mechanism to strengthen employee cohesion & supervisor leadership • Employee competency development - Promotion of individual career development plans to enhance talent development and retention • Rotation and promotion mechanisms for competent employees - Improvement of cross-disciplinary management competency and leadership of executives
Empowerment/ Autonomy	80%	84%	79%	
Work Tasks & Sense of Achievement	83%	85%	82%	
Collaboration	79%	83%	78%	
Diversity & Inclusion	77%	80%	77%	
Enabling Infrastructure	74%	77%	73%	
Talent & Staffing	62%	66%	61%	
Supervision	81%	84%	80%	
Communication	72%	75%	71%	
Senior Leadership	69%	73%	67%	
Performance Management	73%	75%	73%	
Rewards & Recognition	74%	76%	73%	
Learning & Development	74%	76%	73%	
Career Opportunities	69%	70%	69%	
Brand	75%	79%	74%	
Work/Life Balance	83%	85%	83%	

Compensation and Welfare

In addition to offering fair and non-discriminatory compensation, our full-time employees are entitled to a consistent remuneration package. We benchmark local market remuneration annually to ensure our employees' base pay remain competitive. In 2018, the ratio of the basic salary of women to men was 0.73; for management position employees, it was 0.80; and for non-management position employees, 0.78. The ratio of the remuneration[1] for management position, it was 0.75.

We conduct performance appraisals for all employees, regardless of gender or job function. We offer monthly incentive bonuses and annual profit-sharing bonuses to reward employees' diligent contributions to the company. Cash bonuses are rewarded to employees with outstanding performance each month based on our business results. Annual bonuses are rewarded to employees based on their individual performances and results within the financial year. In 2018, ASEH paid out approximately US$228.7 million and has also issued employee stock options (valid for 10 years from the issue date) for the purpose of retaining outstanding employees. In 2018, the number of full-time, non-managerial[2] ASEH employees was 46,885 with an average salary of NT$745,000.

[1] Remuneration includes basic salary and other cash incentives.
[2] ASEH became a listed company on Apr. 30th, 2018; the number of full-time non-managerial employees in 2018 was not markedly different from that of 2017. "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.

Performance Appraisal

Evaluation	Object	Frequency	Approaches
Ranking and Management by Objectives	All Employee	Twice a year	Work project targets and quantifiable performance indicators are presented by employees to their direct supervisors for discussion and confirmation before being set as preliminary targets. In 6 months, employees are required to present their self-evaluation to their supervisors, who shall assess their performance and determine if the performance targets have been reached. A final evaluation is made before all employees in each department are ranked according to their performance.
Multidimensional Performance Appraisal	Management, Engineering, Administration Position Employee		After employees complete the management training program (MTP), they are interviewed by their direct supervisors and supervisors from other departments. Their coworkers also evaluate their performance as team workers.
Qualification Certificate Evaluation	Skill Job Position Employee		According to the various types of machine equipment at each station on the production line and the need to inspect products and resolve anomalies, qualified instructors are assigned to evaluate the performance of production line employees.

Employee Communication

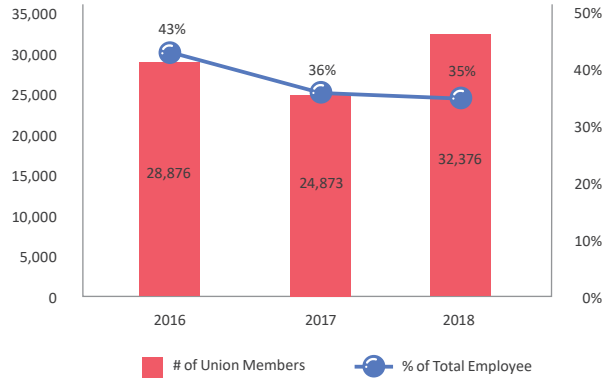
We respect employees' opinions and provide various channels for employees to voice any comments or concerns they may have related to their workplace. Our Human Resources Department has provided various two-way communication channels, including:

- Intranet - to publish company's latest news
- E-mails Announcements - to announce group-wide updates and messages from top management
- Bulletin Boards - to provide information related to labor compliance policy, health and safety, and company activities
- On-Site TV News/Information - to broadcast employees' welfare-related information
- General Manager/Plant Director Mailbox - to deliver employees' opinions/suggestions to GM/Plant Director directly
- Employee Opinions Box - to collect and respond to employees' grievance and feedback
- Employee/Foreign Employee Symposium - to share and discuss work experiences, regular symposium with foreign employee every month
- Counseling Room - to provide one-on-one counseling sessions
- Labor Meeting - to have a communication between HR & labor representative quarterly
- Periodical Issue - to interview employee and let employee to express their opinions

Labor Unions

We have labor unions that have served our employees for many years, at a number of our facilities including ASE Kaohsiung, Weihai, Suzhou, Wuxi, Shanghai(A&T), Kunshan, Korea, Japan, Singapore and USI Zhangjiang, Kunshan, Mexico,and SPIL, Suzhou, and these Unions have been serving ASEH employees for many years. At the end of 2018, the total number of union members was 32,276, accounting for around 35% of ASEH total headcount. The unions sign a collective contract[1] with ASEH, and hold bilateral quarterly meetings to discuss and resolve employee welfare issues.

Union Statistics

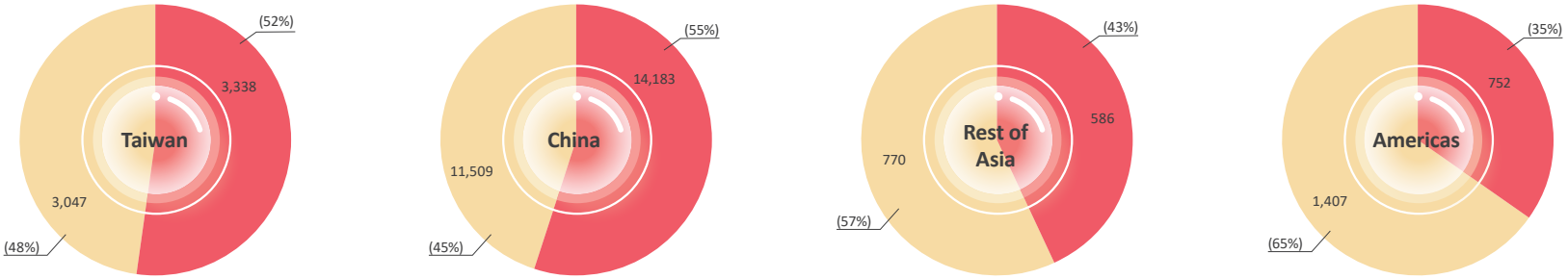


[1] The signed collective contract includes ASE Japan, Korea, Weihai, Wuxi and SPIL Suzhou, about 9% of total employees.

Turnover Rate

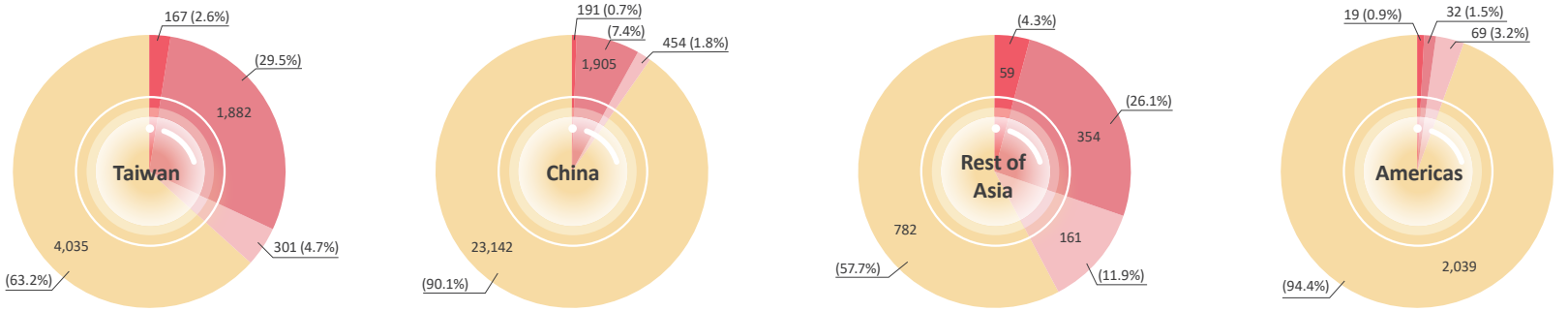
Gender

- Male
- Female



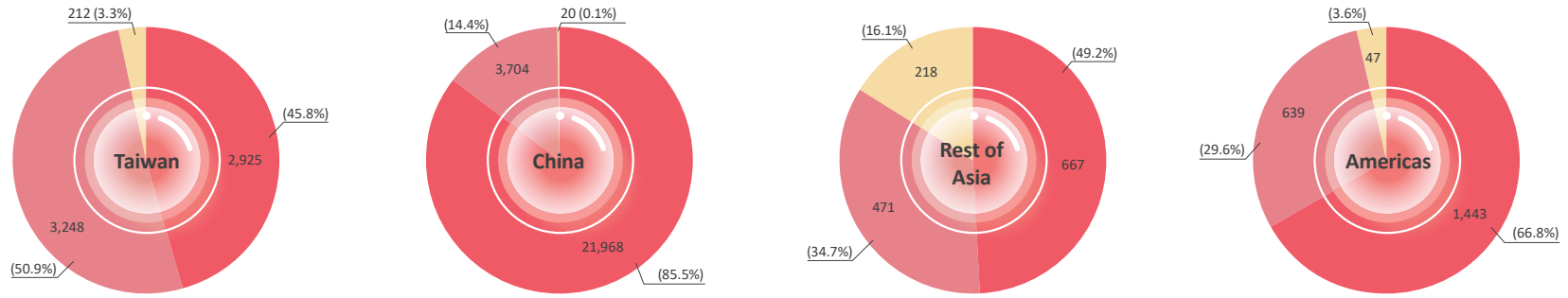
Employee Category

- Management Positions
- Engineering Positions
- Administration Positions
- Skill Job Positions



Age

- Age 16~30
- Age 31~49
- Age 50 Above



Sustainable Value Assessment - Social Aspect (Employees)

Our sustainability value assessment in the social dimension (employees) is focused on employees' direct experience and feedback from their involvement in the business operations. Salaries and benefits, employee career development, employee care and occupational safety and prevention are critical approaches in impacting employee sustainability value.

Impact Driver	Activity / Output	Outcome / Impact
Employee Engagement	Compensation and Benefits	Employees' financial satisfaction and livelihood maintenance
	• Employee Career Development • Work Environment • Employee caring	• Promote managerial capabilities • Enhance job Competitiveness • Raise a sense of belongings • Improve self-accomplishment
Health and Safety	Employee Health Care Activities	• Increase healing chance of employee health issues • Reduce employee financial impact as the result of health issue
	Occupational Injury	• Employee physical/ Psychological Injury

6.3 Talent Cultivation and Development

Our employees' innovative spirit, talent and passion drive the company's success in sustainable development. As our organization continues to grow, investing in human capital is necessary to enable us to maintain our innovative momentum and competitive edge. To develop management talent, significant resources have been dedicated to a blueprint in management skills in 'leadership', 'communication' and 'influence'. We hope that our employees at the management level can both grow personally and realize their full potential through these courses, and help motivate their team members to similarly learn, grow and have a valuable and meaningful career at ASEH together.
In 2018, we invested around US$4.49 million in employee development programs, averaging about US$116[1] per employee. A total of 9.62 million training hours were completed at ASEH in year 2018. The average hours of training and development courses offered was 104 hours per employee. We also provide reimbursements for tuition expenses for employees pursuing an advanced degree in their field of work; in 2018, 259 degrees were sponsored by the tuition reimbursement program.

Training highlight of 2018: "Influencing Skills" Courses

To pass on the company's DNA culture, accumulate valuable knowledge and experience, and innovate corporate value, we continue to promote the company's three major courses on influencing skills: interdepartmental project management, Management Training Program (MTP), and Train the Trainer (TTT) Program. These management courses have teaching materials designed by experienced managers and lectures given by employees certified by the company's internal lectureship training system. This facilitates the effective transfer of knowledge to employees and fully utilizes internal human resources and influence, breeding a new generation of management talent. In 2018, total of 4,395 internal lecturers were trained.


Training Course

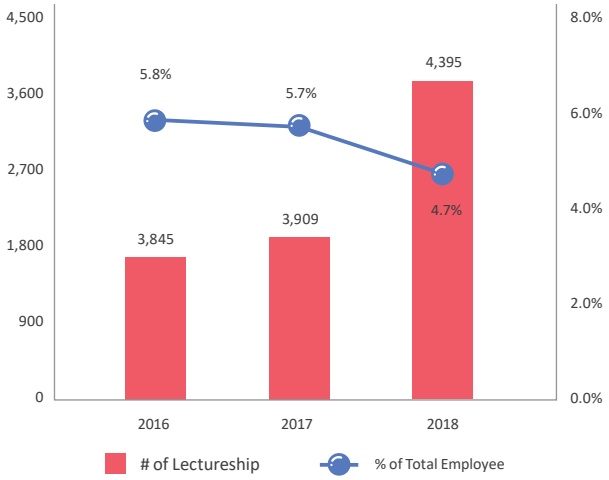

Talent Development Workshop

[1] Indirect (management, technology and administrative affairs employee) average training cost

Training Program statistics

	2016	2017	2018
Overall Training Hours	6,947,542	8,315,240	9,619,786
Average training hours - Total Employee	104	121	104
Average training hours - Male	105	110	116
Average training hours - Female	102	131	92
Training Cost(US$)	2,150,208	2,068,800	4,488,000
% of open positions filled by internal candidates[1]	72.1%	76.9%	69.3%

Internal Lectureship



Mentor Course

ASEH Plan, Do, Check, Act(PDCA) Training System

Planning annual training courses

Each ASE facility is required to establish its annual training plans in accordance with business and organizational needs and execute them according to ASE's six major training principles through four approaches; namely practical training, online courses, on-the-job training, and external training.

Executing key annual projects

The key annual projects carried out in 2018 were mainly training courses designed to develop the influencing skills of management personnel at ASE facilities.

Verification of training effectiveness

The Kirkpatrick Four-Level Training Evaluation Model is applied to examine training effectiveness indicators.

Sharing training results and continuous improvement

A platform has been established for different facilities to share their best practices with each other to engage in joint learning, improvement and growth.

Check - Effectiveness of Training: Assessment Enhancement with the Kirkpatrick Model

To ensure the continuous improvement of the Group's overall competitiveness, we have established the "Employee Development Dashboard" since 2015 and used the Kirkpatrick Model to measure the effectiveness of training indicators.

1. Reaction evaluation - to confirm course quality and the indicator we set for this level is: Score of courses satisfaction survey
2. Learning evaluation - to confirm the employee development mode and the indicator we set for this level is: Training system generation status
3. Behavior evaluation - to confirm employees' application of what they have learned and the indicator we set for this level is: Internal Certified Lecturer
4. Result evaluation - to confirm the contributions of trained employees to the organization and the indicator we set for this level is: The key talent retention rate and the training investment cost

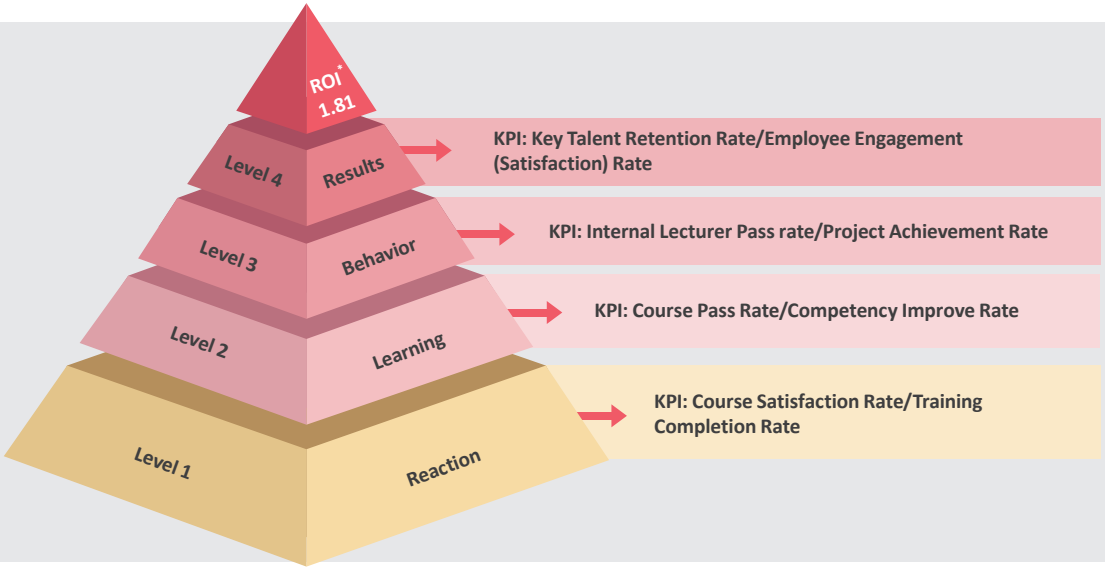
The "Employee Care & Development Taskforce" of the ASEH Corporate Sustainability Committee annually reviews the dashboard indicators at each site. Based on the dashboard performance, each site is required to establish improvement activities for employee training and development.

Action - Sharing & Improvement: Sharing Best Practices

Talent cultivation is the core element in maintaining competitiveness and sustainable development for a business. Our HR development training begins with the basic 'Six-Path Employee Career Development System' and our training results are examined and assessed to determine its effectiveness. We also hold internal HR seminars where HR consultants and university professors are invited to speak. At these seminars, participants contribute ideas and engage in discussions on courses of action to help progress the company's sustainable development. In 2018, we conducted regular seminars on human resource improvement practices at the facilities in the Greater China Region and invited HR managers from the China facilities to share their experiences regarding training framework models.

