SUSTAINABLE GOVERNANCE

2.1 Organization and Structure

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

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

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

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

Board of Directors

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

[Executive Secretariat] Corporate CSR Division

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

ASEH Corporate Sustainability and Information Security Committee

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

Chairperson:
Jason C.S. Chang ASEH Chairman

Vice Chairperson:
Tien Wu ASEH Chief Operating Officer

Members:

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

ASEH Sustainability Management Committee

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

Members:
Du-Tsuen Uang
ASEH CSO

Joseph Tung
ASEH CFO

ASE Corporate Sustainability Committee

Chairperson: Tien Wu General Manager and CEO

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

SPIL Sustainability Committee

Chairperson: Chi-Wen Tsai Chairman and General Manager

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

USI Sustainability Committee

Chairperson: C.Y. Wei President

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

Taskforces

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

2024 Key Sustainability Projects

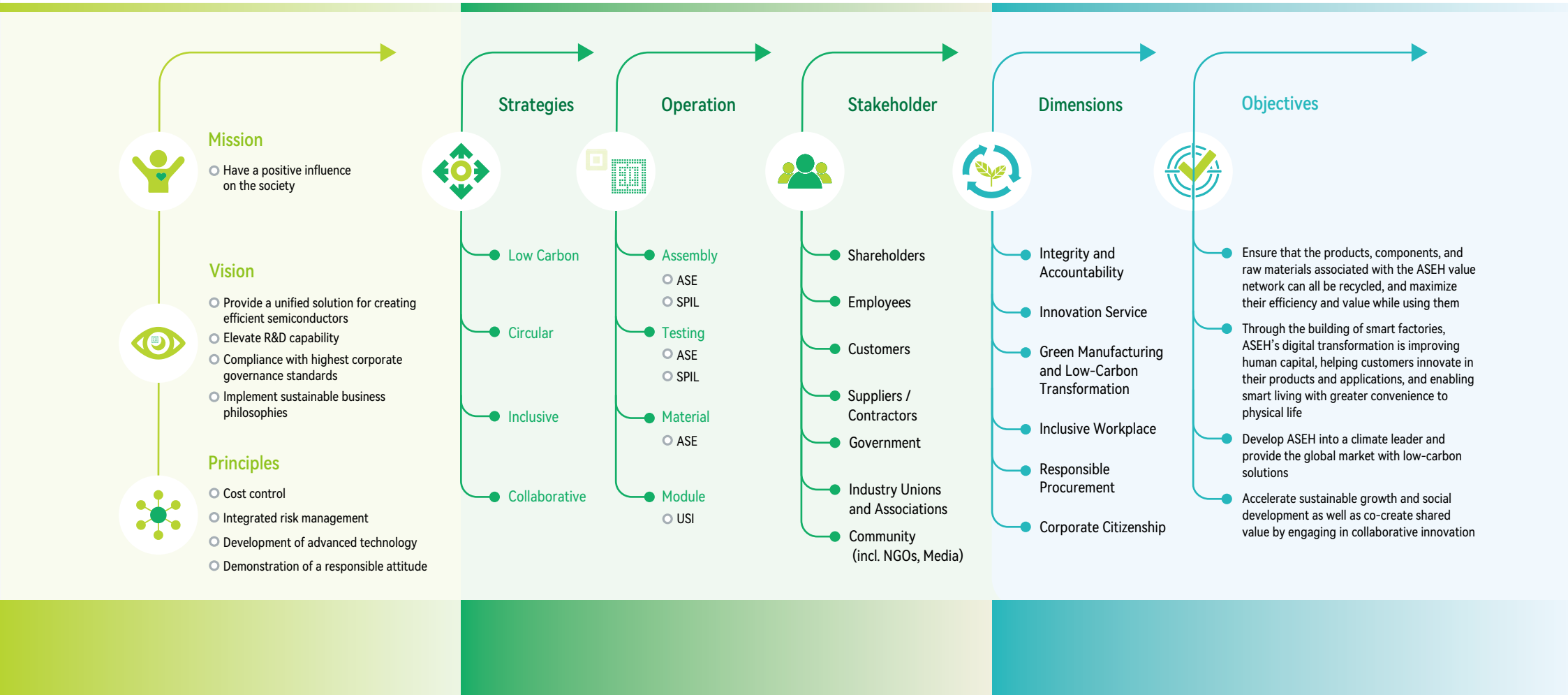
Dimensions	2024 Key Projects	Partners	Positive Changes
Environmental 	Net Zero Emission	• Government • External Consultants	• Structural transformation of energy and lower operational risks • Mitigation of extreme climate change
	Climate and Natural Environment Assessment	• External Consultants	• Strengthening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

