

FORMOSA PLASTICS GROUP

2023 Annual Report



Evoking Nostalgia Among its Employees, 40-year-old Formosa Plastics Building Undergoes Major Renewal

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FPG's Management Philosophy and Industrial Development Relief Works

In 2023, Formosa Plastics Group bid farewell to the old headquarters building (1976-2023). In the new building in Neihu, the Group's most important Corporate Management Philosophy of "diligence, perseverance, frugality, and trustworthiness" integrates the Taiwan industrial development relief works personally designed by President Wen-Yuan Wong in 1997. The relief works, namely "Leaving the Mainland for Taiwan," "Cultivating the Land," "Developing Light Industries," "Developing the Petrochemical Industry," and "Outlooks on the Electronics Industry," complement each other, showing that the Management Committee has not only inherited the spirit of the two founders, but also carries it forward and leads all employees to continuously expand the Group's footprint and reach new heights!

Formosa Plastics Group | 2023 Financial Highlights

Company	Capital	Assets	Equity	Sales	Income Before Income Tax	Number of Employees
Formosa Plastics Corp.	2,071,170	16,101,550	11,301,778	4,892,177	224,398	6,164
Nan Ya Plastics Corp.	2,580,388	18,494,435	11,717,725	3,938,205	186,673	12,333
Formosa Chemicals & Fibre Corp.	1,907,007	14,735,138	11,038,182	6,929,563	283,298	4,553
Formosa Petrochemical Corp.	3,099,385	13,227,715	10,943,038	23,110,795	800,618	5,198
Nanya Technology Corp.	1,008,011	6,258,224	5,431,077	963,393	-348,948	3,540
Nan Ya PCB Corp.	210,238	2,241,162	1,558,741	959,181	233,541	6,516
Formosa Sumco Technology Corp.	126,191	1,599,275	828,009	484,016	139,931	1,502
Formosa Taffeta Co., Ltd.	548,125	2,229,220	1,768,406	716,157	15,829	4,139
Formosa Advanced Technologies Corp.	143,882	431,542	384,163	248,856	20,279	2,303
Subtotal of Public Companies	11,694,397	75,318,261	54,971,119	42,242,343	1,555,619	46,248
Other Domestic Companies	2,485,596	21,961,484	18,680,256	6,803,144	1,025,787	32,276
Subtotal of Domestic Companies	14,179,993	97,279,745	73,651,375	49,045,487	2,581,406	78,524
Companies in U.S.A	1,510,281	16,853,654	13,298,723	6,348,120	93,135	4,267
Companies in China	5,919,387	12,994,863	8,413,088	8,524,763	-191,751	16,661
Other Foreign Companies	6,386,574	13,375,353	5,908,537	5,203,480	-672,820	13,169
Subtotal of Foreign Companies	13,816,242	43,223,870	27,620,348	20,076,363	-771,436	34,097
Total of Formosa Plastics Group	27,996,235	140,503,615	101,271,723	69,121,850	1,809,970	112,621

*NOTE: The financial data shown above is extracted from the individual financial statements of each company.

(In Thousands	of	USD,	persons))
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Preface

FPG has taken active steps to develop industry transformation, upgrades, and new businesses. In addition to devoting efforts to develop and sell high-value, differentiated and green products, FPG will also work to expand the application and added value of its products, closely observing market trends as remains committed to developing global strategies and expanding new overseas markets to diversify market and actively grasp industry trends and potentials to develop new businesses.



2023 continues to be a precarious year as the global economy continues to be impacted by the political and economic turmoil of the second half of 2022. The post-pandemic economic recovery is not as strong as previously expected, while the US and European countries continue to raise interest rates and tighten monetary policies in attempt to curb high inflation rates, leading to a slowdown in demand. The impact of the ongoing technology and trade war between China and the US, as well as the ongoing geopolitical disputes such as the Russia-Ukraine war and the Israel-Hamas conflict that triggered the Red Sea crisis, has once again impacted global trade and raised inflation, leading to weak economic momentum and terminal demand, so the overall economic performance of 2023 remains unsatisfactory.

Regarding the petrochemical industry in particular, over 20 petrochemical expansion projects were completed and put into operation in China last year, doubling China's petrochemical production capacity from just 12% of the global production volume in 2015 to 25% in 2023. The huge increase of production capacity in China has led to a price war. Additionally, China shut down a large number of factories during the pandemic, which disrupted the global supply chain, resulting in weak economic recovery after restrictions were lifted. Widespread unemployment, declined consumption, and a real estate downturn make it hard for the economy to improve. Not only was there a sudden freeze in demand and sharp drop in prices for petrochemical products, but consumers have also become more conservative in their demand, impacting Taiwan' s exports to China.

According to the 2023 Manufacturing Production Index released by the Ministry of Economic Affairs, the 2023 growth rate of Taiwan's overall manufacturing industry was -12.74%. The four major industries- metal electromechanical, electronics and information technology, chemical, and consumer goods- all had negative growth, which shows severe impact on all industries.



Chairman WenYuan Wong

Business Operation Overview

Impacted by the continued global economic slump, FPG's overall revenue in 2023 is NT\$2.1245 trillion, a decrease of NT\$528.9 billion or 20% from 2022. This is mostly due to an oversupply of overall products and weak demand resulting in a sharp fall in prices that compressed profits in the petrochemical industry. The pre-tax profit in 2023 is NT\$55.6 billion, a drastic decrease of NT\$141.1 billion or 72% compared to 2022.

I. Taiwan

In 2023, Formosa Plastics Group's various companies in Taiwan created a total revenue of NT\$1.5074 trillion, representing a decrease of 20% from 2022. Pre-tax profit amounted to NT\$79.3 billion, a 55% decrease from 2022. This was mainly due to weak global petrochemical demand, coupled with the huge increase of production capacity in China resulting in low prices spilling over to the international market. The imbalance between supply and demand has reduced the profit





FPG Profile Scan QR code to watch the video margin of most petrochemical products, resulting in a sharp decline in profits compared with the previous year.

Though overall market conditions continued be sluggish in 2023, the companies under FPG remain committed to exploring domestic and foreign sales channels and diversifying market risks to reduce dependence on a single market. At the same time, they developed strategic alliances with upstream and downstream suppliers to research and develop new products or expand the application of existing products, moving in the direction of technology and medical industry transformation to increase the added value of products. For example: products like Formosa Plastics' dry-jet wet-spun ultra high strength carbon fiber and all PP cold-resistant textiles, Nan Ya's leuko-reduction filter bag and release film, Formosa Chemicals & Fibre's composite materialsand nylon made from recycled fishing nets, and Nanya Circuit Board's high-end ABF substrates have all been completed and put into production, which is expected to drive performance growth.

Additionally, the companies continued to actively integrate AI into smart production, process optimization, quality inspection, maintenance and repair, and industrial safety projection. As of the end of 2023, 1,225 projects have been completed with estimated annual benefits of NT\$6.2 billion. There are also 745 ongoing projects which are expected to bring in an additional NT\$2.4 billion of annual benefits once completed, which demonstrates the effectiveness of AI applications.

II. United States

In order to curb inflation, the US Federal Reserve raised interest rates 11 times in a row by a total of 17 percentage points from 2022 to 2023, causing market consumption to become more conservative and suppressing product demand and prices, resulting in generally poor petrochemical profits. In 2023, Formosa Plastics Group's various companies in the US generated a total revenue of NT\$195.1 billion, representing a decrease of 28% from 2022. The pre-tax profit was NT\$2.9 billion, a decrease of 86% from 2022.

III. China

During the past three years of the COVID-19 pandemic, the large number of factories shut down, the real estate downturn, and local debt problems in China, in addition to the impact of the expanding technology and trade war between China and the US, has led to a gradual withdraw of foreign investments. As a result, economic recovery in China after the lifting of COVID restrictions in 2023 remains sluggish with a clear slowdown in consumption, production, and investments, as well as a drastic drop in exports. The low consumption willingness and significantly lower-than-expected economic activity has even led to deflation.

In addition, the gradual completion of large-scale refineries that China has rigorously supported over the years have resulted in a huge increase of production capacity. With weak domestic and foreign market demands, this has spilled over into the international market, causing a price war. Impacted by these domestic and foreign factors, China saw unsatisfactory economic performance in 2023, which also affected the operations of FPG's various companies in China. The total 2023 revenue in China was NT\$262 billion, a 17% decrease from 2022. The annual loss is equivalent to approximately NT\$5.9 billion, which is also a sharp decline of 151% from 2022.

IV. Vietnam

The 2023 turnover of Formosa Plastics Group's companies in Vietnam was equivalent to NT\$141.5 billion, which was down 10.5% from 2022. In particular, Formosa Industries Corporation is facing the toughest conditions encountered by textile industry in nearly 4 decades. Impacted by negative factors like high inflation, shrinking terminal demand, and price cut competition in the textile products from China, the textile industry could only reduce production in response. As a result, there was a drop in sales of textiles, nylon, and rayon cotton, and the annual loss was equivalent to approximately NT\$2.2 billion.

Also, the continued sluggishness of China's real estate market and low demand for steel

products in 2023 resulted in a large volume of lowprice dumping in Southeast Asia. To maintain market share and avoid losing customers, Formosa Ha Tinh Steel had to reduce prices in response, even if there wasn' t a significant decrease in raw materials costs. As a result, the company was unable to perform ideally, with an annual revenue of approximately NT\$124.5 billion, a 3.2% decrease from 2022, and an annual loss of approximately NT\$20.1 billion.

Implementing ESG Sustainable Development

For nearly 70 years, Formosa Plastics Group has remained committed to its corporate tenets of "get to the heart of matters" and "strive for excellence", actively carrying out various management tasks to achieve sustainable development, from the 1993 5S management principles, the subsequent 1999 no leakage policy (no gas leakage, no water leakage, no oil leakage), and the formation of the company-wide "Energy Conservation and Emission Reduction Task Force" in 2006 to further promote energy conservation and emissions reduction.

In 2016, FPG went even further to promote a circular economy, taking the four aspects of circulation - raw materials, water resources, energy, and waste - into consideration to implement inter-company, inter-factories energy and resource integration. In 2018, FPG applied AI to our energy conservation, emissions reduction, and circular economy efforts and initiated digital transformation and further expand the effectiveness. In 2020, FPG expanded the "Energy Conservation and Emission Reduction Task Force" into the "FPG ESG Promotion Organization". ensuring that the entire enterprise is committed to various ESG (environmental, social, governance) tasks so that the enterprise can move towards sustainable development.

After establishing the "FPG ESG Promotion Organization", the entire enterprise demonstrated its determination to fully promote sustainable development from top to bottom, not only continuing to promote energy conservation and emission reduction, circular economy, AI, AI+ simulation, and digital transformation, but also remaining committed to improving energy efficiency and production efficiency. The enterprise also improved its production technologies, developed and produced green products, and promoted recycling at the processing end and consumer end to expand carbon reduction and waste reduction effects.

At the same time, FPG is actively planning to build renewable energy and energy storage equipment, and also purchase green power certificates and carbon rights. For example, FPG companies have built 21.3MW solar photovoltaic facilities, which can reduce emissions by approximately 21,000 tons of CO₂ annually. Going forward, an additional 122.2MW will be built, which will generate 148,786 thousand kWh of electricity every year and further reduce 118,000 tons of CO₂ emissions. The companies also continue to focus on the latest technology concerning energy conservation improvement, fuel transformation, energy conversion, development of green renewable energy, and CO2 recycling in order to handle the upcoming trend of domestic and foreign carbon fees or carbon tariffs.

FPG also actively gathered information on the latest carbon reduction technologies and collaborated with other institutions to develop carbon capture, utilization and storage (CCUS) technologies. In terms of the supply chain, raw materials, and equipment purchasing, FPG also worked with suppliers to develop energy-saving, recyclable products in order to expand the scope of sustainable development to the fullest extent.

While taking multi-pronged approaches to actively promote carbon reduction, companies in the group also signed the SBTi (Science Based Target initiative) in 2022 to declare carbon reduction goals for the next 5-15 years, joining advocacy



FPG won the 2023 Resource Circulation Ese Ilence Award from the Resource Circulation Administration of the Ministry of Environment

organizations with scientifically verified data. The companies also continued to publish sustainability reports, and published the Task Force on Climate-Related Financial Disclosures (TCFD) for the first time, working to achieve transparency and recognition.

The following is an overview of our ESG measures and their results:

1. Environmental Protection (E)

(1) Water Conservation

According to the statistics of the Ministry of Economic Affairs, although Jiji weir was initiated to supply water for the Sixth Naphtha Cracker Complex, industrial water consumption accounted for only 5% of the weir's water supply, while up to 93% went to supplying agricultural water usage in Yunlin County and Changhua County. Even so, FPG still implemented active measures to use precious water resources more efficiently by reducing the amount of water used in production processes, recycling water, and reducing loss due to evaporation. As a result, the water recycling rate throughout the region exceeded 92%, and the Mailiao Industrial Complex conserves up to 309,000 tons.

Additionally, according to the "Directions for Application Review on Proposal of Water Usage" published by the Ministry of Economic Affairs, the water recycling rate (R1) of the Mailiao Industrial Complex is over 98.9%, which is equivalent to each drop of water being reused up to 12.9 times.

In addition to conserving water use, FPG also actively seeks to increase sources of water, effectively recycling and reusing rain water by increasing rainwater collection areas and water storage facilities. 2021 has been the most abundant in terms of rainfall in recent years, with an average on average 20,088 tons of rainwater collected each day. Furthermore, FPG also invested NT\$5.4 billion to establish a 100,000-ton seawater desalination plant in the Mailiao Industrial Complex. The plant is expected to be completed and ready for use by 2024.

(II) Energy Conservation and Emission Reduction

To further enhance its energy and resource usage efficiency, FPG established a dedicated unit for energy conservation and carbon reduction in 2006, with the Chairman of FPG serving as the convener. The unit hosts monthly meetings and set the annual energy saving target at 3% and the water conservation target at 5% to promote inter-plant, inter-company energy and resource integration.

According to the statistics, the average daily production output of Mailiao Industrial Complex has risen 4% in the past decade, but the average daily electricity consumption and steam consumption per unit of product have decreased by 18% and 19% respectively, while hourly electricity consumption and steam consumption have decreased by 14% and 16% respectively.

As for air pollution control, in order to continue promoting the optimization of environmental protection control technologies, FPG is working to reduce PM 2.5 emissions by installing wet electrostatic precipitators in co-generation power plants and promote the reuse of heat emitted from boiler chimneys, thereby eliminating the visible pollution of white smoke from chimneys without using extra energy. The two improvement initiatives are well underway and are expected to be completed before Nov. 2025, after which the plants will be able to match natural gas emission standards.

In addition, all vessels traveling in and out of Mailiao Harbor must use low-sulfur fuel or energy-saving power, and vessels in the harbor must use shore-side electricity instead of burning fuel to effectively reduce sulfide emissions. These active environmental protection measures made Mailiao Harbor the first industrial port in Asia to be awarded the "EcoPorts Certification".

(III) Overall Water and Energy Conservation Investment and Results

Using Mailiao Industrial Complex as an example with the measures listed above, FPG has invested approximately NT\$42.42 billion into energy conservation, emissions reduction, and circular economy as of the end of 2023, completing

2,875 water conservation improvement initiatives to conserve 112.6 million tons of water each year. At the same time, 11,192 energy-saving initiatives that can reduce CO₂ emissions by approximately 13.72 million tons each year were completed. The results are quite impressive, with combined annual water and energy conservation benefits reaching NT\$38.7 billion, making Mailiao Industrial Complex a true eco-industrial park.

