2022 Annual Report

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## Financial Highlights

### Financial and Operational Analysis

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<tr>
<th>Financial Statistics</th>
<th>Unit</th>
<th>2022</th>
<th>2021</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Revenue</td>
<td>( Million TWD )</td>
<td>141,070</td>
<td>132,140</td>
<td>6.76%</td>
</tr>
<tr>
<td>Passenger Revenue</td>
<td>( Million TWD )</td>
<td>20,479</td>
<td>3,434</td>
<td>496.36%</td>
</tr>
<tr>
<td>Cargo Revenue</td>
<td>( Million TWD )</td>
<td>115,864</td>
<td>124,249</td>
<td>-6.75%</td>
</tr>
<tr>
<td>Other Revenue</td>
<td>( Million TWD )</td>
<td>4,727</td>
<td>4,457</td>
<td>6.06%</td>
</tr>
<tr>
<td>Operating Expenses</td>
<td>( Million TWD )</td>
<td>135,153</td>
<td>112,820</td>
<td>19.80%</td>
</tr>
<tr>
<td>Operating Income</td>
<td>( Million TWD )</td>
<td>5,917</td>
<td>19,320</td>
<td>-69.37%</td>
</tr>
<tr>
<td>Net Income</td>
<td>( Million TWD )</td>
<td>2,860</td>
<td>9,380</td>
<td>-69.51%</td>
</tr>
<tr>
<td>Operating Margin</td>
<td>( % )</td>
<td>4.19</td>
<td>14.62</td>
<td>-10.43ppt</td>
</tr>
<tr>
<td>Net Margin</td>
<td>( % )</td>
<td>2.03</td>
<td>7.10</td>
<td>-5.07ppt</td>
</tr>
</tbody>
</table>

### Balance Sheet

<table>
<thead>
<tr>
<th>Financial Statistics</th>
<th>Unit</th>
<th>2022</th>
<th>2021</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Assets</td>
<td>( Million TWD )</td>
<td>268,092</td>
<td>270,651</td>
<td>-0.95%</td>
</tr>
<tr>
<td>Total Liabilities</td>
<td>( Million TWD )</td>
<td>198,092</td>
<td>196,607</td>
<td>0.76%</td>
</tr>
<tr>
<td>Equity</td>
<td>( Million TWD )</td>
<td>70,000</td>
<td>74,044</td>
<td>-5.46%</td>
</tr>
<tr>
<td>Total Liabilities/ Total Assets</td>
<td>( % )</td>
<td>73.89</td>
<td>72.64</td>
<td>1.25ppt</td>
</tr>
<tr>
<td>Return on Assets (ROA)</td>
<td>( % )</td>
<td>1.72</td>
<td>4.18</td>
<td>-2.46ppt</td>
</tr>
<tr>
<td>Return on Equity (ROE)</td>
<td>( % )</td>
<td>3.97</td>
<td>14.25</td>
<td>-10.28ppt</td>
</tr>
<tr>
<td>Book Value per Share</td>
<td>( TWD )</td>
<td>11.64</td>
<td>12.47</td>
<td>-6.66%</td>
</tr>
</tbody>
</table>
### Operating Statistics

<table>
<thead>
<tr>
<th></th>
<th>Unit</th>
<th>2022</th>
<th>2021</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passengers Carried</td>
<td>(1,000)</td>
<td>1,503</td>
<td>173</td>
<td>768.79%</td>
</tr>
<tr>
<td>Passenger Capacity</td>
<td>(Million ASK)</td>
<td>14,879</td>
<td>3,829</td>
<td>288.59%</td>
</tr>
<tr>
<td>Passenger Traffic</td>
<td>(Million RPK)</td>
<td>6,583</td>
<td>639</td>
<td>930.20%</td>
</tr>
<tr>
<td>Passenger Load Factor</td>
<td>(%)</td>
<td>44.25</td>
<td>16.67</td>
<td>27.58ppt</td>
</tr>
<tr>
<td>Passenger Yield</td>
<td>(TWD/RPK)</td>
<td>3.11</td>
<td>5.38</td>
<td>-42.19%</td>
</tr>
<tr>
<td>Cargo Carried</td>
<td>(1,000 kg)</td>
<td>932,812</td>
<td>1,052,159</td>
<td>-11.34%</td>
</tr>
<tr>
<td>Cargo Capacity</td>
<td>(Million FATK)</td>
<td>8,265</td>
<td>10,003</td>
<td>-17.37%</td>
</tr>
<tr>
<td>Cargo Traffic</td>
<td>(Million FRTK)</td>
<td>6,362</td>
<td>7,551</td>
<td>-15.75%</td>
</tr>
<tr>
<td>Cargo Load Factor</td>
<td>(%)</td>
<td>76.97</td>
<td>75.49</td>
<td>1.48ppt</td>
</tr>
<tr>
<td>Cargo Yield</td>
<td>(TWD/FRTK)</td>
<td>18.21</td>
<td>16.45</td>
<td>10.70%</td>
</tr>
<tr>
<td>Overall Capacity</td>
<td>(Million ATK)</td>
<td>9,605</td>
<td>10,348</td>
<td>-7.18%</td>
</tr>
<tr>
<td>Overall Traffic</td>
<td>(Million RTK)</td>
<td>6,954</td>
<td>7,609</td>
<td>-8.61%</td>
</tr>
<tr>
<td>Overall Yield</td>
<td>(TWD/RTK)</td>
<td>20.29</td>
<td>17.37</td>
<td>16.81%</td>
</tr>
<tr>
<td>Overall Unit Cost</td>
<td>(TWD/ATK)</td>
<td>14.07</td>
<td>10.90</td>
<td>29.08%</td>
</tr>
<tr>
<td>Break Even Load Factor</td>
<td>(%)</td>
<td>69.37</td>
<td>62.78</td>
<td>6.59ppt</td>
</tr>
<tr>
<td>Employee Productivity</td>
<td>Unit</td>
<td>2022</td>
<td>2021</td>
<td>% Change</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-----------------------------------</td>
<td>-------</td>
<td>-------</td>
<td>----------</td>
</tr>
<tr>
<td>Revenue per Employee</td>
<td>( 1,000TWD/Person )</td>
<td>13,080</td>
<td>11,938</td>
<td>9.57%</td>
</tr>
<tr>
<td>Capacity per Employee</td>
<td>( ATK/Person )</td>
<td>890,548</td>
<td>934,841</td>
<td>-4.74%</td>
</tr>
<tr>
<td>Traffic per Employee</td>
<td>( RTK/Person )</td>
<td>644,801</td>
<td>687,366</td>
<td>-6.19%</td>
</tr>
</tbody>
</table>

**Notes**

- **RPK**: Revenue Passenger Kilometers. Number of revenue passengers carried multiplied by distance flown.
- **ASK**: Available Seat Kilometers. Number of seats available for sale multiplied by distance flown.
- **Passenger Load Factor**: Revenue Passenger Kilometers divided by Available Seat Kilometers.
- **FRTK**: Freight Revenue Tonne Kilometers. Number of revenue tonnes of freight carrier multiplied by distance flown.
- **FATK**: Freight Available Tonne Kilometers. Number of tonnes of capacity available to carry freight multiplied by distance flown.
- **Cargo Load Factor**: Freight Revenue Tonne Kilometers divided by Freight Available Tonne Kilometers.
- **RTK**: Revenue Tonne Kilometers. Revenue load (passengers and freight) in tonnes multiplied by distance flown.
- **ATK**: Available Tonne Kilometers. Number of tonnes of capacity available to carry revenue load (passengers and freight) multiplied by distance flown.
A Message from the Chairman

Seizing Post-Pandemic Business and Sustainability Opportunities

Global economic performance lagged in 2022. Several factors caused distress: the ongoing pandemic, the war in Ukraine, energy crises, high inflation, recessions, inventory adjustments in supply chains, and climate change. These harmed the global economy and the various industries that compose it. Against this difficult background, as countries around the world reopened their borders and sought to stimulate tourism, aviation passenger volumes finally began to recover. In a comprehensive bid to attract the business these renewed passenger volumes presented, China Airlines (also referred to below as the “Company”) adopted three main strategies: advance deployment, stable arrangement, and precise distribution. The bright spots emerging in passenger air travel markets, however, were shaded during the second half of the year by declines in the air freight market, caused in part by lower terminal demand, excessive inventory levels, and a declining global economy. Presented with a difficult situation where supply exceeded demand, even as shipping prices began to drop, our team continued striving to develop waypoints that showed potential. We arranged freight service in a way that would make ample use of our existing fleet while permitting flexible dispatch of capacity to areas that offered new opportunities. The objective was to increase combined revenues from passenger and freight to benefit overall business performance. Strong commitment and common purpose from all our employees made China Airlines one of the few global airlines in 2022 that continued to turn a profit in spite of the pandemic.

China Airlines closely heeds every aspect of the passenger flying experience. For seven consecutive years, the Airline Passenger Experience Association (APEX) has named us an APEX Five Star Global Airline. As a pioneer of the Taiwan aviation freight market, besides building experience carrying several types of special goods, we also built extensive professional experience in the area of cold chain management and transport. Our reliability is affirmed by customers from around the world. In 2022, the magazine Air Cargo News dubbed us the Best Cargo Airline – Asia. In the same year, the IATA Center of Excellence for Independent Validators in Pharmaceutical Logistics renewed our CEIV Pharma certification for cold chain transport of pharmaceutical products.

China Airlines upholds the missions and responsibilities of corporate sustainability. We continue to promote environmental, social, and governance (ESG) actions, and our results in these areas are widely affirmed. In 2022, we placed first among all participating worldwide airlines on the Dow Jones Sustainability Indices (DJSI), and we became the only airline to be included for seven consecutive years on the Dow Jones Sustainability Emerging Markets Index, setting a new milestone for a Taiwanese transport company. We won a National Sustainable Development Award in our first time joining the competition run by the National Council for Sustainable Development, Executive Yuan. For a seventh consecutive year we were included on the FTSE4Good Index Series, which is a series of sustainable stock indices launched by the British financial data firm. We won a Taiwan Corporate Sustainability Award (TCSA) for a ninth consecutive year, and a Global Corporate Sustainability Award (GCSA) for a fourth consecutive year. These accomplishments highlight our ESG and sustainable development leadership in the global airline industry. To mark our 63rd anniversary celebration, for the first time we operated a full-day net zero flight program covering all passenger and cargo flights that departed from Taiwan. For The Sustainable Flight Challenge (TSFC), held by the SkyTeam alliance, we launched an award-winning sustainability demonstration flight. We also joined The Pokémon Company to carry out the “Pokémon Air Adventures,” which further underscored the beliefs and spirit we bring to corporate sustainability.

Looking ahead to 2023, the global economy still must contend with high inflation and rising interest rates. COVID-19 remains, and there is the US-China tech war, the war in Ukraine, and inventory adjustments and cycles. Each of these factors continues to act as a variable and a potential threat to the prospects of the global economy. We therefore must closely heed market changes and respond as needed. China Airlines will act prudently and steadily. As change happens quickly in the post-pandemic age, collaboration between the Company, affiliated firms, and all our employees will remain strong. Using innovative methods, we will become stronger, more sustainable, and more competitive. Outstanding, flexible management and nimble operational capacity, combined with a commitment to comprehensive ESG measures, will make us a leading enterprise entrenched on the path of sustainable development.
A Message from the President

Integrated Transport Capacity Steers the Course in the Post-Pandemic Age

2022 was a year of upheaval and challenges. Global trade growth slowed and geopolitics grew extremely tense. Energy and foodstuff prices rose quickly, putting inflation on a steep upward trajectory that led central banks around the world to respond by tightening monetary policy. The pandemic continued and extreme weather events disrupted supply chains. Companies had to contend with high energy and wage cost growth, which compressed corporate profits. In the face of these challenges, China Airlines showed resiliency, not only by keeping revenues above the NT$100 billion mark and growing revenues, but also by keeping the streak of profitable fiscal years alive.

To maximize revenue, during the first half of 2022 China Airlines continued to prioritize cargo capacity with passenger capacity playing a supplementary role. In the second half of the year, as countries around the world, including Taiwan, opened their borders to regular travel, and demand for cargo transport dropped, we reacted to the changing market conditions by balancing the weight of both our passenger and cargo businesses. Rolling adjustments to our flight network, capacity, and schedules, along with the integration of passenger and cargo transport resources, optimized capacity while increasing earnings. We recruited pilots, mechanics, and office staff as needed, while using on-the-job training to improve employees’ skills. We offered immunization guidelines and arranged vaccines for staff in line with government policy. As the pandemic draws to a close, normalization of non-contact service methods will continue to keep our passengers safe.

China Airlines works diligently to reduce carbon emissions and protect the environment. We adopted the four core fuel saving strategies of fleet renewal, aircraft weight reduction, flight operation optimization, and maintenance advancement, with the goal of achieving net zero carbon emissions by 2050. To support our aviation network development strategies and prepare for the post-pandemic travel market we continue to replace old aircraft with newer models. Since the end of 2020 we have been adding a new generation of 777F freighters to replace our old 747-400F. Progress includes an agreement reached at the beginning of 2022 to purchase four 777F and the delivery of five 777F by the end of 2022, with our total fleet of delivered 777F expected to reach 10 by 2024. To strengthen our regional completeness, since the end of 2021 we have been adding Airbus’ new generation of passenger aircraft, the A321neo, which is gradually replacing our Boeing 737-800 passenger aircraft. Meanwhile, to support our wide-bodied passenger aircraft replacement program, in 2022 we committed to purchasing 16 Boeing 787-9 passenger aircraft (with the option to buy an additional eight). Delivery will begin in 2025, when they will start to replace our A330-300 and take over as the mainstay of our new generation medium-capacity wide-body fleet. The new generation fleet possesses exceptional fuel efficiency that reduces emissions while optimizing our cost structure to support post-pandemic growth. Further integration of zero contact services together with advanced passenger cabin facilities will provide a higher quality flying experience.

Based on our belief in the recovery of the international passenger flight market, we have begun resuming previous flight routes and increasing flight density when there is sufficient demand. We are developing waypoints that show great potential in Southeast Asia, including Cebu, Danang, and Chiang Mai, and more connections to Europe and the United States are helping us to lure transit passengers, strengthening Taiwan’s position as an aviation hub. Our long pursuit of freight markets continues as we solidify existing business while actively seeking to develop delivery capabilities for markets that show high potential, such as 5G, microtechnology, automotive electronics, and semiconductors. Taking full advantage of our freedoms of the air, we deploy the capacity of our 22 freighters and 66 passenger aircraft with belly holds. Based on market dynamics and urgent delivery needs, we add flights or arrange charter flights for deliveries of medical aid, information and communications goods, vaccines, chip machinery, automobiles, garments, or e-commerce. Getting the maximum out of our capacity enables us to get the most out of freight delivery opportunities.

Looking ahead to 2023, as the world economy faces stiff pressure from high inflation, rising rates, fluctuating gas prices, and geopolitical tension, China Airlines will strictly control risk and craft response measures. We will focus on our main strategic development themes to achieve sustainable governance and lead all employees down the path of innovative thinking, with the goal of becoming a corporate benchmark for protecting the environment and promoting socioeconomic development.
Members of the Board

Chairman

Hsieh, Su-Chien

Chairman, China Airlines Ltd.
Chairman, CAL Park Co., Ltd.
Chairman, CAL Hotel Co., Ltd.
Chairman, CAL-Asia Investment Inc.
Chairman, CAL-Dynasty International Inc.

Director

Kao, Shing-Hwang

President, China Airlines Ltd.
Chairman, Mandarin Airlines, Ltd.
Director, Cal Hotel Co., Ltd.
Director, CAL-Asia Investment Inc.
Director and President, CAL Park Co., Ltd.
Director, CAL-Dynasty International, Inc.
Director, Dynasty Properties Co., Ltd.

Director

Charles C.Y., Chen

Chairman, Eyon Holding Group
Vice Chairman, Taiwan Air Cargo Terminal Ltd.
Vice Chairman, Taian Insurance Co., Ltd.
Board Director, Shihlin Paper Corporation
Chairman, Wan Hai International Pte. Ltd.
Vice Chairman, Wan Hai Lines (Singapore) Pte. Ltd.
President, Chen-Yung Foundation

Director

Ting, Kwang-Hung

Group Chairman, Phu My Hung Holdings Group
Vice Chairman, TVBS Media Inc.