Sustainable Management Framework

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

ASEH Sustainable Management Framework

Sustainable Development Best Practice Principles
Corporate Sustainability and Citizenship Policy



Enriching and Promoting Sustainable Culture

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

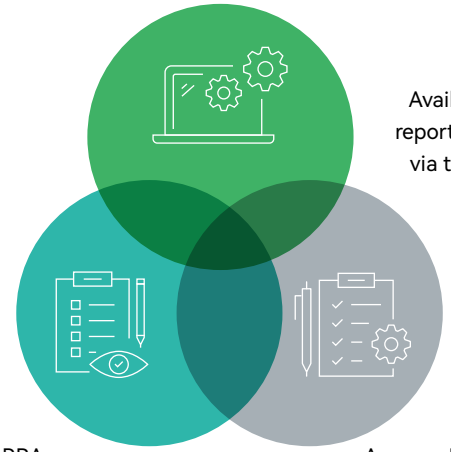

ASE CSC Annual Meeting


SPIL Sustainability Committee Annual Forum


USI Sustainability Committee Annual Meeting and Forum

2024 Activities to Cultivate Sustainable Culture at ASEH

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



100%
Availability of audit reports to customers via the RBA-Online platform

93%[1]
Percentage of RBA VAP-certified facilities globally

75
Average RBA SAQ score

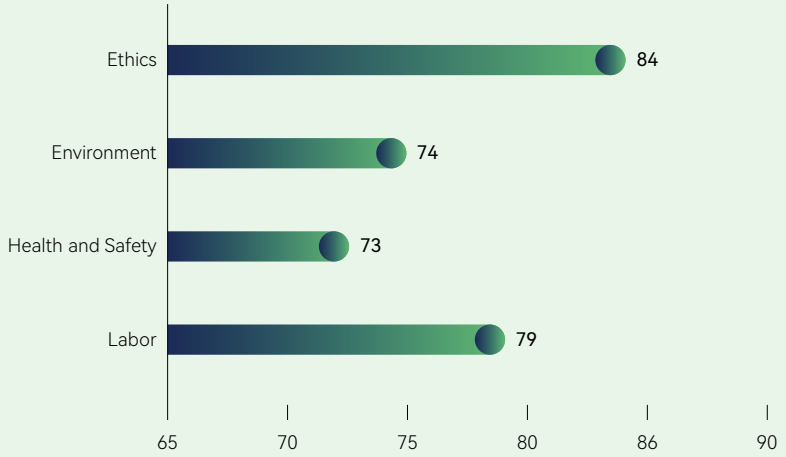
As a global leader in semiconductor packaging and testing, and system integration, ASEH is committed to environmental protection and compliance to the highest ethical standards. As a member of the RBA (Responsible Business Alliance), all our manufacturing facilities participate in the annual RBA Self-Assessment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