Moreover, according to the evaluation results published by the international environmental evaluation index Carbon Disclosure Project (CDP) in 2023 (evaluation scores are divided into 8 grades, from A to D-), Formosa Plastics, Nan Ya, Formosa Chemicals & Fibre, Nanya Technology, Formosa Taffeta, Formosa Advanced Tech, and Formosa Sumco Technology were awarded the top score of A, while Formosa Petrochemical and Nan Ya Printed Circuit Board also achieved an impressive score of A-. In terms of water safety disclosure, six companies including Formosa Plastics, Nan Ya, Formosa Chemicals & Fibre, Nanya Technology, Nan Ya Printed Circuit Board, and Formosa Sumco Technology received a score of A in leadership, while Formosa Petrochemical, Formosa Taffeta, Formosa Advanced Tech received the commendable score of A-.

Notably, FPG companies generally only scored B~C when first invited to be assessed by the CDP in 2017. It is only with a series of hard work and internal improvements were the companies able to gradually keep up with international carbon disclosure trends and improve their scores year by year, eventually passing the review of the most authoritative international carbon reduction framework - the Science-Based Target Initiative (SBTi), and finally achieving the impressive score of 13 A's and 5 A- in 2023. These improvements demonstrate how the group's focus on energy conservation, carbon reduction, and circular economy under the President's leadership has been recognized and praised by prominent international institutions.

The carbon emissions of FPG reached a peak in 2007 with 61.48 million tons, making 2007 FPG's base year for carbon reduction. The

short-term goal is to lower emissions to 49.18 million tons by 2025, a 20% decrease from the base year. The mid-term goal is to lower emissions to 39.96 million tons by 2030, a 35% decrease from the base year. After years of efforts to promote energy conservation, emission reduction, and circular economy, FPG has reduced emissions to 47.29 tons by 2022, a 23.1% decrease from the base year. Moving forward, FPG will continue to stay in line with government policies and the international promotion of ESG, while making plans to move towards achieving the long-term goal of carbon neutrality by 2050.

II. Social Responsibility (S ' Social)

(1) Friendly Workplace

FPG has long built a friendly and happy workplace environment to continue attracting and recruiting outstanding talent. FPG provides professional and new technology training to help employees cultivate diversified professional skills and also takes care of the health and welfare of employees, allowing every employee to reach their full potential in a position suitable for their skills. At the same time, to take care of employee welfare and health care, FPF not only provides benefits superior to regulatory requirements, but also added gift bags for pregnant women and their babies, a NT\$20,000 maternity subsidy for each pregnancy, a monthly NT\$2,000 childcare subsidy for children under the age of 6, and a day of paid "health check leave" each year. Therefore, FPG has earned the title of "Happy Enterprise" for three consecutive years in the voting event organized by the 1111 Job Bank from 2019 to 2023. Meanwhile, in 2023, 19 companies in the Group received accolades, such as the Health Promotion Label and Excellent Healthy Workplace Award, which shows how much the group values and cares for its employees.

(2) Social Outreach

FPG remains committed to its management philosophy of "taken from the community, given back to society". In addition to the establishment of three universities and the Chang Gung Memorial Hospital, FPG has founded multiple foundations and charitable trusts, giving back over NT\$104.4billion to the community over the years. FPG' s main charitable projects include (see attachment for details):

1. Campus reconstruction: Since the 921 earthquake, FPG has sponsored the reconstruction projects of 76 school buildings throughout Taiwan that have deteriorated with age or have been stricken by natural disasters. Through these projects, FPG has rebuilt more than 900 classrooms.

2. Welfare for the elderly: FPG has donated approximately 1.15 million doses of the pneumococcal vaccine with a total market value of nearly NT\$1 billion for senior citizens over the age of 75. According to research by Chang Gung Memorial Hospital, the vaccine can reduce the infection rate by 76% and the mortality rate by 91%. These donations saved the government over NT\$14.3 billion in medical expenses for pneumonia treatments. Meanwhile, FPG also provided subsidies for improving housing for the elderly, established senior health centers, donated funds and equipment to the Yunlin County Evergreen Canteen, and supported other charitable programs.

3. The Rainbow Program and Sunny Program:

FPG provided health education, psychological counseling, and skill training for drug-addicted inmates with AIDS (Rainbow Program) and drug offenders (Sunshine Program). FPG also provided regular follow-up counseling after inmates were released to help them find employment, cutting recidivism rates from 60-80% down to approximately 10%. Because of these programs, FPG's Chairman received the 11th "Charity Award" from the HK & Macau Taiwanese Charity Fund. In addition to donating all of the prize money, the Wang Jhan-Yang Charitable Trust Fund also donated a matching amount to expand the project.

4. Welfare for women and children: FPG promotes multiple welfare programs, including medical and financial assistance for patients with rare diseases, education support for minor welfare institutions, support for minors that have left

welfare institutions, professional early intervention and treatment for children with developmental disabilities (benefiting over 33,000 children and 92 institutions), scholarships for orphaned children, financial assistance for families affected by domestic violence, scholarships for low-income students, work-study programs at social welfare institutions, financial support for students in remote areas, talent training programs in remote areas, grants for school lunches in elementary and junior high schools in Yunlin County, English courses for students in the remote areas of Hualien and Taitung Counties, support for the development of preschool children in vulnerable families, used toy logistics centers and the Children's Playground Project, and the Junior High School Skills Education Project.

5. Other social welfare programs: FPG promotes a number of programs to help the disadvantaged, such as helping homeless people reintegrate into society, donations to establish food banks, and improving the lighting in social welfare institutions. FPG also funds the training of outstanding athletes in sports such as tennis, table tennis, billiards, and badminton, and actively supports performances by local art groups, such as: The Ming Hwa Yuan Arts & Cultural Group, I Wan Jan Puppet Troupe, and Apple Theater, making arts and culture events more accessible to people in remote areas and helping local art and culture groups to grow.

Many of the charitable programs promoted by Formosa Plastics Group were the first of their kind in Taiwan and were widely praised, allowing the Group to elevate the quality of their services and meet the goal of sustainable operation. Under the Chairman' s leadership, Formosa Plastics Group is fully realizing the two founders' wish to give back to society.

III. Corporate governance (G ' Governance)

Sound corporate governance has always been the cornerstone of FPG, as the Company actively practices its management philosophies of "diligence, perseverance, frugality and trustworthiness", "strive for excellence", "positive contribution to the society", and "sustainable development", focusing on the industry and actively investing in new energy and other diverse industries, setting development targets, formulating measures, and carrying them out to the fullest. At the same time, FPG complies with laws and policies protecting the rights of shareholders, strengthening the functions of the company's board of directors, actively improving the transparency of the company's financial and business information, and respecting the rights and interests of stakeholders.

Therefore, the 8th corporate governance accreditation conducted in 2023 showed that Nanya Technology ranked in the top 5%, while Formosa Plastics, Nan Ya, Formosa Chemicals & Fibre, Formosa Petrochemical, Nan Ya Printed Circuit Board, Formosa Sumco Technology, Formosa Taffeta, and Formosa Advanced Tech ranked in the top 6~20%. Meanwhile, the 7 listed companies in the Group - Formosa Plastics, Nanya, Formosa Chemicals & Fibre, Formosa Petrochemical, Nanya Technology, and Nan Ya Printed Circuit Board, and Formosa Sumco Technology - were all selected in the TWSE Corporate Governance 100 Index, demonstrating that FPG's corporate governance achievement is well recognized.



FPG Chairman attended the grand opening of Kaohsiung Formosa Wang Brothers Park

Future Operating Environment

In recent years, the global economy continues to be impacted by factors like the pandemic, geopolitical conflict, the US-China trade and technology war, inflation, interest rate hikes, and climate anomalies. Geopolitical conflicts also seem to be spreading, evolving into bloc confrontation and drastically increasing global economic risks and uncertainties, the effects of which showing no sign of subsiding. Therefore, the economic trend in 2024 will be even more severe and complicated, and it is harder than ever to predict when the global economy will recover.

In addition, China has made huge investments in steel, petrochemical, shipbuilding, and automobile industries, rapidly expanding their production capacity. In 2023, over 20 petrochemical plants were completed and put into production, covering a full range of plastic raw material products. Due to low domestic demand and a sluggish global economy as businesses digest excess inventory, a lot of the new production capability has spilled over, resulting in strong pressure on the international petrochemical raw material market to reduce prices, which has had a huge impact on industries players across Asia, including in Taiwan.

Notably, China has suspended ECFA preferential tax rates for 12 petrochemical products from Taiwan, including propylene and paraxylene, in January 2024. China has also completed trade barrier surveys on over 2000 agricultural, chemical, textile, and machinery products, and countermeasures are on the way. These actions have garnered widespread attention from Taiwanese businesses. After all, China is the second largest economy in the world and Taiwan's largest export market. Its every move is scrutinized by the global economy. China taking countermeasures against Taiwan will not only severely damage the long-term development of Taiwanese industries but also affect cross-strait economic and trade exchanges and collaboration. Therefore, this is an issue that requires the government's attention and proper response in advance.

On the other hand, global climate anomalies have continued to cause severe disasters. Therefore, countries around the world are committed to achieving the goal of carbon reduction and net-zero emissions to combat climate change. The EU has even started requiring a declaration of carbon emissions for some imported goods in October 2023 (with a transitional period until the end of December, 2025) and will begin imposing carbon tariffs in 2026 (CBAM, Carbon Border Adjustment Mechanism).

From the trial phase of Europe's CBAM to the introduction of the Clean Competition Act (CCA) in the US, low-carbon, sustainable green products have become the industry standard for the future, bringing new challenges to the entire industry. Facing the threat of China's expanding production capacity, FPG not only continues to develop high-value products, but also makes efforts to transition towards recycling, plastic reduction and sustainable carbon reduction, developing green, sustainable and high valueadded products to respond to the global trend of carbon reduction as soon as possible.

Future Outlook

In 2023, the continuation of unfavorable factors from the previous year has resulted in no significant improvement to the global economy, and it is hard to predict when things will turn around. In particular, China's sluggish real estate market and domestic demand, as well as US-China disputes, have led to a decline in domestic and foreign investment year after year, greatly impacting the global economy. Fortunately, inflation in Europe and the United States has gradually cooled down, and interest rate hikes are nearing an end, with the US Federal Reserve also expected to lower interest rates this year. Considering all these factors, the global economy may start to slowly recover in 2024, but the degree and timing of such improvement will depend on how the two major economies of China and the US recovers, the monetary policies of major countries, and whether geopolitical conflicts can be eased.

"Transformation" has become a critical and urgent matter for companies to respond to the diverse challenges of industry development. In 2023, FPG's major companies have established dedicated departments for transformation and sustainable development that will focus on promoting "transformation" as the most important goal of future operations. Other than focusing on the core petrochemical operations, companies will also promote cutting-edge technology and products regarding aspects like "digital transformation," "energy transformation," "circular economy", and "new business development", developing new businesses and products to actively develop differentiated and high valueadded products. FPG will also develop high-tech and medical industries in hopes of building a stronger business structure that can overcome the headwinds of recession and gather key momentum for sustainable growth in the future.

(I) New expansions and investments

As for business development, in response to the coming age of 5G and AI, we have introduced 10nm grade DRAM production technology at existing fabs and plans to gradually invest NT\$360 billion to upgrade existing fabs and construct a new fab to introduce several generations of 10nm grade technology and products in order to build a foundation in the DRAM industry and strengthen international competitiveness. FPG is also planning for the development of its business in new energy. It has started construction on the largest lithium iron phosphate battery cell factory in Taiwan in 2023, aiming at its four major goals of "energy saving, energy storage, new energy, and recycling" to do its part for the environment.

Regarding overseas business, FPG continues to promote various investment and expansion projects, including the expansion of petrochemical raw material production capacity in the Ningbo Plant and the electronics material expansion project in Huizhou to secure its leading position in the global electronics material market. As for businesses in the US, in order to fully grasp the low-cost competitive advantage of shale gas, FPG has already built its 3rd ethane cracker plant and downstream related petrochemical plants in its Texas plant. Going forward, FPG will also evaluate the feasibility of expanding its investment. In addition, Formosa Ha Tinh Steel's efforts to develop an export market had gradually come to fruition, successfully entering the European and US markets. The company will continue to deepen and expand export sales and develop various high value-added steel products, actively entering the high-end market of various industries as it strives to become a world-class steel company.

(II) AI and ESG development

To enhance operation performance, FPG has also continued to promote AI and AI+simulation, as well as digital transformation to improve production efficiency and the energy utilization rates. The goal is to increase profits by NT\$20-30 billion annually. On the other hand, not only is achieving net-zero emissions important for keeping in line with international standards, but its success or failure is also an important variable that will affect the development of the industry over the next few decades. In the pursuit of sustainable development, FPG has not only continued to promote ESG sustainable management strategies like energy conservation, carbon reduction, and circular economy, but also further expanded its recycling of discarded oyster shells into antibacterial powder for plastic products, the recycling of PET bottles to make polyester silk (cotton), and the recycling of discarded oyster rope, fishing nets, and other marine waste to make reconstituted nylon. FPG is also developing biodegradable and environmentally friendly products, expanding its level of influence and cooperation, before working with downstream suppliers to establish a recycling mechanism.

Also, in response to the global trend of energy conservation, carbon reduction, and new energy development, FPG has been working on the development of clean energy such as solar power, minimal water, and wind power generation for many years, accumulating lots of professional and practical experience in the field. With companies in the group promoting the use of solar energy generators in factory rooftops and parking lots, FPG will continue to expand the use of energy storage batteries to regulate peak and off-peak electricity usage as it continues to move towards the long-term goal of achieving carbon neutrality by 2050 and pursue the sustainable development of the enterprise.

Since its establishment nearly 70 years ago, FPG has continued to expand its corporate reach and strengthen its international competitiveness. With an increasingly competitive global market, there will be more unpredictable challenges ahead. FPG has taken active steps to develop industry transformation, upgrades, and new businesses. In addition to devoting efforts to develop and sell high-value, differentiated and green products, FPG will also work to expand the application and added value of its products, closely observing market trends as remains committed to developing global strategies and expanding new overseas markets to diversify market and actively grasp industry trends and potentials to develop new businesses. FPG also continues to rationalize various operations and exercise the enterprise's strong physical fitness. In the face of variables and severe challenges, it is our firm belief that maintaining our determined attitude as we work to develop countermeasures will help us turn crises into opportunities and allow us to stand firm and embark on new chapters in changing times.



