

## Sustainable Management Policy and Achievements

To operate for the next 50 years and develop sustainably as a benchmark enterprise in the Group, we have launched various transformation plans since 2016 and completed one after another (Please refer to ESG Video Zone - [Introduction to various improvements](#)). We have adopted four major strategies since 2021 in alignment with the government's net zero emission policy: adoption of AI production technology, improvement to production efficiency, replacement with energy-saving equipment, and elimination of bottlenecks to increase production capacity and storage and transportation space.

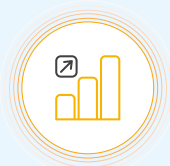
	▶ Circular economy	<ol style="list-style-type: none"> <li>1. R&amp;D to increase the percentage of recycled raw materials.</li> <li>2. Increase the percentage of recycled water per year.</li> <li>3. Recovery of heat energy from cracking furnace.</li> <li>4. Recycling and reuse of PE bags.</li> <li>5. Promotion of waste material reuse.</li> </ol>
	▶ Import system	<ol style="list-style-type: none"> <li>1. PSM system.</li> <li>2. Sustainable development included in KPI evaluation.</li> <li>3. ISO-50001 energy management system verification.</li> <li>4. ISO 14064-1 Organizing greenhouse gas inventory.</li> <li>5. ISO 14067 Carbon Footprint of Products and Services.</li> <li>6. "GRS" Global Recycling System Certification.</li> <li>7. ISO 46001 water resources management system.</li> <li>8. ISO 14046 water footprint verification.</li> <li>9. ISO 14001 environmental management system certification.</li> <li>10. ISO 45001 Occupational Health and Safety Management System Certification.</li> <li>11. IATF 16949 Quality Management System.</li> <li>12. Clean Production Assessment System Certificate.</li> <li>13. Green Building Label Certificate.</li> <li>14. ISO 14021 Verification of Recycled Material Content. (<a href="#">PVC-U pipes</a>, <a href="#">UPVC for electric conduit use</a>)</li> </ol>
	▶ Establishment of a smart factory	<ol style="list-style-type: none"> <li>1. Manufacturing process Optimization: TVCMe's distillation tower system and CGPC's PVC drying system.</li> <li>2. Manufacturing process Safety Monitoring: Absorption tower process safety monitoring, electrical pane AOI thermal imaging recognition, critical rotating equipment intelligent monitoring system, Intelligent stacker safety assistance system, intelligent improvement of space bag packaging safety operations, tank truck loading safety video recognition, dangerous behavior recognition for adhesive tape machine take-off wheels.</li> <li>3. Image Recognition: Employee facial recognition attendance system, intelligent vehicle control and intelligent truck scales, product processing plant defect recognition system, pipe AOI image detection system.</li> </ol>
	▶ Carbon Reduction Layout	<ol style="list-style-type: none"> <li>1. CGPC: Energy saving improvement of the cooling tower pump, installation of a new natural gas boiler, construction of a smart automatic warehouse system, improvement of water eliminator and thermal insulation, replacement of 800RT freezer, and update of the D sets of compressors in the coincidence course.</li> <li>2. TVCM: Cracking furnace energy-saving coating, quench tower heat energy recovery, steam Boiler Optimization and Improvement, cooling water tower pump efficiency improvement, and fan frequency conversion control.</li> <li>3. CGPCP: The thermal water vapor heating system is optimized.</li> </ol>
	▶ Environmentally Friendly	<ol style="list-style-type: none"> <li>1. CGPC: Constructed a new activated carbon fluidized bed and a new 30-ton natural gas boiler.</li> <li>2. TVCM: Replacement of VOC control valves, aerobic wastewater sludge reduction project, the 35 ton Steam Boiler Optimization and Improvement.</li> </ol>
	▶ Establishment of renewable energy facilities and purchase of green electricity	<ul style="list-style-type: none"> <li>◆ As of 2023, CGPC has constructed solar energy equipment with an installed capacity of 2.12MW. In 2024, a fire incident at the plant affected the solar installation capacity. As of the end of 2024, the total installed capacity amounted to 1,880.88 kWp.</li> <li>◆ In addition, the Group is actively developing external renewable energy projects. As of the end of 2024, the cumulative grid-connected capacity of solar energy projects has reached 8.6 MW, generating approximately 10.73 million kilowatt-hours of green energy annually.</li> </ul>