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

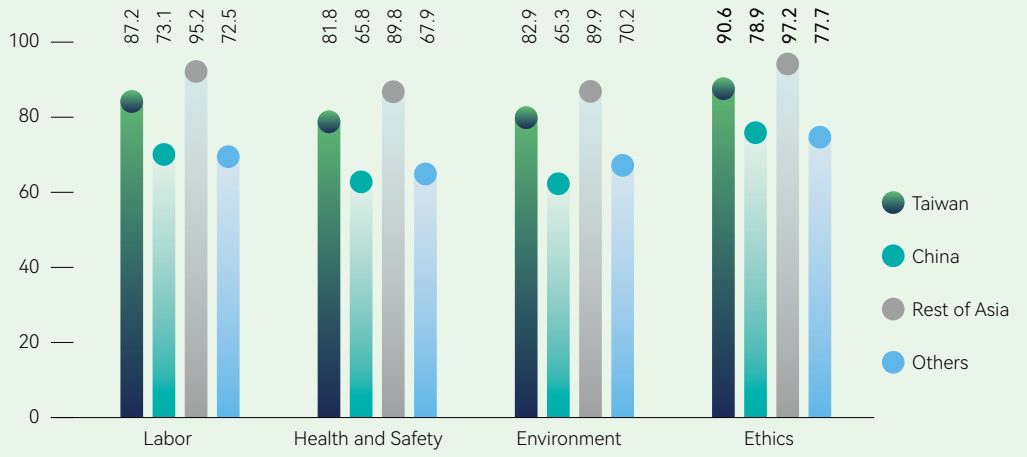
Our global locations include Taiwan, China, Japan, South Korea, Singapore, Malaysia, Vietnam, the United States and Mexico. As of 2024, 25 of our facilities have completed the RBA VAP. Customers can request the completed audit reports via the "RBA-Online" platform.

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

Average SAQ scores in 2024 (by category)