[1] (Management position promotion employee - New hire manager employee)/Management position promotion employee

Leadership Training Program

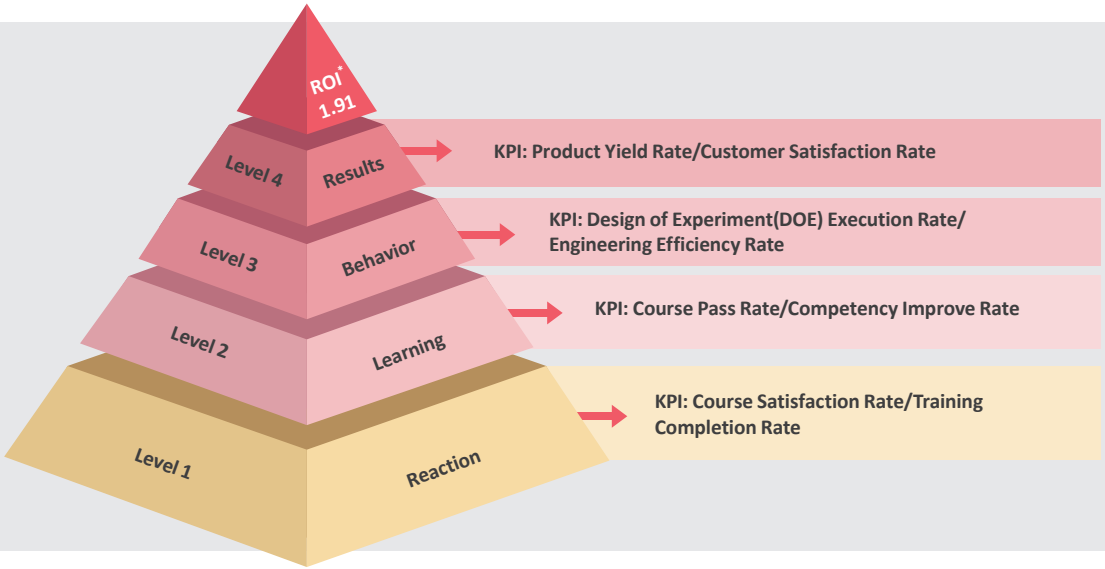


Course Description:
Managerial competency self-improvement, leadership capabilities & subordinate empowerment: The course mainly includes the development of basic management skills such as goal-setting, formulation, implementation, and control. In this course, participants learn the capabilities and methods behind effective delegation and empowerment as well as mastering the ability to communicate effectively with their superiors, colleagues, and subordinates. This facilitates the coordination between different departments and the establishment of high-performing teams; it also helps participants enhance their leadership capabilities through learning effective methods to guide and develop subordinates.

Object: Director/Manager/Supervisor

Business Impact & Benefits:
Effective project management is achieved through the development of management capabilities, which helps manager and deputy manager-level personnel build exceptional teams and develop outstanding leadership capabilities, thus enhancing operational efficiency.

Engineering Capability Enhancement Program



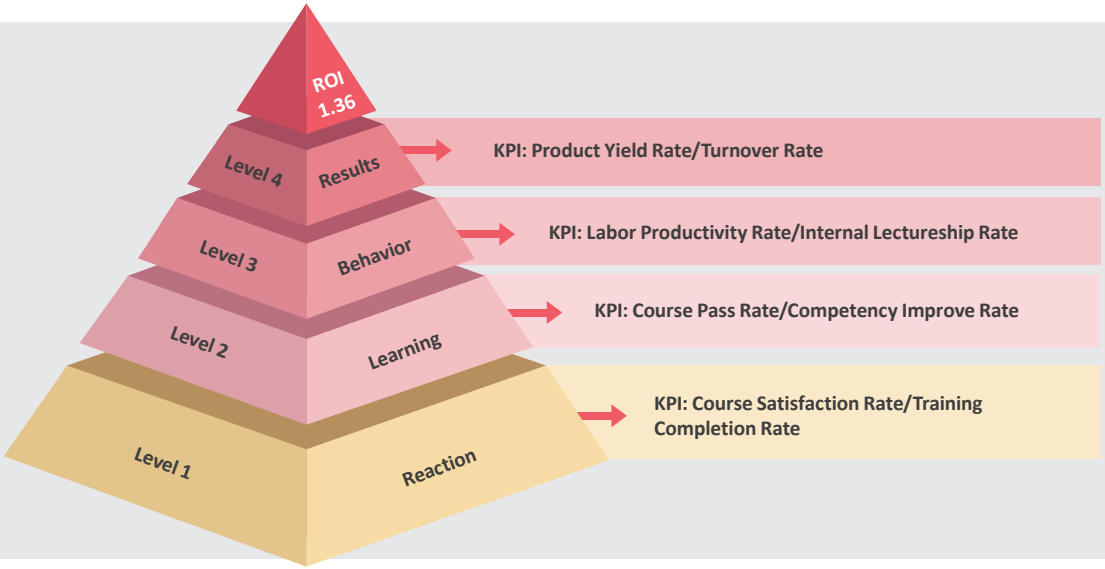
Course Description:
Enhancing engineering management competency through product analysis training: The course mainly focuses on the development of problem-solving capabilities, training in design & verification of engineering experiments, statistical methods & analysis of data, and failure mode & effects analysis.

Object: R&D/Manufacturing/Equipment/Quality Engineer

Business Impact & Benefits:
The main purpose of engineering skills training is to help engineers develop problem analysis and problem-solving capabilities for both the front-end and back-end parts of the manufacturing process, so as to enhance operational efficiency. The training covers: improvement of new manufacturing processes, product material process management, equipment management, cost reduction, development of new products, and enhancement of production capacity.

* ROI: The financial benefits created for each dollar invested in employee development projects

Quality Management Program

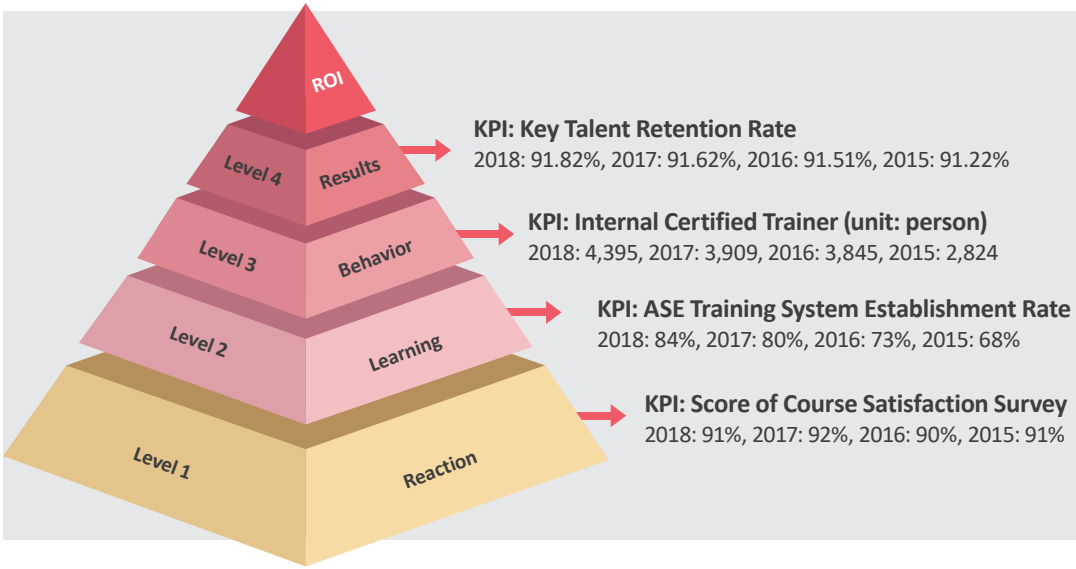


Course Description:
Using analytic tools to establish standard operating procedures & manage production anomalies: The course mainly consists of three types of training: job instruction (JI), job method (JM), and job relation (JR). These courses enable facility managers to give direct instructions to facility personnel by setting out the deconstructed workflow and implementing corrective measures. It also facilitates the improvement of labor-management relations.

Object: First line of management positions staff

Business Impact & Benefits:
The quality control training course helps line managers deconstruct, analyze, and optimize tasks, so as to establish standard operating procedures and reduce rejected products and waste. The training also prevents accidents, hazards, and equipment damage thus improving work quality, product yield, and employee retention

Assessment Indicators of Employee Training Effectiveness



6.4 Occupational Health and Safety

ASEH is committed to providing workers with a safe, healthy and conducive work environment. We formulate occupational health and safety ("OHS") management principles to effectively prevent occupational accidents and to ensure the health and safety of our employees at the workplace. The main focuses of ASEH's OHS management include OHS management system and health promotion.

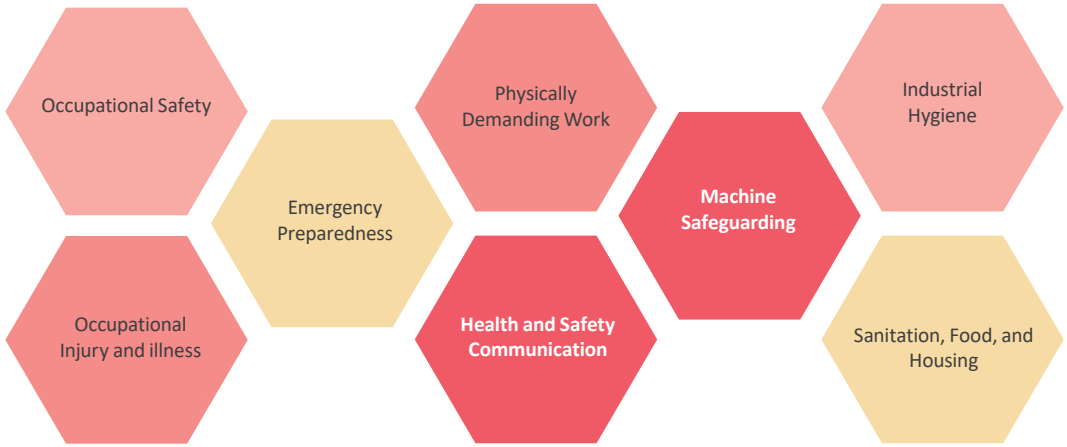
OHS Management System

All ASEH facilities worldwide have established management organizations and formulated management methods and procedures that are in compliance with ISO 45001 (Occupational Health and Safety Management Systems), OHSAS 18001 (Occupational Health and Safety Management Systems), the RBA Code of Conduct, and local regulations. In addition, regular review procedures were set up to effectively prevent accidents so as to achieve the "zero accidents" management objective. ASEH's global facilities conduct regular checks on occupational health and safety management systems and obtain relevant certifications[1]. Such actions facilitate the effective tackling of long-term problems that impact employee health, absenteeism and accidents. Our facilities are also in the process to transition to the new ISO 45001 standard.

ASE's global facilities observe occupational safety, emergency response, work injury and occupational disease prevention, industrial hygiene, physical labor work, machinery protection, public health and accommodation, health and safety information covered under the OHS management system. Our facilities are also certified OHSAS 18001 and compliant with local health and safety regulations. On an annual basis, we assess and identify risks for all new or modified manufacturing processes ascertain risks and establish control procedures where needed.

We identify specific high-risk manufacturing processes that could expose our employees to hazards such as ionizing radiation, noise, dangerous chemicals and dust. These employees are provided with high quality protective equipment and undergo routine medical screenings to ensure that their health is in check.

OHS Management Aspects



OHS Management Processes

Safety Requirement	Develop OHS management systems in compliance with ISO 45001, OHSAS 18001, RBA Code of Conduct, and local laws and regulations.
Risk Assessment	Develop hazard identification and risk assessment management procedure handbook, implement annual facility safety risk identification regularly, and propose high risk factor improvement measures to reduce it down to low risk. The risk rating determined is based on severity, probability of occurrence and exposure ratio.
Validation	Develop occupational health and safety management inspection regulation and procedure handbook for facility security personnel to follow and inspect facility operations and fire-fighting equipment on a regular basis. Coordinate safety and disaster prevention drills with local government's fire-fighting and disaster prevention units.
Improvement	Organize occupational health and safety education and training in employees' local mother tongue and post and promote health and safety related information in conspicuous workplace areas.

[1] OHSAS 18001 certification : ASE (Chungli, Shanghai_A&T, Shanghai_Material, Kunshan, Suzhou, Weihai, Wuxi, Korea, Singapore), USI (Taiwan, Zhangjiang, Shenzhen, Kunshan, Mexico), and SPIL(Taiwan, Suzhou)

Major Occupational Injuries and Preventive Measures

There were no major occupational fatalities in any of ASEH's facilities in 2018. The total number of occupational injuries was 111, where the injury rate (I.R.) was 0.128, lost day rate (L.D.R.) was 2.470, absence rate (A.R.) was 0.76%, occupational disease rate (O.D.R.) was 0, disabling injury frequency rate (F.R.) was 0.640, and disabling injury severity rate (S.R.) was 11.376. For more information, please refer to the 2018 Occupational Health and Safety Statistics in the appendix. The F.R. and S.R. of the electronic manufacturing service facilities were lower than the Taiwan electronic and component industry average.

Occupational Injury Statistics

	2016	2017	2018
No. Of Occupational Injury Accidents	127	73	111
Occupational Injury Rate	0.181	0.098	0.128
Lost Day Rate	10.27	2.163	2.470
Occupational Disease Rate	0	0	0

Occupational Injury Improvement

Category of Occupational Injury	Number of Occupational Injuries		Major Injuries	Improvement Actions
	Employee	Contractor		
Physical Injury	103	5	• Falls resulting from electric shocks • Falling due to misstep	• For operations where employees may come in contact with electrical wires buried in walls, wall scanners and voltage detectors were used to verify the locations of any sources of electricity or electrical wires prior to the commencement of any operation. Greater emphasis has been made to inform employees of the importance of wearing full-body harness when operating in elevated work environment. • Installed protective devices on catch basin lids and inspected said devices prior to operations to ensure that they were in place. Improved lighting and well-lit construction areas at all times. Inspections be conducted by two inspection personnel instead of one.
Chemical Injury	4	0	Inhaling chemical fumes	Analyzed the fumes created by chemicals used, increased the gas pumping capacity of gas analyzers, and monitored the electric potential and concentration values.
Ergonomic Injury	4	0	Carpal tunnel syndrome	Provided tools and informed employees of any operational adjustments made (using both hands to carry objects)

Note: There is yet another category of occupational injury - "Biological Injury". Even though there were no related occupational injury of such category in 2018, prevention plans were developed, including the management specifications developed specifically for group meal practitioners and food materials in accordance with "Food Safety and Sanitation Governing Acts", "Medical Operation Technical Handbook" and "Needle Incident Prevention and Emergency Response Operation".

Disabling Injury Statistics

ATM Facility	2016	2017	2018
Disabling Frequency Rate	1.141	0.564	0.796
Disabling Severity Rate	61.916	10.485	13.708

EMS Facility	2016	2017	2018
Disabling Frequency Rate	1.095	0.267	0.225
Disabling Severity Rate	8.674	5.058	4.155

Occupational Injury Incident Handling and Reporting System

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. Injury incidents and improvement of preventive measures are reviewed each quarter to ensure the plant is moving forward to the goal of zero injuries.

Occupational Injury Incident Reporting Procedures

Reporting the injury incident to the occupational safety unit in the facility (who/what/when/where)

↓

Performing initial medical treatment before taking the injured to the hospital

↓

The occupational safety unit reporting the injury incident to the local competent authority

↓

Cordoning off the site of an accident until the occupational safety unit and the competent local authority have completed the investigation and given permission for cordon removal to assure the same injury accident does not reoccur

↓

Analyzing the causes of injury accident and working out measures for long-lasting improvement; filing the accident report for record

Contractor Operation Safety Management

ASEH facilities have established contractor management plans to assure safety management mechanisms can be carried out when contractors work inside the facilities and the goal of zero occupational injuries for contractors can be achieved. There are eight types of operations entailing high risks in ASEH facilities, including pipeline, hot work, confined space, live-line work, cranes operation, elevated operation, chemical filling work and working on the roof. Guidelines for high-risk operations have been instituted to serve as the basis for construction control. ASEH will continue to request contractors for high-risk operations to present proof that they meet the requirements specified in OHSAS 18001 and ISO 45001.

Contractors in-plant Construction Procedures

Contractors presenting operation safety management proposals

↓

Training personnel who enter the plant and informing them of likely hazards

↓

Performing periodic patrol inspection according to the safety checklists for before, during and after construction

↓

Filing the project closure report for record

Disaster Response and Emergency Drills

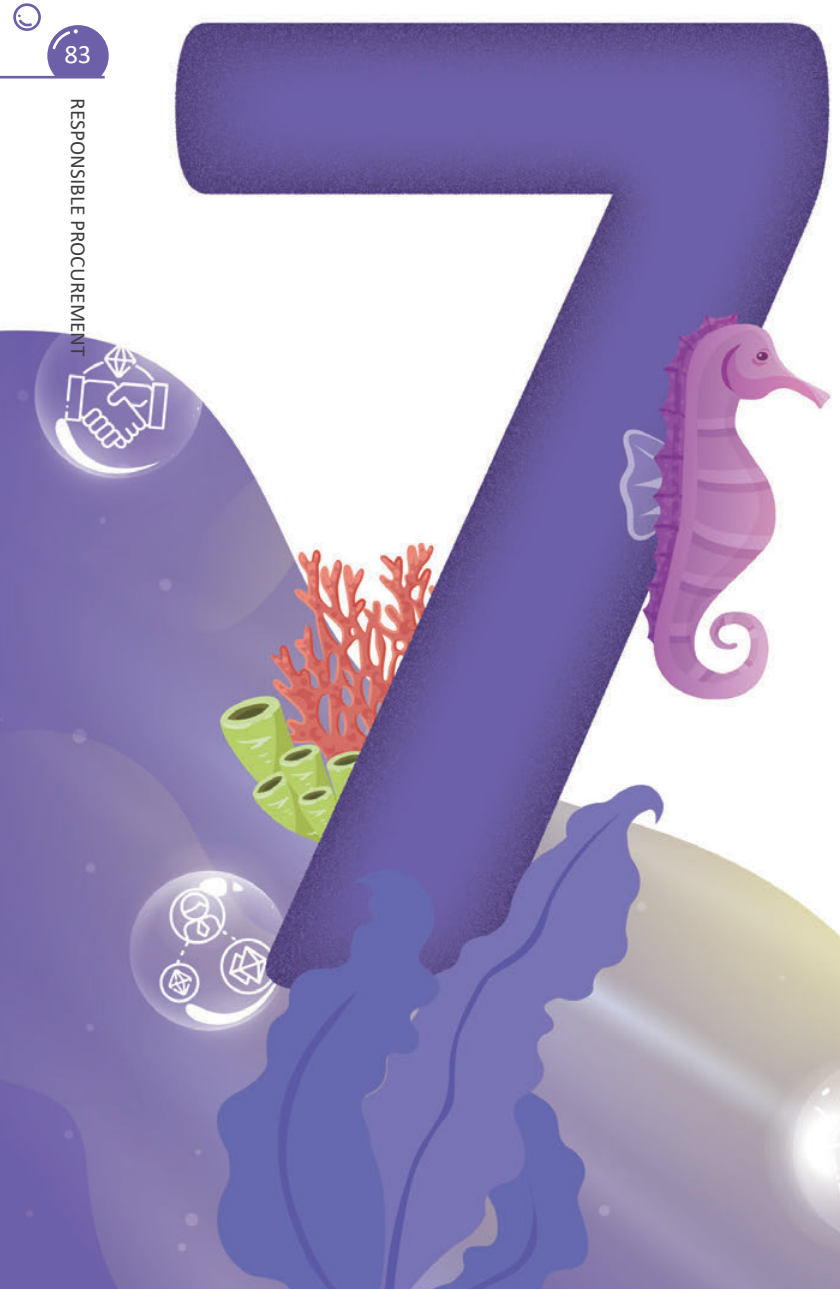
All of our manufacturing facilities develop disaster response and recovery plan and conduct full-scale emergency drills annually in cooperation with the local authorities. Various scenarios are simulated at these drills to improve our disaster response plans. In 2018, we completed 807 drills for earthquakes, fire and chemical disasters.

