

## Corporate Sustainability- 2024 ESG Achievements

In line with promoting Corporate Governance 3.0 and the sustainable development blueprint, our company established an ESG short, medium, and long-term development action and goal blueprint in 2021, aiming to continuously enhance the effectiveness of corporate governance, actively implement energy conservation and carbon reduction, promote a circular economy, build an energy-efficient and friendly environment, and fulfill social responsibilities for sustainable development. In May 2021, the company organized a "CSR Core Group," chaired by the Vice President of Technology, consisting of units such as the production plant, quality assurance department, technology department, finance department, sales department, administrative management department, and labor safety office. In March 2022, it was renamed the "Sustainable Development Group," responsible for integrating cross-departmental strategies and execution results related to ESG, including environmental issues, occupational safety, employee care, social concerns, corporate governance, and stakeholder communication arising from the company's operational activities. The group reports at least once a year to the board of directors on the implementation of the ESG sustainable development work plan, goals, and results, sets or revises goals based on board recommendations, and adjusts strategies according to the execution status

Convened by the Vice President of Technology and directed by the Chairman of the Board of Directors, a total of four meetings will be held in 2024, with motions that include (1) continuing to identify sustainability-related issues and formulate action plans to address them, such as the risks and opportunities of climate change (TCFD) and the enhancement of industry-specific indicators for disclosure (SASB); (2) the objectives of and policy revisions to sustainability-related issues, such as greenhouse gas inventories and verifications, carbon-neutral pathways, and energy sources; (3) Revision of ESG short- term, medium- term and long-term goals and their implementation; and (4) In accordance with the "Blueprint for Convergence with IFRS" issued by the FSC, the Company will apply the IFRS for sustainable disclosure in three phases starting from the fiscal year 2026.

On July 1, 2022, the Board of Directors of the Company approved the greenhouse gas inventory and verification schedule, and the implementation will be reported to the Board of Directors every quarter. The implementation of the Company's ESG sustainable development will be reported to the Board of Directors at least once a year, The task forces will modify their plans according to the Board of Directors' recommendations. The ESG implementation status was last reported to the Board of Directors on October 30, 2024, and the short-, medium-, and long-term development goals for 2024 were revised on May 7 and October 30, 2024 , respectively, and were approved by the Board of Directors and the Audit Committee.

▲ ESG short-term 1-2 year sustainable development plan and goals

<b>E</b> environment	<ol style="list-style-type: none"> <li>1. Energy saving in manufacturing processes and facilities to achieve a 1% reduction in energy intensity and a 3% reduction in greenhouse gas emission intensity.</li> <li>2. The phased installation of smart meters will lead to intelligent energy-saving planning.</li> <li>3. Set up a recycling water system to reduce tap water consumption by 5%.</li> <li>4. For transportation fuel saving, we arrange the shipping in batches through the sales management plan to reduce the number of vehicles dispatched, thus reducing 3 vehicles dispatched every week.</li> </ol>
<b>S</b> social objectives	<ol style="list-style-type: none"> <li>1. Village and Good Neighbor cares for the disadvantaged and donates more than 20 safety boxes to the village every year.</li> <li>2. Caring for the disadvantaged: Utilizing the company's group strength to provide care for disadvantaged groups or individuals. Organize social care activities <math>\geq 1</math> event/year.</li> <li>3. To improve employee occupational safety and health, we have established a high/over-load human factors engineering promotion plan.</li> </ol>
<b>G</b> governance objectives	<ol style="list-style-type: none"> <li>1. Develop an intellectual property patent management program.</li> <li>2. Develop an intellectual property patent management plan. Supply chain management (suppliers) - ban on conflict minerals.</li> <li>3. Prepared a sustainability report and submitted it to the Board of Directors for approval.</li> <li>4. Improve the corporate governance on a rolling basis and maintain the second level of corporate governance evaluation carried out by OTC.</li> <li>5. Prepared English version of annual report, shareholders' meeting manual, and interim/final financial reports.</li> </ol>