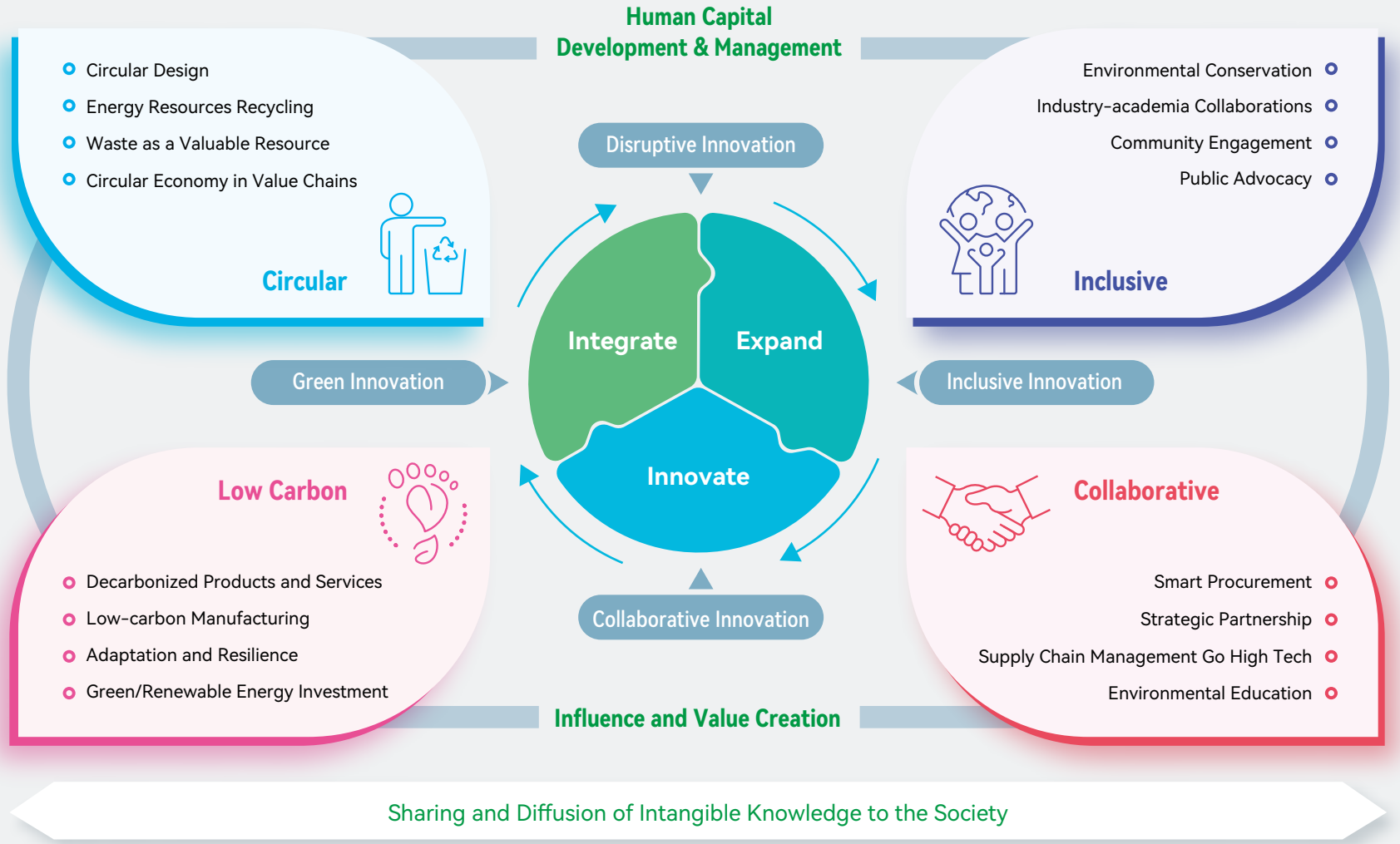


Average RBA SAQ scores in 2024 (by region)



2.2 Sustainability Strategies

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



Sustainability Vision

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

Strategic Approaches and Targets

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

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

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

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