Health Promotion

The healthy workplace development principles proposed by the World Health Organization (WHO) stipulate that a healthy workplace must account for the following aspects; "Physical Work Environment," "Psychosocial Work Environment," "Personal Health Resources," and "Enterprise Community Involvement". Moreover, it must strive for continuous improvement by implementing processes of integration, needs assessment, prioritization, planning, execution, evaluation, and improvement. ASEH provides our employees with various medical, health and psychological counseling services, formulates employee health management measures based on the concept of preventive healthcare, emergency infectious disease response procedures, emergency rescue procedures and maternal health. The company identified employees with high health risks and offered them health improvement plans as well as inviting them to participate in health improvement activities. In 2018, USI Taiwan and SPIL Hsinchu have introduced measures to encourage employees to give up smoking and lead more healthy lifestyles; such as implementing a smoke-free work environment. Such efforts were approved by the Health Promotion Administration of the Ministry of Health and Welfare, and awarded the Accredited Healthy Workplace certification.

Healthy Workplace Promotion Model and Major Achievements in 2018

Aspects of a Healthy Workplace	Major Activities	Major Achievements in 2018
Physiologically healthy environment	• Assessment of ergonomic work environment • Assessment of the causes of occupational injuries • Assessment of maternal health protections in the workplace	• Professional specialist physicians provided services at the facilities, helping the company assess the work environment of approximately 95 employees • Approximately 8,000 employees attended the ergonomic hazard courses, elevating employees' awareness of said hazards to 98%
Psychosocially Healthy Environment	• Follow-ups on the channels for reporting workplace bullying • Health and comprehensive training	• Built psychological counseling rooms and provided psychological counseling to employees • Provided workplace human rights training to approximately 162,000 employees, totaling approximately 205,000 training hours
Personal Health Resources	• Regular health checks for general employees and health checks for employees working in special working environments • Family medicine clinics • Art-culture and sports society	• Invested approximately US$3 million and arranged health checks to more than 53,800 employees • Offered health clinics (to give up smoking, weight loss, and physical and psychological clinics etc.); approximately 1,300 employees participated in the weight loss clinics, where they lost a total of approximately 4,300 kg • Cloud based employee health information
Enterprise Community Involvement	• Community-based medical services • Promotion of community sporting events	• Smart mobile clinic • Taoyuan half-marathon • Long-term care and LOHAS activities



RESPONSIBLE PROCUREMENT

ASEH is committed to partnering with our suppliers to ensure that working conditions in ASEH's supply chain are safe, their workers are treated with respect and dignity, and that business operations are environmentally responsible and conducted ethically.

The supply chain is a critical extension of the ASEH value chain. We are actively involved in the sustainable development of our supply chain to ensure that our tier-1 suppliers and contractors provide high-quality products and services to ASEH in a sustainable, ethical and responsible fashion

Sustainable Value Assessment – Social Aspect (Suppliers)

2018 Key Performance

Supplier Sustainability Audit
107 suppliers

44% Percentage of Non-tier-1 Suppliers Included for Management

Conflict Minerals Compliant Supplier Ratio **100%**

DRC Conflict-Free Products **100%**

Conflict Minerals Survey
550↑ suppliers

SDGs	Business Actions	2018 Material Aspects	KPI	2018 Target	Status	2018 Performance	2019 Target
4 QUALITY EDUCATION 8 DECENT WORK AND ECONOMIC GROWTH	Ensure that all employees across the business and supply chain earn a wages that allows them to support the education of their dependents and ensure that there is zero child labor.	Sustainability Supply Chain	% of DRC Conflict-Free product lines of Packaging and material services	100% of product lines	Achieved	All products lines (100%) are DRC Conflict-Free	100% of product lines are DRC Conflict-Free
			% of DRC Conflict-Free product lines of Electronic manufacturing services	100% of product lines	Achieved	All products lines (100%) are DRC Conflict-Free	100% of products lines are DRC Conflict-Free
			# of supplier sustainability audits for raw materials suppliers	100 audits	Achieved	107 raw materials supplier audits were completed covering labor, health and safety, environment and ethic indicators	100 raw materials suppliers sustainability audits
			% of critical direct material suppliers completing RBA SAQ	85%	Not Achieved	66% of critical direct material suppliers completed RBA SAQ	85% of critical direct material suppliers completing RBA SAQ
			% of critical direct material suppliers of our packaging and material service that complete workers' human rights risk assessment and improvement	60%	Achieved	60% of critical direct material suppliers of our packaging and material service that complete workers' human rights risk assessment and improvement	65% of critical direct material suppliers of our packaging and material service that complete workers' human rights risk assessment and improvement
			% of purchasing amount of non-tier 1 suppliers that conduct risk assessment	40%	Achieved	Non- tier 1 suppliers conducted risk assessment with 44% of purchasing amount	Non- tier 1 suppliers conducted risk assessment with 45% of purchasing amount
13 CLIMATE ACTION	Substantially reduce emissions from our supply chain and our operations, in alignment with climate science.		% of raw material suppliers with 80% of purchasing amount obtaining Greenhouse Gas verification	50%	Not Achieved	49% of purchasing amount suppliers' obtaining Greenhouse Gas verification	60% of purchasing amount suppliers' obtaining Greenhouse Gas verification

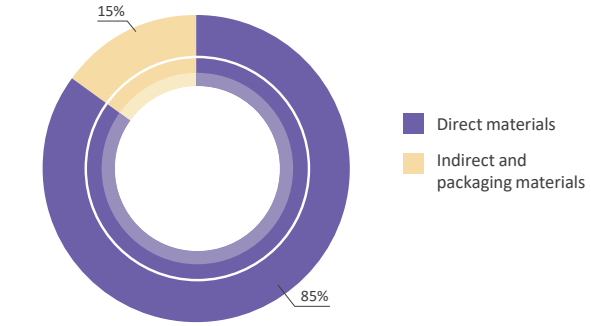
7.1 Supply Chain Overview

ASEH's current facilities in Taiwan, China, Japan, Korea, Malaysia, Singapore, America, and Mexico provide assembly, testing and material (ATM) manufacturing services, and electronics manufacturing services (EMS). ASEH works with thousands of suppliers globally to procure raw materials, equipment, facility/engineering services, waste management services, transport, logistics and subcontract services. The supply of raw materials have 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 ensure efficient resource allocation and management of raw material suppliers, we identify tier-1 suppliers based on their annual procurement value and maintain regular management controls with these critical suppliers[1].

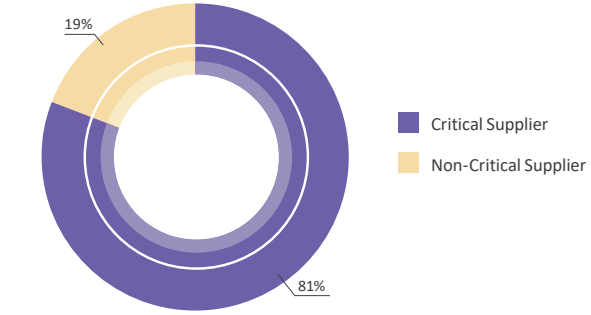
To lower overall supply chain risks, ASEH has expanded the scope of sustainability risk management to non-tier-1 suppliers. There are currently over 400 non-tier-1 suppliers which accounted for 44% of our total procurement amount.

We also performed risk assessment on the geographic locations of, and type of materials supplied by non-tier-1 suppliers, from which 142 critical non-tier-1[2] suppliers were identified. ASEH shall follow up on the risk status of these suppliers and perform further risk control.

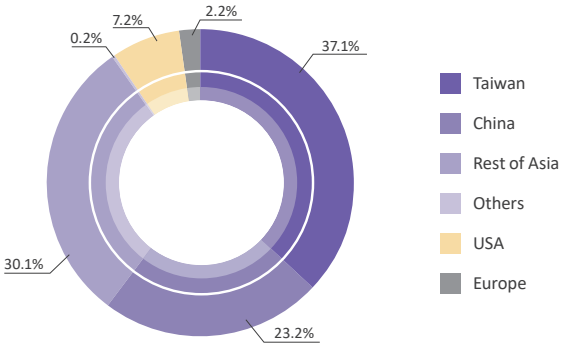
2018 Raw Materials Supplier Category
(Per annual procurement amount)



2018 Critical and Non-Critical Supplier Distribution
(Per annual procurement amount)



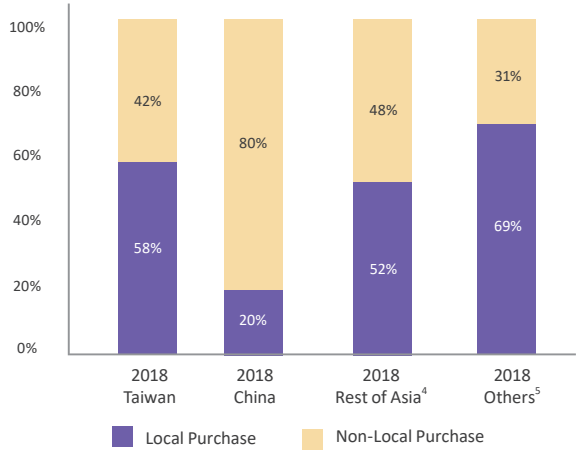
2018 Raw Materials Supplier Distribution Area
(Per annual procurement amount)



Supporting Local Suppliers

Through its collaboration with local suppliers[3], ASEH hopes to establish technical capabilities, create jobs, and reduce carbon emissions from the overall supply chain. In 2018, procurement from local suppliers accounted for approximately 36% of the total procurement amount.

2018 Raw Material Local Purchasing Spends



[1] The definition of critical raw material supplier as follow : (1) Top 85% of direct material purchasing amount, (2) Indirect material suppliers refer to those with a purchasing spending over 2 million USD with ATM; purchasing spending over 1 million USD with EMS, (3) Single source or non-substitutable suppliers

[2] The definition of critical non-tier 1 suppliers as follow : (1) Supply to critical tier 1 suppliers, (2) Supply to tier 1 direct materials suppliers who ASE spend over 10 million USD/year, (3) Supply to more than two tier 1 suppliers

[3] Local supplier refers to the supplier's register location is located at the same country where ASE manufacturing facility is located

[4] Rest of Asia：Japan, Korea, Malaysia and Singapore

[5] Others：USA and Mexico

7.2 Supply Chain Management Framework

ASEH Purchasing and Supply Chain Development Policy

The ASEH Purchasing and Supply Chain Development Policy is published on the company website to communicate ASEH's supplier sustainability expectations. We hope to make a positive impact on the global electronic industry supply chain and establish sustainable supply chains with its suppliers. ASEH is also devoted to socially responsible procurement and innovation throughout the supply chain, on top of providing responsible and quality services to our customers.
Please visit: http://www.aseglobal.com/en/csr_supplier_coc.html

ASEH Supplier Code of Conduct

The supply chain is a major extension of ASEH's business operations and we actively foster sustainability 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 and management and various corporate compliance standards. The suppliers are also required to drive their suppliers to meet such standards and oversee their compliance status.
Please visit: http://www.aseglobal.com/en/csr_supplier_coc.html

Supply Chain Management Strategy

Through stable partnerships with its suppliers, ASEH hopes to improve the overall supply chain resilience and implement socially responsible procurement. 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. From an overall supply chain management perspective, and using a risk and opportunity assessment to analyse our current supply chain status, we developed various programs in recent years focusing on responsible procurement, supply chain diversification and mitigation of supply chain disruption to attain win-win collaboration with our suppliers

7.3 Supply Chain Sustainability Management

ASEH has suppliers around the world, all of which are important partners. Beyond value creation, we also hope to be able to address labor rights and environmental protection issues by joining the Responsible Business Alliance (RBA) and actively participating in its annual conference. 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 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 2018.

ASEH strives to be an advocate on major topics impacting corporate sustainability. In 2018, ASE supported the RBA Outreach Meeting which attracted over 140 participants. Aside from experience-sharing by international enterprises, the event focused specifically on the labor challenges faced by Taiwanese enterprises. ASEH aims to improve the competitiveness of Taiwanese enterprises through the active promotion of industry forums and learning from global corporations' experiences.

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.

- Supplier Code of Conduct Commitment Letter
- Sustainability Risk Assessment Questionnaire

- Risk Assessment 1：Active Risk Assessment
- Risk Assessment 2: Sustainability Risk Assessment Questionnaire
- Risk Assessment 3：High-Risk Supplier Risk Assessment/Audit

- On-site/Off-site Audits
- Corrective Action Verification

- Trainings

Supplier Sustainability Requirement

ASEH's raw material suppliers are required to sign the "ASEH Supplier Code of Conduct Commitment Letter". The suppliers are also required to complete a sustainability risk assessment questionnaire that covers regulatory compliance, sustainable management, supplier management, conflict mineral management, environmental protection, health and safety, labor rights, human rights, etc. The purpose of the questionnaire is to assess each supplier's sustainability risk and conduct an on-site audit where necessary to ensure conformity to ASEH's supplier sustainability standards. In parallel, we encourage suppliers to seek continuous improvement by acquiring internationally recognized certifications such as ISO 9001, IATF 16949, ISO 14001, OHSAS 18001/ISO 45001 and ISO 14064-1.

Supplier Sustainability Risk Assessment

To assess the current status of supply chain sustainability development and risk management status, ASEH conducts an annual three-step supplier sustainability risk evaluation and analysis. This allows ASEH to identify the suppliers that exhibit potentially high social, economic, and environmental risks. Deficient suppliers will have to undergo audits and follow ASEH's corrective guidelines to ensure effective mitigation and control of risk.

Risk Assessment 1 (RA 1)：Active Risk Assessment

We conduct a preliminary assessment and analysis of potential risks to suppliers based on location, procurement amount, type of product supplied and manufacturing process.

Risk Assessment 2 (RA 2): Sustainability Risk Assessment Questionnaire (SAQ)

To ensure effectiveness in the assessment and protection of small and medium suppliers, we have established various standards and requirements for critical and non-critical suppliers that help ASEH develop a more resilient and sustainable supply chain. In 2018, we conducted sustainability risk assessments on over 700 tier-1 suppliers that achieved a response rate of more than 70%.

- Critical suppliers : the implementation of a management system is a basic requirement, with the sustainability management practices and performance included as assessment criteria; or the completion of a RBA Self-Assessment Questionnaire (RBA SAQ).
- Non-critical suppliers : the focus is on management system requirements.

Risk Assessment 3 (RA 3): On-site audit/RBA VAP/RBA SAQ

From the review and analysis of the questionnaire results, we were able to identify potential high-risk suppliers and take appropriate action to ascertain their risk status and reduce the risks.

- Critical suppliers : implement on-site audits or request for completion of RBA Validated Audit Process (VAP)
- Non-critical suppliers : request for completion of the RBA SAQ

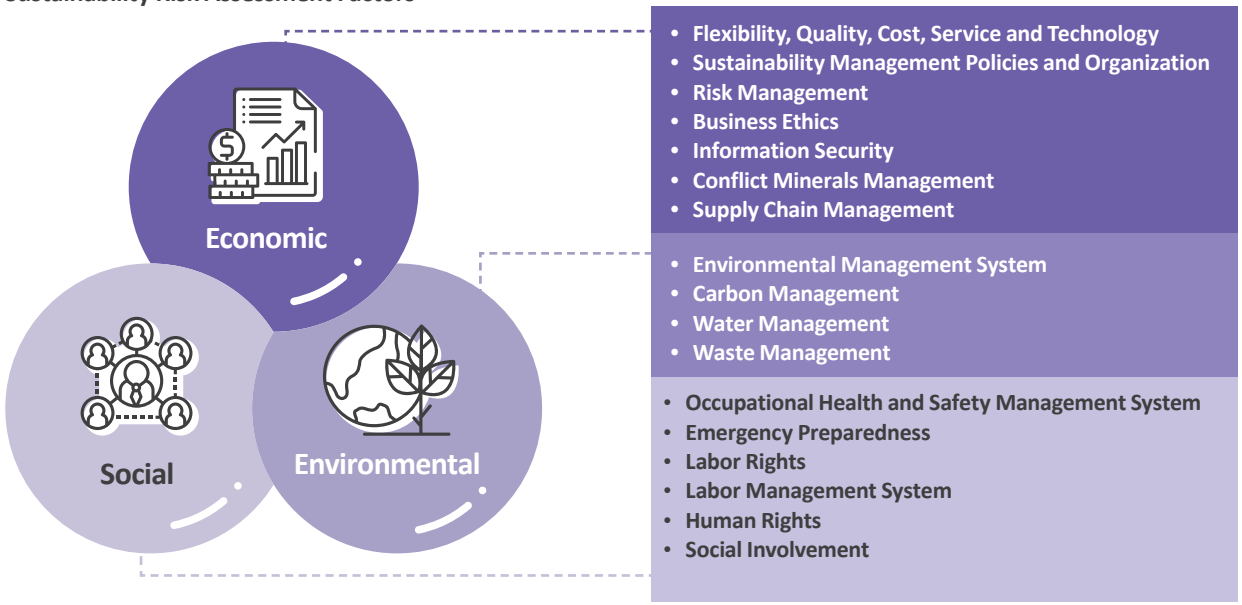
Supplier Sustainability Risk Assessment Targets and Procedures

Risk Assessment 1 (RA 1)
We conduct an initial risk assessment of suppliers based on the manufacturing location, manufacturing processes, and procurement amount.