Director

Chen, Han-Ming

Chairman, Tigerair Taiwan Co., Ltd
Chairman, Prime Development Co., Ltd.
Director, Chyn-Tay Bearing Co., Ltd.

Director

Chen, Maun-Jen

Chairman, Everpar Enterprise Corporation
Chairman, Hipower Autotech Co., Ltd.
Chairman, Hi Safe Technologies Co., Ltd.

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2022 CHINA AIRLINES ANNUAL REPORT

Director
Wei, Yung-Yeh
Member of Council, China Airlines Employees Union
Foreman, Line Maintenance Department, Engineering & Maintenance Division, China Airlines

Director
Chao, Kang
Member of Council, China Airlines Employees Union

Director
Chang, Hui-Chuan
Director, TaiMed Biologics Inc.

Director
Wang, Shih-Szu
Political Deputy Minister, Ministry of Culture

Independent Director
Huang, Hsieh-Hsing
Chairman, Audit Committee, China Airlines Ltd
Independent Director, TECO Electric and Machinery Co., Ltd.

Independent Director
Chang, Hsieh Gen-Sen
Chairman, Risk Committee, China Airlines Ltd
Member, Foundation Management Committee, Environmental Protection Administration
Independent Director, K Laser Technology Inc.

Independent Director
Hwang, Chin-Yeong
Chairman, Compensation Committee, China Airlines Ltd
Chairman and President, Digitimes Inc.
Independent Director, Alltek Technology Corp.
Countries around the world overcame the ongoing presence of COVID-19 in 2022 to begin to open their borders. Airline passenger traffic started to recover but, faced with an uncertain environment, global airlines continued to suffer financial losses. Despite these harsh conditions, like a plum blossom blooming in the heart of winter, China Airlines prospered, achieving its third consecutive profitable year. This excellent performance was made possible by our professional operational team and the hard work of all employees. Our sustainability performance was likewise excellent. In 2022, we placed first among 57 airlines that were part of the Dow Jones Sustainability Indices. This result not only underlined our success in making sustainability a part of our business strategy but also demonstrated the resilience and excellent governance of the Company. In 2023, we will capitalize on the recovery of airline passenger traffic by leveraging our operational scale and talent. Centered on a foundation of mutual trust, we will build connections with employees while strengthening teamwork and organizational culture. As we return to our pre-pandemic operational scale, we will maintain our profitable streak.
Expanding Competitive Advantages That Support Recovery

In 2022, the ongoing impact of the COVID-19 pandemic, geopolitical tensions (the Russia-Ukraine war), strict lockdowns in China, and a global energy crisis caused severe inflation and stressed supply chains. According to a January 2023 report from the International Monetary Fund (IMF), the global growth rate in 2022 was 3.4%, including 2.7% growth in advanced economies and 3.9% growth in emerging markets. For 2023, the IMF predicted that surprising demand resilience in the United States and Europe, easing of energy costs, and the reopening of the Chinese economy would overcome other headwinds to achieve a global growth rate of 2.9%, including 1.2% growth in advanced economies and 4.0% growth in emerging markets. The IMF cited a strong US dollar in 2022 as a contributor to tense international trade relations and imported inflation. In response, countries around the world tightened monetary policy (raised interest rates). The IMF forecasts this will help global inflation (CPI) fall from 8.8 percent in 2022 to 6.6 percent in 2023 and 4.3% in 2024.

2022 Air Passenger Market

According to IATA, full year 2022 revenue passenger kilometers (RPK) reached 68.5% of pre-pandemic traffic. Momentum varied by region, with the North American market recovering fastest to achieve 88.7% of pre-pandemic traffic. North America was followed by Central and South America at 85.8%, and Europe at 77.8%. In the Asia-Pacific, strict pandemic prevention measures and slower border openings contributed to traffic only returning to 44.4% of the pre-pandemic level. Propelled by a gradual return to international travel, overall passenger revenues were expected to grow to US$438 billion (or about 72% of pre-pandemic revenues). Looking ahead to 2023, the market will remain in the recovery stage. International airlines will continue to expand their passenger transport businesses while replacing old aircraft with newer generations that raise overall operational efficiency. The addition of more zero contact services will further aid recovery.

2022 Air Cargo Market

In 2022, the air cargo market had to contend with sluggish economic growth, high inflation, and weak terminal demand. IATA forecast respective year-over-year drops of 8.0% and 4.1% in freight revenue tonne-kilometers (FRTK) for 2022 and 2023. Additional pressures, including the recovery of belly freight capacity on passenger aircraft and a growing gap between the prices of sea and air cargo, led to supply outstripping demand. These factors caused global air cargo revenues to fall from US$204.2 billion in 2021 to US$201.4 billion in 2022. Meanwhile, the share of cargo in airlines’ total revenue dropped from 40.3% in 2021 to 27.7% in 2022. Looking ahead to 2023, variables such as inflation, rising interest rates, the Russia-Ukraine war, the US-China tech war, and high inventories will continue to have an impact on global trade growth and air cargo performance. China Airlines will closely monitor future developments and market changes in order to follow up with appropriate responses.
Enhanced Passenger Cabin Quality Provides the Industry’s Best Experience

China Airlines continues to replace old aircraft with newer models to support our aviation network development strategies and aid recovery of the post-pandemic travel market. By the end of 2022, we operated a fleet of 88 aircraft, consisting of 66 passenger and 22 cargo aircrafts, with an average age of 9.9 years. For our short-haul fleet, we are replacing aging aircraft while introducing more 777 freighters to enhance operational efficiency and market competitiveness.

While replacing old aircraft, we continue to improve passenger cabin service quality. Inspired by the industry’s post-pandemic trend of dematerialization and reducing contact for in-flight entertainment systems, we developed digital platforms, with installation of required hardware completed on all 737-800 passenger aircraft in 2022. Fantasy Sky Wireless entertainment system let passengers enjoy in-flight content using their personal mobile phones or other smart mobile devices, providing for a safer entertainment experience.

China Airlines’ new A321neo aircraft has a total of 180 seats in the full cabin, comprising 12 full flat-lying business class seats and a new spacious economy class with 168 seats. The aircraft is further equipped with the latest generation of in-flight entertainment systems that feature industry-leading 4K personal TV screens and Bluetooth support, so passengers can bring their own bluetooth headsets to enjoy audio-visual entertainment. The aircraft also offers the industry’s highest speed wireless internet, providing passengers a technologically advanced and comfortable journey.

In preparing for the delivery of China Airlines’ first wide-bodied 787 passenger airliner during the first quarter of 2025, we launched cabin planning procedures in the fourth quarter of 2022. Suppliers were selected to outfit the fleet with the latest airline seating, personal entertainment systems with high-resolution televisions, and internet services. These features will create a higher-quality, more comfortable travel experience.
Leveraging the Post-Pandemic Recovery to Expand Our Aviation Network

In 2022, as the vaccinated population became widespread and countries around the world started to lift border restrictions, the aviation market gradually recovered. When Taiwan ended quarantine restrictions for incoming travelers in October, China Airlines responded by increasing flight frequency in order to meet greater demand. At the same time, as part of efforts to develop new markets in the post-pandemic age, in December we opened a new flight route to Cebu. This will help to optimize our regional flight offerings and strengthen the overall aviation network.

Looking forward to 2023, China Airlines will satisfy growing demand for air transport through rolling network expansion, until our pre-pandemic destination and flight capacity is restored. The additional flights will further strengthen Taoyuan Airport’s position as a travel hub. Besides developing our existing market, China Airlines is entering new markets and seizing opportunities that arise in the post-pandemic age. In January, we opened a new route to Danang and restored flights to Chiang Mai. In July, we open a new route to Prague. In the future, we will monitor market changes to evaluate the benefits of developing emerging markets or adding flights to existing ones, so that we can expand our aviation network.
Flexible Adjustments Optimize Freight Revenues

With the impact of the COVID-19 pandemic still felt across society, Taiwan saw little international travel for tourism or leisure purposes entering or leaving the island prior to the official end of quarantine for inbound travelers on October 13, 2022. Most international travel was for business, labor, or study. Before October, China Airlines continued to adjust passenger flight volume and ticket sales based on entry restrictions from the Central Epidemic Command Center (CECC) as well as border restrictions enacted by other countries around the world. At the same time, China Airlines allocated some passenger aircraft purely for cargo flights or flew passenger flights that prioritized cargo but also carried regular passengers, with a view to maximize total revenue. In 2022, we used passenger aircraft exclusively for cargo carrying on 20,616 flights, which was equivalent to about 61.4% of our total passenger aircraft flights, for a reduction of 26.6 percentage points relative to the 88% of passenger aircraft flights used to carry cargo in 2021. To set passenger fares, we analyzed market demand, ticket price dynamics of partner airlines, and seat availability, then used this data to adjust our prices to reach an appropriate profit level. In 2022, as Europe, the United States, Canada, New Zealand, Australia, and nations in Southeast and Northeast Asia eased border restrictions, flight capacity and traveler numbers gradually increased. Seats on our partner airlines increased significantly and ticket fares gradually moved closer to levels seen before the pandemic. Average ticket prices fell 25.4% compared to 2021 while ticket sales increased by 765%, leading to an overall increase of about 545.6% in passenger revenues.

Customized Charter Flights Optimize Fleet Capacity

In 2021, China Airlines carried 177.5 million tonnes of cargo, ranking ninth among global airlines based on IATA data of industry-wide cargo carrying volumes. Our FRTK (freight revenue tonne-kilometers) of 7,551 million ranked 11th worldwide. In 2022, the effects of inflation, geopolitical tension, extended inventory cycles, and reduced orders caused the global economy to slow and markets to undergo significant changes. Shipments by China Airlines likewise slowed as we carried 149.1 million tonnes of cargo. Our cargo capacity (freight available tonne-kilometers, or FATK, of 8,265 million) and cargo volume (freight revenue tonne-kilometers, or FRTK, of 6,361 million) dropped by 17.4% and 15.7%, respectively, compared to 2021.

China Airlines has a fleet of 22 freighters, consisting of 17 747–400F freighters equipped with a nose cargo door for loading large goods and five energy-efficient 777F freighters. We will add more 777F freighters to optimize the scale of our fleet and replace the less efficient 747F. On the condition of meeting market needs, we dispatch freighters with an eye towards minimizing fuel consumption and repair costs. This creates a more efficient aviation network tailored for customized, regular chartered services and cabin charter partnerships. We will continue to seek charter transport opportunities, including for medical aid missions, information and communications goods, vaccines, chip machinery, garments, and e-commerce. Advanced management of these cases enables us to maximize earnings. Our 22 freighters currently serve 14 countries and 36 waypoints in Asia, Europe, and the Americas, with an average weekly schedule of 97 flights.
China Airlines Named Best Cargo Airline in Asia and Recognized for Excellent Cold Chain Transport

In 2022, Air Cargo News named China Airlines as the “Best Cargo Airline – Asia.” In the same year, the IATA Center of Excellence for Independent Validators in Pharmaceutical Logistics renewed China Airlines’ CEIV Pharma certification for cold chain transport of pharmaceutical products. In 2013, China Airlines began to set up a logistics system for cold chain transport of pharmaceutical products. In 2014, we introduced active temperature-controlled ULDs. In 2019, we became the first airline in Taiwan to obtain CEIV Pharma certification, underscoring the excellent quality and stability of our cold chain transport. Recognizing the pivotal role temperature-controlled cabinets play in the transportation of vaccines and pharmaceuticals, we boosted the number of temperature-controlled cabinets in our fleet from 1,200 in 2021 to more than 1,900 in 2022, an increase of 61%. During the pandemic we also transported many disease prevention materials, including delivering masks and rapid test kits between Europe, the Americas, Asia, and Oceania, as well as more than 120 million doses of COVID-19 vaccine.

Excellent Performance in the Sustainable Flight Challenge

At The Sustainable Flight Challenge (TSFC) from SkyTeam alliance, China Airlines launched a sustainability demonstration flight that featured a number of sustainable innovations, such as apron mobilization, use of lightweight materials for crates instead of aluminum, and replacement of gas-powered tugs with electric tugs. For these advances China Airlines was awarded Best Sustainable Innovation Cargo.

Excellent Performance at the 4th National Enterprise Environmental Protection Award

At the 4th National Enterprise Environmental Protection Awards, China Airlines Cargo presented a number of operational innovations, including apron mobilization, e-Freight, use of lightweight materials for crates instead of aluminum, as well as recycling and reuse of straps. Following comprehensive judging that encompassed overall environmental management, fulfillment of corporate social responsibility, promotion of a green supply chain, green procurement, energy and resource conservation, and pollution prevention, China Airlines was presented with the top Giant Thumb Award for its strong performance.

Recertification as an Authorized Economic Operator

China Airlines’ Cargo Sales, Marketing and Services Division was recertified as an Authorized Economic Operator (AEO). The recognition makes us more competitive to potential commercial partners, which expands international trade and supply chain business opportunities.
Innovation and Creativity Create Outstanding Experiences

As the COVID-19 pandemic continued in 2022, China Airlines undertook the important responsibility of providing charter services for diplomatic missions between Taiwan and its diplomatic partners. As the pandemic eased and Taiwan opened its borders, we supported the Immigration Services Agency of Japan during the Lunar New Year period in conducting trial pre-entry screening procedures that made entry into Japan more convenient. Meanwhile, for the VIP lounges of Taoyuan Airport we hired professional chefs to lead reinstatement of our popular buffet service featuring creative local cuisines. At the same time we continued to follow national disease prevention policies and support the health of our crew. Better internal training made our team more professional and improved service quality. From aircraft livery to inflight meals and partnerships with excellent local farms, we found innovative ways to provide travelers with outstanding experiences.
Dedicated Charter Services Fulfill Government and Corporate Needs

When pandemic conditions worsened in 2022 and countries around the world tightened their borders, international travel became riskier and more inconvenient. During these trying times, China Airlines took on the important responsibility of providing special charter flights between Taiwan and its diplomatic partners. Strict adherence to disease prevention measures handled in cooperation with professional ground service crews kept departing and visiting officials comfortable and safe, so they could successfully complete their diplomatic and goodwill missions.

China Airlines’ high-end, specialized charter services are well known in the business community. By the end of 2022, we had already completed five such charter missions. Passengers on these flights receive the VIP treatment they deserve, from high-quality check-in services to excellent lounges, boarding, and other ground support.

Excellent Reviews for Our Safer Buffet Service

As countries around the world started to adjust disease prevention and border control policies, travelers began to plan business and personal trips. The increase in air passenger numbers led China Airlines to modify VIP lounge policies. On October 13, 2022, our two lounges in Taoyuan Airport (on the A side of Terminal 1 and the 3rd floor of Terminal 2) reopened. We welcomed Novotel and China Pacific Catering Services, our two large professional food service partners, to return in supporting the lounges. Under the condition of providing even stricter sterilization control, the lounges provided buffet-style cuisine. Travelers eager to have another taste of our popular beef noodles were excited to find that our professional chefs had designed more local delicacies. Before boarding their flight, VIP passengers could once again eat heartily and relax in our special lounges.

In the lounge located on the A side of Terminal 1, travelers are treated to steamed buns with shrimp steak. Designed by Novotel, the western cooking techniques used to make the steak contrast with the eastern-style lotus leaf-shaped bun. The combination of innovative and traditional techniques, accentuated by the branding of a China Airlines plum blossom logo, turned this specialty dish into a popular subject for online influencers. Another delicious option is the mala nutty dry noodles. The peppery, numbing, salty flavors pair perfectly with the nuts, eliciting great delight from diners. Meanwhile, Peng-Chieh Wang, who was named as a World Master Baker in 2018, created truffle mushroom soup and pumpkin soup seasoned with local Taiwanese ingredients and served with bread, further giving international travelers a strong impression of Taiwanese cuisine.