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

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

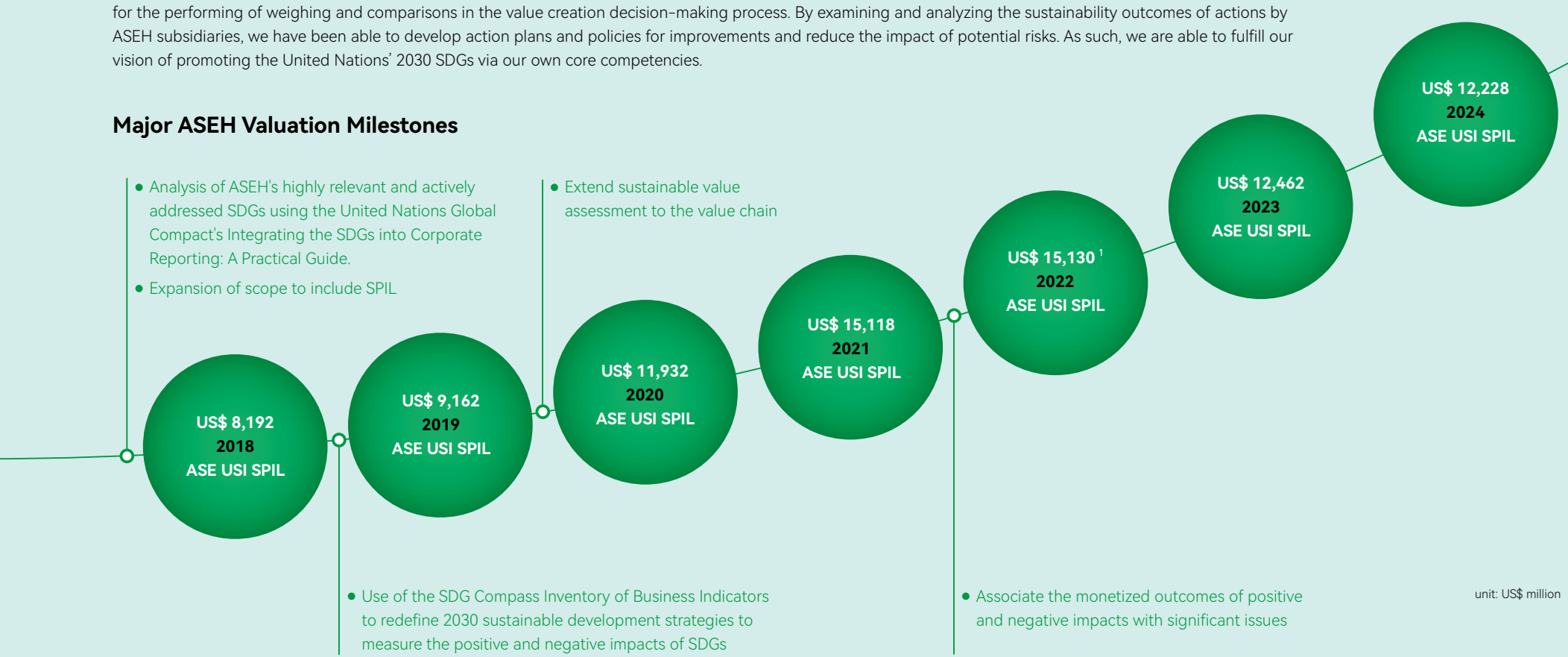
Dimensions	Key Issues	Business Impact on ASEH	Strategic Approach	2024 Progress/Status	2025 Target	2030 Target
Responsible Procurement	Sustainable Supply Chain	Establishing a sustainable supply chain is a win-win strategy that strengthens the protection of our suppliers' employees and assets and indirectly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