To enhance operation performance, FPG has also continued to promote AI and AI+simulation, as well as digital transformation

Summary Table of Formosa Plastics Group's Social Welfare Projects in Taiwan (As of the end of 2023)

Unit: NTD million

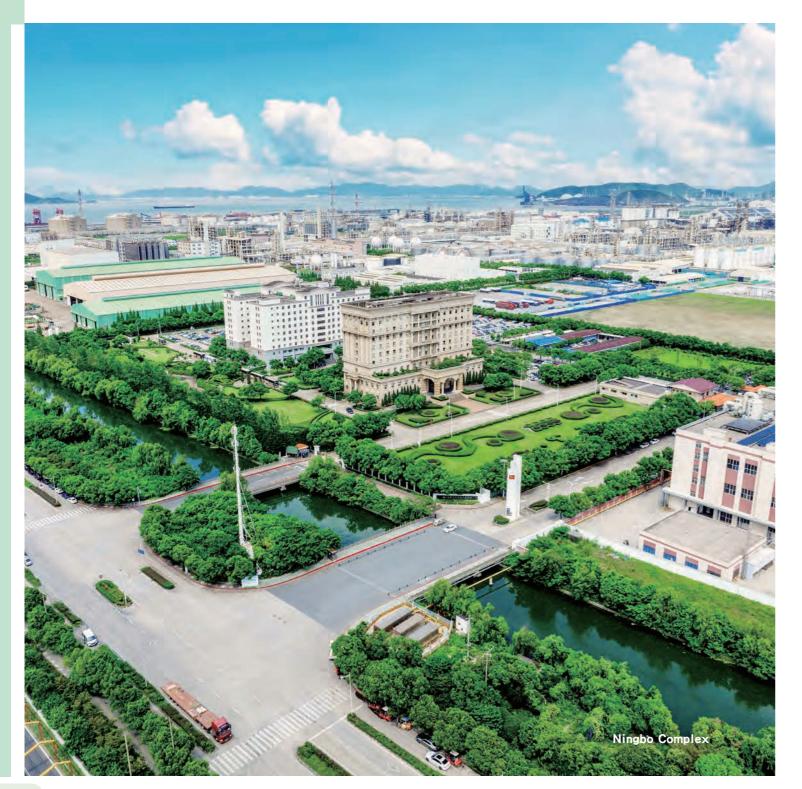
Donors	Main Social Welfare Projects	2023	As of 2023		
	1. Established Ming Chi University of Technology, Chang Gung University, and Chang Gung University of Science and Technology				
	2. Established Chang Gung Memorial Hospital				
Formosa Plastics Group	 Bade donations towards earthquake and typhoon relief and sponsored campus reconstructions 				
	4. Organic vegetables, food waste recycling, afforestation				
	5. Donated epidemic relief supplies and the Executive Yuan relief fund.				
	6. Local contributions				
	 Established Ming Chi University of Technology, Chang Gung University, and Chang Gung University of Science and Technology 				
Founder and	2. Established Chang Gung Memorial Hospital		26,842		
the Wang Family	3. Donation of cochlear implants				
	 Cover medical expenses for poor or disadvantaged families and unaccompanied or unidentified patients, as well as any emergency relief or care expenses. 				
	 Provide patients or families with care services and hold various outreach activities. 				
Chang Gung	3. Organize community health care and health promotion services.				
Memorial Hospital	4. Provide social services.	691	18,5		
(Founded in December 1976)	5. Organize international medical aid.				
	6. Donation of cochlear implants				
	7. Other expenditures				
Ming Chi University of					
Technology (Founded in December 1963) Chang Gung University of Science and Technology (Founded in June 1988)	Assist indigenous students in their education and employment	2	1,67		
(Founded in Suite 1966)	1. Disability welfare - Disability welfare such as improving the quality of early intervention institutions				
	 Welfare for minors and women- funding Orphan Scholarship Program, provide nutritious breakfast for junior high school students from disadvantaged families, donate to the Foundation for Scholarly Exchange' s Hualien and Taitung English Teaching Assistant Program, the Second-Hand Toys and Children's Playground Project, the Positive Education Campus Promotion Project, and the Vocational Empowerment Program for Women Re-entering the Work Force. Welfare for the elderly - Pneumococcal vaccine donations for the elderly, Donated to the Smart Long-term Care Assistance System and the FHC Volunteer Program, etc. 		3,645		
Wang Chang-Gung Charitable Trust Fund					
(Founded in October 2002)	4. Sports promotion - Athletic trainer assistance program				
	5. Health research - "Formosa Plastics Group - Fulbright" Scholarship				
	6. Educational support and other subsidies for indigenous students				
	7. Welfare for the disadvantaged and others - Homeless service plan, sponsored the Chinese Taipei Paralympic Committee in training disabled athletes; Donated funds to numerous organizations, such as a charity concert organized by the Taiwan Alzheimer's Disease Association, road run events and the International Art Fair of People with Disability in Taiwan etc.				
Wang Jhan-Yang Charitable Trust Fund (Founded in March 2006)	Township meal delivery plan for senior citizens living alone, Wisdom Foundation Dementia Family Support Program, donated Double Ninth Festival cash gift for Yunlin county elderly, etc.		1,585		
				1,00	
				 Cultural sponsorship - Development Program for Taiwan's Characteristic Cultures, Mind Theater campus tour, Yunlin local puppet theater campus performances, etc. 	Aind
				 Sports promotion - Flaming Stars Athletic Talent Cultivation Project, Future Stars Athletic Talent Overseas Training Project, etc. 	

Donors	Main Social Welfare Projects	2023	As c 2023	
	7. Educational support and other subsidies for indigenous students			
Wang Jhan-Yang Charitable Trust Fund (Founded in March 2006)	8. Welfare for the disadvantaged and other - Taiwan New Economy Foundation's Industry Environment Excellence Program, lighting improvement program for social welfare institutions (children's institutions, study programs, elder-care institutions), donated funds to purchase computer equipment for the Taichung School for the Visually Impaired, etc.			
	1. Disability welfare - Employment assistance program for mildly autistic people			
	 Welfare for minors and women - Scholarships and talent training programs for remote areas, Donated to the Foundation for Scholarly Exchange's English Teaching Assistant Program, etc. 			
Ching Pao Charitable Trust Fund (Founded in June 2010)	 Welfare for the elderly - Housing improvement and home appliance subsidy program, The Foundation for the Welfare of the Elderly's Make a Wish Program, Rural Elders Assistance Program, etc. 		866	
	 4. Donated vehicles to social welfare organizations, provide holiday bonuses to low-income households in Mailiao, donated daily necessities and rice to social welfare organizations, emergency aid, assistance program for Yunlin veterans and their families, donated daily necessities to the Chinese Christian Relief Association (1919) food bank, donated funds for the renovation of Yinghua Drainage Ecological Park in Taishan District, etc. 			
	1. Disability welfare - Improving the quality of early intervention institutions			
Wang Jhan-Yang Social Welfare Foundation (Founded in August 1995)	2. Welfare for minors and women - Funds for school lunches for elementary and junior high school students in Yunlin County, funds for the construction of welfare institutions for minors and women, donations to provide funds for 7th grade girls in Yunlin County to receive the HPV vaccine, and childcare subsidies provided to grandparents caring for children ages 0-2 in Yunlin County.			
	 Taipei Prison Environment Improvement Project, etc. 4. Welfare for the elderly - Pneumococcal vaccine donations for the elderly, donation of funds and equipment to the Yunlin County Evergreen Canteen 	55	1,974	
	5. Culture - Sponsored the Vienna Philharmonic New Year Concert			
	6. Educational support and other subsidies for indigenous students]		
	7. Welfare for the disadvantaged and others - Sponsored the renovation of Mailiao Kongfan Temple, Donations to the Mailiao Township Library and volunteer firefighting group			
	1. Disability welfare - Improving the quality of early intervention institutions, donation to the Yunlin Physical Therapy Youth Association for building repairs			
	2. Welfare for minors and women - Ching Pao P.D. Scholarship, part-time student workers at social welfare organizations, donation to the Taipei Orphan Welfare Foundation, donation towards breakfasts for junior high school students from disadvantaged families, talent training programs in remote areas, support for minors that have left welfare institutions, and after-school care for elementary school children in remote areas.			
Ching Pao Charitable Trust	3. Welfare for the elderly - Housing improvement and home appliance subsidy programs for the elderly, Active Aging Center Program, donation towards establishing healthcare plans for remote areas, etc.	161		
Fund (Founded in November 1995)	 Health promotion - donations to environmental protection research projects at Chang Gung University and Ming Chi University of Technology 		2,86	
, i i i i i i i i i i i i i i i i i i i	5. Educational support and other subsidies for indigenous students			
	6. Support for the disadvantaged and others - Donate daily necessities, rice and vehicles to social welfare organizations for emergency aid. make donations to the Chang Gung Memorial Hospital Social Welfare Foundation, United Way, the Dharma Drum Mountain Humanities, Social Improvement Foundation, and to various social welfare organizations and county/city government social welfare programs, donated to the Lan An Cultural and Educational Foundation in Lanyu to fund day care centers, donation for families impacted by typhoons, and renovations of social welfare institutions			
	1. Disability welfare - Early Intervention Efficacy Enhancement Program		80	
Ming-De Foundation	 Welfare for minors and women - Donations to CGU Choir and the Nantou County After-School Program for Indigenous Students 			
(Founded in July 1974)	3. Educational support and other subsidies for indigenous students	0.2	89	
	4. Welfare for the disadvantaged and others - Printed books by the Founder, educational support and other subsidies for indigenous students			
Jin-che Indigenous	1. Welfare for minors and women - Work-study programs and emergency relief for indigenous students			
Foundation (Founded in April	2. Educational support and other subsidies for indigenous students	0.2	1	
1997)	3. Welfare for the disadvantaged and others - Donation to the Yilan Leshui Community Development Association			
	Formosa Plastics Group	1,744	46,2	
Total	Founder and the Wang Family	-	26,	
	Chang Gung Memorial Hospital	691	18,	
	Chang Gung University, Chang Gung University of Science and Technology and Ming Chi University of Technology	2	1,	
	Foundations and Charitable Trusts	700	11,	
	Total	3,137	104	



Formosa Plastics Corporation

FPC will continue to develop the R&D for forward-looking and high value-added products and production process. In the meantime, FPC moves towards the trend in refinization of products to strengthen long-term competitiveness.



The Company (Formosa Plastics Corporation) generated consolidated sales of NTD 199.14bn in 2023, reaching 73% of its target of NTD 271.27bn and was down by 21% from NTD 251.65bn generated in 2022. Consolidated pre-tax profit came in at NTD 6.99bn in 2023, reaching 12% of its target of NTD 58.03bn and declined by 84% from NTD 43.79bn generated in 2022.

In 2023, major central banks in the US and Europe implemented measures to curb high inflation, including continuous interest rate hikes and monetary tightening. Additionally, the ongoing technology and trade tensions between the US and China, coupled with the economic recovery in mainland China falling short of expectations post-reopening, led to a slowdown in global demand and a decline in economic growth momentum. Furthermore, factors such as geopolitical issues and supply chain rebalance contributed to a challenging market environment. The petrochemical industry faced oversupply issues as competitors expanded production capacity, resulting in intense price competition. Consequently, the global demand contraction, coupled with a decrease in product prices, led to a 21% decline in the Company's 2023 consolidated revenue. The consolidated operating loss was NTD 4.02bn, a decrease of NTD30.83bn, representing a decline of 115% from 2022.

Despite recognizing investments income of NTD 7.94bn in 2023 (+NTD 2.18bn vs. 2022) from companies like Formosa Petrochemical and Mai-Liao Power Corporation, a decrease in cash dividend income of NTD4.77bn resulted in a substantial decline of 84% in consolidated pre-tax profit in 2023 compared to 2022.



Chairman Jason Lin

Facing uncertainties such as inflation, interest rate hikes, geopolitical risks, the rising ESG requirements, and the downturn in the petrochemical industry, the Company is strategically responding by aligning with the global supply chain shift. We are committed to diversifying our sales markets to regions such as India, Southeast Asia, Australia, New Zealand, Turkey, Africa, and South America, reducing reliance on a single market. Moreover, we are forming strategic alliances with both upstream and downstream partners, engaging in collaborative research and development of new products or expanding into new application areas. Our focus is on transitioning towards technology and healthcare industries, enhancing the value of our products, applying for patents to ensure market exclusivity, and sharing future growth benefits.

Simultaneously, actively entering the innovative industry, the Company aims to increase product value and sales volume, while also achieving the goal of maintaining human health and enhancing the quality of life. The pioneering "Formosa New Functional PP Fiber" was introduced at the Taipei Textile Exhibition in October 2023, seizing opportunities in the high-performance functional wear market. Furthermore, "Formosa Antibacterial Shell Powder" was recognized by the Ministry of



FPC 7th Innovation Conference

Environmental Protection in 2023 as an "Outstanding Resource Recycling Enterprise," indicating the company's efforts in upholding the founders' principles of "sustainable management and contribution to society" have been acknowledged.

Additionally, there is an increasing focus on the development and application of AI technology, establishing an integrated optimization module for the entire factory to move towards the goal of a "smart factory." The company is gradually integrating digital transformation achievements across departments, achieving integrated management of production, sales, and research to swiftly adapt to market challenges and enhance operational efficiency. As of the end of 2023, a total of 419 development projects have been proposed, with 223 completed, yielding an annual benefit of NTD 750mn. Furthermore, an AI research and development center was established in Jenwu, cultivating in-house AI talent. 98 individuals have completed training at institutions like the Taiwan AI School. Through systematic training, industry-academic collaboration, expert lectures, and other new initiatives, the Company is able to foster high-tech talent and accelerate future development, laying a solid foundation for digital transformation.

Moreover, the Company is fully committed to the development of circular economy, project improvements, water and energy conservation, and reducing the usage of public fluid units. In 2023, a total of 1,174 projects were completed, generating an annual benefit of NTD 990mn. Through the implementation of these business strategies and improvement measures, the Company continues to strengthen its resilience and reduce the impact of external challenges.

The company and its subsidiaries in Ningbo, China, and the US primarily manufacture plastics, chemicals, and fiber raw materials. The production of Polyvinyl Chloride (PVC) faced challenges in 2023 due to the ongoing Russia-Ukraine conflict and geopolitical tensions, coupled with soft consumer demand in Europe and the US due to high-interest rates. Additionally, the oversupply in the Chinese market, influenced by a sluggish real estate sector and significant capacity expansion in the industry, led the market to a state of oversupply. However, efforts to diversify into markets like Australia and the Middle East, coupled with increased infrastructure demand in India, contributed to a successful sales volume of 1.67 million tons, a growth of 3.4% compared to 2022. caustic soda benefitted from low coal prices in China, resulting in increased operating rates for caustic soda plants. However, the downstream market faced challenges due to US interest rate hikes and weakening demand in various countries, leading to an oversupply situation. Considering the unfavorable combined profits of EDC and caustic soda, a more flexible production strategy was adopted, resulting in a sales volume reduction to 1.25 million MT, a decrease of 14% compared to 2022.

HDPE faced challenges due to the slower-than-expected economic recovery in mainland China, weak market demand, and the impact of new capacity expansion, leading to a decline in PE prices. Additionally, the high cost of ethylene resulted in weaker sales in the Far East market. However, in view of the decline in ethylene prices in 3Q23, the Company seized the opportunity to actively promote sales, resulting in a sales volume of 370,000 tons, a 3% growth in 2023 from 2022. Linear Low-Density Polyethylene (LLDPE) experienced a similar situation, with increased competition in the Asian market due to higher exports from US peers. This led to a reduction in sales in Taiwan. However, the US subsidiary actively explored markets in Central and South America and Europe, contributing to a sales volume of 501,000 tons, a 4% growth from 2022. Ethylene Vinyl Acetate (EVA) saw an 18% growth in sales volume to 325,000 tons, driven by increased demand for shoe foam materials after the easing of the pandemic in China, lower silicon material costs, and increased demand for EVA encapsulation film from the solar module industry. Furthermore, the EVA plant in Ningbo completed a debottleneck project at the end of 2022, increasing its annual production capacity to 100,000 tons.

AE experienced a stable sales volume of 543,000 tons, despite reduced demand in Europe and Southeast Asia due to inflation and interest rate impacts. The rapid growth in India's real estate and infrastructure sector offset the decrease, leading to a steady sales volume. Carbon



FPC Linyuan Complex

fiber faced challenges with an oversupply in the market for sports equipment like bicycles and intense competition in the wind power sector, resulting in a 32% decline in sales volume to 4,000 tons. Butanol, mainly supplied for self-use by Taiwan and Ningbo AE plants, experienced a 12% growth in sales volume to 246,000 tons due to reduced market supply from peers in China and Southeast Asia during maintenance periods from August to October. SAP achieved a 6% growth in sales volume to 203,000 tons, driven by orders from major brands customers in the Americas and Africa and the expansion in the mainland China market.

Polypropylene (PP) faced a 4% decline in sales volume to 718,000 tons due to weakened end-consumer demand on high inflation in the US and Europe, and continuous capacity expansion in mainland China. Acrylonitrile (AN) and Methyl Methacrylate (MMA) saw increased sales volumes of 30% and 35%, respectively, despite intense competition from new supply from mainland China. However, Epoxy Chloropropane (ECH) experienced a 13% decline in sales volume to 75,000 tons due to soft demand in the electronics sector and lower demand for downstream Epoxy.