▲ ESG short-term 3-5 year sustainable development plan and goals

<b>E</b> environment	<ol style="list-style-type: none"> <li>1. Energy saving in manufacturing processes and facilities to achieve a 1% reduction in energy intensity and a 6% reduction in greenhouse gas emission intensity.</li> <li>2. Developed a recycling model for precious metals and high purity metals with specific customers and raw material suppliers.</li> <li>3. In conjunction with the "Sewage Treatment Plant Recycled Water Promotion Program", a certain percentage of process water is used as recycled water.</li> <li>4. Promote external verification of ISO 14064-1 greenhouse gas inventory.</li> </ol>
<b>S</b> social objectives	<ol style="list-style-type: none"> <li>1. Through organization initiation, we work with national organizations to organize social welfare activities, more than one event per year.</li> <li>2. Participate in social care activities organized by government agencies or with neighboring companies to expand social participation.</li> <li>3. Become a community caretaker. Participate in community activities and give back to the community.</li> </ol>
<b>G</b> governance objectives	<ol style="list-style-type: none"> <li>1. Prepare the ESG sustainability report and obtain third-party certification.</li> <li>2. The number of seats on the Board of Directors shall be one-third or more for each gender of directors.</li> <li>3. To upload the English version of the sustainability report on the Market Observation Post System and the Company's website.</li> </ol>

**▲ ESG short-term 3-5 year sustainable development plan and goals**

<b>E</b> environment	<ol style="list-style-type: none"> <li>1. Energy saving in manufacturing processes and facilities to achieve a 3% reduction in energy intensity and a 10% reduction in greenhouse gas emission intensity.</li> <li>2.Planning ISO-50001 energy management system.</li> <li>3.The proportion of renewable energy (green energy) used reaches more than 10%.</li> <li>4.In terms of transportation fuel management, 50% of diesel trucks under the fifth phase will be replaced, and more than 50% of official vehicles will be electric vehicles.</li> </ol>
<b>S</b> social objectives	<ol style="list-style-type: none"> <li>1.Innovate and develop materials for advanced medical equipment, achieve high-end treatment equipment used in first-class large hospitals, and more than 1.</li> <li>2.The promotion of career training for middle-aged and senior-aged people aims to create a silver-haired friendly workplace and create irreplaceable human value.</li> </ol>
<b>G</b> governance objectives	<ol style="list-style-type: none"> <li>1.Link to the United Nations Sustainable Development Goals (SDGs) and link to more than five of the 2030 SDGs.</li> <li>2.Independent directors account for more than half of all directors.</li> <li>3.Plan a policy that exposes the linkage between senior managers' compensation and ESG-related performance evaluation.</li> </ol>

**▲ Implement achievements of ESG sustainable development in 2024**

(1) The objectives and implement achievements of ESG's short-term and medium-term sustainable development plan this year are briefly summarized in the following table:

<b>E</b> environment	Objective	Implementation results Data boundary: Information on the parent company's Taiwan plant area
Energy intensity	Decrease by 1%	Decreased by 10.57%
GHG emissions intensity	Decrease by 3%	Decrease by 15.4%
Achieving carbon reduction through low-carbon manufacturing (reducing electricity consumption)	Decrease by 1%	Increase of 2,151,500 kWh or 6.05% (mainly due to 16.24% increase in shipments compared to the same period last year)
Recycle the water system and reduce the usage amount of tap water	Decrease by 5%	Down 29.04%
Planned shipment in bulk to reduce vehicle dispatching and fuel for transportation	Vehicle number: 3	Up to 3 times per week /44.24% decrease in gasoline /16.01% decrease in diesel fuel
Intelligent energy-saving planning through phased installation of smart meters	Setting up energy consumption monitoring system for central air-conditioning (chilled water host system) in the office area as the basis for intelligent regulation and energy saving in 2024.	