Risk Assessment 2 (RA 2)
Critical suppliers：ASE SAQ/RBA SAQ **Non-critical suppliers**：ASE SAQ

Risk Assessment 3 (RA 3)
High-risk critical suppliers：On-site audit/RBA VAP **High-risk non-critical suppliers**：RBA SAQ

Sustainability Risk Assessment Factors



Supplier Major Sustainability Risk Factors in 2018

Category	Risk Factors	Risk Description
Economic	Risk Management and Continuous Operation Management	Evaluation procedures for the risks and impacts associated with continuous operation have not been established.
		Identification procedures for regulatory risks associated with continuous operation have not been established.
	Supplier Sustainability Management	Guidelines for requesting sustainability compliance from suppliers have yet to be established.
Environmental	Environmental Management	Evaluation procedures for risks and impacts associated with climate change have yet to be established.
		GHG inventory mechanisms have yet to be established.
		Management mechanisms for waste management service providers have yet to be established.
Social	Occupational Health & Safety (OHS)	Procedures for the identification of OHS regulations have yet to be established.
	Labor Rights	Procedures for the identification of labor regulations have yet to be established.
		Procedures for the assessment of labor-related risks and impacts have yet to be established.
		Mechanisms for managing employment agencies have yet to be established.

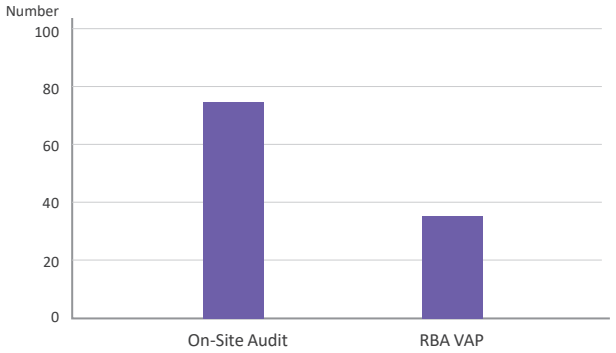
Supplier Sustainability Audit Mechanism

ASEH established a supplier sustainability audit system to carry out routine and ad hoc audits on-site, through document submissions, and through appointing third-party agencies or the RBA VAP. Deficient suppliers are required to draw up corrective action plans and rectify them within a given time frame. We will then review the results of their corrective action plans, followed by another assessment on the status the following year.

In 2018, we conducted on-site audits/RBA VAP on 107 raw material suppliers and on-site audits of 76 human resource/service contractors, including high-risk critical suppliers. All audited suppliers completed the corrective actions within the given time frame; and after evaluation, 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 2018, 23% of our non-tier- 1 suppliers completed sustainability questionnaires, and 5% of the non-tier-1 suppliers completed on-site audits/RBA VAP. We shall continue to perform sustainability risk assessment on non-tier 1 suppliers to better manage risks to our supply chain

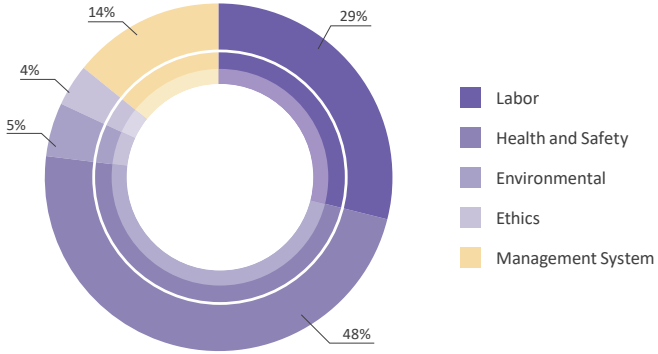
Type of Raw Material Suppliers Audits in 2018



Supplier Audit Results and Corrective Actions in 2018

Category	RBA Classification	Major Nonconformance Found	Corrective Measures
Labor	Working Hours	• Working hours exceeding 60 hours a week • Working seven days consecutively	• Recruiting enough employees in accordance with production needs to prevent excessive overtime work from manpower shortages • Establishing regulations and tracking mechanisms to assure workers have one day off every seven days and implementing overtime work controls
	Wages and Benefits	• Deductions from wages as a disciplinary measure	• Stipulations in company regulations forbidding the use of wage deductions as a disciplinary measure
	Freely Chosen Employment	• Workers not allowed to freely terminate their employment	• Stipulations in employment contracts and company regulations stating that employees have the freedom to terminate their employment provided that advance notice is given
Health and Safety	Emergency Preparedness	• Access to fire safety equipment obstructed • Insufficient information on emergency evacuation plans	• Regular inspections to ensure effective fire safety equipment and unobstructed egress • Regular review and revision of emergency evacuation plans in facilities
	Occupational Safety	• Employees not equipped with proper protective equipment in hazardous working environments	• Enhancing training and management mechanisms to improve employees' safety awareness
	Health and Safety Communication	• Health and safety related information not posted in working environments involving use of chemicals	• Provision and regular review of safety information in the languages of foreign workers within all operating areas involving use of chemicals
Environmental	Hazardous Substances	• Insufficient classification and management of hazardous substances	• Regular inspections to ensure proper classification and storage of hazardous substances
Ethics	Protection of Identity and Non-Retaliation	• Anonymous whistle-blowing mechanisms not established	• Establishment of whistle-blowing and grievance channels as well as follow-up mechanisms to protect the identity and rights of whistleblowers
Management System	Communication	• Unclear conveyance of information to employees (e.g., labor-management meetings)	• Establishing procedures for clear conveyance of information to employees
	Training	• Ethics training programs for employees not established	• Establishing comprehensive training programs in relation to labor, the environment, and health & safety
	Supplier Responsibility	• Supplier risk assessment and auditing procedures not established	• Establishing procedures for supplier risk evaluation and auditing

2018 Supplier Sustainability Audit Findings by Category



Sustainable Supply Chain Development Program

ASEH continues to support its suppliers by providing education and training, organizing seminars, forums and counseling sessions. These efforts help ASEH stay responsive to an ever changing business landscape and to foster sustainability values throughout the supply chain.

Supply Chain Greenhouse Gas Inventory Guidance Program

To counter the impacts and risks brought by global climate change, ASEH has invested resources to help suppliers with the early establishment of a regulatory (e.g., Taiwan's Greenhouse Gas Reduction and Management Act) compliant greenhouse gas management system. We launched a two-year (2018-2019) supply chain greenhouse gas guidance program in Taiwan with external consultants and through on-site guidance, we assisted at least 20 suppliers to incorporate greenhouse gas management systems that meet ISO 14064-1 standards. The program has enabled suppliers to master its own greenhouse gas emissions, and acquire ISO 14064-1 external verification to establish the ability for supply chain carbon disclosure and improve their competitiveness.

ASEH applies the social return on investment (SROI[1]) methodology to evaluate the social impact of the supply chain greenhouse gas guidance program. The methodology also evaluates the changes in suppliers and participants before and after the program implementation to obtain an in-depth understanding from a stakeholder's perspectives which serves as guidance for the optimization of future to the direction and strategy for future optimization strategy.

Risk of Foreign Forced/Bonded Labor in Supply Chain Corrective Action Project

ASEH is committed to the protection of the dignity and the rights of workers. In 2018, we collaborated with suppliers to review and conduct due diligence on the hiring process of foreign workers, and explore ways to improve the process. The aim is to eliminate any practice of forced or indentured labor, and to make up for the inadequacy in local labor law protection and/or complex hiring procedures within our supply chain.

Supplier Sustainability Education and Training

ASEH continues to invest resources enhance the sustainability performance of its supply chain risks. We have organized variousing sustainability education and training, and conducted guidance outreach at multiple facilities to communicate our supply chain management requirements. In 2018, we conducted 10 seminars/consulting globally, with 792 people attendees from more than 560 suppliers attended.

SROI in supply chain GHG inventory assistance

ASEH is committed to build a resilient and sustainable supply chain. Through past interactions with our suppliers, we have identified that our suppliers need to enhance environmental data management and the credibility of their data. Consequently, we launched a two-year supply chain GHG emission reduction assistance project in cooperation with external consulting units. In 2018, the project successfully helped ten suppliers pass the external verification for ISO 14064-1 compliance.

To further understand the social benefits and impacts on stakeholders brought about by the "Supply Chain GHG Inventory Assistance Project", we conducted a SROI analysis on the social influence of the project in 2018. According to our analysis, over 60% of our suppliers included GHG emission information in their procurement decision-making process. 81% of the suppliers believed conducting GHG emission management could improve company image and facilitate business development. Meanwhile, all suppliers (100%) expressed they would make changes to their day-to-day procurement.

[1] Social return on investment (SROI) is a method for measuring social, environmental, and economic values created by corporations in CSR activities. The concept is to identify the cost-and-effect relationship between the resources invested and the values created, ie, the social value created with every dollar invested. Externally, this information allows stakeholders to understand clearly the level of contribution of an enterprise to society. Internally, it helps the enterprise understand whether the projects implemented have achieved the expected results. The experience can be used to modify subsequent projects and maximize the influence of investment.

ASE - Sustainability Seminar

- We organized 5 supplier sustainability seminars at our facilities in South Korea, Suzhou, Wuxi, Singapore, and Malaysia. A total of 213 people from 157 suppliers attended the seminar.
- Through the seminars, we strengthened suppliers' sustainability management through the communication of ASEH's supply chain sustainability management standards and RBA requirements, as well as our boundaries on regulating conflict minerals.

ASECL - Health and Safety Family Program

- We organized education & training for suppliers and contractors. A total of 98 people from 32 suppliers/contractors participated in the events.
- The training discussed the "responsibilities and proper conduct of occupational health & safety personnel" through experience-sharing and collaboration between the ASE Chungli Facility and its suppliers and contractors. ASE Chungli assists and guides these small businesses to improve their working environment, enhance health and safety self-management, raise their awareness of sustainable management, and promotes labor health & safety.

USI- Sustainability Seminar

- We organized 3 Supplier Sustainable Supply Chain Seminars in Taiwan, Shanghai and Shenzhen. A total of 287 people from 217 suppliers participated in the seminars.
- We discussed the USI Administrative Strategies for Sustainable Development Goals, the implementation of the RBA Code of Conduct and VAP, conflict minerals management and the latest updates to international environmental regulations (e.g., RoHS and REACH) and regulatory trends. This ensures that suppliers understand USI's sustainability management requirements and helps them gain a deeper insight into USI's sustainable development policies and system.

SPIL- Supplier Sustainable Practices, Health & Safety Awareness, and Experience Sharing

- The company has organized education and training for our contractors. A total of 194 people from 155 contractors, human resource providers, and service providers participated in the event.
- SPIL communicated to its suppliers the philosophy of the RBA and analysed the differences between different versions of the Code of Conduct and the common nonconformities found in RBA audits. Through this practical analysis, SPIL hopes to encourage suppliers to establish their own sustainable management framework and conform to RBA requirements, gradually reducing their risks. With regards to health & safety, SPIL has raised awareness using case studies and experience sharing to reduce the likelihood of hazards through comprehensive preventive measures.

ASESG Sustainability Seminar

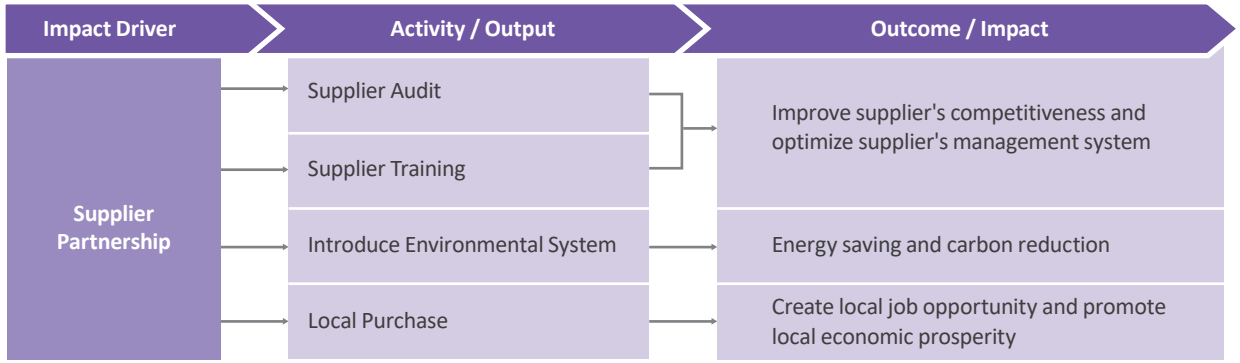
ASEKR Sustainability Seminar

USITW Sustainability Seminar

SPIL Sustainability Practice Workshop

Sustainable Value Assessment – Social Aspect (Suppliers)

ASEH's social impact sustainable value assessment for suppliers shows that the primary impacts and influence paths generated by the activities under ASEH's current agreements with suppliers are: 1. Enhancing supplier competitiveness by making it easier for suppliers to conform to sustainability standards and auditing during collaborations with other international customers, pinpoint key sustainability risks, and reduce importation and certification costs and time. 2. Increasing the effects of energy saving. In 2018, ASEH assisted suppliers to incorporate ISO 14064-1 principles into their management system that influenced their procurement behavior and energy-saving awareness. 3. Promoting the growth of the local economy and job opportunity creation through sourcing from local supplier.



ASE Best Supplier Awards Ceremony

The award ceremony for the ASE Group Best Supplier Awards 2018 took place on March 14, 2019. At the opening of the event, Dr. Tien Wu, CEO of ASE, spoke about the trends and outlook for the assembly & testing industry and opportunities for collaboration between ASE's suppliers. Dr. Wu further expressed his gratitude to suppliers for their major contributions to the company. The event also featured topics on industry sustainability, including "Sustainability management in the microelectronics industry: why matters and how to make it better?" and "Sustainable finance: the new driving force behind sustainable global supply chains". These topics presented by guest speakers with both professional and academic research backgrounds, were aimed at sharing with suppliers the importance of sustainability and its future trend. The awards given included "Best Supplier - Group level", "Best Supplier - Branch level", and the "ASE Sustainability Award" for outstanding sustainability performance. ASEH hopes to encourage suppliers to join our efforts towards sustainable development, by utilizing the industry's positive influence to direct more suppliers towards proactive sustainability and welcoming a more sustainable future for the semiconductor industry.

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

7.4 Conflict Minerals Compliance

To communicate ASEH's conflict minerals management requirements, the ASE Technology Holding Co., Ltd. Corporate Policy for Sourcing Conflict Minerals is posted on our company website, please visit: http://www.aseglobal.com/en/csr_conflict_minerals_compliance.html

Conflict Minerals Compliance

To prevent the unintentional use of any conflict mineral such as tantalum, tin, tungsten and gold (3TG for short) from the Democratic Republic of the Congo and its neighboring countries, we have established the ASEH Conflict Minerals Policy, joined the Responsible Minerals Initiative (RMI)[1], and participated in the group's effort to use the RMI Conflict Minerals Reporting Template (CMRT) and Due Diligence (DD) to resolve conflict minerals issues in the supply chain and support responsible sourcing.

Conflict Minerals Management Approach

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

Conflict Mineral Requirement

ASEH communicates conflict mineral policies to our suppliers through our website. The suppliers are required to comply with ASEH conflict minerals policy 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.

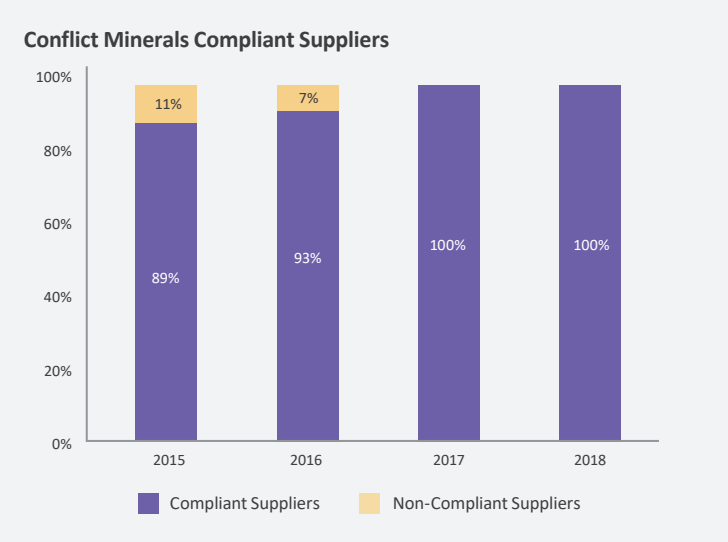
Reasonable Country of Origin Inquiry (RCOI)

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 Conflict Minerals Policy and to fully reveal the source of the SoRs they sourced from.

Since 2011[1], 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 2018, we have extended the scope of supplier survey and identified 260 SoRs from more than 550 suppliers. According to the supplier survey we conducted in 2018, 100% of our suppliers are compliant with ASEH's requirement for sourcing DRC conflict-Free minerals.



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/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[2] 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.
Based on our RCOI analysis and DD measures in 2018, 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.

ASEH SEC Conflict Minerals Filing

We disclose the Conflict Minerals report on our company website annually. For complete file of ASEH SEC Conflict Minerals Filing, please visit: http://www.aseglobal.com/en/csr_conflict_minerals_compliance.html

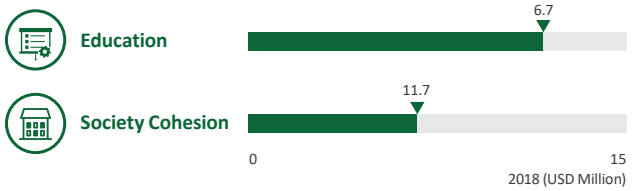
[1] Since 2011, ASE and USI have performed annual investigations on the smelters' sources of 3TG necessary to the manufacturing processes or products of the assembly and material manufacturing services and electronics manufacturing services. The CMRT is further used to identify the sources and minerals used by suppliers and smelters.
[2] Since 2015, ASE and USI have conducted an IPSA annually.

CORPORATE CITIZENSHIP

ASEH is committed to devote ourselves to the community through charity, education and social work which optimize resource allocation and maximize social influences.

ASEH continuously engages with local communities, NGOs, government, industry, academic and other stakeholders in strategic ways to establish trust and obtain direct input to support social development, while achieving corporate and societal value. At the same time, we strive to facilitate public advocacy related to our core business and sustainable development to promote a positive corporate image and create a meaningful influence to society.