To enhance international competitiveness and enhance added value for products, the Company actively expanded production capacity and implemented debottleneck projects at various plants domestically and internationally. In Taiwan, three PVC plants in Jenwu, Linyuan, and Mailiao completed debottleneck projects with a total annual capacity of 100,000 tons at the end of 2023. Another debottleneck project with an annual capacity of 60,000 tons is expected to be completed in the second half of 2028. In Jenwu, a medical material center is being established to produce medical-grade compounds, including PVC, PE, and PP. The project is expected to be completed in the first half of 2024. Additionally, an expansion project for the A-column in the Jenwu carbon fiber plant, with an annual capacity of 1,600 tons, is expected to be completed in the first half of 2025.

In Ningbo, China, a PDH plant with an annual capacity of 600,000 tons was completed in December 2023. In the US, a new 1-hexene plant with an annual capacity of 100,000 tons is expected to be completed by the end of 2025.

Furthermore, in alignment with the urban development in Kaohsiung City, the Company relocated the Front Caisson area to the Intercontinental Phase II Petrochemical Zone, establishing 12 storage tanks and a salt warehouse. Apart from the ethylene storage tank expected to be completed in the first half of 2025, the rest were completed at the end of 2023. The completion of these new and expanded projects is expected to inject new growth momentum for the Company's future operations.

In terms of equity investments, FPC-USA's (22.66% owned by the Company) pre-tax income amounted to USD 256mn, decline from 2022's level. This decline can be attributed to several factors, including the high energy prices on prolonged Russia-Ukraine conflict, heightening interest rate in US, tightening monetary policies globally, weakness in China's property sector and slowing demand for Chinese exports products. With muted global economic growth, the average selling price of petrochemical products declined from the levels seen in 2022, resulting in squeezed profit for the Company.

In 2023, the Company's research and development expenses amounted to NTD 2.8bn, representing 1% of our total revenue. These funds were primarily allocated to various areas, including formula development, process improvement, quality enhancement, energy conservation, talent development, aiming to increase its product's value and reduce costs. The Company successfully completed 58 research and development projects, generating an annual benefit of NTD 260mn. Some notable projects include the development of Special powder for the suspension method in CPVC production, high-efficiency flow-blocking pipes for polymerization tanks, new processes to increase the production capacity of processing aids, composite emulsifiers for MBS, silicone tubing for peritoneal dialysis with anti-adhesive properties, new-type activated carbon recycling system, research on improving the quality of recycled wastewater from emulsion powder using specific algae and microorganisms, metal-coated HDPE pipe-grade material, high-flow HDPE fiber material, high-pressure flame-retardant EVA cable material, dry spray and wet spinning for ultra-high-strength carbon fiber, next-generation SAP products from internationally renowned manufacturers and high-purity calcium carbonate. These proactive initiatives have yielded positive results in enhancing the added value of downstream products.

To enhance its competitiveness, the Company actively invest in critical technology research and development while applying for patents domestically and internationally. In 2023, the company obtained a total of 53 granted patents, bringing the cumulative number of valid patents to 319 by the end of 2023. In order to deepen our research and development foundation and strengthen R&D capabilities, the Company continually expand collaborations with academia and industry. The Company send talent in R&D team to universities domestically and internationally for further education, aiming to reinforce their expertise and broaden their perspectives. Additionally, the Company leverages the research potential of top academic institutions and sufficient quantum high-speed computing resources to accelerate its pace and scope of R&D. This approach helps the Company effectively reduce the time required for product development.

In addition, by integrating resources from the valuable instrument center and virtual laboratory, the Company has been actively invested in the research and development in advanced composite materials. This initiative spans various sectors, including medical materials, energy, and green materials. In view of ESG and carbon neutrality policies, the Company is committed to development of carbon reduction technologies. Moreover, the Company is actively developing recyclable materials. These efforts include the development of new technologies, such as reusable systems for saltwater electrolysis and carbon dioxide, all-material PP cold-resistant clothing, new applications for recycled plastics (PCR), recyclable resin in carbon fiber composites, and antibacterial shell powder.

The Company always puts emphasis on industry development and environmental protection equally. As of 2023, the cumulative investment in improvements of occupational safety, environmental protection, and fire prevention has reached a substantial NTD 30bn. These improvements have resulted in the treatment and emission of various pollutants surpassing national regulatory standards. Several business units of the Company were praised by local government on the good performance in these efforts by 2023. Notable mentions include FPC' s Haifeng plant, Mailiao EVA and Carbon Four Plant (C4) for receiving the Yunlin County Occupational Health and Safety Excellence Unit award. The Mailiao Hainan Plant, in particular, received the Five-Star Award for three consecutive years. Additionally, the Company was honored with the Taipei City Government's Green Procurement Excellence Unit award.

In terms of greenhouse gas reduction, the Company sets short-term (20% reduction in 2025), medium-term (40% reduction in 2030) and long-term (carbon neutrality by 2050) reduction targets based on the benchmark of greenhouse gas (Scope 1 and 2) emissions in 2020 with 8.635 million tons. After a thorough test conducted by a third-party institution, the total greenhouse gas (Scope 1 and 2) emissions in 2022 was 7.943 million tons, a reduction of 69,200 tons compared with 2020, a decrease of 8%.

In terms of water and energy conservation and greenhouse emissions reduction, the Company accomplished 1,174 improvement projects in 2023. Total water saved amounted to 4,656 tons/day, while greenhouse gas emissions reduction reached 112K tons/year. Other ongoing 1,167 improvement projects were expected to further conserve water by 4,360 tons/day and reduce greenhouse gas emissions



Won the 2023 Resource Circulation Ere Ilence Award (Silver) from the Resource Circulation Administration of the Ministry of Environment

by 278K tons/year. According to the results announced by Carbon Disclosure Project (CDP) in 2023, the Company was rated as "A" in climate change assessment and water resources assessment. Both achievements were among the top rankings within many well-known international chemical companies, which shows that the Company's efforts in energy saving, emission reduction and circular economy in response to climate change have achieved considerable results.

Besides, in order to enhance operational safety, prevent occupational disasters, and ensure the safety and health of labors, the Company continued to conduct overall equipment inspection, implement Standard Operating Procedures (SOP), Management of Change (MOC) and Process Hazard Analysis (PHA) operations, and strengthen inspections of machinery and equipment for improvement.

Measures such as personnel control, the use of safety helmets, the deployment of image recognition technology for monitoring elevated pipelines and high-risk areas, and the integration of abnormal incident reporting mechanisms are employed to enhance occupational safety management. For instance, the Company developed a "Personnel Positioning System" to monitor the real-time dynamics of personnel and construction activities. This system, combined with the existing "Image Recognition System for Construction Site Safety " that establishes electronic fences, has been implemented at the expansion construction site to facilitates effective occupational safety management, prevents occupational accidents, and contributes to the establishment of a safe and friendly work environment.

In response to increasingly stringent environmental regulations, all plants are required to implement measures such as reducing VOC sources, streamlining equipment components, and gradually eliminating low-leakage equipment components. The Company also strengthen autonomous inspections by the application of infrared detector (Gas Finder). Meanwhile, the Company enhance the management of various environmental indicators to continue promoting carbon neutrality and zero discharge of wasted water for a friendly environment.

The following is production and sales volume, and business performance in 2023:

Looking ahead to 2024, the effects of interest rate hikes and monetary tightening in the United States, Europe, and other countries are expected to have a spillover impact. On top of that, the prolonged downturn in the China real estate market and local debt may continue to dampen end demand. However, with inflation cooling down in the United States and Europe, market expectations for interest rate cuts in the second half of the year could lead to increased corporate investment and consumer spending. The fiscal stimulus policies in China also plays a role. According to the International Monetary Fund (IMF) predictions, global economic growth rates are anticipated to be similar to those in 2023, albeit still lower than the growth observed between 2000 and 2019. Moreover, the economic growth in Europe and other emerging markets is expected to offset the



Environmental management outstanding manufacturers observation and improvement case selection presentation held by Yunlin University of Science and Technology



Mailiao Ecological Industrial Complex

downturn in the United States and China. Countries such as India, Southeast Asia, and Mexico are anticipated to see increased corporate investment and accelerated infrastructure development, which will drive the demand for petrochemical products.

When will global economy recover and stable growth resume? Attention should be paid to the monetary policies and interest rate schedules in the United States and Europe, China's economic performance, the speed of global supply chain restructuring, the impact of extreme weather events and geopolitical risks on the trends of crude oil and other raw material prices.

In terms of the development of the global petrochemical market, according to the Chemical Market Analytics, the net increase in global ethylene production capacity in 2024 is projected to be 5.3 million MT, reaching a total capacity of 231 million MT; If demand is estimated based on a 0.9 times GDP growth, an increase of approximately 4.7 million MT is expected. Propylene production capacity isexpected to increase by a net 9.3 million MT, reaching a total capacity of 175 million MT; If demand is estimated based on a 1.8 times GDP growth, an increase of approximately 6.2 million MT is expected, indicating an oversupply of petrochemical materials.

Among them, China is highlighted as the region with the most significant increase in ethylene and propylene production capacity in 2024. The production capacity will increase by 3 million MT (acc. 57% of global additions) and 7.8 million MT (acc. 84% of global additions). The total production capacity will reach 55 million MT and 70 million MT. As the per capita consumption of petrochemical products in China continues to increase with economic development, it is expected that ethylene and propylene will continue to experience capacity expansion in the coming years, with annual new capacity exceeding 3 million MT. This expansion will contribute to an increase in self-sufficiency rates of propylene and downstream derivatives and a gradually narrowed demand gap.

The petrochemical outlook for 2023 reflects the continuation of the trends observed in 2H22. High global inflation prompts significant interest rate hikes by the US Federal Reserve and the European Central Bank. The slower-than-expected economic recovery in China severely impacts consumer purchasing power, leading to a contraction in end-demand, widespread price declines for petrochemical products, and an overall challenging economic environment for the industry. In 2024, as the ongoing Russia-Ukraine war and conflicts in the Middle East are expected to affect international crude oil supply and price trends, potentially causing a renewed increase in inflation. While the US and Europe still operating in a high-interest-rate environment, are expected to curb corporate investment and weaken consumer purchasing power, further affecting petrochemical product demand. China's significant increase in petrochemical production capacity leads to oversupply concerns, despite the introduction of economic stimulus policies. The effectiveness of these policies remains to be seen, making the outlook for the petrochemical industry in 2024 less optimistic.

China remains the largest market for global petrochemical materials. Although the economy recovery was not as strong as expected, the China government continued to introduce policies aimed at boosting economy and easing real estate regulations, along with the efforts to lower deposit interest rates. With the anticipation of inflation easing in the US and Europe, the market expects interest rate cuts to begin in 2024, which will help consumer confidence gradually recover and increase demand for petrochemical products, which could have a positive impact on the global economy and the petrochemical industry.

Looking ahead to the new year, in view of the lack momentum in global economic recovery, challenges arising from trade globalization, coupled with several unfavorable factors such escalating geopolitical tensions, substantial production capacity increases of China peers, and extreme climate risks, business will be severely tested.



Night view of Ningbo Complex

In order to build a resilient business foundation and overcome economic downturns, the Company's efforts will be focused on driving "transformation" as the most critical goal for future operations. This includes maintaining our core petrochemical business, expanding investments globally, actively developing high-value products, and exploring opportunities in technology and healthcare industries. By learning from the strategies and thinking of overseas petrochemical giants, the Company aims to analyze its future business direction and development opportunities, promote forward-looking technology and product research and development, strategically position new businesses and products, expecting these to become key drivers for the Company's sustained growth.

Simultaneously, through strategic alliances with the upstream and downstream companies, there will be a deeper commitment to innovation in "comfortable living". This involves developing diverse applications to meet daily life needs, adding value to products, diversifying market presence based on regional market changes and supply-demand dynamics, and increasing the proportion of differentiated product sales. The objective is to seize opportunities amidst the global industrial supply chain reorganization.

In addition, strict control over capital expenditures, reduction of raw material and product inventories, continuous implementation of overall process safety measures and inspections at various plants and at construction sites will be maintained to eliminate safety hazards and ensure stable production with zero accidents. Furthermore, the company will deepen its development in AI and digital transformation, optimizing overall process and operational management digitally, moving towards the goal of intelligent factories. ChatGPT will also be applied to assist in business management to enhance operational efficiency.

In response to the global wave of lowcarbon transformation, to achieve sustainable operations, the Company will integrate ESG principles into various business strategies. The Company is committed to promote energy transitions, circular economy practices, energy conservation and carbon reduction, strengthening our risk management for climate change. The Company's dedicated efforts to the research and develop of environmentally friendly and medical-grade products, such as fully recyclable plastics, anti-adhesive composite granules, and green plastics, etc. are steps towards implementing a green transformation and the goal of carbon neutrality by 2050. Through these sustainable and innovative business strategies, the Company seeks to strengthen its international competitiveness, especially during this downturn in petrochemical industry, finding key opportunities for a turnaround to break through various challenges to regain profitability.





Nan Ya Plastics Corporation

The Company will integrate the circular economy into process optimization, and constantly improve and upgrade the efficiency of existing equipment/production lines by introducing AI.



In 2023, Nan Ya Plastics Corp. (NPC) recorded a consolidated revenue of NT\$259.76 billion, marking a 26.9% decrease from NT\$355.18 billion in 2022; and a consolidated pre-tax income of NT\$9.13 billion, declining by 80.8% compared to NT\$47.55 billion in 2022.

During 2023, there was a significant increase in global inflation, with countries rapidly raising interest rates, leading to a sharp decline in demand. However, the industry added new production capacity, leading to a continuous rise in market supply, and prompting manufacturers to prioritize inventory clearance. This conservative market environment had posed challenges, which was reflected in the overall performance.

The four major product categories of NPC operations are plastic processing, chemicals, polyesters, and electronic materials.

In terms of plastic processing, NPC continued to engage in the R&D of innovative



Taipei Dome, Nan Ya Fire Doors



Chairman Chia-Chau Wu

applications, raw materials, and eco-friendly products with special specifications in order to increase the sales ratio of differentiated and high-value products and expand into healthcare, e-sports, and the automotive industry. We also carried out capacity consolidation, introduced automatic monitoring equipment to enhance machine productivity, and expanded into high-end and potential emerging markets by promoting e-commerce and online marketing.

Moreover, we took advantage of our decentralized production sites at home and abroad in Taiwan, China, the U.S., and Vietnam. By coordinating production and marketing operations among our plants promptly, we provided satisfactory service and experience to our customers. As a result of our ongoing efforts, we consistently maintain stable profitability in plastic processing products.

In terms of chemical products, in line with vertical integration and division of labor in the Sixth Naphtha Cracking Plant in Mailiao, NPC's products, including ethylene glycol (EG), Bisphenol-A (BPA), 1,4-butylene glycol (1,4BG), plasticizers, phthalic anhydride (PA), 2-ethylhexanol (2EH), and epoxy resin (EPOXY), have been vertically integrated into upstream and downstream



2023 Taipei Innovative Tetk ile Application Show

industries to form a complete supply chain that supports the development of downstream industries such as polyester, electronics, and plastic processing, respectively.

In 2023, real estate issues in mainland China remained unresolved. After the lifting of pandemic-related restriction, the momentum of recovery was not as expected. Market demand declined, and with the continuous expansion of new production capacity, the oversupply spilled over to overseas regions. The market became highly competitive, leading to an overall decline in profitability for chemical products. Moving forward, we will persistently optimize our processes and bolster our sales in markets beyond mainland China to enhance revenue and profitability.