<p>Conduct ISO-14064 greenhouse gas inventory</p>	<p>( 1 ) In 2024Q2, we conducted an internal audit of the greenhouse gas inventory, with a total of 41 audits and 0 non-compliances. Through internal audits, we identified opportunities for improvement and implemented the necessary measures to improve the ISO14064-1 greenhouse gas inventory system.</p> <p>( 2 ) It is expected that the third party external verification pre-process will be implemented in 2025.</p> <p>( 3 ) The first third-party external verification is expected to be performed in the second quarter of 2026.</p>
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<p><b>S social objectives</b></p>	<p><b>Implementation results</b></p>
<p>Caring for the underprivileged and our neighbors, while making donations to help the nearby village children every year.</p>	<p>In 2024, approximately 20 households received some form of charity, and in the past eight years, a total of 280 marginalized families have received donations, in order to continuously improve society.</p>
<p>Industry-university cooperation</p>	<p>On October 26, 2023, a letter of intent was signed with the School of Design of National Cheng Kung University for industry-academia cooperation, with a plan to develop 15 digital models of titanium new product design for civil products to promote industry-academia linkage and cooperation for a talent development platform; the “Innovation, Happiness, and Sustainability - Titanium Achievement Exhibition” press conference co-organized by TTMC.</p>
<p>Social welfare activities</p>	<ol style="list-style-type: none"> <li>1. In 2024, a rescue campaign was held to encourage employees to purchase overproduced and unsold agricultural products, and a total of about 3,000 kilograms will be purchased from the Tainan Wendan Park from 2022 to 2024.</li> <li>2. Every year, we assist local people with disabilities with employment and training opportunities. In 2024, we assisted 18 people, and provided a total of 73 people with disabilities a self-sufficient work stage in the past 4 years.</li> <li>3. In response to World Vision Taiwan’s red envelope spreading love campaign, the company set up a voluntary donation box for employees, raising a total of NT\$18,000, the total amount is \$43,000 for two years.</li> <li>4. ESG Friendly Train, in response to the Kaohsiung City Government’s environmental volunteers: <ul style="list-style-type: none"> <li>■ Kaohsiung City Environmental Protection Bureau calls for the protection of the coastal environment, to protect and restore coastal resources and ensure water resources, and to fulfill its social responsibility. The company actively participates in this effort by establishing the TTMC Coastal Patrol Volunteer Team under the flag of the Kaohsiung Municipal Environmental Protection Bureau, with 36 volunteers patrolling the neighboring coastline of Kajaia, in order to</li> </ul> </li> </ol>

	<p>create a friendly living environment by “reshaping the clean coastal landscape” , and to achieve the goal of zero loss of natural coasts.</p> <ul style="list-style-type: none"> <li>■ Under the leadership of the chairman of the board of directors, TTMC colleagues organized a beach cleaning activity at the beach of Kajia Coastal Park on 2024/09/12 with the theme of “2024 Beach Cleaning General Mobilizer” . 32 people participated in the activity, and the whole activity cleared out 153 kilograms of garbage that day, which was an outstanding result.</li> <li>■ On 2024/09/21, the TTMC volunteer team cooperated with the Kaohsiung City Rehabilitation Institute for the Blind to organize a guide activity for the blind to listen to the baseball games. The team led eight blind people to experience the baseball games at the Clarion Lake Baseball Stadium, to feel the atmosphere on the field, and at the same time, reminded them of the safety of going up and down the staircases, thresholds, and up and down the slopes, and so on.</li> </ul>
<p>Develop materials for advanced medical equipment</p>	<p>In order to localize and domesticate the materials for medical equipment, the Company completed the development of materials for BNCT (Boron Neutron Capture Therapy) equipment in Taiwan, and became the supply chain partner for the first set of Taiwan's Accelerator Boron Neutron Capture Therapy (AB-BNCT) equipment installed by Ho-Jung at the Hsinchu branch of the Hospital of the Chinese University of Medical Science and Technology, and completed the shipment of two sets of finished products.</p>
<p>Manpower development and occupational safety and health</p>	<ol style="list-style-type: none"> <li>1. The Company participates in market salary surveys every year and makes salary adjustments based on market salary levels, economic trends, and individual performance to maintain overall salary competitiveness. 2023 salary adjustments averaged 3.45%, and 2024 proposed salary adjustments averaged 3.85%.</li> <li>2. 30.77% of female supervisors in management positions.</li> <li>3. Number of occupational accidents: 0; occupational accident rate: 0%.</li> <li>4. We conduct annual health checkups for all employees in compliance with regulations and conduct proactive questionnaire surveys through online questionnaires in the month of health checkups for human-caused hazards and overload hazards, and track them for continual improvement, and advocate preventive medicine for the promotion of health for all employees in the plant..</li> <li>5. In 2024, the prevention of abnormal work overload hazards (including health abnormal inspection and tracking management) totaled 115 times.</li> <li>6. In 2024, Human Factors Engineering Hazard Questionnaire Survey, there are 8 suspected hazardous statisticians with a score of more than 3 on any part of the body, a decrease of 4 compared to last year, and a preliminary analysis of the same departmental colleagues, the suspected hazardous parts are not the same, and a preliminary judgment of the relationship with the operation may not be significant.</li> </ol>