Sustainable Value Assessment – Social Aspect (Social Involvement)



2018 Key Performance

2014~2018
Environment Conservation
Fund(ECF) Programs
NT$ **500** Million

2014~2018
LED Lamps Installation
63,500 units

2018 Community Engagement
NT$ **56.4** Million

2014~2018 Tree planting
121[1] hectares

2018 Industry-Academia Collaboration
NT$ **46.5** Million

SDGs	Business Actions	2018 Material Aspects	KPI	2018 Target	Status	2018 Performance	2019 Target
13 CLIMATE ACTION	Promote climate conscious behavior and build capacity for climate action	Social Involvement	• # of install LED lamps and schools • # of hectares for tree plant • # of participants to join environmental course	• Install 10,000 LED lamps and 5 schools • 5 of hectares for tree plant • 2,000 of participants to join environmental course	Achieved	• Install 10,122 LED lamps and 8 schools • 13 of hectares for tree plant • 2,600 of participants to join environmental course	• Install 12,000 LED lamps and 10 schools • 10 of hectares for tree plant • 2,500 of participants to join environmental course
4 QUALITY EDUCATION	Implement programmes to support higher education and access to free, equitable, and inclusive primary and secondary education		• # of students for after school care • # of people to join semiconductor course	• 100 of students for after school care • 100 of people to join semiconductor course	Achieved	• 123 of students for after school care • 158 of people to join semiconductor course	• 100 of students for after school care • 100 of peolple to join semiconductor course
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		• # of innovation projects cooperation with the university • # of initiative sustainable Act	• 20 of innovation projects cooperation with the university • 1 of initiative sustainable Act	Achieved	• 42 of innovation projects cooperation with the university • 4 of initiative sustainable Act	• 30 of innovation projects cooperation with the university • 1 of initiative sustainable Act

[1] In 2014~2018, USI plants trees about 25 hectares at Inner Mongolia.

Social Involvement Focus & Benefits/KPIs

Focus	SDGs Alignment	Business Drivers	Business Benefits & KPIs	Social/Environmental Benefits & KPIs	Impacts
Environmental Conservation		To enhance education and awareness for environmental mitigation, adaptation, and early prevention, the company invests in the R&D of environmental technologies and raises production efficiency. ASEH initiated the 'Promotion of Environmental Education Program' and collaborated with local communities, NGOs and schools to promote research and education in environmental studies. We have also influenced consumer habits by raising the awareness on eco-friendly products through our 'Promotion of Environmental Protection Art & Culture Program'. These programs have enabled ASEH to improve its overall production efficiency as well as enhance the value contribution from semiconductor industry players.	**Promotion of eco-friendly technologies; improvements to manufacturing efficiency** **2018:** • 9 joint research projects with academic/research institutions on environmental technologies • Increase in volatile organic compounds (VOCs) treatment efficiency - annual reduction of 3.1 tons in VOC emission • The use of microbial cultures reduced the amount of highly concentrated wastewater - annual reduction of 1,100 tons of wastes, US$1.2 million saved in the cost of outsourced waste management • Silica sludge from wafer cutting - annual reduction of 10%, about US$0.8 million in the cost of outsourced waste management • Annual cyclopentanone (CPN) recovery from 49 tons of waste; annual reduction of US$ 0.16 million in the cost of outsourced waste management **2015~2018:** • Participated in 41 joint eco-friendly technology projects with schools or research institutes, reduction of US$ 2.7 million in the outsourced waste management	**Environmental impact reduction and quality of life improvements** **2018:** • Installed 10,122 LED light tubes at 8 schools resulting in annual energy savings of 405,000 kWh and carbon emissions reduction of 214 tons CO_2e • Conducted 22 environmental education courses with 2,600 participants; produced 7 environmental education videos and 8 environmental education lesson plans **2015~2018:** • Installed 63,549 LED light tubes at 50 schools resulting in annual energy savings of 2.5 million kWh and carbon emissions reduction of 1,340 tons CO_2e	• In the development of new products, careful planning is carried out to ensure the use of materials and manufacturing processes that mitigates environmental impact, uses recyclable materials and adopts green manufacturing. We have noted a significant change in employee awareness on environmental protection and carbon reduction. • Due to our successful industry-academia collaboration on environmental studies, 6 of our industry peers have also applied the methodologies in their manufacturing process, to improve eco-efficiency.
Industry-Academia Collaboration		As the semiconductor segment is a high-tech industry with a wealth of scientific research and cross-disciplinary R&D talents, it is necessary for us to capture professional skills and enhance employment opportunities. In-depth academic research collaboration has allowed us to develop the next generation of semiconductor technologies and materials to improve our competitive edge. We also offer semiconductor courses in collaboration with local schools, scholarships, and internships to attract and recruit people into the industry and provide skill development for the workforce. The promotion of industry-academia collaborations, corporate internships and scholarship programs help nurture our employees and develop the value of human capital.	**Cultivating human capital and promoting the innovation and development of semiconductor technologies** **2018:** • 42 Industry-academia collaboration projects, including the development of Smart Yield Management System, Artificial Intelligence in Substrate Layout Automation, Smart Predictive Maintenance, Virtual Metrology System, Material Characterization Database, and Neural Network Manufacturing Process Risk Prediction System. • 158 students participated in the semiconductor industry courses. **2015~2018:** • we conducted a total of 83 industry-academia projects involving 615 students, on IC assembly and test, advanced materials and production automation technologies.	**Increasing youth employability and filling the gap in educational resources** **2018:** • Interns - 366 students • Join research project - 131 students • Scholarship - 55 students • 50 Universities Cooperation **2015~2018:** • Interns - 2,349 students	• In response to the development in heterogeneous integration technologies, we have established ASE Industry Colleges with top universities. Currently there are three Industry Colleges, specializing in semiconductor assembly & testing, smart automated manufacturing, and artificial intelligence. • Improving youth employability, competitiveness, and filling the gap in educational resources.

Focus	SDGs Alignment	Business Drivers	Business Benefits & KPIs	Social/Environmental Benefits & KPIs	Impacts
Community Engagement		To ensure that underprivileged communities enjoy equal access to economic resources, we help to improve the economic, social, and environmental development between the rural and urban communities in all the regions that we operate in. We focus our efforts on major areas like community development, social welfare and emergency aid. Our active participation in community development and care for the underprivileged have strengthened our relationship with the local communities, leading to a stable social environment for each of our regional operations.	**Improving the community's quality of life, strengthening local emergency response mechanisms** **2018:** • Volunteer service hours - 12,000 hours • Number of volunteers - 2,130 **2015~2018:** • Volunteer service hours - 35,200 hours • Number of volunteers – 7,060	**Corporate citizenship activities to enhance the development of local community with the company** **2018:** • After school day care for underprivileged children - 123 children • Number of charitable organizations sponsored - 54 associations • Sponsorship of children from low income families - 842 children **2015~2018:** • After school day care for underprivileged children - Total of 533 children • Sponsorship of children from low income families - Total of 2,832 children	• ASEH Taoyuan and Nantou facilities established eldercare centers to help elderly relatives of employees and local residents learn about healthy lifestyle management. • In Kaohsiung, we launched the Smart Mobile Clinic that taps on cloud technology to provide medical services in rural areas where access to medical care may be inadequate or non-existent.
Public Advocacy		Sharing of knowledge, expertise, technology and financial resources help companies achieve sustainability goals. To that end, we have developed global partnerships through our sustainability development and promoted the exchange of knowledge, expertise and technologies with stakeholders. Our active participation in various public organizations also help expand our sphere of influence. Active participation in initiatives (core business, sustainability development etc.) promoted by sustainability organizations (economic, environmental and social aspects), and connecting with global semiconductor/ electronics industry players to develop next generation technologies help enhance our corporate image within the industry.	**To promote technological innovation and development** • Collaborated with 84 semiconductor and electric manufacturing institutions	**Promotion of ESG(environmental, social, and corporate governance) compliant behavior, and the support for the formulation of semiconductor CSR initiatives** • Collaborating with 47 sustainable institutions • ASEH proposed that amendments be made to the four following regulations: Waste Disposal Act, Regulations Governing Collection of Soil and Groundwater Pollution Remediation Fees, Emission Performance Standards for Greenhouse Gas Emission Sources, and the Air Pollution Control and Emissions Standards for the Semiconductor Industry.	• Creating a 'System in Package (SiP) heterogeneous integration' technology blueprint to develop the next generation technology for semiconductor manufacturing. • Founded the 'Circular Economy Alliance'[1] and collaborated with our OSAT competitors in Taiwan to jointly establish an industry standard for circular economy, promote sustainable supply chains and build an EHS information platform.

[1] Alliance member include TASS, SEMI Taiwan, TPCA, TSIA and TEEMA.

8.1 Social Involvement Overview

Social involvement refers not only to financial assistance but more importantly, the achievement of social regeneration. As the highest governing body of ASEH's social involvement, the CSC coordinates and supervises the establishment and implementation of policies and specifications related to social involvement. The CSC reviews annually, the promotion and implementation of social involvement based on ASEH's four principles: "environment conservation", "industry-academia collaboration", "community engagement" and "public advocacy". The Social Involvement Taskforce under the CSC provides our global manufacturing sites with relevant policies and standards, assesses risks and opportunities in public affairs, drafts and facilitates action plans. Global manufacturing sites are responsible for the planning of the organization, structure and allocation of responsibilities, formulating and implementation of action plans and targets in accordance with corporate policies and standards. We adopt the LBG (London Benchmarking Group) model and social logic to review the input, benefits and impact of each development aspect, and report the performance and results biannually.

In 2018, our total spend in social involvement was about US$ 7.4 million, accounting for 0.7% of ASEH's profit before income tax[1]. Compared with 2017, we had spent more resources in industry-academia education and community building activities in 2018, that enabled us to deepen our cohesiveness with the community, and collaboration with universities. During the year, over 2,130 employee volunteers and 12,000 volunteer hours were expended.

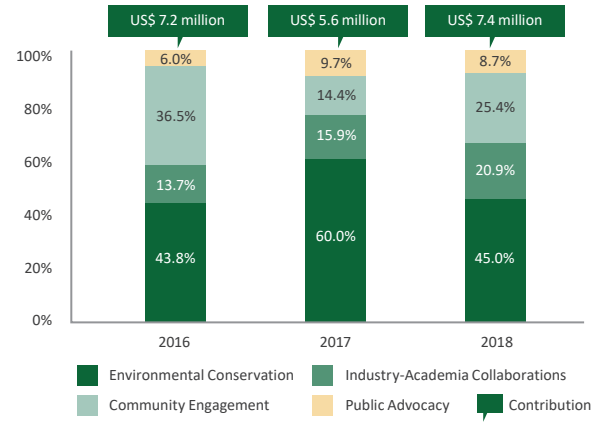
ASEH Public Affairs Engagement Policy
As an international corporate citizen, ASEH endeavours to advance public welfare while devoting ourselves to conducting stable business operations and managing shareholder returns. We seek to effect positive change and impact across the globe society.
Therefore, we are committed to ensuring that any contributions or spending regarding public affairs we make are:

1. for the purpose of supporting public affairs or promoting public policies;
2. in compliance with all applicable accounting principles and laws and regulations of countries in which we operate;
3. adequately disclosed in accordance with applicable laws and regulations and reporting requirements; and
4. in accordance with our relevant ethical policies and specifications.

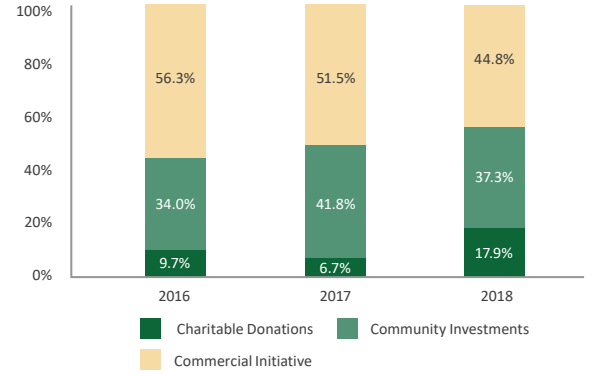
And the organizations that ASEH supports are limited to those:
1. have a consistent view with ASEH on the core business and sustainable development relevant issues that ASEH cares about; and
2. provide venues for discussion regarding public policy issues and advocate for common business interests.

[1] The 2018 pre-tax net profit was NT$31,937,678K (for more information, please refer to ASEH Form 20-F).

Distribution by Four Aspects



Distribution by Application



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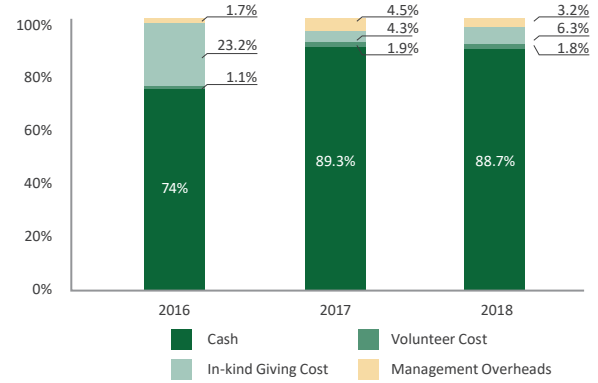


Sustainable Value Assessment - Social Aspect (Social Involvement)

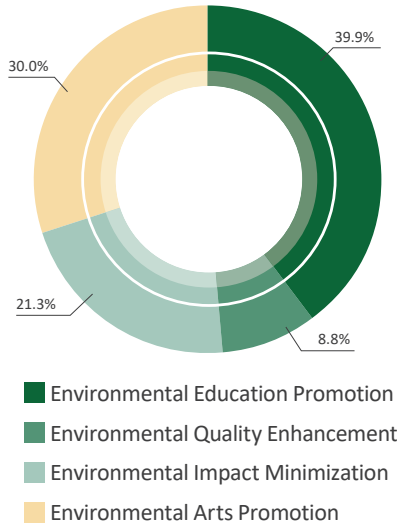
On education, we are focusing on talent development for the semiconductor industry and environmental education. We are working closely with academia by providing resources and practical experience to improve the quality of capable personnel, as well as the research capabilities and competitiveness of the semiconductor and technology industries. In addition, we hope to use environmental education to promote environmental protection and encourage people to incorporate ecofriendly practices into their everyday lives, we continue to communicate and engage with neighboring communities in our facilities. We use appropriate social cohesion relations activities to bolster our relationships with these local communities.

Impact Driver	Activity / Output	Outcome / Impact
Education	Semiconductor Class	Improve the quality of talent in the semiconductor industry
	Industry-Academic Cooperative Research Project	Enhance research capability and competitiveness of semiconductor and technology industry
	School Environmental Education	Implement environmental protection in life
	Community Environmental Education	
Social Cohesion	Community Development and Care	Enhance social welfare
	Minority Groups Care	Improve the well-being of residents
	Afforestation Activities	Ecology restoration and conservation
	Medical Sponsorship	Improve local medical level
	Arts and Sports Participation	Cultural influence and physical and mental satisfaction

8.2 Environmental Conservation

Since 2014, ASE has committed to donating at least NT$100 million per year for at least 30 years, to environmental protection in Taiwan. In 2018, NT$100 million was allocated for the ASE Cultural and Educational Foundation to implement "Environmental Conservation Fund (ECF)" programs. The focused aspects of the environmental conservation programs include "Environmental Education Promotion", "Environmental Quality Enhancement", "Environmental Impact Minimization" and "Environmental Arts Promotion".

Distribution by 2018 ECF Programs



2018 Accomplishments of ECF Programs

Programs	Major Projects
Environmental Education Promotion	• Environmental Thesis/Dissertation Awards • Environmental Technology Research Projects • Southern Taiwan Environmental Education Projects • "CommonWealth" Magazine in Taiwan -Creative Teaching Material Competition • River Water Resource Documentary Films • Global Harbor Cities Forum Kaohsiung • Environmental Education Films Projects
Environmental Quality Enhancement	• Afforestation Projects • Constructed Wetland Equipment Treatment • Ocean Environmental Protection • Reef Conservation Projects
Environmental Impact Minimization	• Campus LED Donation Projects • Water Recycling Model Plant Operation Sponsorship in NEPZ • Cuora Flavomarginata (yellow-margined box turtle) Conservation and Restoration • Green Supply Chain Projects • Sustainable Circular Economy Forum • Smart Grid
Environmental Arts Promotion	• Half Marathon Taoyuan • Lantern Festival in Kaohsiung • Spring Arts Festival in Kaohsiung • Public Social Welfare Sponsorships

ASE Everywhere

The ASE Cultural & Educational Foundation and the Chang-Yao Hung-ying Social Welfare Charity Foundation have been contributing to Taiwanese society for many decades, devoting themselves to environmental protection and social welfare causes. At the end of each year, we compile the results of our work in a periodical entitled "ASE Everywhere" and share them with the general public. In 2018, a total of 53 social welfare activities were organized.

Smart Grid

Campus LED Donation Projects

Afforestation Projects

"CommonWealth" Magazine in Taiwan - Creative Teaching Material Competition

Energy Forum

Environmental Thesis / Dissertation Awards

Environmental Technology Research Projects

8.3 Industry-Academia Collaborations

The technology needs of the IC packaging industry are becoming more sophisticated, and technological innovation is critical to ASE's corporate sustainability. Over the years, ASEH has invested heavily in resources and research funding to maintain our semiconductor technology leadership. We collaborate with top universities on various research and development projects that help strengthen semiconductor technologies through the synergistic relationship between industry and academia. The talent cultivation and the rising academic capabilities through the collaboration have enabled the entire semiconductor industry to thrive.

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 2018, ASE continued its collaborations with local schools, contributing over US$ 1.55 million, including US$ 1.31 million towards 42 technology research collaborations and US$ 0.18 million for scholarships. We also recruited 366 interns and enrolled 158 students in the semiconductor master's degree program. Nearly 50 schools and research institutions in Taiwan, China, Singapore, Malaysia, South Korea, Japan, etc. were involved in these collaborations.

2018 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 • 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

ASE Japan (Industrial Visit)

SPIL Changhua (Scholarship)


ASE Korea (Academic Scholarship)

Smart manufacturing at ASE Kaohsiung Facility

Smart manufacturing has been a part of the strategic blueprint for ASE Kaohsiung (ASEKH). In 2015, ASEKH began collaboration on automation technology research with various universities in southern Taiwan with 20 projects to date. By tapping on the expertise of academic institutions, we have developed a Smart Yield Management System that is capable of improving the machine's early-warning capabilities and the stability of manufacturing processes. We have also developed a Smart Predictive Maintenance and Virtual Metrology System, which uses algorithms to quickly find and improve critical parameters for yields. We have also greatly reduced the cost in time and manpower through the development of Artificial Intelligence for Automation in Substrate Layout. ASEKH has also established a keyword-based classification level relational database that utilizes big data analytics to manage access and provide early warning in the event of abnormal access or behavior in our IT infrastructure. ASEKH launched the AI Academy in collaboration with the National University of Kaohsiung, and invited industry experts in the field of artificial intelligence to share their knowledge and expertise. The facility has also collaborated with the university to organize lectures and hands-on training to cultivate professional technical engineers with advanced statistics expertise.