The polyester products had experienced adverse effects due to the decline in end-consumer demand, primarily attributed to inflation and interest rate hikes. Brand owners and downstream customers had been consistently adapting by adjusting their inventory levels accordingly. Additionally, intense competition from mainland Chinese counterparts, who were aggressively lowering prices to secure orders, had resulted in lower-than-anticipated sales and an overall decline in profits. With the rise of global environmental awareness, there are unlimited opportunities for recycling and the circular economy. The demand for polyester products primarily depends on the recycling of PET bottles. The Company has proactively pursued the development of polyester items aimed at minimizing carbon emissions and conserving water resources. This includes innovations like naturally colored silk, textile recycling, and highly elastic single-material recyclable silk. Additionally, we focused on broadening the scope of application for polyester fiber products, striving for continued performance growth.

As for electronic materials, there was sluggish demand for consumer electronics in 2023. Despite this, materials for automotive, communication, and server applications remained stable. Additionally, the supply chain proactively implemented measures to minimize inventory, and the United States heightened its technology control over mainland China. Consequently, customers restricted orders to urgent needs, resulting in a decline in both sales volume and prices across various products compared to 2022. This dual decrease in revenue and profit followed suit.

The electronic materials industry is poised for exciting opportunities on the horizon.

- 1. The advancement from 5G to 6G in communication technology will enable the progress of related materials to continue.
- 2. The advancement of electric and autonomous driving in automotive electronics requires the use of materials capable of withstanding higher voltages.
- 3. Support from low-loss materials is also necessary for large-scale language model training in the field of AI.

4. In advanced semiconductor packaging, thinner circuits, and dielectric layers necessitate the use of new materials.

In addition to wind power construction and related applications, this will drive the improvement of material specifications and the demand for upstream raw materials. The Company will take advantage of full vertical integration both upstream and downstream. We will combine internal research and development with external collaborations to develop high-performance materials, including copper foil substrates, resins, fiberglass fabrics, and copper foils. In addition, we have established a dedicated market expansion department to expand our presence in Taiwan and mainland China, as well as new locations in Southeast Asia. This will accelerate product validation and implementation, ultimately leading to increased sales and profits.

Nan Ya Printed Circuit Board Corp. (Nan Ya PCB) a reinvestment company of NPC, has been cultivating the high-end IC substrate market for a long time and has been working with customers to launch next-generation CPU, GPU, Netcom, automotive, AI, and HPC (high-performance computing) application substrates. However, due to the decline in demand for electronic products such as remote business and home entertainment products, manufacturers rapidly reduced orders to clear excess inventories. Intense competition for orders among industry peers resulted in lower sales and profits in 2023 compared to 2022.

Under the development of advanced technologies such as chiplet packaging and heterogeneous chip integration, the demand for high-end IC substrates continues to grow. In response to future development trends, Nan Ya PCB has actively strengthened its R&D capabilities and expanded its production capacity to meet market demand. In addition, we have worked closely with our customers to jointly develop application IC substrates for cloud server processors, high-end AI chips, and AI personal computer processors. In addition, we have consistently integrated artificial intelligence and big data into our production management to improve the company's operational performance.

Nan Ya Technology Corp., another reinvested company of NPC, is dedicated to developing, manufacturing, and selling DRAM products. In the first half of 2023, major global manufacturers increased their production cuts to address the supply-demand imbalance. In the second half of the year, demand for related products increased due to the popularity of AI applications. The price of DRAM stopped declining and began to rise gradually in the fourth quarter. To counter the sluggish industry outlook, Nan Ya Technology Corp. continued to adjust its product portfolio and implemented various cost improvement initiatives to improve profitability.

DRAM is an essential component in the smartification of electronic products. Major applications include servers, data centers, personal computers, smartphones, and consumer electronics. It is expected that the recovery of DRAM will be stimulated after the regular inventory adjustment of the end market in 2024. In addition to maintaining sales of current products,



DRAM wafers, chips, and modules

efforts will be made to strengthen independent development capabilities to enhance long-term competitiveness.

Looking ahead to 2024, global interest rates remain high. The increasing competition between the United States and China in the technology sector, the ongoing war between Russia and Ukraine, and the eruption of the Israeli-Palestinian conflicts have created an unpredictable international situation. In addition, petrochemical production capacity in mainland China has been expanded in recent years, leading to an oversupply and intense competition among industry peers for contracts. As a result, business operations remain challenging.

In addition, trends such as technological innovation, diverse applications of AI, increasing electrification of automobiles, and integration of smart functions into end devices are driving the demand for advanced electronic materials, including high-frequency and high-speed materials. Companies can only make profits by having advanced technologies and products.

Sustainability issues have become an integral part of modern business management. Faced with significant changes in the business environment, companies must proactively adapt and respond. The Company has formed an internal Sustainable Operation and Development Group to coordinate resources across the organization and promote business transformation and sustainable development. The Group's main objectives are as follows:

- 1. Increase the ratio of high-value and differentiated products while concurrently expanding into new applications and markets.
- 2. Develop new businesses, products, and technologies to deepen the Company's industrial layout.

- 3. Apply digital technology, refine AI, and advance digital transformation to achieve intelligent operations.
- 4. Expand the range of environmentally friendly products, demonstrate commitment to energy conservation and carbon reduction, and actively promote the circular economy.

Under the aforementioned operating strategy, we aim to capture market development trends by focusing on core areas such as high-speed communications, innovative AI applications, new energy vehicles, and automotive electronic substrates. We intend to pioneer materials in the technology industry and develop healthrelated medical materials, as well as recycling and green technology products. This initiative will drive the development of a series of upstream and downstream industries.

In the future, we will actively improve and upgrade our equipment. We will continuously incorporate artificial intelligence into our equipment and processes, integrate various digital data, and develop a digital management platform. This will optimize the control of production process conditions, improve quality, reduce raw material and energy consumption, achieve intelligent management, and increase NPC's operating efficiency.



In 2023, Nan Ya Plastics was awarded the highest honor, the Gold Award, for exe llence in resource recycling by the Ministry of the Environment.



2023 TPCA SHOW, Taiwan Circuit Board Association

The Company has always been committed to protecting the environment by implementing the circular economy. We prioritize water and energy conservation, waste reduction, and recycling activities. By adopting multiple cycles of reuse, our goal is to minimize resource consumption and maximize economic benefits. Furthermore, we have allocated resources to R&D, concentrating on the creation of environmentally friendly high-value green products. Concurrently, we've forged cross-industry alliances to establish a robust recycling system. This strategic approach enables us to effectively meet our objectives of waste reduction, reuse, and resource utilization.

We are also actively implementing strategies to achieve carbon neutrality by 2050. These strategies include transitioning to low-carbon energy, conserving energy, reducing carbon emissions through circular economy practices, increasing the use of renewable energy, and applying carbon capture technology. We have already worked with ITIR and TUV Rheinland to verify the carbon footprint of 13 main products. We are also proactively addressing the opportunities and challenges presented by climate change and

improving operational resilience through improved product design, process technology, and supply chain management.

In terms of new expansions and investments, the bisphenol-A (BPA) at Ningbo Plant in China has been operational since 2023. This year, several investments will also be completed successively, including release liners, ABF substrates, and blood bag and leukocyte reduction filter system for medical use at Shulin Plant, Taiwan, and the soft adhesive tape at Texas Plant in the United States. These investments are expected to generate an annual output value of over NT\$12 billion.

In the upcoming years, the Company will continue with various expansion projects, including the plant solar systems installation in Taiwan, and the expansion of copper foil at Huizhou Plant in China. Moving forward, we will adapt to industry trends and international economic and trade conditions, closely monitoring changes in the supply chain. We will make timely and appropriate investments in new capacity expansion to drive sustainable growth.



Formosa Chemicals & Fibre Corporation

In pursuit of the worldwide environmental trend, FCFC practice the circular economy by recycling and reusing emissions and wastes.



In 2023, under the influence of inflation and high interest rates, consumer demand and investment confidence continued to weaken. In addition, mainland China's economic activities after the epidemic is lifted performed worse than expected due to the collapse of the housing market and sluggish domestic demand. In addition, mainland petrochemicals and plastics climbed significantly in the launching of new production capacity. Supply and demand on the market was seriously out of balance. There were also the geopolitical risks in the Middle East such as the Kazakhstan conflict that caused instability in the international supply chain and oil price fluctuations. All of which impacted the company's operations.

The company's consolidated revenue in 2023 was NT\$332.6 billion, a decrease of NT\$47.3 billion or 12.4% from NT\$379.9 billion in 2022. The decline in sales was mainly due to the decrease in the selling price, which dropped by NT\$37.9 billion mainly due to weak market conditions and demand. Additional production capacity devoted to the market from mainland counterparts, more supply than demand on the market, and price-cutting competition lowered the selling price of products and brought the overall sales income. Acetone was the only sector that saw climbing selling prices because of the tight supply from reduced production; Sales dropped by NT\$9.4 billion. Inflation and sluggish demand slowed flows of purchase orders. Except for the return of SM to full capacity in addition to reduced trans-shipment to Ningbo for personal use and increased external sales, increased sales of PX and OX as a result of reduced price difference, and completed expansion and commissioning of the Ningbo ABS plant and the normal production and sales of the phenol plant because of no regular inspections, most products were modulated, with only competitive ones remaining, reflective of the



Chairman Fu Yuan, Hong

production and sales status and it led to reduced sales.

In terms of income, the consolidated pre-tax income in 2023 was NT\$7.4 billion, a decrease of NT\$2.2 billion from NT\$9.6 billion in 2022, a decrease of 23%. In addition to the launch of new refining and chemical production capacity in Mainland China, weakened economy, and inflation, sliding profits of reinvested companies and hence reduced cash dividends were to be blamed for. The Company proactively adjusted its production and marketing strategy in 2023, eliminated inventory, and continued to improve its operating system. The operating income attributable to the parent company hence turned positive.

An overview of 2023 shows sluggish global economy as a result of high inflation, persistent U.S.-China trade war, and slow post-pandemic economic recovery in Europe and America. The economy saw far slower post-pandemic consumption recovery than expected due to undesirable performance on the housing market of Mainland China. The demand for crude oil turned conservative. In the first half of the year, the price of West Texas crude oil fluctuated between US\$70 and US\$80 per barrel. In the second half of the year, OPEC continued to reduce production and the conflict between Israel and Kazakhstan broke out. Oil prices once rose to nearly US\$95 per barrel. However, as interest rates continued to rise, the economy slowed down and the demand for crude oil dropped to suppress oil prices; they gradually fell back to US\$70 per barrel by the end of the year, with an average of US\$77.57 per barrel for the whole year, a decrease of 17.8% from 2022. The petrochemical and plastics markets continued to be difficult since the outbreak of COVID-19. Concerns about inflation and interest rate hikes remained. Consumer demand was conservative and supply saw surpluses, yet production capacity continued to climb in addition to geopolitical conflicts. The market turned conservative and prices fell; the average price of light oil dropped by 17.2% from the previous year. Falling prices were common among a majority of the Company's petrochemical and plastic products, too. Because of the crazy commissioning of new production capacities for a variety of plastics in Mainland China, in particular, price falls borne by PC, ABS, and phenol were consistently higher than that of light oil. SM saw undesirable volumes and prices, too, due to supply surplus and sluggish market demand in the downstream. Reduced production to secure survival was the only option. Fortunately, under the efforts of colleagues, operational policies were slowly reaping fruits. The selling rate on the market was coming back to make up for part of the deficits. In addition, the fall in mean prices of aromatic hydrocarbons, including benzene, PX, OX, and PTA, was far lower than that of light oil to maintain certain spread, which became a main contributor to the operational profits of the Company in 2023.

As part of the consolidated revenue in 2023, the parent company's net revenue was NT\$171.9 billion, accounting for 51.7% of the consolidated revenue. Net revenue of subsidiaries such as Formosa Industries Corporation in Ningbo, Formosa Industries Corporation in Vietnam, and Formosa Taffeta Co., Ltd., totaled NT\$160.7 billion, accounting for 48.3% of the consolidated revenue. Main contributors to the parent company's revenue are petrochemical and plastic products. Both combined had a net worth of NT\$159.3 billion, accounting for 92.7% of the parent company's revenue. Among them, petrochemical products totaled NT\$119.2 billion or 69.4% and plastic products NT\$40.1 billion or 23.3%.

Under the premise that safe production is ensured, for each major product, the operation focused on market expansion reflective of the production and sales status, increasing the ratios of high-value, differentiated, and certified products, continued promotion of water and energy conservation, and reduced consumption and emissions, among other circular economy improvements, as well as proactive promotion of AI smart production and digital transformation to fortify the operational composition and to make sustainable competitive advantages possible.

In terms of petrochemical products, optimization of light oil quality was completed; the operational efficacy of the recombination unit was enhanced; and cross-plant integration of light oil materials were completed for the No. 3 Aromatic Hydrocarbons Plant to significantly reduce the amount of light oil used and to increase the output of products PX and benzene. Efforts also continued in the promotion of process heat integration. With improved equipment performance and operational optimization, energy efficiency was enhanced and operational performance was strengthened. Multi-effect distillation (MED) at the styrene plant in Haifeng was improved to be more competitive. Although the product spread of PTA continued to slide due to the additional production capacity devoted and the increased supply in Mainland China, with low energy consumption, good quality, and steady lead time that had secured long-term trust among its customers, the Ningbo plant managed to maintain

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full-fledged production throughout the year. The production lines in Taiwan, on the other hand, had their production adjusted reflective of the shrunk domestic sales demand. PTA-3 in Longde only ran for a month while PTA-1 in Mailiao maintained full-fledged production. In terms of PIA, the two lines in Taiwan and Ningbo combined contributed to an annual production capacity of 400 thousand tons. Efforts continued in exploring potential customers domestically and internationally for bottle chips, low-melt fibers, and coatings. In November 2023, the total sales across the Taiwan Strait broke the threshold of 41 thousand tons and are heading towards 45 thousand tons in order to increase the presence of the Company's PIA on the global market and to gradually secure the leading position on the market.

In terms of plastic products, in 2023, the devotion of additional production capacities, the sluggish post-pandemic housing market, weak domestic demand and poor export orders in Mainland China contributed to undesirable performance of respective plastic products and significantly hindered sales. The company continued to control inventory, production, and sales; the overall production and sales declined from 2022. PCs managed to see profits throughout the year and losses in others, such as PS, ABS and PP slowed. Faced with the additional production capacity in Mainland China, for 2024, continued efforts will be made to put lean production and sales into practice, to reduce general red-sea production and sales, and to focus on improving the ratio of differentiated products in sales and decentralizing the market. The differentiation goals for respective products are 55.4% for PS, 44.4% for ABS, 50% for PP, and 38% for PC and the ratios of sales on the market of Mainland China will be reduced wherever possible. In addition, the Ningbo plant's new ABS production capacity of 250 thousand tons has been put into operation in July 2023. The cost-effective new process of the new plant will help continue to secure the market share in Mainland China on the one hand and proactively sell to RCEP duty-free countries on the other hand.

For textile and fiber products, affected by unfavorable factors such as high inflation, high prices, and price-cutting competition for exported textile fiber products from Mainland China, the downstream turned conservative; end-user demand shrunk; and sales of textile, nylon and rayon cotton dropped. In response, plants in Taiwan and Vietnam cut their production sizes. This hence resulted in extended deficits. The difficulties encountered by the plant in Vietnam, in particular, were unforeseen over the past nearly 40 years. The development of high-value and differentiated products will be the focus of subsequent long-term promotional efforts. In the future, as demand returns, the inventory size of each brand manufacturer will gradually lower and the market for nylon clothing silk will be better off. The operational outlook is expected to further improve.

Sustainable development is the focus of business administration while ESG (environmental protection, social responsibility, and corporate governance) is the unchanged priority in the business operation of the Company.