## Sustainable Management Achievements

2021	2022	2023
<ul style="list-style-type: none"> <li>• Ranked among top 6–20% in the 8th Corporate Governance Evaluation.</li> <li>• Received the Platinum Award of 14th TCSA for the report - Comprehensive Performance: Taiwan Corporate Sustainability Excellence Award Single Performance Award-Innovative Growth and Leader Award 1st TSAA Taiwan Sustainable Action Award - Silver Award.</li> <li>• Served as the leader of the Safety and Health Family in Miaoli County and made donations for anti-pandemic efforts.</li> <li>• Continuously improved energy conservation and carbon reduction at three entities: Adopted Intelligent in the process, improved the drainage systems, used high-efficiency motors, replaced old refrigerators, replaced old air compressors, improved the electric heating of pipe-expanding machines, replaced packaged air conditioners, replaced old street lights with LED ones, replaced old activated carbon fluidized bed reactors, etc.</li> <li>• Environmental Protection: Remediation of the drainage system, activated carbon fluidized bed.</li> <li>• Recognized by the Taipei City Government's Environmental Protection Bureau with an appreciation letter for "Excellence in Green Procurement."</li> <li>• VCM Recycling System</li> <li>• Continued soil and groundwater environmental remediation efforts (enhancing technology and biological applications) and education.</li> <li>• Passed the review for the Action Plan for Accelerated Investment by Domestic Corporations by the Investment Commission, MOEA.</li> <li>• TVCM was awarded the certificate of cancellation of management for remediation technology at polluted sites from the Environmental Protection Administration, Executive Yuan, and Director Chien, Hua-Yii was awarded the Outstanding Project Manager Award by the Taiwan Soil and Groundwater Environmental Protection Association.</li> </ul>	<ul style="list-style-type: none"> <li>• Ranked among top 6–20% in the 9th Corporate Governance Evaluation.</li> <li>• Selected as a constituent stock of the "Corporate Governance 100 Index."</li> <li>• Received the Platinum Award in the 15th TCSA Report and the Overall Performance (Taiwan Top 100 Sustainable Exemplary Enterprises Award), as well as the Taiwan Sustainable Action Award (TSAA) in the 2nd edition, with a Silver Award in SDG 12 and a Bronze Award in SDG 6.</li> <li>• CGPC, TVCM and CGPC Polymer implemented the SO 14067 carbon footprint management system.</li> <li>• CGPC and TVCM included ISO 14064-1 greenhouse gas inventory - Scope 3 in the inventory; CGPC Polymer implemented ISO 14064-1.</li> <li>• We have adopted the Global Recycled Standard (GRS) to certify CGPC's eco-friendly TPE leather products.</li> <li>• CGPC implemented ISO 46001 water resources and ISO 14046 water footprint management system.</li> <li>• The supervisors at CGPC, TVCM, and CGPC Polymer included ESG in the KPI evaluation.</li> <li>• Establishment of renewable energy facilities and purchase of green electricity</li> <li>• Newly established an automatic storage AI system.</li> <li>• CGPC has updated the IEM Alkali Liquid Evaporator Renewal and Replacement Project (B0000200), and our first application for greenhouse gas reduction quota under this project was approved by the Environmental Protection Administration, and we were granted a reduction quota of 4,335 metric tons of CO<sub>2</sub>e.</li> <li>• Update 2 cracking furnaces (F-6201 and F-6202) in TVCM's Linyuan plant as part of the offset project (B0000210) and obtained approval from the Environmental Protection Agency for the first greenhouse gas reduction quota application, receiving a reduction quota of 3,129 metric tons CO<sub>2</sub>e.</li> <li>• Three plants have been continuously improving energy efficiency and reducing carbon emissions through the following measures: Replacement of high-efficiency dissolved air flotation blowers, implementation of Intelligent energy-saving measures in processes, energy-saving coating for cracking furnaces, heat recovery in quench towers.</li> <li>• Environmental Protection: Remediation of the drainage system, construction of a new activated carbon fluidized bed, installation of a LDS System, smart pipeline inspection project.</li> <li>• Continued soil and groundwater environmental remediation efforts (enhancing technology and biological applications) and education.</li> </ul>	<ul style="list-style-type: none"> <li>• Ranked among the top 6–20% in the 10th Corporate Governance Evaluation.</li> <li>• Received the Platinum Award in the 16th TCSA Report and the Overall Performance (Taiwan Top 100 Sustainable Exemplary Enterprises Award), as well as the Taiwan Sustainable Action Award (TSAA) in the 3rd edition, with a Silver Award in SDG 6, a Bronze Award in SDG 12, and a Bronze Award in SDG 8.</li> <li>• Continued soil and groundwater environmental remediation efforts (enhancing technology and biological applications) and education.</li> <li>• Three plants have been continuously improving energy efficiency and reducing carbon emissions and environmental protection through the following measures: By integrating Intelligent technologies, we have implemented several projects to enhance operational efficiency and safety. These Intelligent integration projects include: Phase 2 of the Dryer Process Optimization, and Establishment of AI Models for Lightweight Fractionation Tower. In addition, CGPC has installed a natural gas boiler, power monitoring of the major energy-consuming equipment at Linyuan factory, updated water purifiers, intelligent control of the 35 ton Steam Boiler Optimization and Improvement (with the addition of a frequency converter and an intelligent control system), condensate recovery, construction of a wastewater sedimentation tank, D Set of compressors, 800RT refrigerators, energy-saving improvements to the external circulation pump of the chilled water system, cooling towers, etc.</li> <li>• Establish a computerized maintenance management system (CMMS) and introduce process safety management.</li> <li>• Participated in the "2023 Industrial Development Bureau, MOEA" Manufacturing Climate Change Adaptation and TCFD Demonstration Project and gave information.</li> <li>• The Company is obtained the "Cleaner Production Assessment System Certificate" on June 2024.</li> <li>• Our supply chain was invited to participate in the CDP questionnaire: Climate Change and Water Security, which received B- and B, respectively.</li> <li>• Bureau of Indian Standards (BIS) certified factory audits.</li> </ul>