[1] by tier-1 procurement amount

2.3 UN Sustainable Development Goals and Sustainable Values Assessment

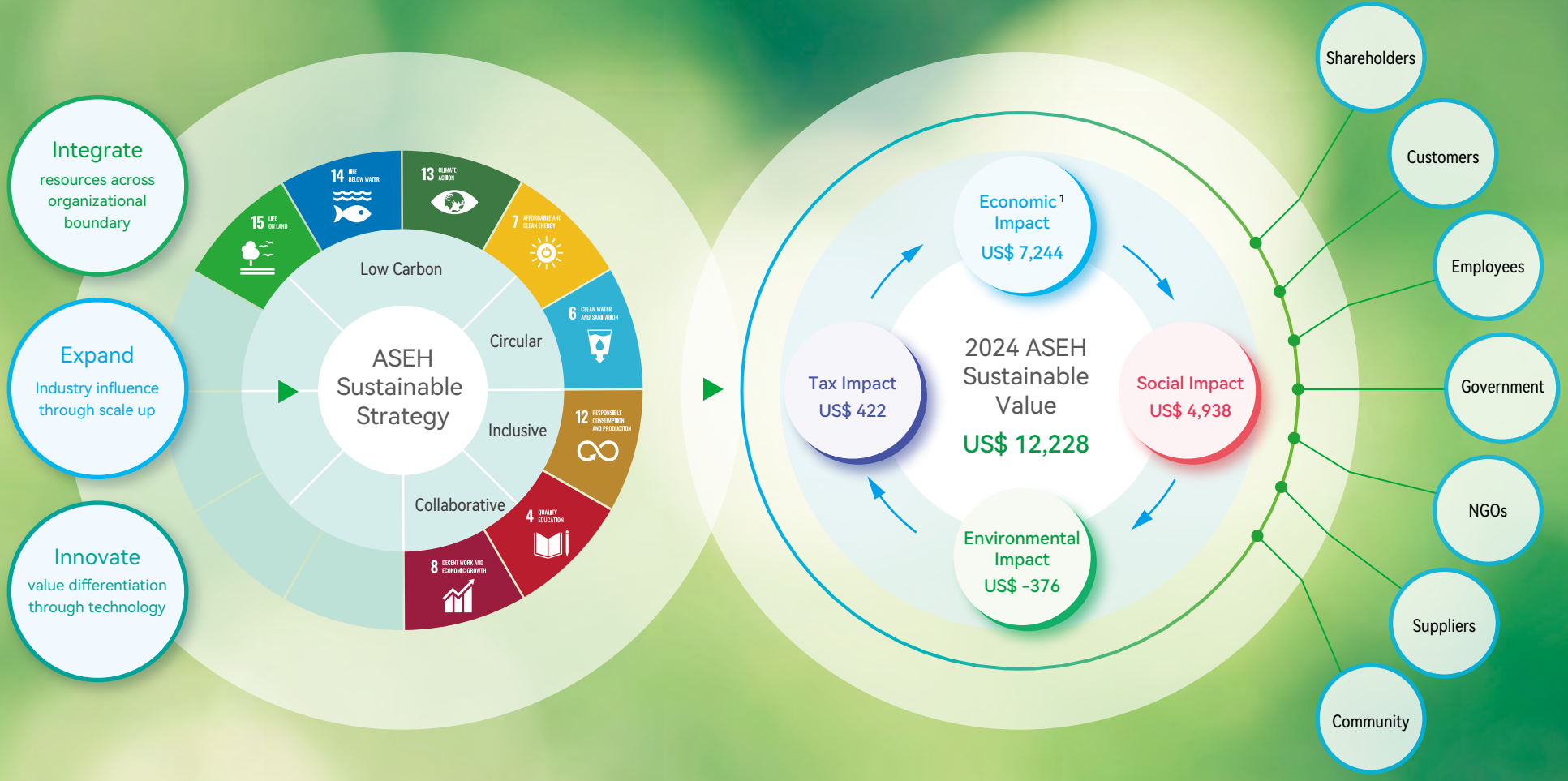
ASEH is building upon its technology leadership to steer the semiconductor industry towards greater sustainability. Since 2017, we have adopted the Total Impact Measurement and Management (TIMM) framework and Social Return on Investment (SROI) analysis to assess the social impacts and operational risks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