In the VIP lounge on the 3rd floor of Terminal 2, China Pacific Catering Services not only offers classic dishes such as our beef noodles, tea eggs, and sweet potatoes, but also delicate breakfast fare such as abalone congee and dripped chicken essence, tasty lunch and dinner cuisine such as Milan-style stewed pork shank and Cantonese-style dim sum, as well as the chef’s specialty Sichuan peppercorn braised dishes. Each of these is well regarded by travelers and mentions of these dishes frequently pop up on social media platforms. As the number of travelers rises, China Airlines is likewise raising service quality and cuisine choices. We frequently adjust menus in accordance with the season or holidays, so that we can provide our VIP customers and members with a richer experience while they wait to board their plane. At the same time, we give international travelers a distinct taste of Taiwan.
Supporting Trial Pre-entry Screening Procedures for Japan

China Airlines supported trial pre-entry screening procedures conducted by the Immigration Services Agency of Japan during the Lunar New Year period at Taoyuan Airport. Officials from the agency carried out these procedures before travelers boarded their plane. Travelers who took part could use special channels for faster immigration inspection upon arrival in Japan, saving a lot of time. China Airlines contributed by publicizing this initiative to travelers at check-in counters. Staff distributed promotional materials and entry cards while also making announcements at boarding gates. The excellent communication and cooperation encouraged many passengers on qualified flights to participate.

The trial cultivated a sense of cooperation between China Airlines and the agency. In the future, we hope for an even closer partnership to make travel to Japan even more convenient for Taiwanese travelers.

Focusing on Professional and Technical Skills to Implement Our Core Values

As countries around the world began to open their borders and reduce pandemic prevention levels, they ushered in a "new normal" way of life that adopts new service standards. Requirements include better management capacity, enhanced discipline, and instilling sustainability into company culture. To fulfill these requirements, besides undergoing annual training in accordance with civil aviation regulations, China Airlines retrained all cabin crew. A combination of videoconferencing, classroom practice, and examinations ensured that our team was ready for the recovery of our industry and possessed the requisite service capabilities and skills. By assessing cabin crew members’ competency and qualifications, we assured they were ready to return to the skies. In order to systematically strengthen our team’s professional capacity and scope, the cabin chief undergoes annual competency assessment and advancement based on rules governing the management of cabin staff selection, training, and use. We are gradually dispatching two cabin chiefs for long-haul flights together with a cabin crew bidirectional assessment system. Air crew instructors conduct comprehensive onboard inspections that evaluate cabin safety, aviation safety, and overall cabin services. Adjustments are made to the cabin crew management system based on internal and external environmental changes.
Digitalization of Crew Reporting Enhances Sustainability

China Airlines is committed to promoting green energy and environmental protection measures in order to lower our carbon production and raise our competitiveness. Besides printing fewer paper copies of our operational manuals, forms, and documents, we expanded digitalization to our management platform. To reduce opportunities for contact infection among crew during the pandemic, starting in April 2022 we began letting staff use the eCrew App to report for duties, instead of swiping their cards. By August 2022, 80% of crew members were using the app. Other app functions, including management and dispatch, save time spent on staffing duties. The improved operational efficiency makes our business more sustainable.

Listening to Crew Needs to Build a Supportive Team

In response to post-pandemic industry developments and forecasted traveler volume, besides maintaining employee safety standards and increasing the frequency of cabin bathroom cleaning, China Airlines began to adjust airplane service procedures, with the aim of striking a balance between customer-oriented service and disease prevention. To build a team consensus and extend the 2021 telephone care group, in March and April 2022 the Company sought feedback from all cabin crew members. An e-survey conducted in conjunction with discussions fostered a respectful atmosphere in which people were open to sharing their opinions. When domestic or international pandemic-related rules changed, we publicized related information. Starting in July 2022 we convened instructional sessions for flight attendants and meetings for cabin chiefs. Open and inclusive soft incentives, such as themed lessons and team learning sessions, crafted a workplace culture suited to the diverse set of changing conditions we face. Crew members were put in positions to demonstrate their capabilities and feel a sense of achievement while engendering team spirit. Customer service systems provided additional feedback and suggestions. Tracking and rolling guidance together with follow-up technical support and coordination ensured that customer satisfaction was achieved.

Internal Analysis of Cabin Bathroom Cleanliness Satisfaction Rates

China Airlines reached its KPI for customer satisfaction towards cabin bathroom cleanliness in every month of 2022. In order to continue to give travelers a comfortable travel environment, the Cabin Crew Division will continue to use the business intelligence portal (BIP) to enter data on aircraft model, flight number, date, flight route, cabin class, card type, and number of passengers. Internal analysis will reveal special characteristics of various waypoints as well as customer satisfaction. Sharing results through regular announcements and meetings will help us to raise in-flight service and customer satisfaction rates.

Monitoring Crew Health in Accordance with National Disease Prevention Measures

For our in-house COVID-19 vaccine booster drive, China Airlines encouraged cabin crew and ground crew to get vaccinated. The resulting 98% rate of employees receiving at least three doses of a COVID-19 vaccine increased herd immunity and improved individuals’ immunity. Meanwhile, CECC adjusted border quarantine measures, including ending quarantine requirements for incoming international travelers starting from October 13, 2022, and ceasing use of the “Operational Principles for R.O.C (Taiwanese) Airlines Air Crew Members to Implement Health Control Measures for Epidemic Prevention.” Acting in accordance with the government’s business continuity plan guidelines for disease control in the airline industry, we implemented the “China Airlines COVID-19 Pandemic Business Continuity Plan.” From November 15, 2022, crew members on international assignments that did not include passing through immigration of a foreign country could follow health self-monitoring guidelines instead of undergoing COVID-19 testing every five days upon returning to Taiwan. From the moment they reported for duty, crew were expected to keep a mask on apart from when they were eating or drinking. External stations adjusted responses and PPE requirements in accordance with local disease prevention control measures. These actions were part of our commitment to self-management of disease prevention.
Raising Professional Capacity Through Enhanced Training

Experiences gained during three years of the COVID-19 pandemic provided a basis for changes to make crew members safer and enhance service quality while building a more closely knit team. In 2022, besides continuing training for all existing aircraft types and air crew, China Airlines purchased A321 emergency training equipment to strengthen safety and service quality on our latest aircraft model. While we sought to reduce the chances of contact infection by using mannequins in place of real people during emergency evacuation drills, we kept the training realistic by purchasing mock-up cabin doors. Furthermore, we designed a flight attendant channel that presents realistic situations and characters in a live streaming, interactive format to improve communication between crew members of different generations. In 2022, more than 95,000 hours of training was accumulated on our digital or distance learning tools, for an increase of 153% compared to 2021. The in-depth, diverse lessons provide a model for sustainable lesson planning and implementation.

Besides internal training, China Airlines offers professional training courses to external companies as part of our commitment to corporate social responsibility. In 2022, we gave a course on etiquette to all staff of Ford Taiwan as well as an additional advanced course on etiquette to select employees. We also taught a communications skills course for the National Taxation Bureau of Taipei, a service etiquette and traveler communications course at the Innovation Headquarters of National Cheng Kung University, a service reception and etiquette course at China Pacific Catering Services, and shared best user experiences with Porsche Taiwan. Each of the courses received excellent reviews and improved service quality at the industrial, government, and academic institutions that participated.

In 2022, after Taiwan opened its borders to travelers, demand for flights to and from Japan surged. To improve the language ability of our international flight crews and maintain service quality on Japanese routes, China Airlines recruited crew members who speak Japanese. These new recruits helped to maintain positive interactions with our Japanese customers and supported effective communication.

Pokémon Aircraft Livery Welcomes Travelers Back

China Airlines and The Pokémon Company joined to implement the “Pokémon Air Adventures,” which was centered on creating Taiwan’s first plane decorated in a Pikachu theme. The beloved livery turned this plane into a popular way to travel during the post-pandemic surge in flying. To further enliven the experience, China Airlines and The Pokémon Company designed 14 limited edition products available on the plane, including pillowcases, tray liners, paper cups, bags, and mixed nuts. Flight attendants wore flying Pikachu service aprons, which further extended the Pikachu theme. The in-flight entertainment system featured 10 Pokémon cartoons, so that passengers could fully bask in the Pikachu experience.
Cross-Industry Collaboration to Kick Off the Post-Pandemic Travel Surge

China Airlines’ newest A321neo aircraft made its maiden flight between Taipei’s Songshan Airport and Tokyo’s Haneda Airport on May 4, 2022. To celebrate the occasion, China Airlines joined hands with Le Ruban Pâtisserie, known as the Chanel of the dessert industry, to treat passengers to Earl’s Hami melon shortcake and the classic great grandmother’s lemon cake. Another collaboration in September 2022 featured an original series of desserts made with seasonal Taiwanese ingredients, including a passion fruit mousse cake for summer followed by a chestnut Mont Blanc for autumn. Guests in the premium business and business classes of Japanese flagship routes had the chance to try these treats.

As people around the world seek to reduce carbon emissions and promote sustainability, China Airlines is finding novel ways to contribute. For example, since December 2022 we have cooperated with Yang Ming Spring restaurant to create specialty vegetarian meals. This collaboration is the first time that a Michelin Green Star winning restaurant’s cuisine has been served in-flight. Guests in the premium business and business classes opened with a spring platter salad. The main dishes of truffle risotto and vegan fish fillet with whole grain mustard transcended Chinese vegan traditions for an unforgettable taste. The Shou Wu nourishing soup was made from over 10 precious traditional herbs. In premium economy, the entrées were fruit salsa, cucumber in pine nut miso, and okra with orange and apple sauce. Economy class was offered either vegan conchiglie bolognese, plant-based meat & quinoa rice with cream sauce, curry stewed rice with king oyster mushroom, or braised plant-based meat & turmeric rice. Instead of traditional Asian vegetarian dishes, passengers in all cabin classes on flights departing from Taiwan can now opt for Michelin Green Star-level plant-based pure foods. Premium business and business class passengers can pre-order through online exclusives or by choosing the vegan oriental meal (VOML), and economy class passengers can pre-order by choosing the vegetarian oriental meal (VOML).

Collaborating with Top Farmers to Present the Wonderful Flavors of Taiwan

The Wonderful Food has played a role in promoting Taiwanese local agricultural products for many years. Starting from the second half of 2022, China Airlines and The Wonderful Food joined with leading small farmers to create themed exhibitions that showcased five different types of specialty products from cities and counties around the island. Passengers who browsed these goods could explore Taiwan’s excellent countryside taste while flying to their destination. A themed exhibition took place every two months. The activity not only expanded passengers’ palates but also shared exquisite Taiwanese agricultural goods with the world.
Innovative Service Options Protect Membership Rights

Active Dynasty Flyer members exceeded 2.45 million at the end of 2022. To thank our members for their long-term support, when Taiwan's borders opened in October 2022 China Airlines issued the latest incentive program for card renewal. Based on card type and other conditions, we actively granted membership renewals and offered extensions on the validity period of cabin upgrades, rewards, and reward tickets.

In order to provide members with a variety of award redemption services, on December 30, 2022, China Airlines announced new upgrade and ticket award redemption schemes that were effective from March 29, 2023. Members could plan their travel itinerary and redeem awards according to their available miles, ticket purchasing classes, and sectors.

For corporate flyers we launched a new digital certificate. In 2016, corporate member cards began as a physical card. After the pandemic changed how businesses in Taiwan and abroad operate, including the rise of remote work and work from home policies, China Airlines introduced digital certificates that are linked online then managed from a mobile device. The service, which launched on February 1, 2023, provides an excellent business travel experience that is available 24 hours a day.

China Airlines cooperates with CTBC Bank to issue a co-branded card, which provides cardholders preferential benefits and high-value rewards. Other partners include airlines, banks, global hotel chains, online booking centers, and global car rental companies. We also expanded dining partnerships with international chain hotels and join with the high-speed rail, Mitsui Outlet Park, and others to offer overseas travelers incentives limited to China Airlines travelers or members.

Network-Wide Shift to a Piece-Based Luggage System

In order to provide the greatest benefits for customers, starting from August 2, 2022, China Airlines expanded the piece system for baggage allowance from the United States and Canada to include Asia, Europe, and Oceania. These latter areas previously were subject to a weight-based system. Standardizing the free checked baggage allowance provides travelers with an increased free luggage quota. Baggage allowances on all routes changed to two pieces of checked baggage weighing up to 32 kg each for business class, two pieces of checked baggage weighing up to 28 kg each for premium economy class, and two pieces of checked baggage weighing up to 23 kg each for economy class.

Dynasty members including Paragon, Emerald and Gold card holders are also eligible for additional free checked baggage allowance using the piece concept on all routes. Based on travelers’ needs, China Airlines continues to adjust rules governing children’s free checked baggage allowance as well as charges and packaging requirements for musical instruments and sports equipment. Our aim is to provide all customers with higher quality service.
China Airlines continues to improve the Company’s website and app in order to provide more functions with an easy-to-use design. To adapt our services to the post-pandemic period, we expanded zero contact capabilities by adding a wider range of payment methods as well as the all-new Dynasty Sky Reading service. China Airlines use social media to generate content and improve communications, while also seeking to increase connections with Dynasty members. To support our environmental protection goals and reduce carbon emissions, we released an online-exclusive menu and digitalized our freight transport operations and bills of lading. Accelerated advances to the digitalization of our freight systems not only completes our apron mobilization system but also extends the system to the transfer and transport of goods in upstream warehouses. The loading and unloading system for the belly of our A321neo passenger aircraft reduces manpower required for loading and makes transit stops faster. Its greater cargo capacity provides a boost to our cargo operations.
Better Online Information Makes Ticket Purchases Easier

In 2022, despite most countries opening their borders to travel, the number of flights available for passenger traffic lagged. In these difficult times, China Airlines adopted the perspective of travelers to optimize website flight information. We presented flights that were operating together with an airplane graphic to make flight information more user-oriented and visually appealing.

To keep travelers fully informed of important disease prevention information and related services during the pandemic, we established a special coronavirus information and services section on the China Airlines official website. The section compiled information on quarantine hotels, pre-booking of quarantine shuttle vehicles, hospitals offering COVID-19 testing, rental of Wi-Fi routers, and the entry and departure rules for various countries. After Taiwan opened its borders and the post-pandemic period arrived, we moved the coronavirus section from the home page of the China Airlines website to a new COVID-19 pandemic services and information section, to continue to provide entry requirements for various countries and other information to travelers. China Airlines also offers travel reminders that provide thoughtful, heartfelt advice, so that travelers stay apprised of the latest border restrictions and travel information from countries around the world.

Adding New Payment Channels to Support Zero Contact

To provide travelers with more convenient, diverse payment methods, on July 19, 2022, China Airlines began to add LINE Pay to the company website and app. Customers enthusiastically responded to China Airlines’ first promotional activity to accept LINE Pay at the Taipei International Travel Fair.
Popular Products Strengthen Social Media Communications

As the travel industry recovery began, China Airlines planned activities to get travelers back in the swing of things. To coincide with the start of the school year in September 2022, we launched our own online academy, featuring a series of fun lessons for members. The idea was based around situational online posts that accompanied relaxed but lively questions and answers with chances to win prizes. The travel lessons included topics such as “smart packing – introduction to the new luggage system,” “mileage guide – how to use your frequent flyer miles,” “Where is China Airlines flying to? – introduction to popular routes,” and “bargain bulletin – discounts for students, working holidays, and others.” On the first day of sign-ups for limited activities we attracted several hundred new members, an increase of 33% compared to the number of sign-ups recorded in the same time and channel of the previous month.

In order to promote our partnership with The Pokémon Company, China Airlines established a website that featured exclusive Pikachu Jet CI and provided information on the latest Pokémon flight routes and peripheral products. Bloggers further supported promotion of aircraft and related micro-travel activities. Their video reports covering the unveiling of the aircraft brought powerful publicity to the campaign.

Social media’s role as a communications tool during the global pandemic made it a powerful way to communicate with travelers. China Airlines responded by opening private messaging capabilities to our global community, so that we could quickly respond to customers. In 2022, the number of fans on our official social media pages reached 1,781,169, for an increase of 4 percent. As travel gradually recovered, we planned themes for our social media pages, including providing travelers with the latest information on new products and services we offered. We also published a series of aviation related content covering topics such as the new A321neo aircraft, aviation knowledge, and onboard dining partnerships to promote a positive brand image and enhance passengers’ identification with China Airlines.
Dynasty Sky Reading E-Publications Provide the Latest Reading Content

China Airlines’ efforts to optimize disease prevention and zero contact services are part of our environmental protection and sustainability commitments. Initiatives include the all-new release of the Dynasty Sky Reading service. Passengers from all classes can log in to their membership or enter their reservation or ticket number then use the China Airlines app to download their favorite newspapers or magazines before boarding or up to 48 hours after arriving at their destination. SkyTeam members and travelers on other associate airlines can browse the Dynasty Sky Reading selections after signing in to the Wi-Fi in VIP lounges that are directly operated by China Airlines in order to enjoy even more reading options.