In order to boost industrial safety, the Company formed the Sustainable Safety Project Team in 2019 to enforce the "person-centered" safety strategy, explore blind spots in safety management, eliminate underlying risks, and reinforce communications on safety awareness among employees. It optimally contributed to



Receives 2023 Ministry of Environment Resource Circulation Administration Outstanding Company Performance in Resource Circulation Gold Award.



FCFC receives 2023 National Sustainable Development Award.

workplace security. The Company won awards as the "Annual Out-standing Healthy Workplace" and the "Occupational Safety and Security Out-performer" in 2023. For 2024, the goal is "advance in autonomous management and enhance awareness of personal safety". Sharing of experiences, consolidation of contractor and staff trainings, promotion of equipment MI, change of ideas about safety and culture among employees, and zero-disasters are to be fulfilled through internal and external exchanges.

Over the past few years, the petrochemical industry has confronted with impacts from industrial environment, digital technology and carbon neutrality issues. Only by strengthening and improving digital transformation, energy transformation, circular economy and industrial transformation and innovation can sustainable development be ensured. To this end, the Company established a "Transformation Development Task Force"in October 2023 that consists of four divisions to deal with, respectively, "digital transformation," "energy transformation," "circular economy, and "new business development" and to accordingly reinforce the promotion of related tasks. Digital transformation, in particular, covers digital optimization and AI application of a smart plant and dynamic operational management. Energy transformation covers continued efforts in the promotion of water and energy conservation, establishment of coal reduction and energy transformation strategies, development of solar power and minimal water power generation projects, etc. in order to answer to the international

carbon reduction trend. Throughout 2023, energy conservation and carbon reduction accomplishments totaled NT\$2.5 billion, with 308 engineering improvement projects completed, saving a total of 2,789 tons of water per day, 62.7 tons of steam per hour, and 9.07 kWh of electricity per hour. The promotion of circular economy includes waste reduction, raw material reduction, process emission reduction and green product development, etc.

The Company continues to carry out various sustainable development tasks and has rendered quite some accomplishments that are recognized by outsiders. For example, Formosa Chemicals & Fibre Corporation in Xingang won the "2023 National Sustainable Development Award for Enterprises" from the National Sustainable Development Committee of the Executive Yuan in 2023 and the "2023 Resource Circulation Out-performer Gold Award for the Resource CirculationGroup" from the Resource Circulation Administration under the Ministry of Environment.

The Company also continues with investments and transformations. It set foot in plastic recycling in early 2022. The annual production capacity of composite materials of the three plants across the Taiwan Strait under the Plastics Department has reached 132 thousand tons. In addition, the new production capacity of the ABS plant in Ningbo totaling 250 thousand tons was completed in 2023 and the additional annual production of 1.5 million tons will be commissioned in 2024 for the PTA plant in Ningbo. Both plants feature the most advanced production technology that is unparalleled in the industry.

Looking forward to 2024, the unknown schedule of U.S. interest rate cuts, rising geopolitical risks, substantial increases in ocean freight rates, global economic slowdown and Mainland China's market performance are all negative factors affecting raw material prices. Mainland China's overcapacity, however, continues to spill over throughout the world in addition to sluggish domestic demand and pending housing crises. Whether end consumption and confidence in the housing market recover or not will be the key to stepping out of the new post-pandemic economy. Cross-Strait relations also affect trade and people's livelihood and economy, especially the suspension of tariff concessions for some ECFA products and the investigation of trade barriers, both of which show that there are no effective communication channels across the strait. With the hopeful easing of inflation in Europe and the United States, however, it is expected that there will be room for interest rate cuts in the second half of the year and hence corporate investments and private consumption will likely climb gradually. If geo-regional conflicts can be controlled, crude oil and energy prices will hopefully stabilize while prices of petrochemical intermediates and plastics have reached the bottom. These will help improve the Company's profits.

Finding a way out of a daunting operating environment remains a priority for the Company. The "escape from China" in the past few years and the promotion of "stand high and go far" in 2023 are all meant to get rid of the mainland market with severe overcapacity, reinforce the ratios of high value, differentiation, and product certification, and sell to the world. Last year, the Company traded with more than 80 countries; among them were about 50 ones with frequent transactions each month. Thanks to the efforts of our colleagues, Red Sea sales dropped and Blue Ocean products increased. Despite the reduced revenue, income was improved. Operations are bottoming out. The operational policy for 2024 is to "be more refined and more extensive", which means to make products more refined, have wider sales, provide timely services and delivery, make specifications more adaptable to diverse needs, continue with the belief in "Customer is King" for hopefully greater success in operations.

To cope with the operational stress of 2024, the Company will eliminate its weak while retaining its powerful production and sales structures, that is, get rid of the bad and keep the good and continue to enforce circular economy, conserve energy, promote smart plants and operational management to improve the production and management efficiency. As far as the issue of carbon neutralization is concerned, the Company has a reduction of 25% in carbon emissions from 2020 as its phased goal by 2030 and declares comprehensive carbon neutralization by 2050. It is estimated that a total of NT\$17.5 billion will be devoted between 2021 and 2030 to the implementation of related carbon reduction proposals, including improved energy conservation, fuel transformation, energy conversion, development of green renewable energy, and recycling and reutilization of CO_2 etc.

In the expansion of green products and circular economy, collaboration with downstream practitioners in establishing a circular and recycling mechanism for marine waste such as nylon oyster ropes and recycling fishing nets continued. Efforts were made to bring the quantity to 1,250 tons/month and fulfill the goal of having recycled marine waste to account for 21.5% of all raw materials and strengthen the reproduction of recycled plastics into low-carbon circular materials and secure the production of high-value green materials. In addition, we will enhance the development of new businesses, steadily set foot in green products, new materials, energy storage, hydrogen energy, and other fields of application on existing bases to keep track of new business opportunities and promote transformations on all fronts for fulfilling the goal of sustainable business development.



FCFC receives 2023 National Enterprise Environmental Protection Award.



Formosa Petrochemical Corporation

Through digital technology, enhancing efficiency in production and management, alongside dynamically adjusting production and sales plans, will be beneficial for responding in realtime to changes in the market and developments in new energy.



The global economy is grappling with numerous challenges in the post-pandemic era, and FPCC is not exempt. We have encountered inflation, weakened consumer confidence and business sentiment, and supply chain crises. These factors have significantly influenced our approach to daily, annual, and programmatic operations, amplifying the complexity of our recovery efforts.

Reflecting on the first half of 2023, oil prices and spreads were adversely affected by the ongoing conflict between Ukraine and Russia, sluggish demand in China, and the emergence of a banking crisis in the United States. These challenges raised concerns about a global economic recession. However, in the latter half of the year, oil prices found support from production cuts by OPEC+ countries and escalating military conflicts in the Middle East. Additionally, as we entered a period of intensive maintenance at refineries, spreads increased accordingly, resulting in a favorable profit margin.

In response to evolving market dynamics, we leveraged our experience to enhance the flexibility of our production and operational processes, all while maintaining our unwavering commitment to safety standards. Despite the volatility in the business environment, we have demonstrated resilience and achieved significant business growth against challenging odds.

Financial and Operation Performance in 2023

	2023	2022	%
Consolidated Revenue	712,576,194	848,048,496	-16.0
Consolidated Operating Income	15,404,555	5,420,137	184.2
Consolidated Earnings Before Tax	24,693,679	16,968,396	45.5
EPS After Tax	2.30	1.51	51.9



Chairman **Bao-Lang** Chen



Excellence Awards Ceremony

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(In Thousands of NT Dollars)

Formosa Petrochemical Corporation 37



FPCC providing aviation fueling services at Songshan Airport

Petroleum Refining

In 2023, the Petroleum Refining Division experienced a significant decline in profit, with a decrease of 69.3% compared to the previous year. This decline was primarily attributed to the global economic slowdown and China's economic recovery falling short of expectations, exacerbated by the challenging environment of low oil prices and high interest rates.

Despite these challenges, the division achieved a 3.2% year-over-year increase in average daily throughput, reaching 442,000 barrels. This increase was primarily driven by a reduction in the maintenance period for RDS (Residue Desulfurization with Hydrogen) compared to 2022.

In the domestic market, FPCC remained committed to maintaining stable prices while stimulating demand. We diversified our marketing channels to enhance brand awareness and expand our customer base. Initiatives such as "Formosa Member Day On Saturday" aimed to strengthen client relationships and boost sales. Additionally, we increased brand exposure through prominent platforms like TV programs and sports events.

Domestic sales of petroleum products grew by 4.6% compared to 2022. However, there was a slight decrease in the supply of gasoline and diesel, resulting in a 0.4% decrease in market share attributed to a reduction in the number of franchise stations. Conversely, aviation fuel sales surged by 49.8% due to the lifting of post-pandemic restrictions globally, leading to a robust recovery in passenger demand.

In terms of foreign sales, FPCC exported 2.43 million KL of gasoline (a 5.3% increase yearover-year) and 8.43 million KL of diesel (a 3.5% decrease year-over-year). This decrease was a result of adjustments between light and middle distillates. Overall, the export volume of petroleum products declined by 3.2% compared to 2022.

Basic Petrochemical Materials Business

The global market for petrochemical materials encountered significant challenges in 2023, including weak demand in downstream markets and heightened price competition due to the expansion of Chinese petrochemical capacities. As a result, both the price and demand for petrochemical products such as ethylene and propylene experienced declines.

Through the implementation of flexible input strategies and continuous process optimization, we successfully reduced the operational costs of naphtha crackers compared to 2022. This initiative was also aligned with the decline in naphtha prices, further contributing to cost savings.

Utilities Division

The primary mission of our cogeneration units is to provide stable and ample electricity and steam to our complex. In 2023, the prolonged

conflict between Ukraine and Russia began to diminish, leading to international coal prices sharply declined from February 2023 onwards, as a result, the Utilities Division experienced an increase in profit in 2023.

2023 Sustainable development

Sustainability lies at the heart of FPCC's core values. We prioritize this value by continuously addressing various ESG topics, striving to achieve a balance between employees, investors and stakeholders. Our dedication to this goal is exemplified through our efforts to become a responsible producer. Specifically, we have leveraged artificial intelligence technology to establish smart factories, aiming to optimize production processes to enhance efficiency and product value. In 2023, we completed a total of 58 sustainability projects, yielding annual benefits of approximately 181 million TWD.



FPMC C Intelligence (DWT 301,861), VLCC arriving at Mailiao Harbor

In 2023, FPCC completed 229 improvement projects aimed at emission reduction, energy conservation, and water conservation. These initiatives resulted in annual emission reductions of 274 thousand tons, electricity savings of 185 million kWh, and water savings of 57 thousand tons.

Furthermore, our commitment to social responsibility is demonstrated through partnerships with organizations such as the Home Care Foundation, where we participated in initiatives like "Surround with Love" and "Infinite Generations," aimed at improving the living conditions of abused children and vulnerable families. Additionally, we collaborated with the "Cultivation Foundation" and "New Taipei City Special School" to provide employment opportunities for people with disabilities by offering gas station sites. Through these practical actions, we aim to encourage more enterprises and individuals to join us in contributing to our communities.

2024 Sales Goals

In 2024, we have set sales targets of 5,169 thousand KL of gasoline and 10,261 thousand KL of diesel. To achieve these goals, we are focusing on digital transition through the launch of the "Formosa Oil APP," aimed at developing and maintaining our target segments while implementing strategic marketing initiatives to reduce related costs. Additionally, we are expanding our marketing channels through television, radio, internet, and sports events to reach new customers. In the export market, we are collaborating with major trading companies to facilitate emerging market penetration.

Regarding petrochemical products, our sales targets include 2,389 thousand tons of ethylene, 1,210 thousand tons of propylene, and 337 thousand tons of butadiene. Our primary objective is to ensure a stable supply for subsidiary and downstream factories while maximizing operating profit through export cargo pairing.

Finally, for our utilities, our goal is to achieve independence in supplying electricity and steam to the complex, ensuring uninterrupted operations and contributing to overall efficiency.

Outlook

While inflation appears to be slowing down and the period of rate hikes is nearing its end, global growth is expected to remain modest. Factors such as necessary monetary policy tightening, weak trade, and low business and consumer confidence contribute to this outlook. FPCC maintains a conservative view of the future market, given the high correlation of our business segments with end-use demand in China and



FPCC Refinery in Mailiao



Moving forward with product upgrade and transformation projects, based on three main pillars: green factories, green energy, and green innovation.

Western countries. Additionally, tariff barriers pose challenges following the suspension of the Economic Cooperation Framework Agreement (ECFA) by China. We hope for active government negotiations to address various economic and trade issues.

On another front, the establishment of a domestic carbon trading exchange center reflects Taiwan's increasingly stringent environmental regulations. As the global economy transitions towards green energy, FPCC anticipates the possibility of 'green energy inflation' due to the costly nature of carbon emission reductions. Therefore, we are committed to conducting the transition efficiently and sustainably. We prioritize industry transformations by enhancing competitiveness through investments in AI applications, clean energy adoption, and carboncapture technologies.

In facing unknown challenges, FPCC adopts a cautious approach and actively integrates sustainable development strategies to foster mutual prosperity in society. Our commitment to excellence guides our actions as we navigate these transitions and strive for a sustainable future.



Formosa Plastics Group-US. Operations

FPG U.S. is implementing artificial intelligence (AI) and other related technologies to improve product quality and production/sales management performance.



The total revenue of Formosa Plastics Corporation USA, Nan Ya Plastics USA, and Nan Ya Plastics America in 2023 was \$6.0 billion, compared to \$8.4 billion in 2022, representing a decline of 28.57%. Despite disruptions caused by the Russia-Ukraine conflict in energy and food markets, unprecedented tightening of monetary policies due to 40-year high inflation, and ongoing tensions in the Middle East, the US GDP still exceeded expectations growing by 2.5% and the unemployment rate remained below 4% in 2023. However, behind the economic figures, there is increasing divergence in different sectors. Compared to the booming technology and service sectors, the Purchasing Managers' Index (PMI) for manufacturing in the US was below the standard 50, indicating a significant slowdown in the manufacturing sector. Additionally, with new capacities in the North American petrochemical industry (including Olefin PE, PP, and PVC) coming online since the 4Q 2022, plus the suppressed demand due to tight monetary policies and unresolved inflation issues, the prices for petrochemical products across North America and globally have been slumped further compared to 2022. Despite facing challenges such as global geopolitical tensions, economic slowdown, and declining product prices in 2023, Formosa Plastics Corporation USA was able to adjust its production and sales strategies timely to ensure profitability.

In terms of production, following the principle of sustainable operation, Formosa Plastics Corporation USA continuously improves its operations. Despite numerous challenges, the company closely monitors market dynamics and adjusts production strategies flexibly to maximize overall benefits. Additionally, the company consistently conducts tireless review to improve the product quality, process and production efficiency, along with competitor benchmarking to strengthen its competitiveness in reducing production costs.

In terms of olefin and its derivative products, Formosa Plastics Corporation USA purchases natural gas and processes it through the liquid fractionation plant to produce ethane and propane. These are then used in three cracking plants to produce 2.74 million metric tons of ethylene and 350,000 metric tons of propylene annually, and

then through the polyolefin plants to produce 1.97 million metric tons of polyethylene and 850,000 metric tons of polypropylene.

In terms of Chlor-Alkali product chain, Formosa Plastics Corporation USA generates power from its own power plant. The electricity is used for the electrolysis of brine to produce 970,000 metric tons of caustic soda annually. The chlorine byproduct then undergoes the EDC, VCM, and PVC processes, resulting in an annual production of 1.36 million metric tons of PVC resin. NPC USA made 36,000 metric tons of rigid PVC film, and NPCA had 15,000 metric tons of flexible PVC film produced using a portion of the PVC resin.

In the PET/Fiber segment, FPC USA supplied the ethylene for NPCA to produce 1,190,000 metric tons of ethylene glycol, 850,000 metric tons of polyester derivatives, and NPC USA to produce 11,000 metric tons of PET Rigid Film.