Major ASEH Valuation Milestones



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

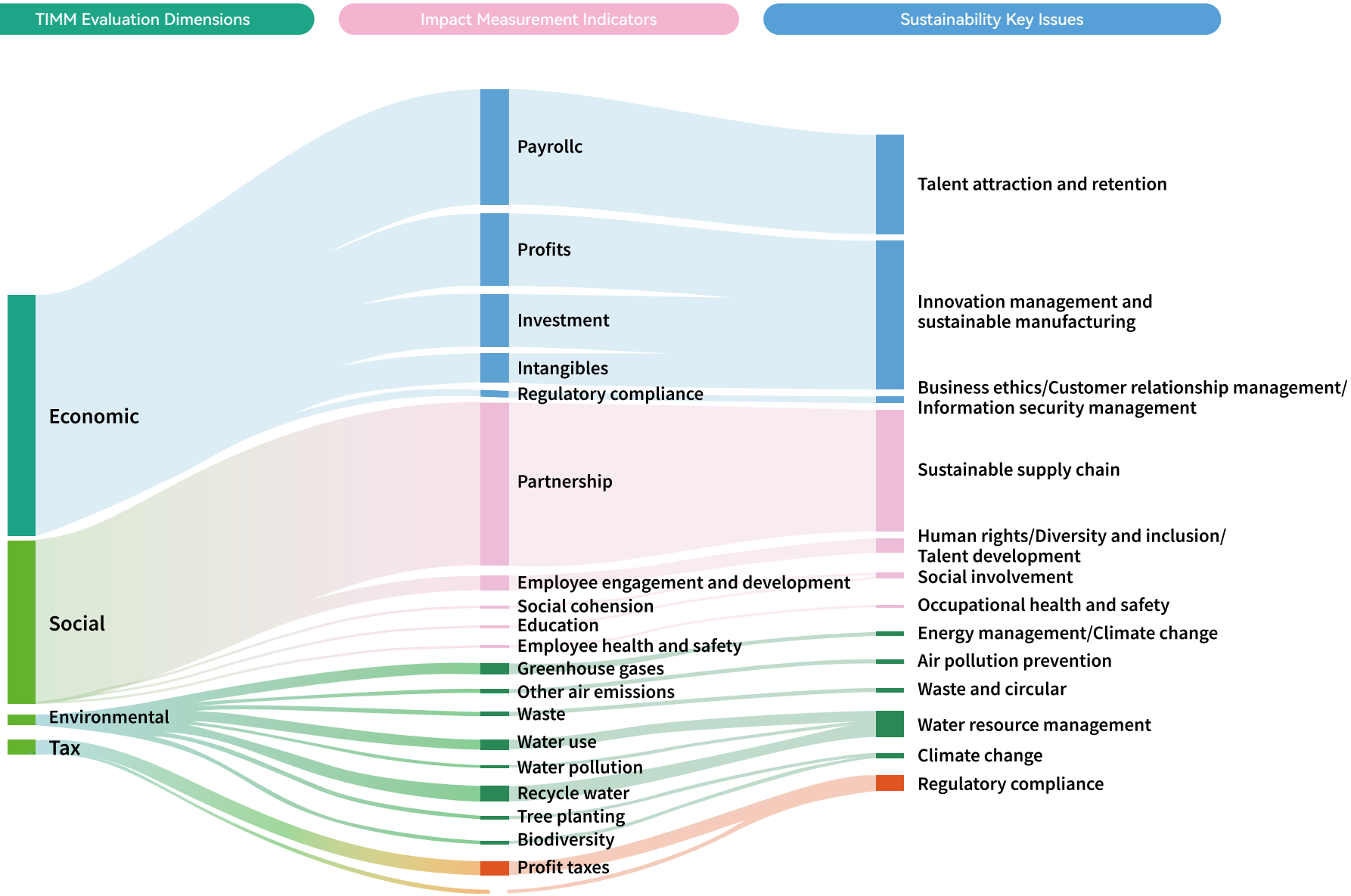
ASEH Valuation Model



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

unit: USD million

The relationship diagram of ASEH value impact and significant issue



Contributions to Global SDGs

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

unit: USD million

unit: USD million

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

Sustainability Value and Impact

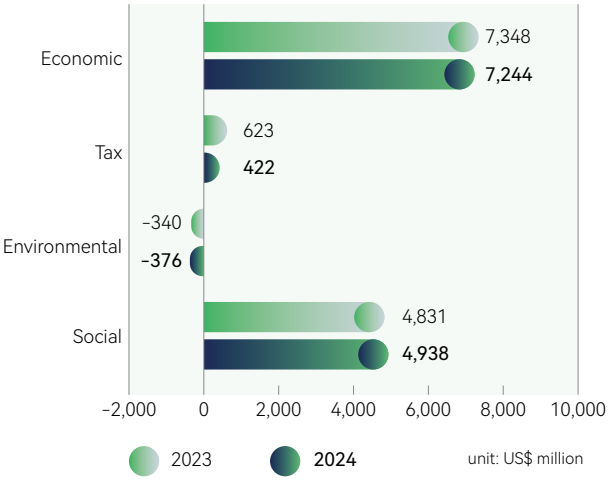
ASEH adopted the TIMM framework for sustainability valuation to quantify the sustainable value of the company's impacts in the economic, tax, environmental and social dimensions. In 2024, ASEH generated US$12,228 million worth of sustainable value for stakeholders.

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

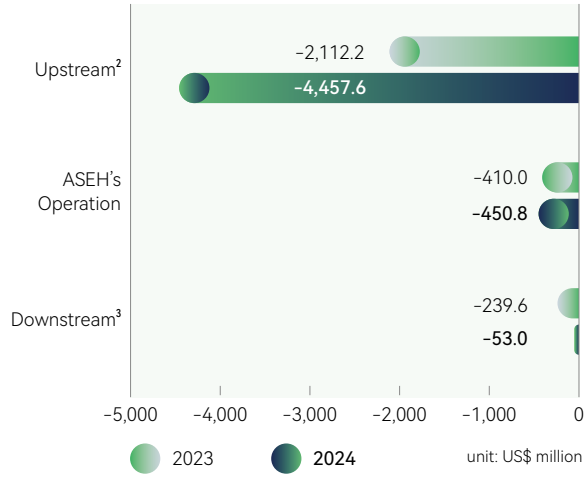
Environmental dimension: The two primary sources of environmental impact in our operations are water consumption during the production process and greenhouse gas emissions resulting from electricity usage. In 2024, renewable energy accounted for 19% of our total electricity consumption. ASEH adopted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

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

2023-2024 ASEH Sustainable Values



2023-2024 Greenhouse Gas Value Chain Outcomes



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

Environmental Impact

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

Assessment of environmental impacts in 2024[1]