Advanced manufacturing engineering at ASE Kaohsiung Facility

ASEKH proposed 15 R&D projects on assembly & testing technologies at the 6th ASEKH Presentation of Industry-Academia Research in Assembly Technologies; with projects on advanced manufacturing processes and material analysis demonstrating promising results. In advanced manufacturing processes, the enhanced layout design and assembly structure enables multifunctional integration, low power consumption and miniaturization. We have improved the 12-inch wafer fan-out manufacturing process through the material characterization of epoxy molding compounds. In material analysis, we have established a complete material characterization database and determined the effect of material properties on product warpage, improving the stability and yield of the manufacturing process. As for the R&D on traditional assembly manufacturing process technologies, ASEKH worked with a research team from National Sun Yat-sen University to explore the issue of interlaminar stress via the relationship between the delamination of copper lead frames and the thickness of copper oxide layers. By applying 3D simulation software optimization and neural networks, we successfully integrated risk prediction into the manufacturing process' data analytics.

8.4 Community Engagement

ASEH seeks not only to create economic value but also to develop alongside local communities in the global locations we operate in. We hope community engagement activities will lead to value system and idea exchanges with the people in the local communities, allowing them to better understand ASEH's philosophy in sustainable operations and for ASEH to maximize positive benefits for our operations.

As part of our effort to continuously create economic value and simultaneously cultivate corporate values, we are committed to incorporating community resources and grow together with local communities. Through the ASE Charitable Foundation, we focused resources on "Community Development", "Charitable Care", and "Emergency Care and Assistance" programs. In 2018, we contributed over US$1.9 million for community engagement activities. We provided afterschool care for 123 students and financial assistance to 842 students from disadvantaged families, and made donations to 54 charities.

Smart Mobile Clinic and Long-term Care Program
With Taiwan's rapidly aging population and inadequate medical resources for preventive health examination in rural areas, ASEH is promoting elderly and long-term care programs through the ASE Cultural & Educational Foundation. Together with a professional medical team from the Kaohsiung Veterans General Hospital, ASEH helped launch the Smart Mobile Clinic. The clinic on wheels is fully equipped to provide advanced medical services that caters to long-term and disabled care, including long-term care, senior health examination, adult health examination, sarcopenia screening, frailty screening, and bone density tests. We also work with Fo Guang University to organize health care courses at our facilities in Kaohsiung and Nantou. ASEH is committed to protect the health of our employees, their families and the elderly in the community, and to cultivate expertise in long-term care.

8.5 Public Advocacy

As a global leader in semiconductor assembly and test, we recognize the need to play a more visible role advocating key issues affecting the industry. Aligning with United Nations' goal of improving the wellbeing of mankind, ASEH is fully committed to initiatives related to our core business and sustainable development (environmental, social and economic aspects). We support initiatives in corporate sustainability and economic development; technological innovation and development; environmental projects; climate change; human rights; and supply chains etc.
In 2018, ASEH contributed US$0.64 million and was active in over 131 external organizations, allowing ASEH to share our value system with industry peers and supply chain partners, and extend a broader social impact.

2018 key advocacy, initiatives and industry associations supported by ASEH

- **Semiconductor Equipment and Materials International Taiwan Branch (SEMI)**

SEMI is a global industry association of the electronic manufacturing supply chain. ASE supports many public policies and in particular, we place a high value in international SEMI events and their promotion of collective interests that focus on education, business, technology, and sustainable development etc. Through this platform, we share information on market trends, SiP (System-in-Package) ecosystems, heterogeneous integration trends and advanced assembly technologies.
In 2018, ASE became the chair of the SEMI-FlexTech Flexible Hybrid Electronics Committee, and leveraged interdisciplinary collaboration between emerging applications in flexible electronics and microelectronics to accelerate technological evolution and commercial operations. The company also serves in many committees under SEMI, including appointments as chairman of the Advanced Assembly Committee and deputy chairman of the Semiconductor Smart Manufacturing Committee.

- **Taiwan Semiconductor Industry Association (TSIA)**

ASE and several of the Taiwan OSAT industry players founded the Environmental Health & Safety (EHS) Committee to address semiconductor industrial safety and environmental protection in Taiwan. The committee provides government agencies with recommendations for the establishment of policies and regulations governing the semiconductor industry. An EHS platform was also established for members to exchange relevant EHS information. In 2018, the committee proposed the following:

1. Waste Disposal Act: The committee recommended that violators be jointly responsible for the cleanup of illegal waste disposal. The committee also recommended to establish joint evaluations and audits of the standards in the waste disposal and recycling business by the high-tech industry.
2. Draft amendments to the Regulations Governing Collection of Soil and Groundwater Pollution Remediation Fees: The committee proposed that amendments be made to the standards for soil and groundwater pollution remediation fees.
3. Draft of the Emission Performance Standards for Greenhouse Gas Emission Sources: The committee proposed to draft an 'Incentive for the Compliance of the Emission Performance Standards for Greenhouse Gas Emission Sources'.
4. Air Pollution Control and Emissions Standards for the Semiconductor Industry: The committee proposed that amendments be made to the VOC emissions and control limits for the assembly & testing industry.

- **Taiwan Alliance for Sustainable Supply (TASS)**

ASE is a founding member of the Taiwan Alliance for Sustainable Supply (TASS) which was established in 2017 with the mission to provide a sustainable development platform and set the standards for supply management, logistics and information sharing. In 2018, the alliance continued to organize events and support initiatives promoting a sustainable supply chain and circular economy:

1. Sustainable talent cultivation: To cultivate CSR talent for our industry, we work with BSI, a business standards company, to organize courses for participants to gain insight on CSR reporting and analysis; and the concept and trends of the circular economy based on the BS8001 framework.
2. Environmental safety information platform: Designed and built a semiconductor assembly and testing industry green EHS cloud application platform to facilitate the effective management of industrial chemical substances and organize forums to discuss and share best practices on the proper handling of chemical substances.
3. Forums on environmental regulation: Helping to bridge the industry's needs with government policies/ regulations. We organized a forum on 'EU General Data Protection Regulation (GDPR) and alignment with the Article 190-1 (environmental offences) of the Criminal Code of the Republic of China' as well as a seminar on 'Energy Conservation and Corporate Sustainability'.
4. Cross-industry alliance: The 5T Circular Economy Alliance was established to build a cross-industry exchange platform and achieve industry consensus. It has organized a domestic and global summit on 'Taiwan's Sustainable supply chain and the Circular Economy', and collaborated with the Chung-Hua Institution for Economic Research and Taiwan Institute of Economic Research to promote smart grid projects.

Looking forward to 2020, ASE aims to continue its investment in sustainable talent cultivation, promote certified sustainable supply management courses, expand the scale and influence of the Circular Economy Alliance, and organize the 'Taiwan Sustainable Supply/ Circular Economy international summit'. We will also strive to leverage resources from the government, industry, academia and relevant public organizations to apply the circular economy to our business model, and use it to address sustainable supply challenges and achieve the SDG 12 (Responsible Consumption and Production).

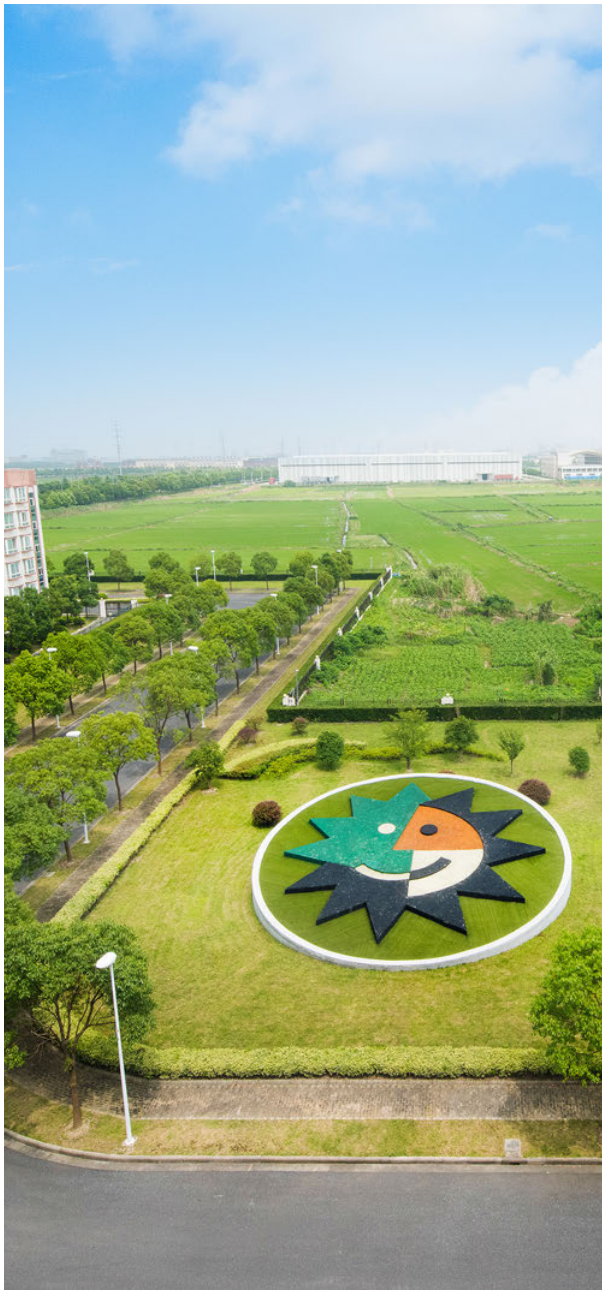
5T Circular Economy Alliance

SEMI-FlexTech Flexible Hybrid Electronics Committee

Taiwan Circular Economy Forum

Industry Organizations in which ASEH Actively Participated

Corporate Sustainability and Economic Development	• Global Semiconductor Alliance (GSA) • Semiconductor Equipment and Materials International (SEMI Taiwan) • Shanghai Integrated Circuit Industry Association (CSIA) • Taiwan Semiconductor Industry Association (TSIA) • Taiwan Printed Circuit Association (TPCA) • Chinese National Association of Industry and Commerce, Taiwan (CNAIC) • Taiwan Business Council for Sustainable Development (BCSD-Taiwan) • Taiwan Institute for Sustainable Energy (TAISE)
Technological Innovation and Development	• PCI-SIG Association • Universal Serial Bus Association • CALCE Electronic Product & Systems Consortium(CALCE EPSC) • Taiwan IC Industry & Academia Research Alliance (TIARA) • Taiwan IOT Technology and Industry Association (TwIoTA) • Taiwan Thermal Management Association (TTMA) • Chinese Institute of Engineers (CIE)
Environmental Engineering and Climate Change	• Carbon Disclosure Project (CDP) • The Chinese Institute of Environmental Engineering (CIEnvE)
Human Rights and Supply Chains	• Responsible Business Alliance (RBA) • Responsible Minerals Initiative (RMI) • Taiwan Alliance for Sustainable Supply (TASS) • Industrial Safety and Health Association, Taiwan (ISHA-Taiwan)



APPENDIX

Materiality Assessment

ASEH develops its materiality assessment framework according to GRI Standards, AA 1000 Stakeholder Engagement Standard (SES), and Principles of identification, analysis and confirmation. The framework allows ASE to determine major sustainable development issues, plan relevant strategies, and serves as the basis for compiling the CSR report. 15 major issues that were identified from the feedback collected from 2,627 ASEH stakeholders formed the basis for the company's design of long-term sustainable management objectives.

Step 1- Identification: Inclusiveness

To identify relevant and important issues, ASEH referenced international standards & regulations, sustainable investment ratings and industry peers as well as stakeholder communications. A total of 40 related issues were generated and classified under 16 sustainable development categories.

 **5** **Economic Issues**  **5** **Environmental Issues**  **6** **Social 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- Analysis: Materiality

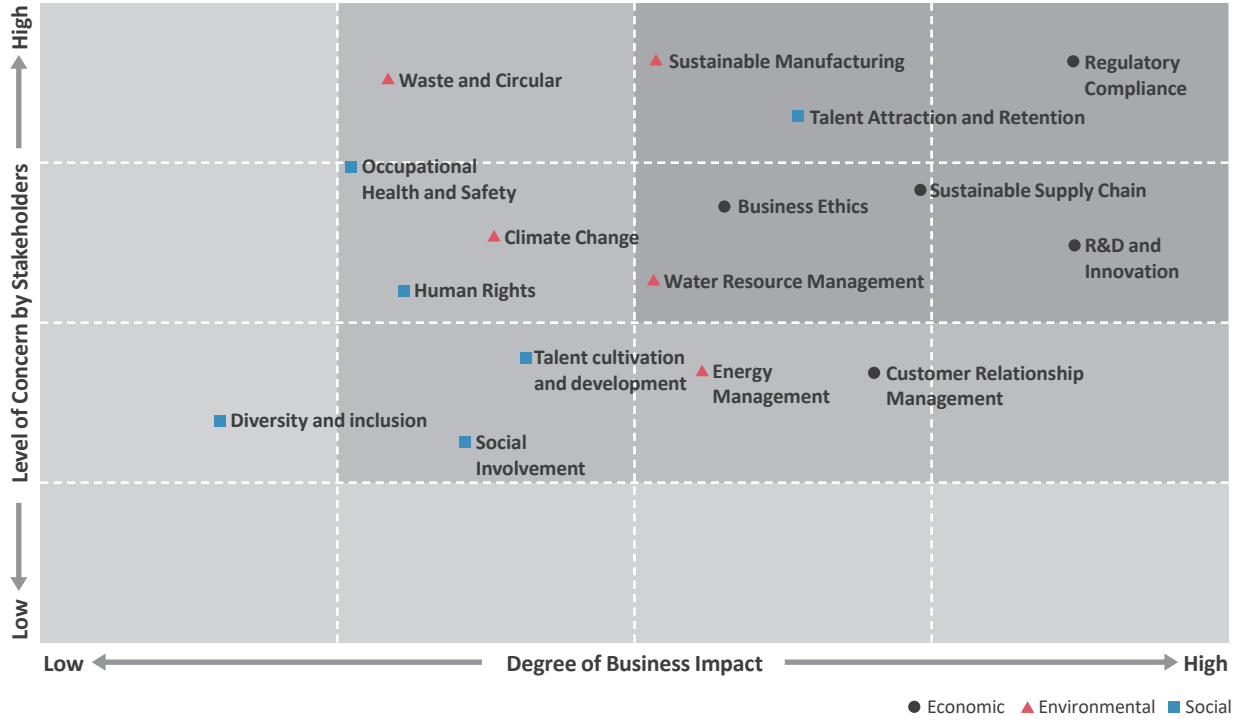
We follow guidelines from GRI Standards to rate the importance of issues based on the level of stakeholder concern and the effect on the operations of the organization. ASEH collects stakeholder concerns through its routine communication and the use of questionnaires. Senior management are empowered to determine the level of importance and relevance of these findings based on the respective impact to their organizations.

 **2,632** **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 2,632 stakeholders' responses. Respondents include employees (1,469), customers (94), investors (20), suppliers (919), government (72), industry unions/associations (5), and community (53).
 **6** **Top management**	Integrating ESG (environmental, social and governance) into the company's core operations is a key driver for ASEH's corporate sustainability. 6 of our senior management leaders participate actively in evaluating the impact of each sustainability topic on the company's revenues, risks and customer satisfaction, and ranking the level of each topic's importance according to the impact.

Step 3- Confirmation: Responsiveness

15 Key issues	Capturing stakeholders' concerns and the impact of these concerns to the company's corporate sustainability enabled us to identify 15 issues of critical importance that form the basis for the disclosures in the 2018 CSR report.
22 Sub-topics	A further 22 sub-topics (20 GRI-specific and 2 ASEH-specific) for disclosures were derived from the 15 issues. Other topics of lower priority will also be concurrently disclosed in the report.

Results of Materiality Assessment



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	Environmental compliance, Socioeconomic compliance	V	V		o		
	R&D and Innovation	Innovation management*		V		o		
	Business Ethics	Anti-corruption, Anti-competitive behavior	V	V		o		
	Sustainable Supply Chain	Procurement practices, Supplier environmental assessment, Supplier social assessment, Conflict minerals management*	V					o
	Customer Relationship Management	Customer privacy		V				o
Environmental	Water Resource Management	Water, Effluents and waste		V		o		
	Sustainable Manufacturing	Sustainable manufacturing *		V		o		
	Energy Management	Energy		V		o		
	Climate Change	Emissions		V		o		
	Waste and Circular	Water, Effluents		V		o		
Social	Talent Attraction and Retention	Employment, Labor/management relations		V		o		
	Talent Cultivation and Development	Training and education		V		o		
	Human Rights	Human rights assessment, Child labor, Forced or compulsory labor	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 SES-2011 Stakeholder Engagement Standard (SES), we have identified 9 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; our indirect stakeholders include community residents, government, industry unions and associations, media, and non-governmental organizations ("NGOs"). 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.

Stakeholder	Communication Mechanisms[1]	2018 Issues of Concerns	2018 Communication Key Outcome[2]
Customers	• Customer quarterly business review meeting • Customer audits • Technical forums	• R&D and Innovation • Sustainable Supply Chain • Sustainable Manufacturing • Customer Relationship Management	• Satisfied customer percentage is 91% in 2018, which exceeded our "90% satisfied customer" target.
Employees	• GM mailbox • Intranet web site • Satisfaction survey on employees • Dedicated employee helpline	• Occupation Health and Safety • Human Rights • Talent cultivation and development • Talent Attraction and Retention	• Our global facilities conducted in total 250 new employee orientations, 229 foreign employee forums and 442 regular employee communication sessions. • Strictly adhere to the standard procedure for dealing with accidents at work and notification to the local authorities within the regulatory time period. There were no major injuries in 2018, and the total occupational injury accident was 111 cases.
Shareholders	• Annual financial reports • Quarterly earnings conference • Annual shareholder meeting • Institutional investors' conference (Quarterly)	• Waste and Circular • Talent Attraction and Retention • Climate Change • Sustainable Manufacturing	• In 2018, ASEH's consolidated revenue was NT$371.1 billion, an increase of about NT$80.7 billion, and a growth of about 27.8% from 2017.
Suppliers/ Constructors	• Supplier questionnaire survey • Supplier on-site audits • Annual supplier forum • Supplier capacity-building activities	• Regulatory Compliance • Business Ethics • Human Rights • Sustainable Supply Chain	• Over 120 companies from all over the world attended our Supplier Awards Ceremony and 3 award winners were recognized for attaining Excellence in Sustainability.
Government	• Communication meetings, conferences, forums or seminars held by government authorities • Proactive dialogue with government authorities • Reporting through government portal	• Regulatory Compliance • Business Ethics • Human Rights • Occupation Health and Safety	• Co-worked with other companies in the semiconductor packaging and testing industry to establish the TSIA ESH Committee for addressing the issues of industrial safety and environmental protection as well as propose amendments in environmental protection regulations to the government.
Community, NGOs and Media	• Community perception surveys and needs assessments • Communication meetings, forums, seminars or workshops held by NGOs • Volunteer activity cooperation with NGO • Press releases • Spokesperson interviews • Company's website	• Social Involvement • Climate Change • Regulatory Compliance • Water Resource Management	• We conduct an annual media seminar to engage media professionals covering our industry and to educate and update them on the global and segment market outlook, technologies and ASEH's progress in corporate sustainability. • We contributed US$2.5 million in support of environmental conservation programs, charitable activities and civic educational programs through collaboration with 20 NGOs.
Industry Unions and Associations	• Organizational member conference • Technology forums held by industry unions/associations	• R&D and Innovation • Climate Change • Sustainable Manufacturing	• We engaged over 131 external organizations and contributed US$0.64 million in public policy and industry development. • The 5T Circular Economy Alliance was established to build a cross-industry exchange platform and achieve industry consensus. It has organized a domestic and global summit on 'Taiwan's Sustainable supply chain and the Circular Economy', and collaborated with the Chung-Hua Institution for Economic Research and Taiwan Institute of Economic Research to promote smart grid projects.