In terms of new plant expansions, Formosa Plastics Corporation USA successfully completed the bottleneck expansion of its VCM plant in Texas in October 2023, increasing its annual capacity by 150,000 metric tons and ensuring a more abundant supply of PVC raw materials. It is projected that in the second quarter of 2024, the PVC plant in Louisiana will also complete its bottleneck expansion, increasing its annual capacity by 110,000 metric tons. Additionally, a new polypropylene production line in Texas is expected to be completed and put into operation in the second half of 2024, adding 250,000 metric tons of polypropylene annually. These expansions will enhance the competitiveness of Formosa Plastics Corporation USA by enriching its portfolio with higher value-added differentiated products.

Regarding sales strategy, the company aims for a balance between production and sales, focusing on the North American market while recognizing the importance of export sales to complement its overall sales objectives. Regarding customer management, the company has established a base of foundational customers, targeting strategic market segments, and is developing strategic partnerships and alliances to deepen customer relationships and facilitate new product development. In the North American market, the company has targeted high-growth and high-value-added segments, maintaining a balanced portfolio across large, medium, and small customers, and gradually reducing sales of disposable plastics year by year as a strategy. In terms of exports, with the expanded production capacity, the company has set up bonded warehouses and shipping hubs in various regions of Europe and utilizes contracted distributors and agents for sales, focusing its export market efforts on Europe. Additionally, the company places importance on maintaining its market shares in Mexico and Central/South America to leverage advantages in freight costs.

Ensuring sustainable business operations has always been the core value of our management. The company will not only continue to strengthen environmental protection, occupational safety management and employee's career development, but also invest in improving product quality, sales strategies, and enhance maintenance performance. Additionally, we will begin evaluating various carbon reduction strategies and planning related initiatives, focusing on continuous development of high-value-added or eco-friendly products, and also enhancing customer services and operational management. This allow us to build long-term relationship with the customers with high demands for quality and service, albeit at relatively higher product prices, to increase profitability and market share.

Looking ahead to 2024, with the hawkish monetary policy with high interest rate led by the Federal Reserve, the inflation in the United States has gradually been brought under control. The Federal Reserve even does not rule out the possibility of cutting interest rates and loosening other monetary policies this year. The International Monetary Fund (IMF) recently raised its forecast for global GDP growth in 2024 to 3.1%, on par with the performance in 2023. However, the lags of tight monetary policy and a soft labor market will impact total demand. Additionally, issues such as conflicts in the Middle East and the drought in the Panama Canal will affect global supply chains, having a significant impact on US imports and exports.

In the US petrochemical industry, demand for major products is expected to rebound in 2024 compared to the end of 2023, with petrochemical raw material prices stabilizing. Product prices are expected to remain stable, similar to the minimal changes observed in 2023. With the ongoing completion of bottleneck projects for PVC in Louisiana and polypropylene in Texas, FPCUSA anticipate better profitability in 2024 than in 2023. However, given numerous uncertainties, a cautious approach is still essential in overall strategy planning.



In addition to these four major corporations, the Formosa Plastics Group has many other affiliates.

Our domestic affiliates include:

NanYa Technology Corp., Nan Ya Printed Circuit Board Corporation, Formosa Sumco Technology Corp., Formosa Taffeta Co., Formosa Advanced Technologies Co., Formosa Heavy Industries Corp., Mailiao Power Corp., Formosa Daikin Advanced Chemicals Co., Ltd., Formosa Asahi Spandex Co., Hwa Ya Power Corp., PFG Fiber Glass Corp., Formosa Environmental Technology Corp., Formosa Idemitsu Petrochemical Corp., Formosa BP Chemicals Corp., Formosa FCFC Carpet Corp., Formosa Oil (Asia Pacific) Corp., Formosa Plastics Transport Corp., Formosa Plastics Marine Corp., Nan Ya Photonics Inc., Formosa Biomedical Technology Corp., Formosa Technology Corp., Formosa Lithium Iron Oxide Corp. and Formosa Smart Energy Tech Corp.



Formosa Ha Tinh Steel Corporation

Our overseas affiliates include:

Formosa Plastics Corporation, U.S.A., Nan Ya Plastics Corporation, USA, Nan Ya Plastics Corporation, America, Formosa Ha Tinh Steel Corporation and P. T. Indonesia Nan Ya Indah Plastics Corporation. FPG's investments in Mainland China include Formosa Plastics Corporation, Nan Ya Plastics and Formosa Chemicals & Fibre Corporation.



Formosa Biomedical Technology Corp 20th anniversary BIO Asia-Taiwan 2024



Non-Profit Organization—Medical Care Chang Gung Memorial Hospital

By integrating teaching, research, services and sound management, Chang Gung Memorial Hospital (CGMH) have created an institution that serves the public as we strive toward upgrading the level of medical care and enhancing the well-being of the society.



In order to achieve the goal of "service quality improvement and appropriate medical cost control", Chang Gung Memorial Hospital has continuously evaluated Taiwan's environment and needs with the exploration of each core problem for more than 40 years. Patient orientation is our central belief to develop environmental innovation and high-quality medical care. Taking good use of limited resources maximizes the effectiveness and the contribution with unstoppable progress of Taiwan's medical standards.

Established in 1976, Chang Gung Memorial Hospital (CGMH) is now in its 48rd year of operation. Adhering to the belief of "What is Taken from the society is to be used in advancing the interests of the Society", we have overcome numerous obstacles during that timeframe. By integrating teaching, research, services and sound management, we have created an institution that serves the public as we strive toward upgrading the level of medical care and enhancing the well-being of the society.

1. Teaching

As a teaching hospital, we have launched cooperative programs with Major medical schools in the country to provide their interns with clinical Training. We have also developed a highly respected resident training system designed to nurture highly competent attending physicians in different specialties. In 2023, 178 residents finished their training program at CGMH for promotion to Attending Physician. Over the years CGMH has graduated over 4,767 students to achieve excellent performance in their respective careers in the medical profession.

Since 2015, CGMH has been accepting healthcare professionals from various countries for clinical internships and training. In 2023, there were 278 international trainees, bringing the cumulative total to 2,060 trainees. Training participants come from over 88 countries, with the top ten being India, Thailand, Malaysia, the United States, the Philippines, Spain, South Korea, Singapore, Hong Kong, and Japan. The number of international trainees is higher compared to other domestic medical institutions. Additionally, CGMH actively promotes international training collaboration and participates in the national "Medical and Health Cooperation and Industrial

Development Plan" under the New Southbound Policy.

2. Research

To encourage R&D, we provide funding for clinical research, basic medical research and international studies for our medical, nursing, technical and administrative staffs. In 2023, we supported international studies for 35 research staff personnel, and conducted more then 3,305 medical research projects under the National Science and Technology Council and Ministry of Health and Welfare. In addition, we provided Funding of US\$ 129.47 million, and published 2,870 SCI qualified papers. 59 patents, 8 technology transfer cases, 46 Research Innovation Award winning projects and 42 winners, including 30 National Innovation Award winning projects. The academic research results and published manuscripts contribute greatly in the academic fields.



Chang Gung Medical Foundation" Hospital Sustainability Accord "Signing Ceremony

In addition, CGMH integrates research findings into clinical applications to enhance healthcare quality. We utilize AI applications to assist in clinical diagnosis. Currently, three medical equipment software have obtained TFDA medical device licenses. CGMH is also the first healthcare institution in Taiwan to acquire the Ministry of Health and Welfare's medical equipment license.

3. Services

As one of the biggest general hospitals in Taiwan, both our facilities and our level of health care are on par with first-rate hospitals around the world. By the end of 2023, we offered over 11,225 beds with health care services provided by over 25,938 employees. In 2023, we served over 10 million outpatients and admitted almost 325,000 patients for inpatient services.

4. Management

To achieve the goal of enhancing service quality and controlling medical costs within reasonable limits, for over 47 years we have constantly evaluated local conditions and needs, inquiring into the root of every problem. With patients at the center of our mission, we have embraced innovations allowing us to provide the best possible medical care, to make the most of limited resources and to enhance the quality health service in the country.

Following the principles of founder Wang Yung-Ching, Chang Gung Medical Foundation is dedicated to utilizing information technology to integrate operations, manpower, and equipment, assisting in the functioning of healthcare services and elevating their quality. With a focus on enhancing hospital information security, it serves as the foundation for implementing electronic medical records and smart hospitals.

The foundation consistently undergoes certification by the Healthcare Information and Management Systems Society (HIMSS). In 2019, it became the first hospital in Taiwan to achieve Level 7 certification, the highest level, in the HIMSS Electronic Medical Record Adoption Model (EMRAM). In 2022, it participated in the Digital Health Indicator (DHI) evaluation, ranking as the world's second and Taiwan's top smart hospital. In 2023, it successfully completed a Level 7 re-evaluation in HIMSS EMRAM and attained Level 6 certification in the Infrastructure Adoption Model (INFRAM). Moving forward, the foundation will continue to prioritize "Informatization" as an overall strategic tool, positioning itself at Chang Gung as an intersection of "technology" and "information."

Valuing the necessity of artificial intelligence as part of the future development, Chang Gung Medical Foundation set up the Artificial Intelligence Core Laboratory to apply AI technology on clinical use, assisting diagnosis and avoiding human resource waste at the same time. The laboratory also focuses on combining communication technology and existing resources to make the process of medical service more convenient. For example, clinic visits, hospitalization, prescription pick-ups etc.

In the future, the laboratory will work on developing mobile telemedicine equipment with high resolution using 5G technology. The results could allow patients from distant areas or under the influence of pandemic to keep accessing medical services.

5. Social welfare and Sustainable development

In the promotion of organ donation, CGMH continues to actively advocate the concept and medical procedures of organ transplantation. In 2023, there were a total of 149 organ donors, with 141 receiving corneas, 9 receiving hearts, 14 receiving lungs, 102 receiving kidneys (including 45 living kidney transplants), 225 receiving livers (including 162 living liver transplants). Additionally, there was 1 case of pathological autopsy, and 13 cases of whole-body donation. Among these, the numbers of lung, liver, kidney, and pancreas transplants all ranked first in Taiwan.

CGMH has also been active in providing advanced social services.In 2023, CGMH provided relief to over3.06 million patients, CGMH have taken an active part in Social welfare such as Charity project of sport medicine, Mobile health care project for rural schools in Yilan County, The protection of children and youths program, Health care system of communities in Yunlin County, Telemedicine service, Medical volunteer programs by employees, etc. An outlay over US\$ 23.10 million from our social service fund.

In addition to its outstanding core healthcare services, Chang Gung Medical Foundation (CGMF) for Medical Research and Education has expanded its horizons through various innovative initiatives. These encompass research and development, talent training, health education, medical relief, and community healthcare services. Acknowledging its comprehensive excellence, CGMF has been honored with the "Overall Outstanding Award" for two consecutive years (2022 and 2023). Moreover, it has received the distinguished "Epidemic Prevention Contribution Award" from the Ministry of Health and Welfare.

Chang Gung Medical Foundation (CGMF), as a healthcare foundation, is deeply rooted in its core medical mission while actively championing environmental protection (E), social responsibility (S), and hospital governance (G). In 2023, the hospital published its third sustainability report, providing comprehensive information. Furthermore, it achieved verification against BSI Taiwan's AA1000 V3 assurance standard, earning the esteemed "Platinum Award" for the third consecutive time.



Yung-Ching Road Running Race



Non-Profit Organization—Education Chang Gung University

Chang Gung University will continue to strengthen teaching, research, industrial innovation, and international collaboration in various fields to respond to the pulse of the times and societal needs.

資訊科技在護理及健康照護之應用:國際研討會 The Application of Information Technology in Nursing and Health Care: International Conference



Guided by the motto of "Diligence, Perseverance, Frugality, and Trustworthiness," we uphold the educational philosophy of "integrating theory with practice," aiming for excellence through a pragmatic approach. Since its establishment, our university has meticulously crafted medium to long-term development strategies for teaching, research, counseling, and administrative services. We are committed to achieving excellence in teaching, research, and industrial innovation, with a focus on promoting and implementing holistic education.

Chang Gung University was established in April 1987, originally named Chang Gung Medical College. Subsequently, in response to the demands of national economic development, engineering and management departments were incorporated to provide comprehensive educational resources for the training of exceptional talents in medicine, engineering, and management. In August 1997, the Ministry of Education officially approved the university's name change to Chang Gung University. Presently, the university consists of four colleges: Medicine, Engineering, Management, and Intelligent Computing, comprising a total of 22 departments, 24 graduate institutes, 2 bachelor's degree programs, 7 master's degree programs, and 1 doctoral degree program.



Experiment on perovskite solar cells

Guided by the motto of "Diligence, Perseverance, Frugality, and Trustworthiness," we uphold the educational philosophy of "integrating theory with practice," aiming for excellence through a pragmatic approach. Since its establishment, our university has meticulously crafted medium to long-term development strategies for teaching, research, counseling, and administrative services. We are committed to achieving excellence in teaching, research, and industrial innovation, with a focus on promoting and implementing holistic education.

Chang Gung University currently boasts a total of 606 full-time faculty members (including clinical faculty) and 605 adjunct faculty members (including clinical faculty). The student body comprises 7,103 individuals, consisting of 5,272 undergraduate students and 1,831 graduate students. In addition to general and professional coursework, students participate in internships and summer employment programs with teaching hospitals and the Formosa Plastics Group, aiming to bridge theory with practice effectively. In recent years, the university has actively promoted the Formosa Plastics Group-sponsored student program, facilitating direct employment postgraduation. Moreover, students are encouraged to engage in research projects and industryacademic collaborations to gain practical



A Ph.D. student independently operated the sputtering process equipment.

experience and merge theory with practice. Responding to industry demands and the AI trend, the university has initiated AI-infused teaching, offering various AI application courses, credit programs, and micro-programs. Furthermore, students are encouraged to pursue dual majors, minors, and interdisciplinary studies to cultivate diverse expertise. Graduates of the university, whether entering the workforce or pursuing advanced education, are well-prepared to contribute to society. They are acknowledged by both industry and society for their knowledge, integrity, and professional competence, thereby fulfilling the university's educational mission of nurturing professionals who excel in both knowledge and character to serve society.

Our university is dedicated to research, with a focus on developing key technologies through interdisciplinary research centers. We collaborate with both domestic and international organizations to address significant societal and environmental challenges. For example, the Molecular Medicine Research Center actively participates in the U.S. Cancer Moonshot Program, aiming to advance cancer prevention and treatment. Meanwhile, the Research Center for Emerging Viral Infections collaborates with the Centers for Research in Emerging Infectious Diseases (CREID) Network to combat various

emerging viral infections, including COVID-19, through international partnerships. The Healthy Aging Research Center engages with the ENIGMA-PD Group of the University of Southern California to conduct research on Parkinson's disease, contributing to advancements in the field of healthcare. In terms of academic achievements, our university has received notable recognition. An expert team from Stanford University released the list of "World's Top 2% Scientists", ranking our university 9th domestically and 1st among private universities nationwide. In the 2023 Academic Ranking of World Universities (ARWU) by the Shanghai Ranking Consultancy, our university ranked 612th globally and 1st among private comprehensive universities in Taiwan. Additionally, the CWTS World University Rankings for scientific impact, published by Leiden University in the Netherlands in 2023, positioned Chang Gung University among the top 300 globally and 3rd nationally, following National Taiwan University and National Yang Ming Chiao Tung University. Notably, in the field of biomedical and health sciences, our university achieved a remarkable global ranking of 85th and secured the top position nationally, solidifying its reputation as a leading institution driving scientific contribution in Taiwan.