G governance objectives	Implementation results
Rolling-type sound corporate governance and maintaining a second level gap in corporate governance evaluation	In 2024, the 2023 evaluation was announced, ranking among all TPEX Listed Companies in the second level gap (6% -20%) for five consecutive years. It is also higher than the average Level 2 score of all listed companies, The total score is 90.97.
Preparation of the English version of the annual report, shareholders' meeting manual and final financial report.	On March 2024, we completed the disclosure of the English version of the shareholders' meeting handbook, annual report, and 2023 annual financial report, as well as the issuance of a total of 8 Chinese and English financial reports for the period of 2022~2023, in addition to complying with the regulations of the Financial Supervisory Commission, and enriching the English webpage to enhance the understanding of the company's information by shareholders and investors outside of the country.
Establishment of Risk Management Committee (The third functional committee was established in 2021)	<p>The second Risk Management Committee (RMC) resolved in 2023 to conduct risk assessment of internal and external information security management, HS CODE checking risk, financial risk assessment of precious metal futures operation, risk assessment of raw material supply due to international and cross-strait situation, risk assessment of semiconductor product development, and risk assessment of electricity tariff increase, etc. The two items of information security and HS CODE were classified as medium risk. The two motions on information security and HS CODE are classified as medium risk and will be implemented in 2024:</p> <p>(1) In August, Information Security introduced EDR (Endpoint Threat Detection and Response Service) and MDR (Managed Detection and Response), which can help identify abnormal risks in the system, and is extremely helpful to the Company's information security enhancement.</p> <p>(2) Due to the misuse of HS-CODE in the declaration of TCMC's finished products, it was determined that the products did not meet the requirements for export tax rebates after the customs audit, and the Company has paid back the tax, and there is no significant tax risk loss to the Company yet.</p>
Volunteer to prepare a "Sustainability Report" and receive awards	We continue to voluntarily prepare the 2023 Sustainability Report of TCMC, upholding the belief in sustainable development, making reference to the SASB and TCFD standards and disclosing ESG-related information, which was approved by the Board of Directors and the Audit Committee on May 7 and October 30, 2024, respectively, and is expected to be completed by 2028 for verification of third-party certification.
The completion rate of information security awareness education and training is 100%	<p>1.The total number of internal and external training and awareness programs in 2024 for information security education will be 142 attendances and 474 hours (100%), and there will be no major information security incidents.</p> <p>2. After four consecutive years of organizing the event, in addition to effectively raising the awareness of the staff on information security, the successful penetration rate is as follows:</p>