## Sustainable Management Achievements

2024	2025
<ul style="list-style-type: none"> <li>◆ Ranked among the top 6 - 20% in the 11th Corporate Governance Evaluation.</li> <li>◆ Received the Platinum Award in the 17th TCSA Report and the Overall Performance (Taiwan Top 100 Sustainable Exemplary Enterprises Award), as well as the Taiwan Sustainable Action Award (TSAA) in the 4th edition, with a Bronze Award in SDG 8.</li> <li>◆ Awarded the 2024 3rd session "Net-Zero Industrial Competitiveness" Excellence Award by the 21st Century Foundation.</li> <li>◆ Continued soil and groundwater environmental remediation efforts (enhancing technology and biological applications) and education.</li> <li>◆ Three plants have been continuously improving energy efficiency and reducing carbon emissions and environmental protection through the following measures: By integrating intelligent technologies, we have implemented several projects to enhance operational efficiency and safety. These intelligent integration projects include: Phase 2 of the Dryer Process Optimization, and Establishment of intelligent Models for Lightweight Fractionation Tower. In addition, CGPC has installed a natural gas boiler, power monitoring of the major energy-consuming equipment at Linyuan factory, updated water purifiers, intelligent control of a 35-ton steam boiler with the addition of a frequency converter and an intelligent control system, condensate recovery, construction of a wastewater sedimentation tank, D Set of compressors, 800RT refrigerators, energy-saving improvements to the external circulation pump of the chilled water system, cooling towers, and so on.</li> <li>◆ Establish a computerized maintenance management system (CMMS) and introduce process safety management.</li> <li>◆ Obtained the "Clean Production Assessment System Certificate" and the "Green Building Label Certificate."</li> <li>◆ Our supply chain was invited to participate in the CDP questionnaire on Climate Change and Water Security, and received management-level scores of B for both categories.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Continue to make energy conservation and carbon reduction improvements in the three plants: Power monitoring of major energy-consuming equipment, update of water purifiers, installation of frequency converters and intelligent control systems for boilers, and condensate water recycling.</li> <li>◆ Update CGPC's PVC compound tanks.</li> <li>◆ In collaboration with external consultants and industry-academia partnerships, incorporated intelligent technology and established an AIoT-enabled smart factory.</li> <li>◆ VCM Recycling System.</li> <li>◆ Continued soil and groundwater environmental remediation efforts (enhancing technology and biological applications) and education.</li> <li>◆ Pass the ISO 14021 Verification of Recycled Material Content (<a href="#">PVC-U pipes</a> 、 <a href="#">UPVC for electric conduit use</a>).</li> </ul>



In 2019  
The production capacity  
of **VCM** reached to  
**485,000** tons



In 2020  
The production capacity of  
**PVC RESIN** of two plants  
reached to **450,000** tons



Focus on **environmental**  
issues and implementation  
of **energy conservation**  
and **carbon reduction**  
measures



**Harmonious**  
**relationship** with the  
community and focus on  
**occupational safety**  
and health



Maintenance of  
**shareholders'**  
**rights** and interests  
and **pursuit of R&D**  
and **innovation**