Input

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

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

Notes: ↘ decrease ↗ increase

Output

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

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

External Impact

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

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

unit: US$ million

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

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

Social Impact

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

Assessment of social impacts in 2024

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

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

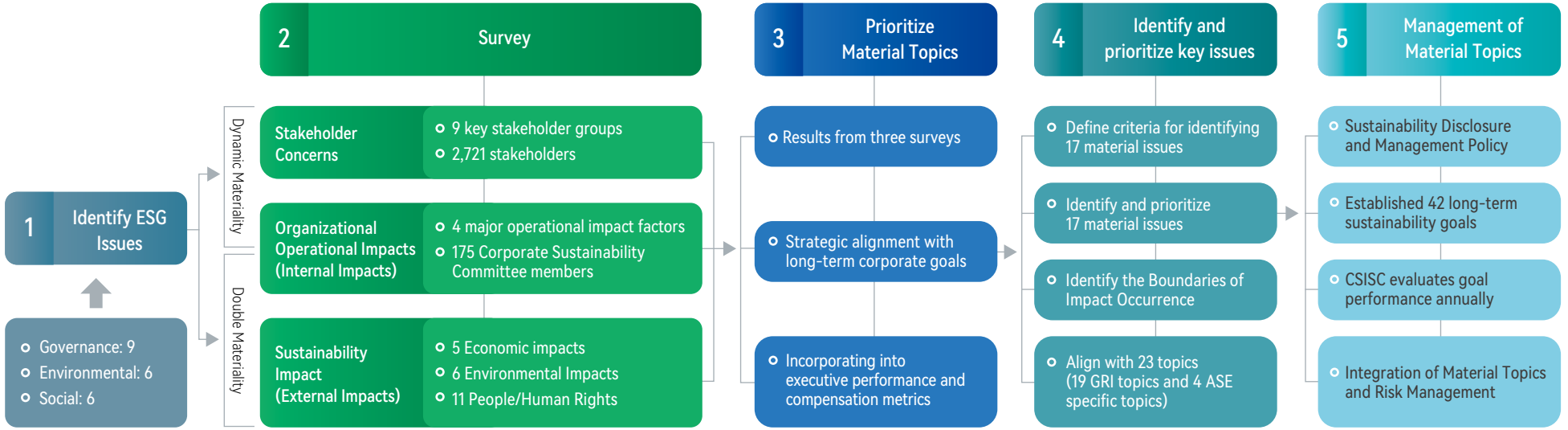
2.4 Materiality Assessments and Stakeholder Communication

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

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

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

The materiality analysis process is outlined as follows:



Step 1: Identification of ESG Topics

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

Adjustments from the prior year include the following:

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

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

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

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

Step 2: Conducting a Survey

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

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

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

ESG Topics and External Sustainability Impacts

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

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

ASEH Impact Assessment – Non-Monetized Model

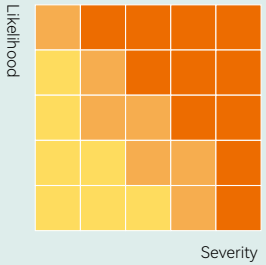
Define positive and negative impact → Major impact analysis → Sustainability issues with significant impact

22 Impacts

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

Impact Reference:

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



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

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

9 significant impact

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

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

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

ASE Impact Assessment- Monetary Valuation(TIMM)

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

Step 3 Prioritize Material Topic

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

The qualitative assessment incorporates internal strategic considerations, including:

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

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

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

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

Results

Three main screening criteria

Step 4: Identify and prioritize key issues

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

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

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

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

Results

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

Step 5: Management of Material Topics

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

Results

Established 42 long-term sustainability goals

4 dedicated sustainability committees

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

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

ASE Holdings – Material Issues Prioritization

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

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

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

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

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

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

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

Double Materiality Assessment of Key Material Issues

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

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

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

Material Issues and Risk Management

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

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

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

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

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

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

Stakeholder Communication Table

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

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

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