E-Commerce Cultivates Deeper Connections with Members

In 2022, the China Airlines eMall expanded the product portfolio of our group subsidiaries to achieve greater synergistic effects. Our main goal was to use the eMall as a tool for serving customers and thereby solidify member loyalty. Besides creating new mileage discounts, we began to let members redeem their mileage for eMall credits. For every 1,000 miles, eMall shoppers can receive a NT$100 discount for up to NT$12,000 off a single product. Each month we introduce new themes and provide incentives for customers who meet certain quotas, so that members have more ways to use their remaining miles to purchase high-quality products. China Airlines also continued to develop branded products. Besides our best-selling flight jackets, we offered collectibles and other popular items, such as our CAL 747 Mug with Silicone Cup lid and our CAL business class mixed nuts and rice crackers. These items proved to be a hit.

An Exclusive Online Menu Protects the Earth

In response to SkyTeam’s Sustainable Flight Challenge, China Airlines turned a May 4, 2022, flight from Taipei to Singapore into a sustainability demonstration flight. Food primarily consisted of local, in-season foods sourced from Taiwan, which helped to reduce the carbon footprint. Preordering by travelers let us more accurately measure how much food was needed so that we could reduce waste. The menu included vegetarian and low carbon set meals, which not only promoted the Taiwanese culture of exquisite vegetarian food and green eating but also helped to protect the earth. These efforts continued starting on July 1, 2022, when we released an exclusive online menu available for premium business and business class passengers departing from Taiwan to preorder meals. The first round of main dishes included seasoned vegetables and asparagus with purple rice or a tomato sauce linguine with parmesan and plant-based hamburger. Most of the ingredients were sourced from Taiwan and used to craft both eastern and western style dishes. The innovative dining experience provided a way for passengers to eat healthy while in flight.
E-Freight and Electronic Bills of Lading Lower Environmental Impact

China Airlines promotes e-freight in line with International Air Transport Association (IATA) guidelines and environmental protection concepts. We share digital data with other airlines and companies acting on behalf of ground services. We provide updated freight movement data with customers and continue to promote electronic bills of lading. Customers are encouraged to sign the Multilateral e-AWB Agreement (MeA), which seeks to eliminate paper bills of lading. We use electronic transmission methods to exchange information with our contractors’ systems. These policies reduce the operating costs of airlines and contractors while avoiding delays caused by incorrect bills of lading or missing documents.

Accelerated Deployment of Digital Freight Systems Slated for Completion in 2024

To accelerate digitalization of our freight systems, in 2022 our freight team selected systems and solicited partners. Contracts with providers were signed in the same year. The next generation of systems is expected to be completed and installed in the second quarter of 2024, bringing us another step closer to the digitalization of our freight systems.

Complete Records of Temperature-Controlled Freight Support Safe Transport Without Delays

In order to enhance customer convenience, since 2016 China Airlines has actively assisted contractors in applying to the Civil Aeronautics Administration (CAA), MOTC for the approval of freight tracking devices. Our goal is to help contractors develop tracking devices that can be attached to goods to transmit location, temperature, humidity, and other real time information. These devices effectively monitor the complete transport process of high-cost, precision instruments and sensitive goods. In 2022, we helped operators to use Envirotainers, which enable shippers to obtain real time information relating to the environmental condition of their goods without the need to add additional tracking devices. Our advocacy helped operators to promote and adopt use of Envirotainers.
The A321neo’s Cargo Loading System Saves Time and Supports Larger Cargo

The introduction of the A321neo passenger aircraft further optimizes the competitiveness of inter-regional freight. The Cargo Loading System specified for the belly hold of the A321neo uses pallet containers for more efficient cargo handling and shorter transit stops while better protecting cargo and passenger luggage. The system means large cargo can also be carried and handled easily. The belly hold can be configured for bulk or loose cargo as well for greater flexibility depending on local airport requirements. Compared with the 738 aircraft, the new A321neo aircraft is expected to have 10 to 20 percent more cargo capacity and provide a valuable boost to China Airlines’ current emphasis on cargo operations.

Apron Mobility System

The apron mobility system wirelessly transmits all cargo information and loading statuses to mobile devices for operators to monitor cargo status from when the cargo leaves the warehouse and support accurate loading. After planning of the apron mobile system was launched in 2017, the system was put online in August 2018. Operators are equipped with mobile devices that serve as a communication channel with ground handling agents, which helps to prevent operators from loading incorrect cargo or failing to load cargo when handling pallets or containers. The devices reduce the idle time of ramp supervisors and improve cargo agents’ productivity.

Starting in November 2021, we began extending the scope of our apron mobility system to include the transfer and movement of goods in our upstream warehouses, to further expand the system’s capabilities. Besides providing better information on the transfer and movement of pallets entering or exiting the apron, the system makes it easier to understand the time needed for movement of goods from the warehouse to the apron and other data. As the system is used to better understand the loading and unloading processes, it makes all cargo transport operations smoother.
Group Integration Raises Synergy

In order to build a comprehensive aviation service network, the China Airlines Group directly and indirectly invested in 30 reinvestment enterprises. Industrial categories range from aviation transport to ground services, air transport assistance, aerospace science and technology, warehouse logistics, tourism and leisure, and holding or leasing. By deepening our cooperation and connections while raising overall service chain quality, we are able to increase the overall competitiveness of the group.
Mandarin Airlines Provides Comprehensive Passenger, Freight, and Logistics Services

Mandarin Airlines is a 96.96% subsidiary of China Airlines established in 1991. It has nine ATR72-600 70 seat propeller planes flying on domestic routes, and leases 737-800, A330-300, 777-300ER, A350-900 and other aircraft from the parent company China Airlines to fly regional international routes in Asia as well as cross-Taiwan Strait routes.

Mandarin Airlines is actively deploying new domestic routes and expanding its scale of operations. In addition to air passenger and cargo transportation services, it obtained ground handling licenses for its self-run air terminal to improve overall service quality. Mandarin Airlines uses Taichung as its operating base. It is the only airline to set up a professional maintenance center and also provide freight warehousing services in Taichung. These facilities enable Mandarin Airlines to offer a full range of services for passengers, freight transport, and logistics to customers in central Taiwan.

Mandarin Airlines is a full IATA member and continues to obtain IATA Operational Safety Audit (IOSA) certification and ISO 9001 certification. In addition, Mandarin Airlines is committed to environmental protection. After setting a precedent in the domestic aviation industry in 2017 by being awarded the Environmental Protection Administration (EPA), Executive Yuan carbon label and ISO 14067 carbon footprint certification, Mandarin Airlines continued to improve operational efficiency and utilize diversified management methods to achieve energy savings and carbon reduction. In December 2020, it was awarded the aviation industry's first Carbon Reduction Label Certificate by the EPA. In November 2021, Mandarin Airlines was presented with a first-class trophy at the 2021 Annual Low-Carbon Product Award Ceremony, and in December 2022 the Taipei City Government named it as an excellent enterprise in the area of green procurement.

In 2022, as the world continued to face severe challenges from the COVID-19 pandemic, Mandarin Airlines used China Airlines Group fleet resources to lease the 180-seat A320 from Tigerair Taiwan and the 158-seat B737-800 from China Airlines. Mandarin Airlines operated these aircraft in addition to the ATR72-600 already in its fleet. Deploying these additional aircraft to increase flight quantity or size helps to meet demand during peak tourist seasons and important periods like Lunar New Year.

To expand service between Taiwan proper and Kinmen, on January 27, 2022, Mandarin Airlines launched a new flight route between Kinmen and Kaohsiung. The added option makes it convenient for people from the Taipei, Taichung, and Kaohsiung regions to reach the outlying island.

Disease prevention concepts developed during the pandemic and future technological trends led Mandarin Airlines to offer new self-check-in kiosks starting from January 2022. The kiosks are designed to resemble Hai Tung Ching, a gyrfalcon from Chinese legend that inspired design of the Mandarin Airlines’ logo. The touchscreen kiosks allow passengers to quickly check in and get their boarding pass while avoiding direct person-to-person contact. Mandarin Airlines also has a long-term cooperation with Taipei Zoo to support the "Kinmen Blue-Tailed Bee-Eater Egg Retrieval and Nurture Initiative" research project. A wild animal research team from National Taiwan University retrieves abandoned eggs that Mandarin Airlines delivers to the zoo to be incubated. In 2022, the group successfully incubated seven blue-tailed bee-eaters, which can now be viewed at the zoo.
Tigerair Taiwan’s Award-Winning Performance

Tigerair Taiwan, a low-cost airline under China Airlines Group that is in its ninth year of operation, expanded from 11 aircraft in 2019 to 15 today. The fleet consists of 11 A320ceo aircraft and four A320neo aircraft, both offering a single class with 180 seats. By 2027, Tigerair plans to add 13 new A320neo planes. Some older planes will be replaced, dropping the average age of aircraft in the fleet from 5.7 years to 3.3 years, making it one of the youngest fleets in the Asia-Pacific.

Tigerair Taiwan’s target customers are mainly young people, independent travelers, and students aged 20 to 40. Its primary focus is the Asian aviation network, especially in Northeast Asia, where it provides consumers with a diverse portfolio of products. Since its maiden flight in September 2014, it has launched international routes to Macau, Tokyo Narita, Okinawa, Osaka, Busan, Incheon, and Palawan. In the fourth quarter of 2022, it added additional routes connecting to Sapporo and Danang. Before the onset of the COVID-19 pandemic, Tigerair Taiwan accounted for about 22% of the overall market share of low-cost airlines in Taiwan (2019), making it the firm leader in Taiwan’s low-cost airline market. By December 2022, the number of passengers carried had exceeded 10 million.

During the first three quarters of 2022, as the COVID-19 pandemic continued to severely impact the airline industry, Tigerair Taiwan found ways to earn extra money and promote the airline to keep it fresh in travelers’ minds. It provided wet leases (leasing of aircraft and complete crew) to other airline operators for the purpose of operating special flight routes. It commissioned aircraft livery, including welcoming a famed calligrapher to write the characters for “majestic and lofty” on a plane and collaborating with the Rakuten Monkeys baseball team for another design. For a novel collectible, Tigerair Taiwan pioneered the use of NFTs in the industry. Ancillary business included cooperating with Rakuten to issue a joint credit card and development of a hybrid air shopping center. The innovative shopping concept uses big data and cross analysis to understand shoppers’ behaviors in order to recommend suitable products. In the future, Tigerair Taiwan plans to integrate this shopping model with the airlines’ member system, in order to increase customer stickiness. Tigerair Taiwan’s nimble and flexible organizational framework brings in more revenue and is well regarded by industrial partners.

By the fourth quarter of 2022, as more borders around the world opened, Taiwanese re-embarked on international travel. Tigerair Taiwan was ready to take to the skies and offered many promotions to get people back in the air, providing a powerful spark to an industry that had lackluster performance for several consecutive years. The nimble, vigorous response was recognized by people from inside and outside the industry.

Tigerair Taiwan successfully registered with the Emerging Stock Market at NT$41 per share on December 16, 2019, and became the first China Airlines Group’s subsidiary to apply for listing. After facing the trial of the pandemic, on December 21, 2022, it applied to the Taiwan Stock Exchange to launch a listing on the Taiwan Innovative Board (TIB). The application received the approval of the exchange’s board of directors on February 21, 2023.
Dynasty Aerotech’s International Leap Forward

Dynasty Aerotech International is a 100% wholly-owned subsidiary of China Airlines that was established in 1989. Its core businesses include aircraft interior and exterior cleaning, aircraft parts and accessories cleaning, aviation container (pallet, net) maintenance, and flight service dining car repair. In order to continuously improve its technical capabilities and service quality, Dynasty Aerotech International introduced French-built, environmentally friendly, water-saving aircraft cleaning technology in 2016 and became the exclusive agent of the technology in Taiwan. Dynasty Aerotech International also has the only “Air Container Repair Center” in Taiwan that was certified by the US Federal Aviation Administration and the CAA. In order to cope with the new boom in air container maintenance, the company was renamed from “Dynasty Co., Ltd.” in 2018 to “Dynasty Aerotech International.” With a focus on internationalization and technology, Dynasty Aerotech International not only meets the maintenance needs of China Airlines’ aviation containers but also improves professional maintenance capabilities and service quality to expand international business opportunities. Responding to the challenges the pandemic posed to the airline industry in 2020 and 2021, Dynasty Aerotech International committed to aircraft pandemic prevention and disinfection work, an area in which its business grew during this period. By November 2022, as the pandemic eased, disinfection work on cargo aircraft declined. Looking ahead to 2023, Dynasty Aerotech International will further commit to aviation ground handling services, aviation container maintenance, and other specialty areas to expand revenues and provide excellent service.

Taoyuan International Airport Services Becomes a Leader in Ground Handling

Established in 1978, Taoyuan International Airport Services (TIAS) is a 49%-owned subsidiary of China Airlines that provides ground handling services for flights to and from Taoyuan International Airport. It is the largest professional ground handling company in Taiwan and serves the largest number of flights at Taoyuan Airport, where it has a market share of about 62%. In 2011, it was the first group in Taiwan to obtain IATA Safety Audit for Ground Operations (ISAGO). This certification is the highest safety inspection standard for the evaluation of ground handling suppliers. In line with the certification specifications, TIAS has continued to pass recertification every two years. In 2016, TIAS cooperated with the CAA to promote the establishment of a Safety Management System for ground operators to comprehensively improve the safety of ground operations. In recent years, in line with the international trends of low-carbon airports and green energy, it has successively introduced electric ground handling equipment. At the same time, it has strengthened corporate governance and operational management through the introduction of digital and mobile electronic document exchange systems, ground services risk management systems, and aviation services management systems.

In order to expand its business scope, TIAS obtained a ground service business license from Taoyuan Airport in January 2020, established a transportation unit in February, and has gradually begun to take over the ground service operations of foreign airlines, including Peach Airlines, Cebu Pacific Air and Royal Brunei Airlines, Greater Bay Airlines, and the Air Asia Group. TIAS will continue to expand below the wing and above the wing package services, as it works towards becoming a ground handling agent (GHA) comprehensive service provider.

From the beginning of 2020, when COVID-19 began to severely impact the airline industry, to October 2022, when Taiwan’s border restrictions began to ease and passenger flights gradually resumed, TIAS undertook the challenging responsibility of following both the China Airlines Group’s strategies and government policy. Its professional ground services experiences, together with a ready capacity and ongoing training, made it ready to meet customers’ needs and standards when the market was restored. TIAS is always prepared to expand service scope, so that it can maintain its leading position in the air terminal ground services industry.
China Pacific Catering Services – A Leader in the Catering Industry

China Pacific Catering Services is a 51%-owned subsidiary of China Airlines that has been operating since 1996. As the largest flight catering company in Taiwan, it provides on-board meals for many airlines, as well as the warehouse management, preparation, and delivery of other service supplies on board. China Pacific Catering Services meets the high standards for food safety with its collection of HACCP, ISO 22000, and Halal certifications. Since the start of the severe challenges that the pandemic placed on aviation-related industries in 2020, China Pacific Catering Services has continued to provide passengers and crew with safe on-board meals and accurate on-board loading operations, all while maintaining strict pandemic prevention policies and supporting the continued operation of international airports. Backed by its foundation of outstanding achievements in the flight catering industry, in 2021 and 2022, China Pacific Catering Services actively explored business opportunities in other markets in order to diversify its business to areas such as e-commerce, external store operations, co-branded products, subcontracting, exhibitions and sales, catering, school cafeterias, and festival goods, with a view towards building innovative business models and enhancing market value.