	<table border="1"> <tr> <td>year</td> <td>2022</td> <td>2023</td> <td>2024</td> </tr> <tr> <td>Number of Persons</td> <td>9</td> <td>2</td> <td>5</td> </tr> <tr> <td>Percentage of successful penetration</td> <td>4.1%</td> <td>1.8%</td> <td>3.8%</td> </tr> </table>	year	2022	2023	2024	Number of Persons	9	2	5	Percentage of successful penetration	4.1%	1.8%	3.8%
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Number of Persons	9	2	5										
Percentage of successful penetration	4.1%	1.8%	3.8%										
Formulate a smart property patent management plan	<ol style="list-style-type: none"> <li>1. Educational training on trade secret management for employees, revision of the "Intellectual Property Management Regulations" and "Patent Management Practices," and improvement of management methods.</li> <li>2. The total number of global patent applications is 22, and the total number of granted applications is 13, of which 8 have been granted and are being maintained, 5 are being applied for, 5 are not being maintained after granting, and 4 have not been approved.</li> <li>3. 16 confidential documents for the company's technological research and development.</li> <li>4. 16 trademarks (11 in Taiwan, 3 in China, and 2 in Japan).</li> </ol>												
Board of Directors	<ol style="list-style-type: none"> <li>1. 7 directors, of which 3 are independent directors.</li> <li>2. The number of female directors was 2 (28.57%).</li> <li>3. Attendance rate of directors at board meetings was 98.21%.</li> <li>4. 100% of Directors and Supervisors' training hours meet the training requirements.</li> <li>5. Investor communication: The Company held 2 legal meetings in a year and a number of mini-conferences. (On July 19, 2024, we were invited to participate in a corporate presentation organized by Capital Securities, and on November 21, 2024, we were invited to participate in a joint presentation organized by Fubon Securities to explain the Company's operations to the investors.)</li> </ol>												

▲Other Important Information for Understanding the Implementation of the Promotion of Sustainable Development

The concrete benefits of investing in energy-saving or green energy-related environmentally sustainable machinery and equipment and investing in domestic green energy' s peripheral industries in 2024 are as follows:

Investment equipment	Investment amount	Investment benefits
Energy monitoring and management system for central air-conditioning and chilled water mainframe, one 5-ton Phase VI diesel truck	NT\$2,255,990	(1) In 2024, NT\$140,990 will be invested in the energy monitoring and management system for the central air-conditioning chilled water mainframe, mainly through the monitoring of water temperature, flow rate, and the energy consumption of each motor/pump, which can be manually adjusted in terms of switching time and the deployment of power consumption zones, and the energy-saving effect can be achieved. It is estimated that there is a 10% reduction in electricity consumption, about 40 kWh of electricity can be saved/day, and each unit of electricity costs \$5, then the daily savings of \$200, annual (about 190 days of use) savings of about \$38,000 in electricity costs.

		(2) In 2024, the purchase of an 8.5-ton Phase VI diesel truck will cost NT\$2,115,000. In addition to tightening the pollution control limits (NOx by about 80% and PM by about 50%) and extending the guaranteed mileage for durability, the emission standards also add new controls on ammonia (NH3) and the amount of particulate pollutants (PN). As a result of the more stringent emission standards, it is necessary to use more efficient pollution prevention equipment to reduce greenhouse gas emissions and improve air pollution.
Purchase of Oil-immersed Transformer for Hot Rolling Mill Power Supply System	NT\$4,987,500	In 2023, we will put into operation the target hot-machine molding equipment "hot rolling mill", the power supply system is a 600V transformer, transformer specifications (three-phase, 60Hz, 2500KVA), efficiency 99.15%, compared with the traditional type transformer efficiency 85%, a difference of about 14.15%, the power demand of the hot rolling mill is about 350KW, the oil-immersed type transformer can save 50 kWh of electricity/day, and the power cost is calculated at 5 yuan per unit, then it can save 250 yuan per day, and save about 5,000 yuan a month (20 working days/month), and save about 60,000 yuan a year in electricity costs. If the electricity cost per unit is \$5, then the daily saving is \$250, the monthly saving is about \$5,000 (20 working days/month), and the annual saving is about \$60,000 in electricity cost.