[1] We communicate with each stakeholder at irregular intervals unless otherwise indicated.
[2] For more information, please see relevant chapters and sections of this report.

Sustainability Data

Environmental Data

A. The environmental data (waste, water, energy, GHG & air emission) of our manufacturing facilities around the world over the past four years are presented in the table below:

Category	Environmental Performance Index	Unit	2015	2016	2017	2018[1]
Waste	Total general and hazardous waste	metric ton	51,319	54,464	53,638	67,004
	General waste production	metric ton	26,625	27,962	28,366	40,839
	Recycled and reused	metric ton	19,353	23,862	24,655	36,770
	Non-recycled and reused	metric ton	7,272	4,100	3,711	4,069
	Non-recycled and reused[2]	metric ton	7,855	4,592	4,173	4,141
	Recycled and reused rate	%	73	85	87	90
	Hazardous waste production[2]	metric ton	29,174	30,862	28,983	27,838
	Hazardous waste production	metric ton	24,694	26,502	25,272	26,164
	Recycled and reused	metric ton	13,629	14,380	13,460	13,240
	Non-recycled and reused	metric ton	11,065	12,122	11,812	12,924
	Recycled and reused rate	%	55	54	53	51
	Total recycled and reused	metric ton	32,981	38,243	38,115	50,011
	Total non-recycled and reused	metric ton	18,338	16,221	15,523	16,993
	Total recycled and reused rate	%	64	70	71	75
Water	Water withdrawal	metric ton	16,007,827	15,147,097	16,034,472	21,571,571
	Water withdrawal intensity	metric ton/thousand USD revenue	1.853	1.811	1.639	1.784
	Ultra-pure water usage	metric ton	15,830,028	17,034,405	17,890,269	20,244,434
	Ultra-pure water usage[2]	metric ton	23,171,432	27,944,314	30,602,254	30,046,711
	Water recycled and reuse	metric ton	13,133,452	15,096,545	15,175,519	22,934,123
	Recycle rate	%	82	100	95	106
	Wastewater discharge	metric ton	14,858,116	12,615,460	11,742,595	17,303,186
	Total fresh water consumption[2]	Million metric ton	23.44	22.47	23.67	23.90

[1] This includes all the data from ASE, USI and SPIL while the data for 2015-2017 are from ASE and USI.
[2] The includes all the data from ASE, USI and SPIL for 2015-2018.

Category	Environmental Performance Index	Unit	2015	2016	2017	2018[1]
Energy	Electricity consumption	MWh	2,143,438	2,229,426	2,300,523	3,130,150
	Renewable electricity	MWh	4,492	5,658	195,595	397,766
	Non-renewable electricity	MWh	2,138,946	2,223,768	2,104,928	2,732,384
	Electricity intensity	MWh/ thousand USD revenue	0.248	0.267	0.235	0.259
	Liquefied Petroleum Gas (LPG)	GJ	10,958	11,407	8,374	2,802
	Liquefied Natural Gas (LNG)	GJ	290,743	332,126	381,022	354,857
	Motor gasoline	GJ	21,740	10,196	8,843	9,141
	Diesel	GJ	51,777	78,824	16,637	15,653
	Heavy oil	GJ	27,214	50,595	36,089	29,325
	Total non-renewable energy consumption[2]	MWh	3,194,122	3,369,827	3,310,931	3,207,383
Greenhouse Gas	SCOPE 1	tCO_2e	51,794	56,764	60,675	85,279
	SCOPE 1[2]	tCO_2e	71,294	76,821	82,996	99,504
	SCOPE 2	tCO_2e	1,273,570	1,328,044	1,215,698	1,544,880
	SCOPE 2[2]	tCO_2e	1,780,590	1,880,305	1,806,806	1,735,097
	SCOPE 1 + SCOPE 2	tCO_2e	1,325,364	1,384,808	1,276,373	1,630,159
	GHG intensity	tCO_2e / thousand USD revenue	0.153	0.166	0.130	0.135
	PFC emissions / number package output	$kgCO_2e/kPCs$	0.00055	0.00060	0.00045	0.00075
	PFC emissions / number package output[2]	$kgCO_2e/kPCs$	0.00074	0.00078	0.00065	0.00081
Air Emission	VOC (Volatile organic compounds)	metric ton	330	269	281	185
	VOC (Volatile organic compounds)[2]	metric ton	337	276	288	188

[1] This includes all the data from ASE, USI and SPIL while the data for 2015~2017 are from ASE and USI.
[2] The includes all the data from ASE, USI and SPIL for 2015-2018.

B. Effluent quality of our facilities with on-site wastewater treatment[1]

		Taiwan_ to land		Taiwan_ to ocean		China		Japan		Korea		Malaysia	
Item	**Unit**	**Effluent standard**	**Min.~ Max.**	**Effluent standard**	**Min.~ Max.**	**Effluent standard**	**Min.~ Max.**	**Effluent standard**	**Min.~ Max.**	**Effluent standard**	**Min.~ Max.**	**Effluent standard**	**Min.~ Max.**
pH	**pH**	6~9	7.3~8.1	6~9	7~7.7	6~9	6.6~8.9	5.8~8.6	6.8~8	5.8~8.6	7.4~7.9	5.5~9.0	6.4~8.4
COD concentration	**mg/L**	<100	10.8~17.2	<280	85.2~111	500	10~419	-	NA	90	7~26	200	<2~176
BOD concentration	**mg/L**	-	0~184	<100	22.3~81.2	300	0~117	25	1~4	80	0~41	50	<2~48
Suspended Solid(SS) concentration	**mg/L**	<30	1.5~16	<100	1.5~2.6	400	5~323	60	1~37	80	1~6	100	<1~24
Cu^{2+} concentration	**mg/L**	<3	0~0.179	<2	0.022~0.046	1	0~0.45	-	NA	3	0~0	1	<0.01~0.7
Ni^{2+} concentration	**mg/L**	<1	0~0.09	<1	0.017~0.024	0.1	0~0	-	-	-	NA	1	<0.02~0.1

[1] ISE Labs, ASE Singapore and three electronic manufacturing service facilities (Kunshan, Shenzhen and Mexico) do not have on-site wastewater treatment, thus not included in the statistics.

Social Data

A. Global Workforce Structure

Global Workforce Structure			Taiwan	China	Rest of Asia	Americas	Total/Ratio		
Overall Employee Gender		Male	26,947	15,889	2,707	881	46,424		92,762
		Female	28,605	11,735	4,551	1,447	46,338		
Disabled Employee		Male	263	74	20	5	362		603
		Female	193	30	16	2	241		
Regular/ Non-Regular Employee Ratio	Regular Employee	Male	26,831	12,629	2,668	872	43,000		87,231
		Female	28,547	9,711	4,530	1,443	44,231		
	Non-Regular Employee	Male	116	3,260	39	9	3,424		5,531
		Female	58	2,024	21	4	2,107		
Employee Category Ratio	Management	Male	2,658	1,125	226	87	4,096		5,382
		Female	815	403	43	25	1,286		
	Engineering	Male	16,803	4,323	1,866	144	23,136		27,090
		Female	2,731	835	369	19	3,954		
	Administration	Male	803	890	263	83	2,039		6,133
		Female	2,027	1,371	564	132	4,094		
	Skill Job	Male	6,683	9,538	358	567	17,146		54,157
		Female	23,032	9,139	3,569	1,271	37,011		
Employee Age Distribution	16~30		15,238	19,512	2,907	1,240	38,897		92,762
	31~49		37,576	7,984	3,653	852	50,065		
	above 50		2,738	128	698	236	3,800		
New Employee Age Distribution	16~30		4,540	20,010	988	2,122	27,660	80%	34,468
	31~49		2,473	2,926	226	997	6,622	19%	
	above 50		52	11	17	106	186	1%	

B. Statistics Regarding Parental Leave

Item[1]	Gender	Taiwan	Rest of Asia	Total
Number of Employee Entitled to Parental Leave	Male	2,269	1,350	3,619
	Female	1,283	1,403	2,686
Number of Employee Applying for Parental Leave	Male	120	81	201
	Female	502	97	599
Number of Reinstatement of Employee's Parental Leave	Male	116	79	195
	Female	406	91	497
Rate of Reinstatement of Employee's Parental Leave	Male	84.06%	97.63%	89.04%
	Female	87.50%	93.81%	88.59%
Number of Retention of Employee's Parental Leave	Male	78	78	156
	Female	326	124	450
Rate of Retention of Employee's Parental Leave	Male	67.24%	98.73%	80.00%
	Female	80.30%	100%	83.9%

C. Average Hours of Training per person (By Type)

Employee Category	Hours
Management Positions	64
Engineering Positions	81
Administration Positions	70
Skill Job Positions	123

[1] In China, no regulation of parental leave and ASE has maternity leave & paternity leave.

D. Employees/Contractor Occupational Health and Safety Statistics

Employees		Gender	Taiwan	China	Rest of Asia	Americas
Category of Occupational Injury	Number of Physical Injury	Male	30	12	10	0
		Female	39	6	5	1
	Number of Chemical Injury	Male	2	0	1	0
		Female	1	0	0	0
	Number of Ergonomic Injury	Male	0	2	0	0
		Female	1	1	0	0
	Number of Biological Injury	Male	0	0	0	0
		Female	0	0	0	0
Injury Rate(I.R.)[1]		Male	0.130	0.088	0.480	0
		Female	0.150	0.060	0.203	0.070
Lost Day Rate (L.D.R.)[2]		Male	3.119	2.266	1.831	0
		Female	3.188	0.811	1.440	2.099
Absentee Rate (A.R.)[3]		Male	1.54%	16.06%	0.64%	0.91%
		Female	2.56%	16.14%	0.91%	0.74%
Occupational Diseases Rate (O.D.R.)[4]		Male	0	0	0	0
		Female	0	0	0	0

Contractors		Gender	Taiwan	China	Rest of Asia	Americas
Category of Occupational Injury	Number of Physical Injury	Male	3	1	0	0
		Female	1	0	0	0
	Number of Chemical Injury	Male	0	0	0	0
		Female	0	0	0	0
	Number of Ergonomic Injury	Male	0	0	0	0
		Female	0	0	0	0
	Number of Biological Injury	Male	0	0	0	0
		Female	0	0	0	0
Injury Rate(I.R.)		Male	0.094	0.107	0	0
		Female	0.094	0	0	0

[1] I.R. = Total # of injuries / Total hours worked x 200,000, excluding traffic accidents
[2] L.D.R. = Total # of lost days / Total hours worked x 200,000
[3] A.R. = (Total # of missed (absentee) days over the period / Total # of workforce days worked for same period) * 100 %
[4] O.D.R. = Total # of occupational diseases cases / Total hours worked x 200,000

E. Social Involvement Key Performance

Campus LED Donation Program

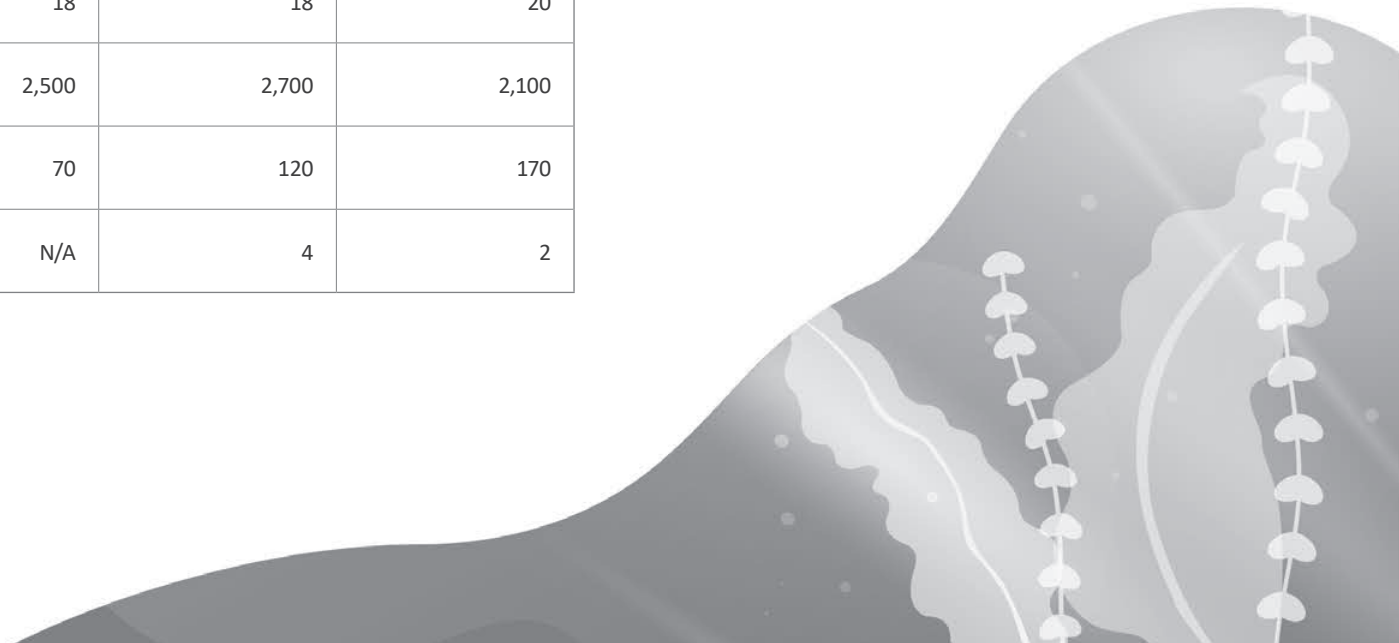
Year	2015	2016	2017	2018
School	13	9	13	4
LED Lamps	16,400	13,500	14,500	8900
Energy Saving(kWh)	656,656	540,540	580,580	356,356

Afforestation Program

Year	2015	2016	2017	2018
Plant (hectares)	6.3	88.65	9.85	13.18

Environmental Education Program

Year	2015	2016	2017	2018
Courses	17	18	18	20
Participant	3,000	2,500	2,700	2,100
Seed Teachers	N/A	70	120	170
Training Materials	N/A	N/A	4	2



Critical Supplier List

ASEH Critical Supplier List (ATM) in 2018

3M	ADVANTEK	Air Liquide Far Eastern Ltd.	ATOTECH
Chemleader Corporation	Daeduck Electronics Co., Ltd.	DAEWON-PEAK	Daisho Denshi Co., Ltd.
DISCO Corporation	Dou Yee	FUJIFILM Electronic Materials Co., Ltd.	Furukawa Electric Co., Ltd.
Fusheng Electronics Corporation	Haesung DS Co., Ltd.	Henkel	Heraeus
Hitachi Chemical	Hon Hai Precision Ind. Co., Ltd.	Hwa Shu Enterprise Co., Ltd.	Hwayeon Plastics Co., Ltd.
Innox Advanced Materials Co., Ltd.	Intel Corporation	ITW Meritex Sdn. Bhd.	Jabon Technology
Jentech Precision Industrial Co., Ltd.	JIH LIN Technology Co., Ltd.	Kinsus Interconnect Technology Corporation	Kostat, Inc.
Kulicke and Soffa Industries, Inc.	Kyocera	LG Innotek Co., Ltd.	Lintec Corporation
Merck Oerformance Materials Ltd.	Mitsubishi Corporation	Mitsui Chemicals Inc.	Mitsui High-tec, Inc.
MK ELECTRON Co., Ltd.	Multiformity Technology Innova-tion Co., Ltd.	Murata Manufacturing Co., Ltd.	Nan Ya PCB Co., Ltd.
Nippon Micrometal Corporation	Nippon Refine Co., Ltd.	Nitto Denko Corporation	NXP Semiconductors
Ohkuchi Materials Co., Ltd.	Peco Tek Co., Ltd.	Perco Plastic Ind. Co., Ltd.	Resound Technology Inc.
ROHM Semiconductor	Samsung Electro-Mechanics Co., Ltd.	Senju Metal Industry Co., Ltd.	Shennan Circuits Company Limited.
Shin-Etsu Electronics Materials Singapore Pte. Ltd.	Shinko Electronics Co., Ltd.	Shinwon Tech Inc.	Simmtech Co., Ltd.
Small Precision Tools, Inc.	Sumitomo Bakelite Co., Ltd.	Sun Surface Technology Co., Ltd.	Sunrise Plastics Industry Co Ltd.
Taihong Circuit Ind. Co. Ltd.	Taiwan Mask Corp.	Taiyo Yuden Co., Ltd.	TANAKA Holdings Co., Ltd.
Tokuyama Corporation	Tokyo Ohka Kogyo Co., Ltd.	TOPPAN Printing Co., Ltd.	UBoT Incorporated Limited.
Unimicron Technology Corporation	Winbond Electronics Corporation	Yantai Zhaojin Kanfort Precious Metals Co., Ltd.	

Third Party Assurance Statement

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INDEPENDENT AUDITOR'S LIMITED ASSURANCE REPORT

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

We have performed a limited assurance engagement on the Corporate Social Responsibility Report ("the Report") of ASE Technology Holding Co., Ltd. ("the Company") for the year ended December 31, 2018.

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 Corporate Social Responsibility Reports by TWSE Listed Companies and GRI Standards for core option 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.