Kaohsiung Airport Catering Services Becomes a Leading Supplier of Diverse Food Products

Kaohsiung Airport Catering Services (KACS) was founded in 1999 and became a subsidiary of China Airlines in 2018. It provides in-flight meals to and from Taipei Songshan Airport, Taichung Airport, and Kaohsiung Siaogong Airport. It is the only company that offers aviation meal services in northern, central, and southern Taiwan, and it acts as a catering agent for airport VIP lounges at Songshan Airport. Each KACS factory has obtained ISO 22000 Food Safety certification and in 2022 obtained ISO 45001 Occupational Safety certification. Moreover, the factory in Kaohsiung obtained ISO 50001 Energy Management certification. Besides aviation-related business, KACS has ventured into other catering partnerships. It has long cooperated with President Chain Store to produce a wide range of fresh foods and baked goods. It partnered with Taiwan High Speed Rail to launch high-speed rail bento boxes and has also provided bento boxes to other agencies and groups. At the same time, KACS founded its own brand of chain dining shops and in recent years expanded into online shopping and group purchase platforms, where it sells a variety of frozen instant foods, baked goods, and temperature-controlled packaging. KACS’ diverse and expansive product portfolio showcases its excellent food manufacturing capabilities and the high quality of its food products.

Novotel Taipei Taoyuan International Airport – Outstanding Service and Green Certification

Novotel Taipei Hotel, a 100% wholly-owned subsidiary of China Airlines, officially began operations in November 2009 under the management of the leading French hotelier AccorHotel Group’s Novotel Brand. It is the only five-star international airport tourist hotel in Taiwan, with 516 rooms and a wide assortment of Chinese & Western restaurants. It is conveniently located next to Taoyuan International Airport, close to the A14a Taoyuan Airport MRT Station, which connects to the Taoyuan High-Speed Railway Station. The Novotel brand global network has obtained Green Globe Environmental Certification. It is a pioneer in the field of sustainable environmental development. A hotel room renovation project carried out in 2019 provides guests with a more comfortable and newer housing space and a better-quality holiday environment. In response to the novel coronavirus pandemic, Novotel Taipei was transformed into a quarantine hotel for China Airlines flight crews in May 2021 and closed to the general public. On June 30, 2022, it stopped serving as a quarantine hotel and reopened for regular service.
Taiwan Airport Service Provides Safe and Professional Ground Service

Taiwan Airport Service Co., Ltd. is a 47.35%-owned subsidiary of China Airlines. It was established in 1966 as the first ground handling company in Taiwan, to provide professional ground handling with an emphasis on aircraft safety, service, efficiency, and quality. In 2017, to expand its business it added transportation agency services and undertook the domestic flight operations of Mandarin Airlines in Hualien and Kaohsiung, as well as the international freight operations of Tigerair Taiwan and other airlines.

To strengthen the competitiveness of ground agents, Taiwan Airport Service formally applied for IATA Safety Audit for Ground Operations (ISAGO) certification in 2014 and passed certification in 2015, making it the first certified ground handling agent at Taipei International Airport. Taiwan Airport Service's operations at Kaohsiung International Airport also obtained ISAGO certification at the end of 2017. By 2022, the company's head office and its operations at Taipei Songshan and Kaohsiung all passed certification and were formally registered by IATA as ISAGO providers, making Taiwan Airport Service the first professional ground handling service company in Taiwan with three certifications. Taiwan Airport Service's ground handling operations follow international ground handling standards. Moreover, the company's standards manual was strengthened to enhance ramp service operations and competitiveness, in order to provide safer and higher quality ground handling.

Taiwan Air Cargo Terminal's Innovations Lead to Excellent Performance

Taiwan Air Cargo Terminal (TACT), a 54%-owned subsidiary of China Airlines, officially began operations in 2000. It is the only Taiwanese air cargo company with both Taipei and Kaohsiung distribution centers. Adhering to the quality strategies of kindness, safety, efficiency, and innovation, TACT provides professional and high-quality inbound, outbound, transit, and express air cargo warehousing services, and offers ample storage and workspace. TACT also has a variety of standard warehousing and dismantling equipment and systems.

When the world continued to be threatened by the COVID-19 pandemic in 2022, TACT used its extensive aviation experience and facilities to support government initiatives to import vaccines and test kits. TACT helped organizations engaged in diplomatic support and the donation of goods, such as the delivery of pharmaceuticals and medical equipment to Ukraine. In addition, TACT uses its consistent and high-quality customized services to handle the operations of passenger and cargo aircraft (warehouse) charters of various contractors, as well as the import and export of precision, temperature-controlled machines from semiconductor manufacturers, making it a highly regarded partner.
As the COVID-19 pandemic continued to affect operations, China Airlines upheld the objectives of sustainable governance and enduring profits. To meet the government’s pandemic prevention measures, we made flexible, rolling adjustments to our disease prevention standards, so that we could continue to provide a safe and healthy workplace and environment for our passengers and group employees. We offer employee health examinations that are more extensive and frequent than required by law. Through planning and classes focused on care, communications, and succession, we raise the quality of staff and cultivate a happy workplace where everyone cooperates towards building a successful business.

Employee Health Protection Builds a Safe, Happy Workplace
Care, Communication, and Succession Improve Human Resources Quality

The theme for China Airlines’ 2022 training courses remained “sustainable development strategy,” with a focus on care, communications, and succession. When the pandemic was severe, some training typically done in-person was changed to e-learning. Further adjustments were made as needed to conform to disease prevention policies while ensuring that the professional skills of all staff remained fresh so they would be ready when operations returned to normal. To ensure that supervisors stayed focused on their teams during the pandemic, we sought to strengthen supervisors’ communications capabilities and motivational skills. Supervisors also took management refresher courses as well as both professional training and general competency courses. Sharing knowledge promoted interdepartmental understanding, which improved our human resources quality and helped us to achieve our goals.

A Lean, Flexible Organization Fulfills Social Responsibilities

China Airlines fulfilled corporate social responsibilities, including by hiring people with disabilities even before passenger flights resumed normal operations. At the same time, we adjusted the focus of our operations to make a leaner organization that deploys personnel in a timely and flexible manner in accordance with our employment policy and diversified operations. When needed, we added manpower to promote global freight operations and maximize our revenues and profits.

In 2022, China Airlines recruited 404 new employees, consisting of 250 Taiwanese staff and 154 foreign staff. Positions were filled in front-line services and logistics support categories.

Caring E-Newsletter Delivers Positive Energy

A quarterly employee care e-newsletter shares a wide variety of health tips and transmits positive energy through words. Craft activities encourage employees to interact and share, helping them to find balance in their work, lifestyles, and interpersonal relations, thereby reducing the pressures they feel. As the employees achieve physical and mental balance, they enhance their work motivation and enthusiasm, which creates a happier workplace.

China Airlines holds craft-making activities that reduce work pressures and enrich the work experience.
Investments in Employee Health Keep Disease at Bay

A renewed increase in international exchanges has led to a rise in the cross-border transmission of infectious diseases. Aviation-related pandemic prevention measures are needed to reduce the threat of infectious diseases entering from overseas. China Airlines adhered to the “2022 Airline Infectious Disease Prevention, Control, Preparation, and Response Management Plan” organized by the CAA and the Occupational Safety and Health Administration of the Ministry of Labor. Starting in May 2022, to adhere to CECC disease prevention policies we compiled information on our Company’s strategies for disease prevention. These include rolling reviews and adjustments to our three main pandemic prevention targets of ready at all times, workplace safety and health, and emergency responses. Up-to-date, accurate disease prevention information related to these targets is regularly offered to employees, so that we are equipped to jointly overcome any major national outbreaks. We actively implemented aviation pandemic prevention to ensure the health and rights of passengers and to provide employees with a safer working environment.

China Airlines’ cooperation with the government’s pandemic prevention standards included arranging 30 COVID-19 vaccination activities at the Company. We encouraged employees to get vaccinated, to protect their health and the health of their families, and to jointly create an excellent workplace environment.

China Airlines offers employee health examinations that are more extensive and frequent than required by law. Using examination results and health management systems, we achieve effective, systematic, and ongoing health management. Additional health promotion activities emphasize preventive care over treatment. Our goal is to make employees more knowledgeable about their health and instill preventive care concepts. We introduce a wide variety of health care plans and provide comprehensive workplace health protection as part of our commitment to corporate social responsibility.

Protecting Employees’ Health After the Pandemic

As the pandemic eased and countries around the world ended lockdowns and opened their borders, CECC ended home quarantine requirements for incoming international travelers starting from October 13, 2022, and ceased use of the “Operational Principles for R.O.C (Taiwanese) Airlines Air Crew Members to Implement Health Control Measures for Epidemic Prevention.” Acting in accordance with the government’s business continuity plan guidelines for disease control in the airline industry, we implemented the “China Airlines COVID-19 Pandemic Business Continuity Plan,” in order to protect employees, reduce the risk of infection, and craft response measures that support orderly reopening. We also closely monitored the operational status of aviation-related industries. In this new stage, inspection of our core duties together with rolling reviews enable us to better adapt to post-pandemic changes.

China Airlines staff enthusiastically participated in health-related talks.

China Airlines continued to offer vaccinations and promote health, in order to prevent cross-border transmission of infectious diseases, protect the health of employees and travelers, and enhance aviation-related pandemic prevention measures.
In 2022, the commitment to our long-term sustainable strategic blueprint remained as strong as ever. Primary objectives were promoting the international development of local education, raising the international visibility of Taiwan’s local brands, and promoting equal opportunities for disadvantaged groups in society. China Airlines is a long-time supporter of social welfare activities for rural communities and disadvantaged groups, aviation knowledge sharing and instruction, and the provision of medical supplies to international regions in need. We take action to implement the SDG3, SDG4, and SDG8, as defined by the United Nations. These measures promote Taiwanese local brands, increase opportunities for international exchanges, and build a society that is better for all.
Supporting Local Education and International Development

Industrial-Academic Cooperation

China Airlines President Kao, Shing-Hwang was invited to speak to graduate students in the Department of Shipping & Transportation Management at National Taiwan Ocean University. More than 100 students attended Kao’s lecture on sustainable development and cultivation of talent.

Volunteer Teaching

In 2022, China Airlines held teaching activities at Xihai, Zhuwei, Guo Lin, Shan Fong, and Qing Xi elementary schools. A total of 865 schoolchildren attended.

Public Welfare Sports Camp

In 2022, we welcomed well-known Taiwanese athletes to join us in holding a baseball camp and a basketball camp. A total of 86 children participated.
In 2022, a total of 273 China Airlines Group employees and their family members joined our beach cleanup.

In 2022, we held a tree planting activity at the Taoyuan Hengshan Calligraphy Art Park. More than 140 trees were planted. Over the course of five years the trees are estimated to absorb 1,100 kg of carbon dioxide.
Raising the Visibility of Local Taiwan Brands

Humanitarian Aid

During the pandemic in 2022, China Airlines transported 10,000 testing kits and 60,000 masks to the residents of Palau. To support victims of the war in Ukraine, the China Airlines Group donated NT$10 million that has helped to benefit up to 4 million people.

Sports Advocacy

China Airlines has supported the development of local sports for many years. In 2022, we sponsored many sporting competitions to help develop the local sporting environment and raise Taiwan's international visibility.

We also donated a total of 1,443 meal boxes to front line medical workers, aviation police, and quarantine taxi drivers.

In 2022, China Airlines and The Pokémon Company joined to implement the "Flying Pikachu Plan," which was centered on creating Taiwan's first plane decorated in a Pikachu theme. Proceeds from micro-travel associated with the plan were donated to the Taiwan Fund for Children and Families, with approximately 50,000 people having benefited.
Promoting Equal Opportunity for the Disadvantaged

Disadvantaged Children and the General Public

A volunteer group from China Airlines held three rural education activities in 2022 that benefitted a total of 164 students.

Ground crew from the airlines painted the walls of LOHAS Preschool, which serves as an orphanage in Pingzhen District, Taoyuan, so that the disadvantaged children there could have a better environment.

China Airlines also donated a total of 539 toy sets themed after the Buddy Bears liveried aircraft to medical institutions, public welfare groups, and rural elementary schools, as a kind gesture meant to brighten up the lives of disadvantaged children.

Small-Scale Farmers and Public Welfare Groups

To support Taiwan’s excellent agricultural products, we purchased 2,443 boxes of pineapples and sugar apples from Taitung as well as 800 boxes of pomelos, at a total cost of approximately NT$2.11 million.

Also, the Company’s employee welfare association bought vouchers totaling NT$4.85 million in value from the Children Are Us Foundation, to give to employees as part of our anniversary celebration. We hope to use our influence to encourage even more enterprises to contribute to public welfare.
In 2022, China Airlines continued to cooperate with the Huashan Social Welfare Foundation to hold three activities: "Love the Elderly and Love the Reunion," "Love the Elderly, Let's Get It Started!" and "Love the Elderly During Mid-Autumn Festival." In total, we supported caring for 370 seniors.

In 2022, we continued to contribute to the Pingtung Happiness Bus Project 2.0, by donating NT$1.5 million to help the Pingtung County Government improve the quality of public transportation services in remote areas, benefiting 17,416 people throughout the year.
China Airlines implements safety management systems and applies for related certifications to uphold our goal of zero aviation accidents or incidents. We strengthen aviation training, including by upgrading training equipment to make simulations more realistic and enhance training quality. When faced with COVID-19, we continued to improve maintenance capabilities to prepare for higher demand following the end of the pandemic. We view comprehensive safety as our highest principle and a critical part of our commitment to safe flying.
Digital Upgrades Advance Safety Management

In accordance with Taiwan’s civil aviation regulations and in consideration of the International Civil Aviation Organization’s (ICAO) Doc. 9859 (Safety Management Manual, SMM), in 2007 China Airlines promulgated our internal Safety Management System (SMS). To this day, progress continues to be made on the SMS’s core objective of safety risk management. Through ongoing risk identification and risk management, we systematically analyze and manage flight operations risk then set safety performance indicators and targets for risk tracking, control, and mitigation. Since 2016, the CAA has conducted annual SMS performance reviews for domestic civil aviation operators to examine the implementation of safety management and measure results. To ensure the effectiveness of SMS, China Airlines uses the CAA’s SMS assessment tools as a basis for conducting operational reviews of various operating units, in order to ensure comprehensive safety management.

In order to continue to strengthen employees’ recognition of safety culture, in 2022 China Airlines offered an e-learning course on just culture. The lessons helped employees to understand the meaning of just culture, and showed them positive methods for improving the Company’s safety culture and overall safety awareness. In the third quarter of 2022 we completed upgrades to our Rolls-Royce SMS Solution, so that we could adhere to new international operational and usage standards. We also integrated a mobile carrier app for report submission so that employees are more willing to submit reports. China Airlines continues to highlight excellent hazard reports from employees and encourages employees to submit oral or written reports in a timely manner when they find hazard factors that affect overall safe operations with immediate, obvious, or potential risks, so as to prevent and reduce the occurrence of safety-threatening incidents. In the spirit of learning by walking around, in the fourth quarter of 2022 we arranged a visit to the Taoyuan Metro Corporation to share practical experiences and discuss safety. We invited the CAA to give a talk on the evolution of revisions to civil aviation law and insights into aviation information and communications technology. The talk covered legal reasoning and aviation technology development. Participants improved their safety knowledge and learned how to apply this knowledge to their work.
Certifications Show We Never Compromise on Safety

The IATA Operational Safety Audit (IOSA) is the highest safety audit standard in the international aviation industry. According to IATA regulations, all 300 member airlines around the world must pass IOSA certification. A re-certification audit is conducted every two years in order to continue to ensure flight safety.

From October 24 to 28, 2022, China Airlines commissioned the French audit organization Quali-Audit to conduct our 11th IOSA renewal audit, which was completed on-site. Quali-Audit conducted comprehensive inspections in accordance with IOSA standards, and we successfully passed. With our current IOSA certification valid until February 25, 2025, we will organize our 12th IOSA renewal audit in 2024 to continue to meet the highest international safety standards.

The scope of IOSA certification covers eight major operational areas related to airline safety: corporate organization and management systems, flight operations, aircraft engineering and maintenance, operational control – flight dispatch, cabin operations, ground handling, cargo operations, and operational security. The audit is carried out systematically by an IATA-approved audit company.