Our university is committed to the philosophy of holistic education, aiming to nurture students who embody academic and moral excellence, possess balanced development across various domains, and maintain a lifelong dedication to learning. We actively encourage students to exercise self-discipline in their academic pursuits, participate in club activities, engage in public affairs, take part in service learning, and cultivate moral character through diverse activities. Through the six indicators of holistic soft power, including caring and giving,



Simulated delivery training at the Center for Clinical Skills and Simulation.

teamwork, humanities and arts, self-reflection, discipline and self-regulation, and innovation and initiative, we regularly evaluate students' learning outcomes to ensure the realization of holistic education's spirit, emphasizing balanced development and excellence in learning.

To promote student involvement in club activities, leadership development, and teamwork, our university vigorously advocates the "Student Club PLUS" project. In 2023, the Light Fire Art Club was honored with the "Best Club Distinctive Activity Award" in the annual national University Student Club Selection and Observation Event. Furthermore, the CGU Student Council received the "Student Self-Government Single Championship Award" at the University Student Council Achievement Exhibition. These accolades reflect our commitment to holistic education and affirm our overarching educational objective of fostering moral integrity in our students.

Chang Gung University is dedicated to becoming a First Choice Top University. Employing research to lead teaching and industrial innovation, the university aims to achieve three excellences. Additionally, we are committed to advancing internationalization, digitalization, cross-disciplinary learning, and collaboration. CGU strives to foster a studentcentered learning environment, emphasizing the cultivation of sustainable responsibility, compassion for humanity, and dedication to societal service among our students. We aspire to excel in pioneering research areas and to nurture exceptional individuals with integrity, professional competence, robust learning capabilities, a commitment to lifelong learning, and global mobility.



Non-Profit Organization—Education Chang Gung University of Science and Technology

Founded to support commitment to humanity and integrity, its vision is to be, in every aspect of health care, the highest-quality school and the source of the highest-quality nurses entering the field.



The institution today known as the Chang Gung University of Science and Technology (CGUST) was first established as the Chang Gung Institute of Nursing, a two-year junior nursing college granted approval by the Ministry of Education in 1988. In 2002, the university underwent restructuring, becoming the Chang Gung Institute of Technology.

In early 2004, the university's Chiayi Campus was created to address the need for healthcare professionals in the Yunjia area healthcare system. The college finally transitioned to its modern iteration as the Chang Gung University of Science and Technology (CGUST) in 2011.

Currently, the Linkou and Chiayi campuses maintain two colleges, a Center for General Education, three graduate programs, and six departments. The institution's two colleges include the College of Nursing and College of Human Ecology; the Nursing Department, Graduate Institute of Nursing, Department of Gerontology and Health Care Management, Department of Respiratory Care, Child Care and Education Program, Department of Cosmetic Science, Department of Nutrition and Health, and the Graduate Institute of Health Industry



Situated learning, learn to be used alive

Technology comprise CGUST's post-secondary departments. The five research centers include the Clinical Competency Center, Chronic Diseases and Health Promotion Research Center, Geriatric and Long-Term Care Center, Research Center for Food and Cosmetic Safety, and Research Center for Chinese Herbal Medicine. The university embodies the pragmatic spirit of technical vocational education, helping fulfil a need for healthcare professionals in society.

The university's outstanding performance has been recognized by students, parents, and numerous institutions both nationally and across the world.

All departments have passed the "Professional Education Certification" of the Taiwan Evaluation Association, ensuring that the



Department of Nutrition and Health Sciences cultivates professional practical skills in healthy diet within a high-quality educational environment.

university fulfills nationally accredited teaching quality assurance standards.

The school placed in the Top 5 medical universities for Global Views Magazine's "Taiwan' s Best Universities" ranking in 2023.

Times Higher Education's 2023 World University Influence ranked CGUST as Number 1 in 'SDG3 Health and Welfare' among Taiwan's best private science and technology universities.

According to the Ministry of Education's Public Information on University, CGUST's enrollment rate in the 2023-2024 academic year was 98.1%, ranking first among Taiwan's private universities of science and technology; the retention rate was 94.87%, the highest rate nationally among vocational universities.

From 2018 to 2023, the school was awarded NT\$367.39 million by the Ministry of Education's "Higher Education Sprout Project" (HESP).

The Chang Gung University of Science and Technology has grown since its founding, reflecting the strength of the University's central tenets and educational principles. Currently, the University employs 317 full-time teachers and

enrolls 6,113 students. With additional expansion of excellent academic programs over the years, the University seeks to nurture high-quality professionals in the healthcare industry.

CGUST is a health sciences university which places an equal emphasis on research and teaching performance alike. Founded to support commitment to humanity and integrity, its vision is to be, in every aspect of health care, the highest-quality school and the source of the highest-quality nurses entering the field. To develop the spirit of diligence and endurance in its students, and to enable them, in both theory and practice, to apply that spirit for the benefit of society, the University has cooperated with Chang Gung Memorial Hospital, the Formosa Plastics Group, and 341 other organizations to provide students with a wealth of internship opportunities. The students are thus offered chances to accumulate work experience and hone their skills. This strategy is designed to help students achieve their educational goals of combining work experience with classroom knowledge concretely, placing them in an advantageous position in today's competitive job market.

Moreover, the University has implemented a mandatory on-campus residence policy to pursue integration of school education with guidance and discipline. Based on the belief that ethical and moral education is developed in daily life, the policy aims to promote holistic student development, encouraging emotional awareness, humility, respect for life, and conscientious engagement with society. These programs cultivate students as consummate professionals, with love and patience for their work.

With respect to academic research, the University encourages teachers to participate



The professor guided the students in special research on extracting functional components of plant peels using microwave extraction.

in research projects in cooperation with the government, Chang Gung Memorial Hospital, and the Formosa Plastics Group. Efforts in cooperative research projects with other industries are strongly supported as well. In the academic year of 2023 alone, the university received 214 Industry-University Collaboration Projects with grants values approaching \$6,091,744.53 USD. A total of \$2,037,327.16 USD in grants was awarded from the National Science and Technology Council for 60 research projects, and a total of \$1,912,059.53 USD in grants was awarded from governmental offices for 58 research projects. In addition, grants totaling \$2,142,357.84 USD were accumulated by 96 cooperative projects between the University and the private sector.

In response to the rapid changes in society, the University is dedicated to improving its administration, with personnel as its central

consideration. Moreover, CGUST's learning environment is constantly being improved to support the ideal of providing quality health care for the general public. As we move forward, our aim toward perfection will continue to guide the development of the University administration, teaching, research, industry cooperation, and student development. The Chang Gung University of Science and Technology continuously strives to foster top-quality professionals who provide the best professional education.



Non-Profit Organization—Education **Ming Chi University of Technology**

In the pursuit of adhering to the spirit of perfection, we strive for excellence in everything, keep making self-improvement, and are tailored to the requirements of the development of the whole industrial economy in order to continue cultivating professional talents with good character.



In the 1960's while both the industrial and economic developments were taking off in Taiwan, there was a lack of mid-level professionals in the industries. In response to the developmental needs, Mr. Y. C. Wang and Mr. Y. Z. Wang, the founders of Formosa Plastics Group, donated the funds for the establishment of the University in December 1963 in order to strengthen the cultivation of talents.

The University is located on the hillside of Kueizi (Accreditation of Chinese Collegiate School of Village in Taishan District, New Taipei City and was Business), showing that the University's educational originally named "Ming Chi Institute of Technology." system is on the international track. The campus occupies an area of 62 hectares with vast green areas and beautiful yet tranquil sceneries. Due to Ming Chi's units receiving top rankings More than 200 years ago, during the reign of Emperor and the school being ranked number one nationwide Chienlong in the Ching Dynasty, the "Ming Chi in the 2011 MOE Evaluation of Technological Academy," founded by a Tributary Scholar, Mr. Hu Universities, Ming Chi was granted permission to Cho-yu in Southern Fukien, was located in the vicinity conduct self-evaluation instead of being evaluated by of the University. At that time the Academy was a the MOE. Since then, Ming Chi has passed the MOE center of intellectual and cultural hub and was also evaluation held every five years, starting from 2016, the cultural origin of northern Taiwan. This university on technological university affairs and self-evaluation was named "Ming Chi" with an aim to encourage on colleges. According to the data collected from the faculty and the students to learn from the virtuous Web of Science, Ming Chi was ranked number one elders and to embrace heritage and vision as their own among all the technological universities and colleges mission. in the year of 2023 in producing SCI/ SSCI papers per author, including assistant professors and above. With the exceptional operational performances In 2018, the Institutional Research Center was established to develop a data-based decision-making model to implement efficient and effective school management systems and pursue sustainable school administration. The average amount of subsidies per student at Ming Chi received from the MOE (including MOE grants, Teaching Excellence Program funds, and Higher Education Sprout Project grants) has led other funded technological universities for years. Ming Chi, which has been awarded certificates of information security management system (ISMS) ISO-27001, and environmental management system (EMS) ISO-14001, is a technological university with excellent traditions and achievements.

and in response to the need for talents due to the economic development and the industrial advancement in Taiwan, the School was approved in 1999 for its transformation into"Ming Chi Institute of Technology." After being awarded Excellence by the annual evaluation conducted by the Ministry of Education (MOE) for six consecutive years, the Institute was approved again in 2004 for its further transformation into "Ming Chi University of Technology." The University currently hosts 4,400 students (4,200 students in the day division and 220 students in the continuing education division), 207 faculty members, and 134 staff members. The University consists of the College of Engineering, College of Environment and Resources, and College of Management and Design, The motto of the University is "Diligence, offering three Ph.D. programs, 12 M.A. programs and Perseverance, Frugality and Trustworthiness." In 13 departments (including three bachelor programs). terms of "Diligence and Perseverance," we expect All the departments and graduate institutes have the students not only to work hard but also to do the passed the certifications of IEET (Institute of right and useful things. Students are encouraged Engineering Education Taiwan) or ACCSB to build their wisdom and enhance self-confidence



Class production line field "Demonstration of MIMS BOM Table Implementation Process for Seed Trainees in Mobile Integrated Management System (MIMS) Training"

through the accumulation of such useful experiences. When students live simple and honest lives, they can concentrate on the pursuit of their life goals. Based on this foundation and equipped with the professional knowledge and skills, all our students are expected to become useful members of the society. Ming Chi has been a boarding school since its establishment. Through this shared on-campus living, students are encouraged to maintain a regular life, strong body and mind. The Mindfulness Center has been established, offering a General elective course on Mindfulness. This initiative aims to enhance students' focus and observational skills, while fostering grounded characteristics and good moral character. In 2018, the general education course "Design Thinking" was offered to guide students to develop interdisciplinary skills, to inspire their creative thinking, and to lay the foundation for them to explore practical problems and solve problems in the future. Moreover, since teachers also live on campus, they can better guide students and live up to the standards of propagating the doctrines of the ancient sages, who would not only teach but also clarify any doubts.

In order to take both theory and practice into account, and to help students develop the spirits of self-supporting, hard-working, and endurance, Ming Chi has implemented the co-op programs by alternating regular classes and internship in four years. Students are arranged to participate in full time practical internship program for one year in the Formosa Plastics. This allows students to receive salaries from the work so that they could reduce the financial burden of their families and complete their studies. Through the internship, students are able to learn the techniques relevant to their professions as well as the

practical management skills. Students are also able to experience the meaning of diligence, perseverance, frugality and trustworthiness and develop the attitude of being down-to-earth and always getting to the bottom of everything. The overseas internship system is unprecedented. Presently the practical training program has expanded to various industries and companies in the U.S., Switzerland, Mainland China, Indonesia and Vietnam. The amount of students working overseas has accumulated to 608 till now. Moreover, Ming Chi has been selected by the MOE to establish a project office on campus to facilitate vocational schools nationwide in offering co-op programs for 14 years, expanding practical training across various industries with over 170 companies participating. This initiative has significantly enhanced students' practical skills, earning high acclaim in the industry. Ming Chi has also received lots of recognition of "Excellent Performances in Industry-Academia Cooperation" evaluated and selected by the Chinese Institute of Engineers. The gap between school education and the employment among industries is effectively shortened, realizing the educational goals in connecting industries and education. Commonwealth Magazine announced in the "2023 USR University Citizens" survey that Ming Chi ranked number one among private technological universities nationwide. According to the 2023 university ranking released by Global Views Monthly, Ming Chi ranked number one in the technology category of comprehensive universities among all other private technology universities. The Ming Chi alumni of the past years have received positive affirmation from the academic, industries, and business fields. In addition, to continue the founder's spirit of caring the financially/ physically challenged, Ming Chi has facilitated the contribution of scholarships by alumni, accumulating donations totaling NTD 150 million to date.

Beginning from the academic year 2004, Ming Chi started to recruit aboriginal students in the four-year college in order to extend our concerns for the aboriginal students. Ming Chi has funded the aboriginal students up to NTD 407 million. This program has gained much appreciation from the aborigines and acclamation from the public in the

society. Moreover, in coordination with the needs in lifetime learning and returning education for technical training, Ming Chi provides employee training for enterprises as well as career guidance for young adults. Meanwhile, in order to satisfy the needs of the alumni and members of the society in continuing education, the Division of Continuing Education was established. This Division has offered in-service master program. In 2016, Dual Award Master's Degree Program was offered between Ming Chi and University of Cincinnati. Further in 2017, Ming Chi together with National Taiwan University of Science and Technology set up dual award Ph.D.'s degree program. In 2019, Dual Award Master's Degree Program was offered between Ming Chi and Northern Illinois University. Ming Chi has signed 133 sister school partnership agreements with overseas schools striving toward a goal of globalization.

After the institute was upgraded to the university level, in addition to the usual devotion in the maintenance of the existing educational beliefs and practice, Ming Chi also focuses on "Industry-Academia Cooperation." Since 2007, Ming Chi has frequently been awarded the title of "Outstanding Unit for Industry-Academia Cooperation" by the Chinese Institute of Engineers in their biennial selection of units for industry-academia cooperation. Eight professors from Ming Chi are on the list of the "World's Top 2% Scientists 2022," released by Stanford University in 2023. According to the 2023 statistics released by the National Science and Technology Council (NSTC), Ming Chi has ranked number four nationwide, and number one among private technology universities in the category of the average amount of funding per project director. MOE also announced in 2023 that Ming Chi ranked the fourth nationwide, and number two among private technological universities and colleges in the average amount of conducting public and private industryacademia cooperation projects per project holder. These honors demonstrate the fruitful results of developing collaborative relationships with industry partners. In recent years, by means of continuously integrating the resources of various colleges, ten research centers have been established: the Biochemical Engineering R&D Center, the Center for Plasma and

Thin Film Technologies, the Chinese Herbal Medicine Center, the Battery Research Center of Green Energy, Organic Electronics Research Center, Center for Reliability Engineering, Research Center for Intelligent Medical Devices, Artificial Intelligence and Data Science Research Center, Center for Environmental Sustainability and Human Health, and Intelligent Vehicle R&D Center. The faculty and students are always encouraged to participate in practical researches and to provide industry-academia services for enterprises. With the development of internship opportunities, the industry-academia cooperation relations are actively being built. Utilizing the resources of intern students, guidance teachers, specific research centers, the Industry-Academia Cooperation Center, and the Innovation and Incubation Center, we are able to achieve close cooperation with the industries and improve the research quality and quantity, and further contribute the research findings to the industries. While the education purposes as well as the advancement of technological force in the industries are achieved, a win-win situation is also created.

Education is the foundation of a nation and its importance is hardly surmountable. Ming Chi looks for "perfection" in every aspect including school administration, research, industry cooperation, and cultivation of students' integrity. We seek the best for everything we do, and pursue self-improvement at all the times. We hope to continue nurturing professionals with sound personality to work with the need of industrial economic development, and fulfill the university social responsibility. We aim to set a new model for the vocational education in Taiwan.



Microanalysis LAB. Researcher operates the Chemisorption Analyzers

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