Auditor's 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) (ISAE 3000 (revised)) to express our conclusion on whether the information in the Report was stated fairly, in all material respects, in accordance with the abovementioned reporting criteria. 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 Auditor's 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.

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 Auditing Standard No. 46 "Quality Control for Public Accounting Firms" issued by the Accounting Research and Development Foundation of the Republic of China and, accordingly, maintains a comprehensive system of quality controls, including documented policies and 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 not stated fairly, in all material respects, in accordance with the abovementioned reporting criteria.

Deloitte & Touche

Deloitte & Touche
Taipei, Taiwan
Republic of China

June 27, 2019

Notice to Readers

For the convenience of readers, the independent auditor's limited assurance report has been translated into English from the original Chinese version prepared and used in the Republic of China. If there is any conflict between the English version and the original Chinese version or any difference in the interpretation of the two versions, the Chinese-language independent auditor's limited assurance report shall prevail.

GRI Content Index

GRI Standard (2016)	Disclosure	Related Section / Explanatory Notes	Page No.
GRI 102: General Disclosures 2016			
102-1	Name of the organization	1.1 Company Profile	7
102-2	Activities, brands, products, and services	1.1 Company Profile No products or services are banned in 2018.	7
102-3	Location of headquarters	1.1 Company Profile	7
102-4	Location of operations	1.1 Company Profile	7
102-5	Ownership and legal form	1.1 Company Profile	7
102-6	Markets served	1.3 Financial Performance	10
102-7	Scale of the organization	1.1 Company Profile 1.3 Financial Performance 6.1 Global Recruitment and Diversity	7, 10, 69
102-8	Information on employees and other workers	6.1 Global Recruitment and Diversity Appendix: Social data - A. Global Workforce Structure	69-70, 116
102-9	Supply chain	1.1 Company Profile 7.1 Supply Chain Overview	7, 85
102-10	Significant changes to the organization and its supply chain	1.1 Company Profile	7
102-11	Precautionary Principle or approach	3.4 Risk Management	31-32
102-12	External initiatives	8.5 Public Advocacy	106-108
102-13	Membership of associations	8.5 Public Advocacy	108
102-14	Statement from senior decision-maker	LETTER FROM THE CHAIRMAN	5-6
102-15	Key impacts, risks, and opportunities	3.4 Risk Management	31-32
102-16	Values, principles, standards, and norms of behavior	3.3 Business Ethics	29-30
102-17	Mechanisms for advice and concerns about ethics	3.3 Business Ethics	29-30

GRI Standard (2016)	Disclosure	Related Section / Explanatory Notes	Page No.
GRI 102: General Disclosures 2016			
102-18	Governance structure	2.1 Organization and Structure 3.1 Board of Directors	11, 25
102-19	Delegating authority	2.1 Organization and Structure	11
102-20	Executive-level responsibility for economic, environmental, and social topics	2.1 Organization and Structure	11
102-22	Composition of the highest governance body and its committees	3.1 Board of Directors	25
102-23	Chair of the highest governance body	3.1 Board of Directors	25
102-25	Conflicts of interest	3.1 Board of Directors	25
102-26	Role of highest governance body in setting purpose, values, and strategy	2.1 Organization Structure 3.1 Board of Directors	11, 25
102-27	Collective knowledge of highest governance body	3.1 Board of Directors	25
102-28	Evaluating the highest governance body's performance	3.1 Board of Directors	26
102-29	Identifying and managing economic, environmental, and social impacts	2.1 Organization and Structure 3.1 Board of Directors	11, 25-26
102-32	Highest governance body's role in sustainability reporting	This report was approved and authorized by the Chairman of Corporate Sustainability Committee.	-
102-33	Communicating critical concerns	2.1 Organization and Structure 3.1 Board of Directors	11, 25-26
102-40	List of stakeholder groups	Appendix: Materiality Assessment	112
102-41	Collective bargaining agreements	6.2 Talent Attraction and Retention	73
102-42	Identifying and selecting stakeholders	Appendix: Materiality Assessment	112

GRI Standard (2016)	Disclosure	Related Section / Explanatory Notes	Page No.
GRI 102: General Disclosures 2016			
102-43	Approach to stakeholder engagement	Appendix: Materiality Assessment	112
102-44	Key topics and concerns raised	Appendix: Materiality Assessment	110-111
102-45	Entities included in the consolidated financial statements	ABOUT OUR REPORTING The scope of the Report encompasses our principal manufacturing subsidiaries but not wholly-owned intermediate holding companies, internal trading companies and those companies without active operations.	-
102-46	Defining report content and topic Boundaries	Appendix: Materiality Assessment	109-111
102-47	List of material topics	Appendix: Materiality Assessment	109-111
102-48	Restatements of information	There is no restatement of information from previous report.	-
102-49	Changes in reporting	No significant change, the reporting boundary include our subsidiary SPIL	-
102-50	Reporting period	ABOUT OUR REPORTING	3
102-51	Date of most recent report	The previous report was published in June 2018.	-
102-52	Reporting cycle	We publish CSR Report annually.	-
102-53	Contact point for questions regarding the report	ABOUT OUR REPORTING	3
102-54	Claims of reporting in accordance with the GRI Standards	ABOUT OUR REPORTING	3
102-55	GRI content index	Appendix-GRI Content Index	122-127
102-56	External assurance	ABOUT OUR REPORTING	3, 121

GRI Standard (2016)	Disclosure	Related Section / Explanatory Notes	Page No.
GRI 201: Economic Performance 2016 (GRI 103: Management Approach 2016)			
103-1	Explanation of the material topic and its Boundary	Appendix: Materiality Assessment	109-111
103-2	The management approach and its components	LETTER FROM THE CHAIRMAN 1.3 Financial Performance	5-6, 10
103-3	Evaluation of the management approach	LETTER FROM THE CHAIRMAN 1.3 Financial Performance	5-6, 10
201-1	Direct economic value generated and distributed	1.3 Financial Performance 2.3 Sustainable Value Assessment	10, 19
201-2	Financial implications and other risks and opportunities due to climate change	5.1 Climate Change and Energy Management	51-53
201-4	Financial assistance received from government	ASEH is entitled to tax incentive. Please refer to page 78-79 of our English Annual Report or page 86-87 of our Chinese Annual Report.	-
GRI 204: Procurement Practices 2016 (GRI 103: Management Approach 2016)			
103-1	Explanation of the material topic and its Boundary	Appendix: Materiality Assessment	109-111
103-2	The management approach and its components	7.3 Supply Chain Sustainability Management	87
103-3	Evaluation of the management approach	7 Responsible Procurement - 2018 Key Performance	84
204-1	Proportion of spending on local suppliers	7.1 Supply Chain Overview	85
GRI 205: Anti-corruption 2016 (GRI 103: Management Approach 2016)			
103-1	Explanation of the material topic and its Boundary	Appendix: Materiality Assessment	109-111
103-2	The management approach and its components	3.3 Business Ethics	29-30
205-2	Communication and training about anti-corruption policies and procedures	3.3 Business Ethics	29
205-3	Confirmed incidents of corruption and actions taken	3.3 Business Ethics In 2018, ASEH did not engage in any political contributions.	30

GRI Standard (2016)	Disclosure	Related Section / Explanatory Notes	Page No.
GRI 206: Anti-competitive Behavior 2016 (GRI 103: Management Approach 2016)			
103-1	Explanation of the material topic and its Boundary	Appendix: Materiality Assessment	109-111
103-2	The management approach and its components	3.3 Business Ethics	29-30
103-3	Evaluation of the management approach	3.3 Business Ethics	29-30
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	In 2018, ASEH was not subjected to any legal actions regarding anti-competitive behavior and violations of anti-trust and monopoly legislation.	-
GRI 302: Energy 2016 (GRI 103: Management Approach 2016)			
103-1	Explanation of the material topic and its Boundary	Appendix: Materiality Assessment	109-111
103-2	The management approach and its components	5.1 Climate Change and Energy Management-Energy Management and Conservation	55
103-3	Evaluation of the management approach	5.1 Climate Change and Energy Management-Energy Management and Conservation	55
302-1	Energy consumption within the organization	5.1 Climate Change and Energy Management-Energy Management and Conservation	55
302-3	Energy intensity	5.1 Climate Change and Energy Management-Energy Management and Conservation	55
302-4	Reduction of energy consumption	5.1 Climate Change and Energy Management- Overall Energy Conservation and Carbon Reduction Results	57
GRI 303: Water 2016 (GRI 103: Management Approach 2016)			
103-1	Explanation of the material topic and its Boundary	Appendix: Materiality Assessment	109-111
103-2	The management approach and its components	5.2 Water Resource Management	59

GRI Standard (2016)	Disclosure	Related Section / Explanatory Notes	Page No.
GRI 303: Water 2016 (GRI 103: Management Approach 2016)			
103-3	Evaluation of the management approach	5.2 Water Resource Management	59
303-1	Water withdrawal by source	5.2 Water Resource Management	59
303-3	Water recycled and reused	5.2 Water Resource Management	59
GRI 305: Emissions 2016 (GRI 103: Management Approach 2016)			
103-1	Explanation of the material topic and its Boundary	Appendix: Materiality Assessment	109-111
103-2	The management approach and its components	5.1 Climate Change and Energy Management	50
103-3	Evaluation of the management approach	5.1 Climate Change and Energy Management	50
305-1	Direct (Scope 1) GHG emissions	5.1 Climate Change and Energy Management-Greenhouse Gas Emissions	54
305-2	Energy indirect (Scope 2) GHG emissions	5.1 Climate Change and Energy Management-Greenhouse Gas Emissions	54
305-3	Other indirect (Scope 3) GHG emissions	5.1 Climate Change and Energy Management-Greenhouse Gas Emissions (partial disclosure)	55
305-4	GHG emissions intensity	5.1 Climate Change and Energy Management-Greenhouse Gas Emissions	54
305-5	Reduction of GHG emissions	5.1 Climate Change and Energy Management- Overall Energy Conservation and Carbon Reduction Results	57
305-6	Emissions of ozone-depleting substances (ODS)	5.4 Green Facility-Gas Emissions Control (no emissions)	63
305-7	Nitrogen oxides, sulfur oxides, and other significant air emissions	5.4 Green Facility-Gas Emissions Control	63

GRI Standard (2016)	Disclosure	Related Section / Explanatory Notes	Page No.
GRI 306: Effluents and Waste 2016 (GRI 103: Management Approach 2016)			
103-1	Explanation of the material topic and its Boundary	Appendix: Materiality Assessment	109-111
103-2	The management approach and its components	5.2 Water Resource Management 5.3 Waste Management	60, 61
103-3	Evaluation of the management approach	5.2 Water Resource Management 5.3 Waste Management	60, 61
306-1	Water discharge by quality and destination	5.2 Water Resource Management-Wastewater Management	60
306-2	Waste by type and disposal method	5.3 Waste Management	61
306-3	Significant spills	No significant spill in 2018	-
GRI 307: Environmental Compliance 2016 (GRI 103: Management Approach 2016)			
103-1	Explanation of the material topic and its Boundary	Appendix: Materiality Assessment	109-111
103-2	The management approach and its components	3.6 Regulatory Compliance	38
103-3	Evaluation of the management approach	3.6 Regulatory Compliance 2.2 Sustainability Strategies-Sustainability Vision	17, 38
307-1	Non-compliance with environmental laws and regulations	5.6 Environmental Expenditures and Investments	66
GRI 308: Supplier Environmental Assessment 2016 (GRI 103: Management Approach 2016)			
103-1	Explanation of the material topic and its Boundary	Appendix: Materiality Assessment	109-111
103-2	The management approach and its components	7.3 Supply Chain Sustainability Management - Supplier Sustainability Risk Assessment	88-89
103-3	Evaluation of the management approach	7 Responsible Procurement - 2018 Key Performance	84
308-1	New suppliers that were screened using environmental criteria	7.3 Supply Chain Sustainability Management - Supplier Sustainability Requirement/ Supplier Sustainability Risk Assessment	87-89

GRI Standard (2016)	Disclosure	Related Section / Explanatory Notes	Page No.
GRI 308: Supplier Environmental Assessment 2016 (GRI 103: Management Approach 2016)			
308-2	Negative environmental impacts in the supply chain and actions taken	7.3 Supply Chain Sustainability Management - Supplier Sustainability Requirement/ Supplier Sustainability Risk Assessment	87-89
GRI 401: Employment 2016 (GRI 103: Management Approach 2016)			
103-1	Explanation of the material topic and its Boundary	Appendix: Materiality Assessment	109-111
103-2	The management approach and its components	6.1 Global Recruitment and Diversity	69-70
103-3	Evaluation of the management approach	6.1 Global Recruitment and Diversity	69-70
401-1	New employee hires and employee turnover	6.1 Global Recruitment and Diversity Appendix: Social Data - A. Global Workforce Structure	69, 71, 116
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	6.2 Talent Attraction and Retention-Compensation and Welfare	72
401-3	Parental leave	Appendix: Social Data - B. Statistics Regarding Parental Leave	117
GRI 402: Labor/Management Relations 2016 (GRI 103: Management Approach 2016)			
103-1	Explanation of the material topic and its Boundary	Appendix: Materiality Assessment	109-111
103-2	The management approach and its components	6.2 Talent Attraction and Retention	71-75
103-3	Evaluation of the management approach	6.2 Talent Attraction and Retention-Employee Communication	71-75
402-1	Minimum notice periods regarding operational changes	With regard to dismissal and disbursement, we provide reasonable advance notice to to the affected employees as required under applicable local regulations where we operate.	-

GRI Standard (2016)	Disclosure	Related Section / Explanatory Notes	Page No.
GRI 403: Occupational Health and Safety 2016 (GRI 103: Management Approach 2016)			
103-1	Explanation of the material topic and its Boundary	Appendix: Materiality Assessment	109-111
103-2	The management approach and its components	6.4 Occupational Health and Safety	79-81
103-3	Evaluation of the management approach	6. Inclusive Workplace- 2018 Key Performance	82
403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of workrelated fatalities	6.4 Occupational Health and Safety-Major Occupational Injuries and Preventive Measure Appendix: Social Data -D Employees/Contractor Occupational Health and Safety Statistics	80, 118
403-3	Workers with high incidence or high risk of diseases related to their occupation	6.4 Occupational Health and Safety-OHS management system	79
GRI 404: Training and Education 2016 (GRI 103: Management Approach 2016)			
103-1	Explanation of the material topic and its Boundary	Appendix: Materiality Assessment	109-111
103-2	The management approach and its components	6.3 Talent Cultivation and Development	75-78
103-3	Evaluation of the management approach	6.3 Talent Cultivation and Development	75-78
404-1	Average hours of training per year per employee	6.3 Talent Cultivation and Development	76, 117
404-2	Programs for upgrading employee skills and transition assistance programs	6.3 Talent Cultivation and Development Appendix: Social Data-C. Average Hours of Training per person	75-78
404-3	Percentage of employees receiving regular performance and career development reviews	6.2 Talent Attraction and Retention	73
GRI 408: Child Labor 2016 (GRI 103: Management Approach 2016)			
103-1	Explanation of the material topic and its Boundary	Appendix: Materiality Assessment	109-111

GRI Standard (2016)	Disclosure	Related Section / Explanatory Notes	Page No.
GRI 408: Child Labor 2016 (GRI 103: Management Approach 2016)			
103-2	The management approach and its components	3.5 Human Rights Management 7.3 Supply Chain Sustainability Management	35-37, 87
103-3	Evaluation of the management approach	3.5 Human Rights Management 7.3 Supply Chain Sustainability Managements	35-37, 87
408-1	Operations and suppliers at significant risk for incidents of child labor	3.5 Human Rights Management 7.3 Supply Chain Sustainability Management	35-37, 87
GRI 409: Forced or Compulsory Labor 2016 (GRI 103: Management Approach 2016)			
103-1	Explanation of the material topic and its Boundary	Appendix: Materiality Assessment	109-111
103-2	The management approach and its components	3.5 Human Rights Management 7.3 Supply Chain Sustainability Management	35-37, 87
103-3	Evaluation of the management approach	3.5 Human Rights Management 7.3 Supply Chain Sustainability Management	35-37, 87
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	3.5 Human Rights Management 7.3 Supply Chain Sustainability Management	35-37, 87
GRI 412: Human Rights Assessment 2016 (GRI 103: Management Approach 2016)			
103-1	Explanation of the material topic and its Boundary	Appendix: Materiality Assessment	109-111
103-2	The management approach and its components	3.5 Human Rights Management	35-37
103-3	Evaluation of the management approach	3.5 Human Rights Management	35-37
412-2	Employee training on human rights policies or procedures	3.5 Human Rights Management	36
GRI 414: Supplier Social Assessment 2016 (GRI 103: Management Approach 2016)			
103-1	Explanation of the material topic and its Boundary	Appendix: Materiality Assessment	109-111
103-2	The management approach and its components	7.3 Supply Chain Sustainability Management - Supplier Sustainability Risk Assessment	88-89
103-3	Evaluation of the management approach	7 Responsible Procurement- 2018 Key Performance	84

GRI Standard (2016)	Disclosure	Related Section / Explanatory Notes	Page No.
GRI 414: Supplier Social Assessment 2016 (GRI 103: Management Approach 2016)			
414-1	New suppliers that were screened using social criteria	7.3 Supply Chain Sustainability Management - Supplier Sustainability Requirement/ Supplier Sustainability Risk Assessment	87-89
414-2	Negative social impacts in the supply chain and actions taken	7.3 Supply Chain Sustainability Management - Supplier Sustainability Audit Mechanism	87-89
GRI 418: Customer Privacy 2016 (GRI 103: Management Approach 2016)			
103-1	Explanation of the material topic and its Boundary	Appendix: Materiality Assessment	109-111
103-2	The management approach and its components	4.3 Products and Services-Customer Proprietary Information Protection	46
103-3	Evaluation of the management approach	4.3 Products and Services-Customer Proprietary Information Protection	46
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	We don't have any substantiated complaints regarding breaches of customer privacy and losses of customer data in 2018.	-
GRI 419: Socioeconomic Compliance 2016 (GRI 103: Management Approach 2016)			
103-1	Explanation of the material topic and its Boundary	Appendix: Materiality Assessment	109-111
103-2	The management approach and its components	3.6 Regulatory Compliance	38
103-3	Evaluation of the management approach	3.6 Regulatory Compliance	38
419-1	Non-compliance with laws and regulations in the social and economic area	In 2018, we received 1 labor related notice of significant violations (total fine: NT$300,000), and 1 health and safety related notice of significant violations (total fine: NT$909,663). (By "significant violations" , we mean the fine/penalty individually costs more than $10,000 USD)	-

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