After first obtaining IOSA certification in 2005, China Airlines has continued to raise safety quality, including strict selection and evaluation of pilots as well as use of a flight operational quality assurance (FOQA), flight operations risk assessment system (FORAS), and other operating systems to monitor flight safety records. Specific departments are tasked with safety audits, quality control, and SMS implementation. We always maintain an uncompromising attitude towards safety, ensuring that all safety measures are leakproof while continuing to implement IOSA certification standards and international norms. By taking practical actions to ensure flight safety, we provide passengers with the highest quality and reliable services.

Better Flight Training Maintains Flight Safety and Quality

In 2022, as the COVID-19 pandemic eased and countries around the world opened their borders, passenger flights gradually started to return to their pre-pandemic levels. In accordance with civil aviation regulations, China Airlines regularly arranged for all crews to undergo flight simulation training as well as training and testing in actual aircraft. For co-pilots who get less practice landing long-haul aircraft models, we developed and carried out a focused flight simulation training plan to ensure all crew remain proficient in flight operations, so that we can ensure flight operation safety.

With industry recovery underway and due to changes in our operational policy, we continued to provide upgraded conversion training for flight crews in accordance with human resource planning. Comprehensive evaluations and implementation of our training plans provide our crews with timely supplementary training, which enables us to fulfill our flight dispatches and raise revenues. Most importantly, it ensures strict oversight over aviation safety.

As the pandemic ends and we add new B787 aircraft to our fleet in 2025, our demand for pilots will increase. To prepare, we are increasing international pilot training. Besides the two flight schools we already partner with we are assessing additional schools to serve as a backup resource in order to ensure high quality training and a regular training schedule.

In order to improve the quality of our coursework, in 2022 we introduced a new e-learning system that optimizes learning for crewmembers. To ensure that our training mechanism adheres to international standards, we sent staff to Boeing to join their Competency-Based Training and Assessment (CBTA), which is modeled on a new training system from ICAO. The curriculum and testing are based on competencies, which is similar to the evidence-based training that we currently use. In the future we will consider CBTA concepts to strengthen our own training.
Upgraded Equipment Improves Training Quality

China Airlines’ flight training equipment was certified by the CAA. Besides providing flight simulator training as well as land and water escape training to crew members from domestic and international airlines, we provide emergency response training for cabin crew members. Ongoing equipment upgrades enable us to raise overall training quality.

In March 2022 we launched our new A320neo flight simulator. It is the world’s first dynamic flight simulator to adopt Version 2.1 of the Airbus standard and maintain a regular aircraft configuration. The simulator upholds safety standards by meeting pilots’ training demands and reducing training discrepancies.

In June 2022, we purchased an all-new A330 1L Slide/Raft to replace our old lifeboat. The new slide/raft meets legal requirements and is expected to raise training quality due to its safety qualities and durability.

In May 2022, upon receiving a service bulletin to prepare for an upgrade to the Next Generation Flight Management System (NG FMS) in all our Boeing 747F aircraft, we launched technical assessment procedures and received approval for modification of our flight simulators. The changes kept operation of the simulator close to real life, so that pilots could quickly understand flight controls and receive better training results. Modifications are expected to be completed by the end of 2023.

When China Airlines arranged to introduce the new generation of Boeing 787-9 passenger aircraft, we subsequently formulated plans to add the corresponding flight simulator and flight training device. These are forecast to be ready for use in December 2024. We also plan to introduce a Cabin Emergency Evacuation Trainer designed for the same aircraft model in the third quarter of 2024, in order to provide a wider range of emergency evacuation training items.

China Airlines follows relevant operating procedures to support updates to the Simulation Quality Management System. In November 2022, upon our latest simulator model receiving the approval of the CAA, we simultaneously launched our new Logistics & Maintenance Management System (LMMS). The LMMS provides detailed maintenance records, fault resolution tracking, periodic inspection management, and warehouse inventory management for spare parts and components for all of our training equipment. It also has adaptable notification functions and an operational interface that significantly strengthen equipment maintenance procedures and make related procurements more efficient. Furthermore, the LMMS replaces many paper forms with digital versions, to reduce the use of paper. Besides making data preservation more reliable and easier to manage, this advance protects the planet.
Enhancing Maintenance Capabilities to Prepare for the Post-Pandemic Recovery

While the pandemic caused severe damage during the past three years, China Airlines assumed responsibility for transporting disease prevention materials and other international freight. The significant increase in cargo plane frequency was accompanied by a corresponding increase in maintenance and logistics support tasks. Teamwork from all of the frontline workers in our Maintenance Division as well as our logistics support teams meant that we could complete dispatch of every aircraft and keep our fleet operating smoothly, even during the pandemic. In 2022, as the pandemic eased and passenger volumes gradually recovered, Maintenance Division staff were ready to meet the incoming increase in passenger flights and related maintenance tasks.

The Maintenance Division of China Airlines is equipped with an abundant maintenance capacity, including a maintenance hangar that can accommodate five large-scale wide-body aircraft, large-scale test benches with an engine test thrust of up to 120,000 pounds, and a variety of fully equipped engines and engine component repair shops. It provides high-level maintenance, maintenance for routes, airframes, engines and parts, and other services. Besides meeting the various maintenance needs of the group's fleet, it serves more than 40 customers at home and abroad.

The Maintenance Division possesses professional maintenance capabilities and actively seeks certification from various civil aviation authorities and related associations. Besides being certified by the CAA, it also has international certifications from the Federal Aviation Administration (FAA) of the United States, the European Aviation Safety Agency (EASA), the Japan Civil Aviation Bureau (JCAB), the Civil Aviation Authority of Singapore (CAAS), and the Civil Aviation Authority of Malaysia (CAAM). China Airlines obtained the first French Standards Association (AFNOR) AS9110 certification in Taiwan, which is a prerequisite for entering the international aerospace maintenance industry.

The COVID-19 pandemic led to a steep rise in global air cargo market demand; in turn, cargo firms significantly increased their flight frequencies. The Maintenance Division was able to take advantage of the subsequent increased demand for maintenance services due to its reputation for reliable repair quality and comprehensive services. Since 2021, the division has provided two high-level maintenance production lines for FedEx A300-600 models. The five-year (2021-2025) contract represents a stable business opportunity that provides the division a valuable entry into the MRO airframe maintenance business, creating a win-win situation. Under the terms of the contract, the division serviced aircraft 11 times in 2022 and has completed high-level maintenance work a total of 21 times.

NORDAM Asia Limited is a composite material maintenance plant jointly established by China Airlines and the American aerospace group NORDAM. The partnership, agreed to in 2017, assigned 49% ownership of the JV to China Airlines and the remaining 51% to NORDAM. NORDAM Asia Limited completed construction of its plant at the end of 2021 and officially opened at the beginning of 2022. It is expected to be certified by the Federal Aviation Administration (FAA) of the United States in June 2023.

China Airlines believes there will be high global demand for maintenance of the PW1100G engine. After many negotiations with Pratt & Whitney, an American engine manufacturer, we finally joined its PW1100G engine maintenance alliance. The cooperation paves the way for a smooth transition between maintenance of older and newer generations of engines at China Airlines. The significant increase in expected output value will expand our engine maintenance business. After the two parties signed their contract in December 2020, in the subsequent year China Airlines began to adjust maintenance capacity, including by renovating plants and procuring new equipment. Maintenance on the first engine under the scope of the contract is expected to begin in the third quarter of 2023.
Environmental Protection Trends

Environmental Protection Milestones Demonstrate Our Sustainability Capabilities

In 2018, China Airlines became the first and the only airline based in Taiwan to publicly sign and adopt the Task Force on Climate-related Financial Disclosures. In the years that followed we compiled related disclosures, which were released in 2022 as part of our second "Climate-Related Financial Disclosure Report." The new report added five core carbon reduction strategies to achieve net-zero carbon emissions by 2050. It promoted eco-services, including ways to include environmental protection concepts in our ground and air services. In 2022, China Airlines introduced Taiwan's first sustainable model flight. In response to international biodiversity conservation efforts, we signed several related environmental protection initiatives and pledges. We placed first among the airlines that were part of the Dow Jones Sustainability Indices, and the EPA presented us with the top Giant Thumb Award at the 4th National Enterprise Environmental Protection Awards. China Airlines' management of environmental and energy issues, together with the environmental protection and sustainability lessons offered to all employees, makes us a model of sustainable development in the Taiwan transport industry and a contributor to global environmental protection efforts.
Leading the Industry in Promoting Global ESG Trends

After considering international benchmarks, China Airlines led the Taiwan service industry in forming both a department and a committee to manage environmental affairs. In the airline industry we pioneered use of comprehensive corporate environmental risk management mechanisms (including ISO 14001, ISO 50001, and ISO 14064) to support the systematic identification and management of environmental risks and opportunities. We set annual energy savings targets and propose projects that make energy and resource use more efficient or that protect the environment. Our Corporate Environmental Committee oversees implementation and rolling management of related projects.

In 2018, China Airlines considered the international state of the airline industry, the United Nation's Sustainable Development Goals, global ESG trends, and national sustainability policies, then used these insights to formulate 11 short-term, mid-term, and long-term (2020, 2025, and 2030) operational targets. In 2022, efforts focused on reducing ground-based carbon emissions while saving water and paper. We set three in-flight waste reduction targets: reducing total in-flight waste, reducing single-use plastics, and reducing average food waste per passenger. These targets were a response to international trends and a demonstration of our commitment to environmental sustainability. Each year we carry out over 70 KPI that are related to these goals. For example, in 2022 we completed 78 KPI that together lowered carbon emissions by 53,750 tonnes, reaching 138% of our total reduction goal. We also achieved full points in the Dow Jones Sustainability Indices rating for our freight fuel use efficiency, which was the highest score among all participating airlines in the world.
Adapting to Climate Change to Strengthen Our Value Chain and Environmental Risk Management

China Airlines leads the Taiwan transport industry in pledging to reduce carbon emissions and seeking to achieve net zero emissions by 2050. In 2018, we became the first and the only airline based in Taiwan to publicly sign and adopt the Task Force on Climate-related Financial Disclosures (TCFD). In the years that followed we actively integrated TCFD initiatives into our Company management systems. In 2020 we compiled independent climate-related financial disclosure data then released the first “Climate-Related Financial Disclosure Report” in the Taiwan service or transport industry in January 2021. This was followed in 2022 by our second report, which built on the previous year’s foundation while strengthening corporate risk management information. It also added five core carbon reduction strategies to support the net zero 2050 objective: increase fuel efficiency, strengthen TCFD operations and emergency response systems, promote the use of sustainable aviation fuel, timely participation in international carbon control mechanisms, and timely introduction of new technology. We continue to monitor and respond to internal and external risks and opportunities, in order to strengthen the Company’s climate-related financial responses and decision management.

China Airlines is the first airline in the world, and the only airline based in Taiwan, to release independent climate-related financial disclosure reports in consecutive years, making us a model for sustainable development of the domestic airline industry.

In line with international carbon reduction and management trends, China Airlines became the first carrier in Taiwan to set voluntary reduction targets for both in-flight and ground-based greenhouse gases using Science-Based Targets (SBT). In 2022, we followed by formally signing the Science-Based Targets initiative (SBTi) pledge. We set short-, mid- and long-term goals for sustainable aviation fuels (SAF), consisting of 2% use by 2025, 5% by 2030, 40% by 2040, and 65% by 2050. In response to the government’s green energy policy, in 2019 we built the first solar power facility at Taoyuan Airport, and in 2022 we pledged to increase installed capacity to 10% of contracted capacity by 2030.

In order to realize the sustainable operation objectives of the China Airlines Group, we not only strengthen our environmental management capacity but also leverage our influence to improve the sustainable value of our green supply chain. For example, in 2018 we used greenhouse gas guidance offered to key suppliers as a foundation for launching our environmental management value chain. From 2019 to 2022, we continued to provide environmental risk opportunity questionnaires and communication mechanisms to our value chain partners. Through joint establishment of management projects and operational goals, we gradually cultivated our environmental and energy risk management capacities.
Creating a Sustainable Culture Focused on Green Operations

China Airlines makes environmental protection an integral part of ground and in-flight procedures to promote “Eco-service.” In 2022, despite the ongoing challenges of the pandemic, we still strengthened relevant data collection processes, compliance checks, and supply chain management to ensure proper waste management. We sought to limit plastic in catering stores and incorporate circular economy concepts into our aviation services. Our Dynasty Sky Reading service further enhanced the in-flight experience while reducing environmental impact. In the future, we will continue to convey to customers the importance of cherishing the earth.

We are also fully aware of the responsibilities and obligations we have towards conserving natural resources and lowering environmental impact. For example, in September 2022 when we held a micro-travel public welfare activity to commemorate our first plane decorated in a Pikachu livery, we donated 100 tonnes of carbon offsets through the ECO Travel carbon offsetting program, operated in partnership with the British environmental protection organization Climate Impact Partners. The donation, which was the first of its kind in Taiwan, offset the carbon generated by this micro-travel experience, so that all passengers could experience the satisfaction felt from a carbon-neutral flight. In 2022, we offset another 7,000 tonnes of carbon when we expanded our fly net zero program to all passenger and cargo flights that departed from Taiwan on the day of our 63rd anniversary celebration. Our high-quality, international-certified carbon offset program is one way that we support renewable energy development and promote global energy transformation. In addition, our pioneering large-scale carbon neutrality initiative further advanced ESG and sustainable operations goals by inviting passengers to contribute by taking public transport to the airport, using online check-in, pre-selecting their meal, and bringing a bag to carry away any duty-free items they purchased. By getting everyone to support carbon reduction, together we can lower the burden we present to the earth.

In 2022, China Airlines took part in the SkyTeam Sustainable Flight Challenge by launching Taiwan’s first sustainability demonstration flight, which featured cabin service supplies made from eco-friendly and renewable materials, low-carbon meals, and excess food management. To support international biodiversity and conservation, China Airlines signed the “Buckingham Palace Declaration” against illegal wildlife trafficking and issued the first “Declaration on Forest and Biodiversity Conservation” in Taiwan’s service industry. These commitments demonstrated our resolve towards protecting ecology and the natural environment. In 2022, we cooperated with the Taoyuan City Government on a tree planting project that included adopting and planting more than 100 indigenous plants with high carbon-absorbing capabilities in the Hengshan Calligraphy Art Park of Dayuan District. We pledged to care for the plants for five years, during which they are estimated to absorb 1,100 kg of carbon from the air. This action to support indigenous plants demonstrates a novel way that we can contribute towards building a green sustainable environment.

China Airlines continues using diverse channels to promote environmental protection education for all employees. We regularly send environmental protection messages to all employees’ mailboxes. For domestic and foreign employees and members of affiliated companies we conduct IRL and online courses, host environmental protection seminars, and hold environmental protection competitions. These events expand our employees’ environmental protection consensus from the inside out. We established a corporate culture focused on environmental and energy conservation education, together with cultivating independent environmental protection awareness, in order to make environmental protection a universal corporate value. In 2022, to help achieve these goals we completed 13,640 employee educational activities.
A Strong Commitment to Environmental Protection Leads to Excellent Results

The Dow Jones Sustainability Indices (DJSI) awarded China Airlines’ long-term efforts in corporate sustainable development governance again by making us the highest rated airline in the Dow Jones Sustainability Emerging Markets Index. It was the first time a Taiwanese enterprise was ranked as the top transport company and the first time an airline was included on the index for seven consecutive years. The full score we received in the environmental report category topped all participating airlines in the world. We also scored highest among airlines in a number of other categories, including environmental policy and management systems, operational and ecological efficiency, climate strategy, and management of excess food and waste. The results demonstrated how we integrated business strategy and sustainability philosophy while underlining advanced sustainability performance in the Taiwanese transport industry. In addition, we were the first transport company in Taiwan to participate in the international Carbon Disclosure Project (CDP) evaluation. In our 11th consecutive year of participation in 2022, our carbon management performance scored a B, which was higher than the average in Asia and the global air transport industry as a whole. Meanwhile, our Supplier Engagement Rating (SER) received the high rating of A- for a third consecutive year (2019 – 2021).

China Airlines is a long-term proponent of environmental protection, energy conservation, and carbon reduction. Our procurement SOPs for all general items, including office equipment, IT equipment, electrical appliances, paper, and cleaning supplies favor products that minimize environmental impact, reduce energy use, and save water, or that obtained green building material or carbon footprint labels. In 2022, the EPA presented us with the top Giant Thumb Award at the 4th National Enterprise Environmental Protection Awards. This demonstrates the recognition we receive for our commitment to CSR, sustainability, and the environment.