▲ Awards/Promotion Records

- Selected by the Southern Taiwan Science Park for the 2024 "Promotion of Equal Rights at Work" Outstanding Enterprise Recognition and Trophy.
- According to the "2024 White Paper on Carbon Reduction for Enterprises at 1.5°C" published by the World Magazine in November 2024, using the "Temperature Reduction Input Pollutants for Enterprises" (TRIPs) to assess the environmental data disclosed by the 967 enterprises that have published sustainability reports throughout Taiwan, the carbon reduction benefits and planning blueprints proposed by the Company were ranked as "Outstandingly Effective" manufacturers; this assessment was made to the "Excellent Effectiveness". The evaluation demonstrates that the Company is highly motivated to reduce carbon emissions through ESG, and that continuous promotion will bring the goal of "Net Zero Carbon Emissions" one step closer.
- The Company's 2023 ESG Promotion Achievement Award was recognized by the Ministry of Labor's Occupational Safety and Health Administration in 2023 as an outstanding enterprise with excellent performance in disclosure of occupational health and safety indicators in its corporate sustainability report, and has won the award for two consecutive years.
- 2023 Kaohsiung City Workplace Employee Health Service Promotion Program Award: Excellence Group (Level II).
- 2023 Workplace Health Management Case Study Experience Sharing



▲Awarded the 2022 Ministry of Labor's Occupational Safety and Health Administration's "Outstanding Enterprise in the Evaluation of Occupational Health and Safety Indicators in the Corporate Sustainability Report".

In order to continuously promote the improvement of workplace health and safety, the Occupational Safety and Health Administration of the Ministry of Labor has taken the initiative to analyze the leading indicators of Occupational Safety and Health (OSH) in the 2020 public sustainability report of listed and over-the-counter business units, and to establish the baseline information of OSH performance disclosure of listed and over-the-counter business units in Taiwan. Our country listed on the counter enterprises OSH performance disclosure of baseline information, especially pilot proactive assessment of occupational health and safety OSH governance, strategy, risks and opportunities, goals and performance, and verification of public disclosure of the contents of the survey and public commendation of the performance of the program to encourage enterprises to promote the practice of independent and public disclosure of occupational health and safety performance for the purpose of, and peers to select the best to learn from the effectiveness of the results of others. The current status of workplace health and safety performance disclosure of Thintech Material Technology's business units was selected as one of the top 10% of the electronics industry's top performers after a proactive evaluation of 429 listed companies (17 with excellent performance) and 159 over-the-counter companies (7 with excellent performance). A grand award ceremony was held on November 9, 2022 at the Taipei National Chengchi University Public Enterprise Center. Director of Occupational Safety and Health, Mr. Chou Tzu-Lian, presented the trophy to the top 10% performers, and Mr. Lin Ching-Fu, Vice President of Thintech Material Technology, received the award on behalf of Thintech Material Technology.

111 年度企業永續報告公開職業健康與安全指標  
績優企業榜單

上市電子前 10 %	上櫃電子前 10 %
2303 聯電	3105 穩懋
2330 台積電	<b>3663 鑫科</b>
2337 旺宏	5347 世界
2376 技嘉	5371 中光電
2377 微星	6510 精測
2383 台光電	6613 朋億
2409 友達	8069 元太
2439 美律	
3037 欣興	
3231 緯創	
3481 群創	
3711 日月光投控	
4919 新唐	
6239 力成	
6669 緯穎	
8021 尖點	
8150 南茂	

  

上市金融保險前 10 %
2885 元大金
2887 台新金
2891 中信金
2892 第一金

  

上櫃金融保險前 10 %
6023 元大期貨

主辦單位: OSHA 執行單位: SAHTECH