In addition, China Airlines provides practical support to international environmental protection activities. For many years we have participated in the Pacific Greenhouse Gases Measurement (PGGM), which is led by National Central University and supported by the EPA as well as the European Union’s IAGOS-ERI. The Republic of China, the European Union, National Central University, the European Economic and Trade Office in Taiwan, and other organizations have all recognized our plentiful contributions. As part of the program, through the end of December 2022 China Airlines had collected high-altitude atmospheric data on 16,456 flights. These measurements contributed to research at the World Meteorological Organization (WMO) and supported decision-making related to the United Nations Framework Convention on Climate Change (UNFCCC). They were included on the list of important deeds in the national yearbook and set a model for Taiwan’s climate diplomacy.

In 2023, China Airlines will expand installation of IAGOS Package II instruments to two more aircraft in order to increase our contributions to international research.
China Airlines’ ongoing promotion of sustainable operations and CSR led to many honors and strong recognition in 2022. The Company’s glory results from strong performance and capabilities that rely on a variety of factors, including corporate governance, transport quality, carbon reduction management, green procurement, service quality, and aviation safety.
'Biking Around Taiwan' Float Nabs Top Prize at 2022 Rose Parade

The Rose Parade is acclaimed as one of the top three New Year's festivals in the United States. For the 2022 Rose Parade, which was held with much fanfare in Pasadena, Los Angeles, China Airlines entered a float based on the theme "Biking Around Taiwan." The impressive design led us to repeat as the winner of the International Award.

China Airlines Awarded 'Silver Class’ in the 2022 Sustainability Yearbook for a Second Year Running

For the second consecutive year S&P Global, the international sustainability ratings agency, named China Airlines as “Silver Class” in the agency’s Sustainability Yearbook 2022, making the airlines Taiwan's top transport operator in terms of total ESG score. Just seven airlines worldwide were included in the yearbook for their outstanding sustainability performance.

100 Green Initiatives on Demonstration Flight Nab Pair of Awards

As part of The Sustainable Flight Challenge (TSFC) from SkyTeam, China Airlines turned Flight CI-753 from Taipei to Singapore into a sustainability demonstration flight. Following the core philosophy of "ECO Service," the airlines pioneered the addition of close to 100 environmental and carbon reduction initiatives, such as fuel-efficient route planning, apron operations, online check-in, and advance ordering of in-flight catering and amenities. The initiatives reduced carbon emissions by about 20%, or close to 10 tonnes, which is equivalent to reforesting land the size of about 25 basketball courts. TSFC awarded China Airlines Best Sustainable Innovation Cargo and Best Employee Engagement.

China Airlines has recorded 30 wins at the Rose Parade.
Inclusion on the Taiwan High Compensation 100 Index and Taiwan Employment Creation 99 Index

Long-term promotion of CSR and corporate governance requires placing a high value on employees’ rights and interests, including the provision of competitive compensation and welfare packages. China Airlines’ strong salaries, profit sharing, and job opportunity creation landed the Company on both the Taiwan High Compensation 100 Index and the Taiwan Employment Creation 99 Index.

Asia’s Best Cargo Airline and CEIV Pharma Recertification

The magazine Air Cargo News named China Airlines as the 2022 “Best Cargo Airline – Asia.” Meanwhile, the IATA Center of Excellence for Independent Validators in Pharmaceutical Logistics renewed China Airlines’ CEIV Pharma certification for cold chain transport of pharmaceutical products.

China Airlines Named APEX Five Star Global Airline for Seventh Straight Year

The Airline Passenger Experience Association (APEX) named China Airlines as a 2023 APEX Five Star Global Airline. It was our seventh straight year of achieving the five star rating. The honor was determined based on airline traveler ratings in five categories: seat comfort, cabin service, food and beverage, entertainment, and Wi-Fi, as tabulated by the popular travel website Triplt.

China Airlines Rated ‘Best Airline in North Asia’ by Global Traveler

Global Traveler, the well-known US-based travel magazine, held its 19th Annual Reader Survey. China Airlines was once again named Best Airline in North Asia and was widely recognized for excellent performance in each category.
Diamond-Level Green Building Label Awarded to China Airlines’ Headquarters

China Airlines announced the goal of achieving net zero carbon emissions by 2050. Areas of focus will include reducing carbon in ground operations and increasing the proportion of green building. The Ministry of the Interior names nine main items for green building certification, including protecting the environment, reducing energy use, and using sustainable methods. It recognized China Airlines’ use of these and other techniques to increase the energy efficiency of the Company headquarters by awarding us a Diamond level green building label.

China Airlines Wins Four Major Sustainability Awards

China Airlines’ commitment to sustainable development and continued excellent performance was on display when the Company garnered four top awards at the Taiwan Corporate Sustainability Awards (TCSA) and the Global Corporate Sustainability Awards (GCSA). The TCSA honors were for “Best Report” in the sustainability reporting category and “Climate Leadership” and “Social Inclusion Leadership” in the specific categories; GCSA presented us with a Gold award for “Sustainability Reporting.”

China Airlines Wins First National Sustainable Development Award

China Airlines’ sustainability philosophy and accomplishments received more recognition when the Company emerged from a field of more than 100 businesses and organizations to win in the corporate category of the Executive Yuan’s 2022 National Sustainable Development Awards (NSDA). In our first time entering the NSDA competition, excellent performance in sustainable operations, social service, digital innovation, and green procurement made us the first airlines in Taiwan to win the award.
Top Honors at National Enterprise Environmental Protection Awards

The EPA presented China Airlines with the top Giant Thumb Award at the 4th National Enterprise Environmental Protection Awards, in recognition of our long-term support of sustainability and environmental protection. Strong performance in environmental policy and management, contributions to energy and resource conservation, pollution prevention and reduction, and environmental engagement made us the only enterprise in the domestic transportation sector to receive the award. We were also the only company invited to speak during a meeting with the president.

Inclusion on the DJSI for a 7th Consecutive Year

The Dow Jones Sustainability Indices (DJSI), which are considered the most credible ranking of their kind, included China Airlines on the Dow Jones Sustainability Emerging Markets Index for a seventh consecutive year in 2022. The inclusion came with a number of honors: it was the highest China Airlines ever ranked, it set a new personal points record that made us the highest rated airline in the world, and it was the first time a Taiwanese enterprise was ranked as the world’s top transport company. Moreover, our total score in environmental categories was the highest in the world, we received a full score in the environmental report category, and we scored highest among all airlines in a number of other categories, including environmental policy and management systems, operational and ecological efficiency, climate strategy, and management of excess food and waste. We were the only airline to be included on the index for seven consecutive years, setting a new milestone for Taiwanese transport enterprises.

11 Consecutive Years of Carbon Disclosure Project Participation

China Airlines has responded to the Carbon Disclosure Project (CDP) questionnaire every year since 2012. We actively disclose climate change-related risk management and actions to institutional investors. In 2022, our carbon management performance scored a B, which was higher than the average in Asia and the global air transport industry as a whole. Meanwhile, our Supplier Engagement Rating (SER) received the high rating of A- for a third consecutive year (2019 – 2021).

China Airlines Passes the IOSA Renewal Audit for an 11th Time

Safety is a core value of China Airlines. After first obtaining IATA Operational Safety Audit (IOSA) certification in 2005, we passed the IOSA Renewal Audit 11 consecutive times. The Company continues to follow IATA rules for IOSA renewal, so that we can meet the highest international certification standards and ensure the reliability of our safety measures.
Financial Status Contents

Financial and Operational Analysis
2022 Financial Statements
Financial and Operational Analysis

Operating Income and Net Income (Loss)

In 2022, China Airlines’ operating income was TWD 5.92 billion (operating margin 4.19%), a decrease of TWD 13.40 billion over 2021. Net Income was TWD 2.86 billion (net margin 2.03%), a decrease of TWD 6.52 billion over 2021.

Operating Revenue

In 2022, total operating revenue was TWD 141.07 billion, an increase of 6.76% yoy. Total operating costs increased by 19.80% to TWD 135.15 billion. Passenger revenue increased by 496.36% to TWD 20.48 billion and cargo revenue decreased by 6.75% to TWD 115.86 billion, respectively. Other revenue increased by 6.06% to TWD 4.73 billion.
Passenger Business

Passenger revenue was TWD 20.48 billion in 2022, an increase by 496.36% over 2021. According to the breakdown of passenger revenue by routes, North America represented the prime market contributing 30.34%, followed by Southeast Asia, Europe, and Northeast Asia with the contribution of 22.88%, 16.61%, and 11.58%, respectively.

Compared with those in 2021, passenger capacity (ASK) increased by 288.59%, passenger traffic (RPK) increased by 930.20%, and passenger yield decreased by 42.19% to 3.11 (TWD/RPK). Passenger load factor increased by 27.58 ppt to 44.25%.
Cargo Business

Cargo revenue was TWD 115.86 billion in 2022, a decrease by 6.75% over 2021. According to the breakdown of cargo revenue by routes, North America represented the prime market contributing 56.03%, followed by Southeast Asia, Europe and Mainland China with the contribution of 16.73%, 11.55% and 6.39%, respectively.

In 2022 cargo capacity (FATK) decreased by 17.37%. Cargo Traffic (FRTK) decreased by 15.75% yoy, and cargo yield increased by 10.70% to 18.21(TWD/FRTK). Cargo load factor increased by 1.48 ppt to 76.97%.
Operating Costs and Employee Productivity

Operating expenses were TWD 135.15 billion in 2022. The three largest cost items were fuel (40.17%), depreciation & amortization (19.94%), and labor (13.79%). Overall unit cost increased by 29.08% yoy to 14.07 (TWD/ATK), unit cost excluding fuel cost increased by 8.93% yoy.

As of December 31st 2022, the number of average employees for 2022 was 10,785. Employee productivity, measured by ATK per employee decreased by 4.74% yoy, RTK per employee decreased by 6.19% yoy, and revenue per employee increased by 9.57% yoy.
The Board of Directors and Shareholders
China Airlines, Ltd.

Opinion
We have audited the accompanying financial statements of China Airlines, Ltd. (the “Company”), which comprise the balance sheets as of December 31, 2022 and 2021, and the statements of comprehensive income, changes in equity and cash flows for the years then ended, and notes to the financial statements, including a summary of significant accounting policies (collectively referred to as the “financial statements”).

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and its financial performance and its cash flows for the years then ended in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers.

Basis for Opinion
We conducted our audits in accordance with the Regulations Governing Auditing and Attestation of Financial Statements by Certified Public Accountants and the Standards on Auditing of the Republic of China. Our responsibilities under those standards are further described in the Auditors’ Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the Company in accordance with The Norm of Professional Ethics for Certified Public Accountant of the Republic of China, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matters
Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements for the year ended December 31, 2022. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key audit matter in the audit of the Company’s financial statements is stated below:

Recognition of Cargo Revenue

In accordance with IFRS 15 “Revenue from Contracts with Customers”, cargo sales are accounted for as cargo revenue after relevant transportation services have been provided. For the year ended December 31, 2022, cargo revenue amounted to NT$115,864,041 thousand. Refer to Notes 4 and 25 to the accompanying financial statements for detailed information.

Cargo rates are highly affected by the supply and demand of the market and sales can only be recognized after relevant transportation services are provided. The input, processing and maintenance of freight information on the airway bills involve manual operations. Therefore, we identified the recognition of cargo revenue as a key audit matter.

Our main audit procedures performed included the following:

1. We understood the internal controls related to the recognition of cargo revenue, including manual and automatic controls.
2. We understood and tested the effectiveness of the information system related to the recognition of cargo revenue.
3. We sampled the airway bills, confirmed that cargo rates were consistent with those stated in airway bills, and verified the amount of cargo revenue.

Other Matter - Audited by Other Independent Auditors

The financial statements of some investments accounted for using the equity method in Note 12 were audited by other independent auditors, and our audit opinion is based solely on the reports of other auditors. As of December 31, 2022 and 2021, the aforementioned investments accounted for using the equity method amounted to NT$725,747 thousand and NT$2,955,909 thousand, representing 0.27% and 1.09% of the total assets, respectively. For the years ended December 31, 2022 and 2021, the combined share of profit (loss) and other comprehensive income (loss) of subsidiaries, associates and joint ventures accounted for using the equity method amounted to NT$(2,230,169) thousand and NT$(1,739,024) thousand, representing 76.12% and (18.44%) of the total comprehensive income, respectively.

Responsibilities of Management and Those Charged with Governance for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Company’s ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance, including the audit committee, are responsible for overseeing the Company’s financial reporting process.

Auditors’ Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors’ report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Standards on Auditing of the Republic of China will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.
As part of an audit in accordance with the Standards on Auditing of the Republic of China, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

1. Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is greater than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

2. Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control.

3. Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

4. Conclude on the appropriateness of management’s use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company’s ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors’ report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors’ report. However, future events or conditions may cause the Company to cease to continue as a going concern.

5. Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

6. Obtain sufficient and appropriate audit evidence regarding the financial information of entities or business activities within the Company to express an opinion on the financial statements. We are responsible for the direction, supervision and performance of the audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the financial statements for the year ended December 31, 2022 and are therefore the key audit matters. We describe these matters in our auditors’ report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Notice to Readers

The accompanying financial statements are intended only to present the financial position, financial performance and cash flows in accordance with accounting principles and practices generally accepted in the Republic of China and not those of any other jurisdictions. The standards, procedures and practices to audit such financial statements are those generally applied in the Republic of China.

For the convenience of readers, the independent auditors’ report and the accompanying financial statements have been translated into English from the original Chinese version prepared and used in the Republic of China. If there is any conflict between the English version and the original Chinese version or any difference in the interpretation of the two versions, the Chinese-language independent auditors’ report and financial statements shall prevail.
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<th>Assets</th>
<th>2021</th>
<th>Amount</th>
<th>%</th>
<th>2022</th>
<th>Amount</th>
<th>%</th>
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<td>Non-current assets held for sale (Notes 4 and 11)</td>
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<td>Total current assets</td>
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<td>Non-current assets</td>
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<td>Property, plant and equipment (Notes 4, 5, 13 and 31)</td>
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<td>100</td>
<td></td>
<td>270,650,716</td>
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</tr>
</tbody>
</table>

| Liabilities and Equity | | | | | | |
| Current liabilities | | | | | | |
| Notes and accounts payable | 27,263,702 | 10 | | 35,913,117 | 13 |
| Notes and accounts payable related parties (Note 30) | 730,428 | - | | 733,837 | - |
| Other payables (Notes 20 and 25) | 12,865,006 | 5 | | 12,865,006 | 5 |
| Current tax liabilities | 35,913,117 | 13 | | 22,880,785 | 8 |
| Leases current (Notes 4 and 19) | 1,185,171 | 1 | | 635,633 | - |
| Provisions - current (Notes 4 and 22) | 18,927,949 | 7 | | 15,229,888 | 6 |
| Current portion of bonds payable and put option of convertible bonds (Notes 4, 18, and 29) | 2,350,000 | 1 | | 2,525,000 | 1 |
| Current portion of long-term borrowings (Notes 17, 29 and 31) | 11,733,508 | 4 | | 8,351,129 | 3 |
| Other current liabilities | 2,815,333 | 1 | | 1,065,229 | 1 |
| Total current liabilities | 54,548,518 | 20 | | 45,666,704 | 17 |
| Non-current liabilities | | | | | | |
| Long-term borrowings (Notes 17, 29 and 31) | 32,190,000 | 12 | | 27,839,847 | 10 |
| Contract liabilities - non-current (Notes 4 and 21) | 3,490,653 | 1 | | 2,575,812 | 1 |
| Current portion of bonds payable and put option of convertible bonds (Notes 4, 18, and 29) | 2,525,000 | 1 | | 2,525,000 | 1 |
| Contract liabilities - non-current (Notes 4 and 21) | 2,815,333 | 1 | | 1,065,229 | 1 |
| Leases non-current (Notes 4 and 19) | 3,388,795 | 1 | | 1,160,279 | 1 |
| Provisions - non-current (Notes 4 and 22) | 16,927,949 | 6 | | 15,229,888 | 6 |
| Deferred tax liabilities (Notes 4 and 26) | - | - | | 822,368 | - |
| Other non-current liabilities | 2,226,828 | 1 | | 446,216 | - |
| Total non-current liabilities | 51,750,930 | 19 | | 29,382,591 | 11 |
| Total liabilities | 106,299,448 | 40 | | 74,051,295 | 27 |
| Equity (Notes 18 and 24) | | | | | |
| Share capital | 9,983,761 | 4 | | 8,437,648 | 3 |
| Capital surplus | 110,092,920 | 43 | | 88,655,899 | 32 |
| Retained earnings | 13,790,785 | 5 | | 12,865,006 | 4 |
| Net defined benefit liabilities (Notes 4, 5 and 23) | 3,490,653 | 1 | | 2,575,812 | 1 |
| Other equity | 925,385 | - | | 9,253,848 | 3 |
| Unappropriated retained earnings | 6,384,381 | 1 | | 9,253,848 | 3 |
| Total equity | 74,043,573 | 27 | | 74,043,573 | 27 |
| Total liabilities and equity | 268,092,198 | 100 | | 270,650,716 | 100 |
### CHINA AIRLINES, LTD.

#### STATEMENTS OF COMPREHENSIVE INCOME
FOR THE YEARS ENDED DECEMBER 31, 2022 AND 2021
(In Thousands of New Taiwan Dollars, Except Earnings Per Share)

<table>
<thead>
<tr>
<th>Item</th>
<th>2022</th>
<th>%</th>
<th>2021</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating revenue (Notes 4, 25 and 30)</td>
<td>$141,069,849</td>
<td>100</td>
<td>$132,140,248</td>
<td>100</td>
</tr>
<tr>
<td>Operating costs (Notes 4, 10, 25 and 30)</td>
<td>$128,089,348</td>
<td>91</td>
<td>$106,229,554</td>
<td>80</td>
</tr>
<tr>
<td>Gross profit</td>
<td>$12,980,501</td>
<td>9</td>
<td>$25,910,694</td>
<td>20</td>
</tr>
<tr>
<td>Operating expenses (Notes 4, 25 and 30)</td>
<td>$7,063,461</td>
<td>5</td>
<td>$6,590,298</td>
<td>5</td>
</tr>
<tr>
<td>Profit from operations</td>
<td>$5,917,040</td>
<td>4</td>
<td>$19,320,396</td>
<td>15</td>
</tr>
<tr>
<td>Non-operating income and expenses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other income (Note 25)</td>
<td>$1,307,531</td>
<td>1</td>
<td>$374,625</td>
<td>-</td>
</tr>
<tr>
<td>Other gains and losses (Notes 11, 12, 13 and 25)</td>
<td>$1,824,894</td>
<td>1</td>
<td>$1,971,900</td>
<td>(1)</td>
</tr>
<tr>
<td>Finance costs (Note 25)</td>
<td>($2,220,960)</td>
<td>(1)</td>
<td>($2,164,174)</td>
<td>(2)</td>
</tr>
<tr>
<td>Share of profit or loss of subsidiaries, associates and joint ventures (Note 12)</td>
<td>($2,939,603)</td>
<td>(2)</td>
<td>($3,585,007)</td>
<td>(3)</td>
</tr>
<tr>
<td>Total non-operating income and expenses</td>
<td>($2,028,138)</td>
<td>(1)</td>
<td>($7,346,456)</td>
<td>(6)</td>
</tr>
<tr>
<td>Profit before income tax</td>
<td>$3,888,902</td>
<td>3</td>
<td>$11,973,940</td>
<td>9</td>
</tr>
<tr>
<td>Income tax expense (Notes 4 and 26)</td>
<td>$1,029,399</td>
<td>1</td>
<td>$2,594,035</td>
<td>2</td>
</tr>
<tr>
<td>Net profit for the year</td>
<td>$2,859,503</td>
<td>2</td>
<td>$9,379,905</td>
<td>7</td>
</tr>
<tr>
<td>Other comprehensive income (loss) Items that will not be reclassified subsequently to profit or loss:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gain (loss) on hedging instruments subject to basis adjustment (Notes 4, 24 and 29)</td>
<td>($144,906)</td>
<td>-</td>
<td>($75,214)</td>
<td>-</td>
</tr>
<tr>
<td>Unrealized gain (loss) on investments in equity instruments at fair value through other comprehensive income (Notes 4 and 24)</td>
<td>$8,570</td>
<td>-</td>
<td>($91,703)</td>
<td>-</td>
</tr>
<tr>
<td>Remeasurement of defined benefit plans (Notes 4 and 23)</td>
<td>$28,890</td>
<td>1</td>
<td>($35,512)</td>
<td>-</td>
</tr>
<tr>
<td>Share of the other comprehensive income (loss) of subsidiaries, associates and joint ventures accounted for using the equity method (Notes 4 and 24)</td>
<td>$219,689</td>
<td>1</td>
<td>$2,831</td>
<td>-</td>
</tr>
<tr>
<td>Income tax related to items that will not be reclassified subsequently to profit or loss (Note 26)</td>
<td>($67,750)</td>
<td>-</td>
<td>$21,236</td>
<td>-</td>
</tr>
</tbody>
</table>

The accompanying notes are an integral part of the financial statements.

(Continued)
### Retained Earnings

<table>
<thead>
<tr>
<th>Share Capital</th>
<th>Capital Surplus</th>
<th>Legal Reserve</th>
<th>Unappropriated Earnings (Accumulated Deficit)</th>
<th>Total Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ 54,209,846</td>
<td>$ 1,187,327</td>
<td>$ -</td>
<td>$ (350,581)</td>
<td>$ 57,559,483</td>
</tr>
</tbody>
</table>

Basis adjustment to gain (loss) on hedging instruments - - - - 99,507 - 99,507
Appropriation of 2020 earnings
Capital surplus used to cover accumulated deficit - (350,581) - 350,581 - - - - -
Issuance of employee share options by subsidiaries - 540 - - - - - 540
Changes in percentage of ownership interests in subsidiaries - - - (104,639) - - - (104,639)
Net profit for the year ended December 31, 2021 - - - 9,379,905 - - - 9,379,905

Other comprehensive income (loss) for the year ended December 31, 2021, net of income tax - - - (21,418) 14,173 (76,871) 133,253 - 49,137
Total comprehensive income (loss) for the year ended December 31, 2021 - - - 9,358,487 14,173 (76,871) 133,253 - 49,429,042
Equity component of convertible bonds issued by the Company - 188,862 - - - - - - 188,862
Convertible bonds converted to ordinary shares 5,202,397 1,668,381 - - - - - - - 6,870,778

BALANCE AT DECEMBER 31, 2021 59,412,243 2,694,529 - 9,253,848 (120,079) (5,512) 2,839,419 (30,875) 74,043,573

Basis adjustment to gain (loss) on hedging instruments - - - - - - 100,687 - 100,687
Appropriation of 2021 earnings
Legal reserve - - - 925,385 (925,385) - - - - -
Cash dividends - $0.83145736 per share - - - (5,800,000) - - - - - (5,800,000)
Changes in capital surplus from dividends to subsidiaries - 1,725 - - - - - - - 1,725
Net profit for the year ended December 31, 2022 - - - 2,859,503 - - - - - 2,859,503

Other comprehensive income (loss) for the year ended December 31, 2022, net of income tax - - - 196,415 (115,781) 46,430 (3,511,101) - (3,152,475)
Total comprehensive income (loss) for the year ended December 31, 2022 - - - 3,055,918 (115,781) 46,430 (3,511,101) - (292,972)
Convertible bonds converted to ordinary shares 723,131 424,050 - - - - - - - 1,147,181
Others - 7 - - - - - - - 7

BALANCE AT DECEMBER 31, 2022 $ 60,135,374 $ 1,120,311 $ 925,385 $ 6,384,181 $ (4,298) $ 49,918 $ (579,995) $ (30,875) $ 70,000,201

The accompanying notes are an integral part of the financial statements.
### CASH FLOWS FROM OPERATING ACTIVITIES

<table>
<thead>
<tr>
<th>Description</th>
<th>2022</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income before income tax</td>
<td>$3,888,902</td>
<td>$11,973,940</td>
</tr>
<tr>
<td>Adjustments for:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depreciation expense</td>
<td>26,756,562</td>
<td>26,503,214</td>
</tr>
<tr>
<td>Amortization expense</td>
<td>181,662</td>
<td>179,111</td>
</tr>
<tr>
<td>Expected credit loss recognized on trade receivables</td>
<td>38,474</td>
<td>38,474</td>
</tr>
<tr>
<td>Interest income</td>
<td>(566,465)</td>
<td>(132,220)</td>
</tr>
<tr>
<td>Dividend income</td>
<td>(11,723)</td>
<td>(8,355)</td>
</tr>
<tr>
<td>Share of loss of subsidiaries, associates and joint ventures</td>
<td>2,939,603</td>
<td>5,850,007</td>
</tr>
<tr>
<td>(Gain) loss on disposal of property, plant and equipment</td>
<td>(19,911)</td>
<td>932,718</td>
</tr>
<tr>
<td>Gain on disposal of non-current assets held for sale</td>
<td>(558,477)</td>
<td>-</td>
</tr>
<tr>
<td>Loss on disposal of investment</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Impairment loss on property, plant and equipment</td>
<td>1,641</td>
<td>540</td>
</tr>
<tr>
<td>Loss on inventory and property, plant and equipment</td>
<td>675,274</td>
<td>1,391,279</td>
</tr>
<tr>
<td>Net loss (gain) on foreign currency exchange</td>
<td>1,580,216</td>
<td>(895,534)</td>
</tr>
<tr>
<td>Impairment loss on investments accounted for using the equity method</td>
<td>-</td>
<td>136,672</td>
</tr>
<tr>
<td>Finance costs</td>
<td>2,220,960</td>
<td>2,164,174</td>
</tr>
<tr>
<td>Recognition of provisions</td>
<td>4,958,429</td>
<td>5,796,335</td>
</tr>
<tr>
<td>Loss on sale and leaseback transactions</td>
<td>-</td>
<td>342,080</td>
</tr>
<tr>
<td>Others</td>
<td>84,406</td>
<td>(3,625)</td>
</tr>
<tr>
<td>Changes in operating assets and liabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notes and accounts receivable</td>
<td>2,515,841</td>
<td>(3,875,256)</td>
</tr>
<tr>
<td>Accounts receivable - related parties</td>
<td>(76,204)</td>
<td>46,950</td>
</tr>
<tr>
<td>Other receivables</td>
<td>(168,077)</td>
<td>(117,036)</td>
</tr>
<tr>
<td>Inventories</td>
<td>(2,504,030)</td>
<td>(1,009,933)</td>
</tr>
<tr>
<td>Other current assets</td>
<td>(913,115)</td>
<td>70,928</td>
</tr>
<tr>
<td>Notes and accounts payable</td>
<td>209,251</td>
<td>(278,147)</td>
</tr>
<tr>
<td>Accounts payable - related parties</td>
<td>(3,490)</td>
<td>145,603</td>
</tr>
<tr>
<td>Other payables</td>
<td>602,575</td>
<td>5,815,179</td>
</tr>
<tr>
<td>Contract liabilities</td>
<td>12,486,227</td>
<td>(927,584)</td>
</tr>
<tr>
<td>Provisions</td>
<td>(3,690,602)</td>
<td>(1,476,769)</td>
</tr>
<tr>
<td>Other current liabilities</td>
<td>660,685</td>
<td>1,474,424</td>
</tr>
<tr>
<td>Defined benefit liabilities</td>
<td>17,864</td>
<td>106,282</td>
</tr>
<tr>
<td>Other liabilities</td>
<td>72,384</td>
<td>-</td>
</tr>
<tr>
<td>Cash generated from operations</td>
<td>51,468,943</td>
<td>51,978,450</td>
</tr>
<tr>
<td>Interest received</td>
<td>564,084</td>
<td>129,028</td>
</tr>
<tr>
<td>Dividends received</td>
<td>317,263</td>
<td>213,017</td>
</tr>
<tr>
<td>Interest paid</td>
<td>(2,361,441)</td>
<td>(2,140,081)</td>
</tr>
<tr>
<td>Income tax paid</td>
<td>(4,402,059)</td>
<td>(45,987)</td>
</tr>
</tbody>
</table>

Net cash generated from operating activities: $45,586,790

(Ca. continued)

### CASH FLOWS FROM INVESTING ACTIVITIES

- Purchase of financial assets at amortized cost: $(4,793,951) to $(11,956,286)
- Proceeds from disposal of financial assets at amortized cost: 11,923,194 to 5,863,137
- Proceeds from disposal of financial assets for hedging: 9,063,037 to 11,110,497
- Acquisition of investments and joint ventures accounted for using the equity method: - to $(4,527,062)
- Payments for property, plant and equipment: (2,269,028) to (1,702,245)
- Proceeds from disposal of property, plant and equipment: 25,141 to 586,395
- Increase in net loss (gain) on disposal of subsidiary: 7,930 to -

### CASH FLOWS FROM FINANCING ACTIVITIES

- Decrease in short-term bill payable: - to $(8,088,882)
- Proceeds from issuance of bonds payable: - to 4,500,000
- Repayments of bonds payable: (2,525,200) to (6,300,000)
- Proceeds from long-term borrowings: 4,231,761 to 40,224,874
- Repayments of long-term borrowings: (20,902,756) to (38,683,066)
- Proceeds from disposal of investments: (24,361,989) to (12,182,071)
- Increase in cash inflow on disposal of subsidiary: - to 9,730

Net cash used in investing activities: $(19,219,173) to $(19,965,200)

### CASH FLOWS FROM OPERATING ACTIVITIES

- Purchase of financial assets at amortized cost: $(4,793,951) to $(11,956,286)
- Proceeds from disposal of financial assets at amortized cost: 11,923,194 to 5,863,137
- Proceeds from disposal of financial assets for hedging: 9,063,037 to 11,110,497
- Acquisition of investments and joint ventures accounted for using the equity method: - to $(4,527,062)
- Payments for property, plant and equipment: (2,269,028) to (1,702,245)
- Proceeds from disposal of property, plant and equipment: 25,141 to 586,395
- Increase in net loss (gain) on disposal of subsidiary: 7,930 to -

### CASH FLOWS FROM OPERATING ACTIVITIES

- Decrease in short-term bill payable: - to $(8,088,882)
- Proceeds from issuance of bonds payable: - to 4,500,000
- Repayments of bonds payable: (2,525,200) to (6,300,000)
- Proceeds from long-term borrowings: 4,231,761 to 40,224,874
- Repayments of long-term borrowings: (20,902,756) to (38,683,066)
- Proceeds from disposal of investments: (24,361,989) to (12,182,071)
- Increase in cash inflow on disposal of subsidiary: - to 9,730

Net cash used in investing activities: $(19,219,173) to $(19,965,200)

### CASH FLOWS FROM FINANCING ACTIVITIES

- Decrease in short-term bill payable: - to $(8,088,882)
- Proceeds from issuance of bonds payable: - to 4,500,000
- Repayments of bonds payable: (2,525,200) to (6,300,000)
- Proceeds from long-term borrowings: 4,231,761 to 40,224,874
- Repayments of long-term borrowings: (20,902,756) to (38,683,066)
- Proceeds from disposal of investments: (24,361,989) to (12,182,071)
- Increase in cash inflow on disposal of subsidiary: - to 9,730

Net cash used in financing activities: $(34,393,837) to $(14,233,486)

### EFFECTS OF EXCHANGE RATE CHANGES ON THE BALANCE OF CASH HELD IN FOREIGN CURRENCIES

- Net (decrease) in cash and cash equivalents: (394,070) to 17,556

### NET (DECREASE) INCREASE IN CASH AND CASH EQUIVALENTS

- Net (decrease) in cash and cash equivalents: (8,420,290) to 15,953,297

### CASH AND CASH EQUIVALENTS AT THE BEGINNING OF THE YEAR

- Cash and cash equivalents at the beginning of the year: 35,913,117 to 19,959,820

### CASH AND CASH EQUIVALENTS AT THE END OF THE YEAR

- Cash and cash equivalents at the end of the year: $27,492,827 to $35,913,117

The accompanying notes are an integral part of the financial statements.
Looking Forward to Seeing You Again